Coal & Allied – Mount Thorley Warkworth Operations

Community Consultative Committee Meeting – Monday 8 August 2106

Attendance

Chairperson	
Colin Gellatly	Independent Chair MTW CCC
Company Representatives	
Mark Rodgers	General Manager Operations – MTW
Travis Bates	Specialist, Community Relations
Community Representatives	
Stewart Mitchell	Community Representative
Ian Hedley	Community Representative
Christina Metlikovec	Community Representative
Graeme O'Brien	Community Representative
Adrian Gallagher	Community Representative
Council	
Cr. Sue Moore	Singleton Council Representative
Observers / Presenters	
Robert Gothard	Environmental Advisor – MTW / CCC Secretary
Bill Baxter	Environmental Specialist – Rehabilitation
Chris New	Environmental Specialist
By Invitation	
Michael Howat	NSW E.P.A.
Apologies	
Andrew Speechly	Manager Environment & Community (HVO/MTW)
Chris Knight	Department of Planning & Environment (DP&E)
Minutes	Sarah Purser - e) sarah.purser@bigpond.com

1. **Welcome;** Col welcomed members and introduced Michael Howat from E.P.A.'s Newcastle Office who had asked to come along to today's CCC Meeting.

2. **Apologies;** Advised and recorded.

3. **Declaration of Pecuniary Interests / Conflict of Interest;** Ongoing; Col advised that both he and Sarah are engaged by Coal & Allied to provide the services of Chairperson and meeting note taking.

4. **Approval of the previous Meeting Minutes**; **9 May 2016**. Col called for approval of the previous Meetings Minutes, no additional comments were put forward by members and Sue agreed that they be adopted.

5. **Correspondence**

- ***Draft Visual Screening Plan distributed by Robert 15 July 2016***; Members were invited to provide feedback and any queries about the purpose and scope of this plan by 19 July 2016.

- ***Business Papers - 8 August Meeting***; Col advised that due to some logistical complications within the company the distribution of these papers had been delayed to Friday 5 August. Stewart, Graeme and Ian advised this had resulted in them not having enough time to review the papers in preparation for this meeting. Graeme asked that if there was an unexpected delay in the future could MTW advise this to members via phone or email, particularly in relation to checking for papers delivered to letterboxes.

Stewart noted that he did not receive a hard copy of the Business Papers and he and other members confirmed their preference was to receive this document in hard copy as it can be tedious to review on a computer screen due to its length. Graeme felt this was unsatisfactory and MTW should fix this in the future. Mark apologised to the group and advised MTW will come back with a commitment on timing to get the Business Papers to members earlier.

Wallaby Scrub Road Protest: Police Presence

Col invited Shane to introduce himself to the group and there was a round table introduction of members and their representation.

Shane advised that he was from Singleton Police and as far as policing goes he is in charge of this area. Shane was asked by Guy Guiana, who is the Acting Superintendant for the Hunter Valley, to meet with members to express Police position. Shane explained that the Police are independent of the two parties that are opposed and part of their role is to ensure people can practice their business lawfully.

Shane advised that the Police are happy for people to protest providing this is lawful and their role is to facilitate the safe and free movement of people and traffic. Should there come a point where situations become unsafe the Police will exercise the law to ensure peoples safety. Shane advised that he is not able talk to any roadside discussions or arrest matters as these are before the Court and it would be inappropriate to discuss this publically.

With regard to road closures, Shane advised that Police had invoked section 186 of LEPRA and Part 6 of the Police Act which gives Police the power to preserve life and property. Shane explained that the shoulder of the road where protestors were located is deemed a road related area. Shane offered to read the relevant section of the Act and asked if members were clear on this. Stewart advised he was happy now having an understanding of what sections of the Act Police were working under.

Shane confirmed that the Police will facilitate a company that is conducting lawful business and that C&A had all the proper authorities through Government and local Council approvals. The reason for Police moving the protestors on was due to these people preventing the company from carrying out its normal business. C&A's normal protocol is to shut roads for blasting, at that point where there was a safety issue the Police relied on section 186 of LEPRA and Part 6 of the Police Act.

Shane reiterated Mr Guiana's position and that is the Police understand the competing interests and acknowledge it is a free country with the right to protest but it has to be lawful. For an assembly to be considered lawful it needs to comply with the Summary Offenses Act and there is the need to submit a Form One for an organised protest to the Commander of Police in the area that the protest is to be held. On the other side, if the need be, if there is lawful activity going on i.e. a business, the Police need to facilitate them carrying out their lawful business as well. The Police can facilitate a lawful protest but also need to protect people's right to carry out their business. The Police are impartial and have no connection with Rio Tinto and their biggest job is to ensure the public's safety and that is all they are doing when using those powers to move people and what they are ultimately trying to ensure.

Col asked if members had any questions for Shane.

Christina queried who asked Police to attend Wallaby Scrub Road on Monday 18 July? Notification from C&A was received by the Police.

Christina noted that the School Bus was at the front of the cue at the road closure and asked if it could not have been let through? Shane advised the road had been closed due to protestors and if the protestors had not been there, the road would have been opened as normal after it had been cleared post blasting. Given that the road was closed for public safety the bus could not be excluded as this would have been a contradiction to send the bus through.

Graeme asked if the School Bus could have been redirected along Broke Road and deliver students further down the Putty road, rather than being held up for 45 minutes? Shane advised that it was not known how long the road would be closed and this was dependent on the behaviour of protestors. The closure was extended due to the slow manner protestors left the exclusion area and if they had of moved when first asked, the road would have been shut for the minimal period which has been agreed upon with Council. In effect, the road was closed until such time that the Police could clear it.

Mark acknowledged the School Bus travel and that the time the blast happened was just not the right time, so the company will not be sending off blasts at 4.00 pm in the afternoon. Mark advised that road closures for blasting should take 10 to 15 minutes, while there is the potential for protestors this may make it longer and MTW will therefore not conduct blasting in the afternoon after 4.00 pm.

Christina finds the road closures tend to be more around 15 to 20 minutes when there are no protestors and asked if the closure was prolonged due to the blast going wrong and settling on the road as a thick green mucus fog. Mark advised the secondary reason for the road being closed for longer was that the fume and dust needed to clear after the blast and he will talk through why that was after members had the opportunity to ask Shane questions.

Sue was surprised the company would blast when it was raining. Mark confirmed that this blast had been planned for Friday 15 July, he advised there is the ability to blast in wet conditions and that loading a shot in the wet is usually a problem but when it is already loaded it is alright. Sue asked if the rain would help to suppress the orange fumes. Mark confirmed that sometimes it can, but mostly the issue is in relation to wind direction and when the blast went off on the Monday there was hardly any wind.

Graeme asked where does the Council fit in regarding road closures? Singleton Council give approval for the time and nature of the blast, it was Police opinion on the day that C&A had met all requirements to close the road by; advertising, sign posting and positioning centuries on the road.

Christina asked who had invited Shane to attend today's CCC meeting? Shane confirmed that Mr Guiana had asked him to attend and that it is quite common for Police to become involved in these sorts of conflicts and meet with community to state their position and what their expectations are and to answer questions from community.

Stewart asked if Shane was part of the Singleton Council Traffic Committee? Sue advised that she Chair's this group and that Senior Constable Dengar is a member. Stewart can't see the need for 6.5 kilometres of the Putty Road to be closed if the exclusion zone is 500 metres. Sue advised that the Traffic Committee sees approvals such as for Special Events. Road closures in relation to mining are more of an operational matter and would be dealt with by Council staff on an ongoing basis, not just for this mine but any mine.

Ian explained that his workshop is located barely out of exclusion zone at 600 metres and would like the exclusion zone to be more than 500 metres, as it is very close. Mark advised the 500 metre exclusion zone from the blast is a legal requirement to allow for rock and the like, then there is an exclusion zone beyond that which is determined by weather i.e. wind direction.

There is also a safety zone to keep people safe if there is dust and/or fume, so there is the minimum 500 metres then MTW may extend this to what they deem necessary to allow for weather conditions.

Graeme asked if Mr Guiana approached the mine here to speak or was the request from the Mine. Mark advised that Mr Guiana had requested a meeting with himself and then had asked that he or another Police representative come to address the group.

Stewart referred to a further blast that had occurred on Wednesday 20 July. Stewart noted that pedestrians had been moved away but he was concerned that two police officers and some people had been in the exclusion zone and were not individually warned that the blast was going off. Mark advised on this occasion when the blast was ready to go off the wind direction was such that the exclusion zone and the area where the police and people were did not require to be closed.

Graeme reads the use of the exclusion zone as a fluid situation where the company sometimes uses this or not as per each blasting requirement. Mark advised that is correct and gave the example of two blasts the previous week with one requiring a road closure and the other did not, again this depends on where in the pit the blast is and also weather conditions.

Graeme would like to know how long he may get held up travelling to and from town as this had been raised in the CCC forum a number of times and especially now that there is the potential for three roads to be closed; Charlton, Wallaby Scrub and the Putty. Mark advised MTW do make assessments on what roads will need to be closed and are conservative on that, detail on road closure is advertised and under normal circumstances should be for around 15 minutes.

Stewart asked if there is a blast at 600 metres from the road would MTW not have to close the road? Mark advised if the wind direction was not going across the road then fundamentally this would be correct. The company will allow for safety and if the wind direction changed they have the ability to close that road quickly, therefore MTW may not close the road.

Blast Overview : Monday 18 July 2016

Col requested for Mark to provide an overview on the lead up to this Blast.

- It is normal practice for MTW to conduct around two to three blasts weekly.
- Some blasts require road closure, others do not.
- Road closures are dependent on the risk of the blast, along with projected weather conditions which can change.
- On Wednesday 13 and Thursday 14 July MTW loaded explosives for a blast planned for Friday 15 July.
- The blast was to be in an area that the company thought was higher risk due to the type of material and also the moisture content and on that basis MTW used certain kinds of explosives i.e. an emulsion that stands up better to moisture.
- Based on company assessments the material and blast would be required to be set off within 24 hours.
- On Thursday 14 July the company was made aware via a notification and the Lock the Gate website, that there was going to be a rally on Wallaby Scrub Road on Friday 15 July between 10.00 a.m. and 11.00 a.m and that approximately half a dozen people turned up for this.
- MTW usually set off a blast around 10.30 a.m. but the company assessment was to wait until that rally had finished.
- There then was a further understanding that some protesters had said to the media that they were willing to stay there for the rest of the day to disrupt the blast so on that basis MTW did a second assessment with the company's preference to set the blast off on the Friday for the reasons just stated.

- Mark advised the Department that MTW had a blast they would like to set off but given the circumstances and not wanting to cause any disruptions to the rally, the company would let the day play so that those who were at the rally and wished to protest for the day could finish that.
- Approvals from Council etc only allow MTW to blast Monday to Friday 9.00 a.m. to 5.00 p.m. so even if the company had wanted to set the blast off on the Saturday they could not do it and the next available time was Monday 18 July.
- MTW's assessment of that was by the time they were looking at a blast on Monday, the explosive would have been sitting in the ground for four days. From a safety point of view it is more dangerous to take out explosives than to set them off so that was not an option.
- On the understanding the longer the explosive sits in the ground the more chemical reaction takes place and the more chance there is of fume, MTW had reached a point where they could not wait any longer and the blast was planned for 10.30 a.m. on Monday 18 July.
- On this morning, there were some protestors that had decided to move into the area.
- The company had advertised this blast and put up signage.
- MTW employees asked these people to move and they advised they would not move, so on that basis MTW contacted the Police who arrived not long after, around 10.30 a.m., and took charge of the situation.
- Police then interacted with the people who were there from around 10.30 - 11.00 a.m. all the way through to around 3.00 -3.30 p.m. when the blast went off.
- The reason the blast had to go off was for the very reason that there was going to be fume, the fact that there was fume on that day was not a surprise. It is not what the company is looking for but when blasts are set off there is at times fume and dust and that is why there is an exclusion zone.
- That fume will usually dissipate and MTW make sure that it does not go off into the Industrial Area for instance or any road where people are going to be.
- Blast fumes get rated and a Number 4 is something that is reportable to the EPA, Monday's blast was rated at 3 so this was very close.

Graeme queried how the Number 3 rating was determined as the fume had some serious colour and looking back on it was very yellow. Mark responded that the rating is based on colour, consistency and density and attributed the fume to the emulsion being in the ground for four days when the requirement was for it to be blasted within 24 hours.

Sue asked if there was flexibility for the company to ask Singleton Council for approval to blast on a weekend given the circumstances. Mark confirmed that there is but noted by the time Friday had panned out there was limited time to organise that. In retrospect, Mark agreed that may have been the best way to have gone however the company does not like to blast on weekends and Bill added that the Road closure process would have to have gone through Council.

Christina asked how risky are the after effects of a blast to the Staff that assess the roads as she noted a thick green fog and stench. Mark advised Staff that conduct the monitoring are located in an area well away from the blast.

Sue asked if there was any sludge on the road to clean up. Mark advised no and that any fume usually dissipates quite quickly via wind, however at the time of the blast on Monday there was pretty much no wind so the whole situation was not good.

Graeme asked if it would be preferable for it not to be too windy as this may result in fume potentially leaving the mine site towards surrounding properties. Mark advised in some cases yes, he reiterated that the company does not plan for there to be fume. Some blasts in different areas have higher potential, so the quicker the blast is done the less potential for fume there is.

If the company feels there may be fume they have an exclusion zone and there are certain wind directions when MTW will never blast if it has potential to go over populated areas and in other wind directions the company know it will dissipate, road closures are in place to allow for it going over a road.

Ian queried the wind directions earlier on the Monday. Mark advised the conditions in the morning were as MTW had expected them to be. The conditions in the afternoon had also looked alright, other than the wind drop.

Christina asked if there are alternative chemicals that can be used that produce less fume. Mark advised there is a certain explosive that MTW used for that blast; an emulsion that is more robust and expensive, it has a slower reaction to any water and that is the reason it was used. MTW used the best explosive that they could for that blast however the issue with the blast was the result of it sitting in the ground for four days.

Stewart queried if it was a breach if fume cloud left site and went across a road. Mark confirmed that where the fume was located was not a breach and that is why there is a requirement for road closures. Mark advised that this is also the reason for the exclusion zone, for the safety and health of people, no other reason.

Stewart advised there had been blasts go wrong in the past and asked what happens if someone is hospitalised due to fume. Ian added that his wife had been hospitalised after being stopped at a road block that was just past Wallaby Scrub Road and too close to the blast. Ian felt that it was after that incident that the company commenced closing off Charlton and Putty Roads as well. Mark responded that if there was potential for fume MTW will only set off blasts when the direction of wind is such that it is not going to impact on individuals and hence the reason for road closures and the exclusion zone.

Ian has had fume come across his place and reiterated that he does not think the 500 metre exclusion zone is a safe distance for fume. Mark advised the 500 metre exclusion zone is determined by Law and it is the normal practice for all mines, this minimum distance can be potentially extended.

6. Matters arising from the previous Meeting (Actions)

<u>Action 1</u>: Community Member Feedback on EPA's Air Quality Optimisation to be provided to Emma by 30 June 2016

✓ Comments period completed.

<u>Action 2 :</u> Meeting Minutes Process.

✓ Preparation of Draft completed; see Business Paper.

<u>Action 3 :</u> MTW to follow up with DP&E regarding final dump height of RL180.

Completed; From Business Paper:-

DP&E Response to Approved MTW Dump Heights

The Department of Planning & Environment have provided a response to the CCC queries on the assessment of the MTW dump heights during the approvals process:
The MTW consent includes a final rehabilitation plan and cross sections (Appendix 6), which indicate that the emplacements will vary in height up to approximately 190 m AHD.

The Department's assessment report (pg. 76) includes consideration of the variation, stating:
"It is important to note that the visible elements of the mining operations would be the overburden emplacements, which would be 4 to 5 km from Bulga Village. In some places the emplacement would be 190 m AHD, which is an increase of around 30 m AHD over existing heights. The Department notes that due to the undulating nature of the final landform the majority of it would be similar or lower than 160 m AHD, which is the current maximum approved height for the overburden emplacements."

The PAC's first review report also acknowledges the change (pg.47), stating:
"The visible elements of the mining complex from Bulga village will be the overburden emplacements associated with the Warkworth extension, which would be located approximately 4 to 5 kilometres from the village. In some areas the emplacement would be 190 metres AHD, which is a significant increase of around 30 metres AHD over existing heights."

Action 4 : MTW to update the CCC on the Cattle Grazing Trials.

✓ At today's meeting.

Action 5 : 2015 Annual Review to be Focus Topic at the May Meeting.

✓ At today's meeting.

Action 6 : MTW to meet with Ian to discuss Air Quality Monitoring on the Mount Thorley Industrial Estate.
Action 7 : MTW to arrange for their Blast Crew to meet with Ian's Safety Committee to review Emergency Plans and Procedures.

✓ Ian confirmed that he has had preliminary meetings with MTW with another date to be set.

Action 8 : Telstra Mobile Network coverage issues in Bulga to be kept as an ongoing Agenda Item.
Robert advised feedback from Telstra was that Bulga does sit on the edge of coverage, being approximately 10 kilometres from the Tower. There is a direct line of sight from the Telstra Tower to the town of Bulga and dumps should not impact reception.

Ian advised that this is incorrect, there was a line of sight to the Mt Thorley Telstra Tower but not now, he would like Telstra to come to Bulga and point out the Tower to residents. Ian has been advised by Telstra that to improve coverage he would need to put a booster aerial on his house. Col asked if a representative from Telstra could be invited to the next Meeting. Sue feels that it should be easy for Telstra to check service at any location and feels there can still be reception when a Tower is not in the line of sight.

ACTION 1: MTW to invite representative from Telstra to the next CCC Meeting to discuss mobile network coverage issues in Bulga.

Feedback from Stewart Mitchell

Stewart was concerned about the finalisation of the November Meeting Minutes and it was confirmed that these Meeting Minutes had been endorsed and distributed to all Members. Sue advised that the CCC Meeting Minutes are forwarded to Council upon approval and also confirmed that these had been received by Council. Sue noted that the approved Minutes had included Stewart's feedback that he did not agree with a member statement.

Stewart did not receive a hard copy of the Business Papers and was not in a position to review this document electronically. The email distribution of the Business Papers on the Friday before the meeting did not allow for any significant time for Stewart to study them. On that basis Stewart felt that he could not contribute as it stands and when this issue is properly resolved he would be prepared to continue in this forum. Christina was in agreement with Stewart and both members excused themselves from the meeting.

Graeme advised that he did not wish to continue in attendance as he was not convinced the matter of the Police was within the province of the CCC nor that Police had initiated the contact and has no way of proving or disproving these remarks. Graeme had no real way of knowing if the company contacted Mr Guiana to speak to the CCC or he actually made the approach, but in view of some history associated with the company prior to Mark taking over, Graeme felt there may be some understanding about his superstitions.

Col asked that it be recorded that Stewart, Christina and Graeme excused themselves from the meeting. Mark asked if members would like to continue and all agreed.

7. Company Reports – Mark Rodgers, General Manager : Overview of activities

7.1.1. Operational Update

- **Rehabilitation**

MTW remains on track to meet the end of 2016 target of 83.3 hectares (areas outlined in red on mapping) and Mark noted that rehabilitation areas are very visual when coming to site.

Works completed 2016:-

- ✓ 47.9 ha bulk shaped
- ✓ 17.5 ha topsoiled
- ✓ 21.5 ha composted
- ✓ 8.1 ha seeded

- **Operational Downtime**

YTD 2016 = 2484.56 hours / YTD 2015 = 4984.92 hours

YTD	# CRO Assessments	# Above trigger	# Nights above trigger
YTD 2015	4000	144	46
YTD 2016	3082	62	22

Measurements taken from the same periods of 2015 to 2016 indicate a substantial reduction in downtime hours in line with the Sound Attenuation Program. There was a number of trigger points heading to sensitive level.

Adrian queried the Dragline downtime being almost double from the previous year. Mark explained this is due to the area being prone to be very dusty and MTW deals with this by shutting the Dragline down.

Noise Attenuation

Mark advised that the percentage of Trucks had been increased to 86% from 85% presented at the previous meeting. MTW are working through an engineering solution for a number of older trucks and have now got to the point where they are comfortable that they know what to do with regard their noise attenuation. Mark advised the company will start with one truck, make the changes and get the measurements so that has taken a couple of extra months, since the last meeting the attenuation program has been increased to year end.

MTW Fleet percentages fitted with full sound kit:-

- Trucks 86%
- Dozers 70%
- Excavator 75%
- Drill 43%
- Water Carts 71%

Adrian asked why the percentage of Drill attenuation was low and Mark advised the company is concentrating on Trucks. Col asked if production was on track and Mark advised the first half of the year is ahead of plan and the production forecast for the year has been upgraded.

Ian noted that the weather had potentially been more favourable and felt from his point of view that there had certainly been a marked improvement in both dust and noise. In winter Ian does tend to have windows closed but he had noted noise conditions outside at midnight the previous evening had been much better and the same for dust.

8. General Business

8.1.1 Focus Topic : Grazing Trial

Presentation by Bill Baxter;
Members agreed not to record Bill's presentation with copy to be distributed with the Meeting Minutes.

Ian asked how much fertiliser was used on the analogue site compared to the rehab? Bill responded that soil tests were undertaken both prior to and during the trial. In terms of phosphorous levels the rehab site was higher than the analogue site. Bill advised that fertilising had not been undertaken during the trial so the paddock was as it was when it came into the trial.

Col asked what lessons had come from the Cattle Grazing Trials and Bill felt this was that if rehabilitation is done well, then the land can be utilised to fatten cattle.

Bill advised that the company is going to push the rehab property a little harder next as there is still a lot of standing feed and the stocking rates were probably on the low end of what would be district typical, so the number of cattle will be increased to 15 on this site. The DPI feels the analogue site is not going to handle many more than 10 so cattle numbers will stay with that there By increasing the cattle number to 20 on the rehab will ascertain if cattle have been selectively grazing and this may encourage them to eat more of the rank feed which would encourage clovers to come through.

Ian feels there are a lot of other issues that come into it such as the direction of the paddock face and that aspect is very important. Ian felt if the same sort of fertiliser was used he would be very surprised if the analogue country would not support more head. Sue understood that the analogue site was as the grazier had left it, so there was the possibility that it had not had any fertilizer applied.

Sue asked if the blood testing of cattle had shown up anything for either site and Bill advised for the odd beast there were minor variations and at the time of this presentation there was no significant differences indicated. Bill felt it would be good to tease this out so has asked the DPI to add comments from vets and the like when writing detail up.

Ian asked about competing animals such as feeding kangaroos as that is another big factor on carrying capacity. Bill advised that C&A have undertaken a lot of kangaroo control culling, with three Commercial Harvesters active at Hunter Valley Operations on mine sites and rehab areas. Bill noted that the Harvesters could be brought to MTW and Col advised he understood there were still kangaroo issues over at HVO.

8.1. Focus Topic : 2015 Annual Review

Col called for feedback from Members on the 2015 Annual Review and noted that this focus topic was put on the Agenda as it was of particular interest to Stewart. No questions were raised by other members.

9. Community Feedback

SUE

Wallaby Scrub Road

Sue asked that personally and as the Council representative on this committee, that she wished to make the following comments and further requested these comments to be recorded in the minutes.

I wish to express my disappointment with MTW in regard to their lack of communication with this committee regarding the proposed permanent closure of Wallaby Scrub Road.

I have advised this meeting whenever the subject was discussed, or whenever I was asked of the resolution of Council. This being Council is opposed to the closure and any change from this would be for MTW to approach Council and request for the road to be closed. I am aware that Andrew Speechly was in the public gallery at the recent meeting when Council again resolved to oppose the road closure. Andrew would have heard comments from other Councillors questioning the honesty and integrity of Coal and Allied. I was not one of these Councillors however personally I am very disappointed with Coal and Allied and more particularly MTW. There was every opportunity for it to be disclosed at the May meeting that a letter had already been sent some 3 weeks earlier to Singleton Council to formally request Council consider closure of the road.

As an action for this I would like to see any future plans (actions) regarding Wallaby Scrub Road reported to the CCC members either at a meeting, or if a meeting is not within 2 weeks via email to all committee members. This includes correspondence either way from any Government body. This would go some way to provide transparency and good faith to this committee.

ACTION 2: MTW to report future plans for Wallaby Scrub Road to the CCC, either at a meeting, or if a meeting is not within 2 weeks via email to all members, inclusive of correspondence either way from any Government body.

Mark advised the fact that Wallaby Scrub was going to have to be closed meant there was going to have to be an application however he took on Sue's point that this can be raised at the CCC so there is full transparency and Sue thanked Mark for this.

Mark advised that MTW have made an application with Council to close Wallaby Scrub Road which is what Sue had been referring to and the resolution that the Councillors passed was to not support closure of the road. Mark advised the company will now have to look at what is next and as to Sue's point and while MTW goes through that process, once MTW has visibility of what they are doing this will be made clear to the CCC.

Col asked if there is a process if Council refuses the road closure i.e. would the company then go to the RMS or is there a right of appeal. Mark feels the process is unclear and the company is working through that, when the process becomes clear Mark made the commitment to communicate this to the CCC.

ADRIAN

Property Acquisitions

Adrian queried when it would be likely for Property Acquisitions to ramp up again as some people are out in limbo and do not know where they are going. Mark asked to take Adrian's question on notice and come back to members on this subject.

Adrian asked if the Company could present the Criteria for Acquisition as for example there may be two properties only 75 metres apart with one in the acquisition zone and the other not.

Mark advised that he would commit to coming back as to where people are at in relation to Acquisition Criteria in the current consent and Col felt it would be good for the company to report on this as it is clearly a contentious matter. Adrian agreed that he is hearing a lot of "why him – not me" being asked by community and that he knows of one or two property owners that are having a bit of problem with this.

Sue felt there would obviously be some mapping that shows both areas of affectation and acquisition and where these two areas connect. Sue asked if there are any people that are part of either zone as there had been a situation with another mine in the past where the house was in the Affectation Zone but not in an Acquisition Zone due to the majority of the property not being affected.

ACTION 3 : MTW to present the Criteria and processes regarding Property Affectation and Acquisition in relation to the new consent.

IAN

Wallaby Scrub Road

Ian advised that he had been asked by two community members to raise the question of why the road cannot be moved further west rather than just closed.

Mark felt that this had been discussed previously and the current consent had considered that. Bill confirmed that it had been considered as one option, however this would take out more Warkworth Sands if a new road was put in further West.

Ian asked if the subject of the relocation of Wallaby Scrub Road could be put back on the table and Mark was happy to have discussions about this and hear people's thoughts. Sue asked if the consent does not provide for this and Mark advised no.

Ian advised that there are a number of people that work up the Valley that would be impacted by the closure of Wallaby Scrub Road. Sue added that there were a number of people that were supportive of the mine progressing due to both direct and indirect jobs associated with MTW, but when they realised that Wallaby Scrub Road would be permanently closed, they advised they hadn't realised this and their feedback was similar to Ian's; asking why can't the road be moved to the extremity. Sue feels confident that there would be people out there that would support the road relocation.

Noise & Air Quality Session at Bulga Hall – 17 May

Ian felt that a lot of community members were not aware of this information session and asked how MTW had advertised this. Travis advised a letter had been sent out to all neighbours and Ian was concerned that the notice did not get to a lot of homes as it seemed the only people that knew about it were members of the Bulga Milbrodale Progress Association (BMPA). Ian didn't realise this session was on and just happened to go across to the Hall to see what was happening, he therefore thought it had been organised with the BMPA.

Sue asked what the main areas of discussions were and Travis advised that under the Consent the company is required to conduct information sessions within a 6 month period.

ACTION 4: Travis to confirm detail on how the 17 May Air & Noise Management Information Session was advertised and to copy future neighbour letters regarding community engagement opportunities to CCC members.

Issue of Kangaroos on the Roads

Ian raised that there are issues around the increased number of kangaroos that has become problematic on all roads, he feels the new fencing around the site is worsening this situation as it has blocked the kangaroo's pathways. Adrian noted the Broke community had the same issues with the Bypass Road around Bulga Underground as this blocked the kangaroo's normal movement.

Ian advised that he had a close call with a kangaroo that went off the road but then came straight back as it had nowhere to go and that there were three new dead kangaroos along the Putty Road this morning, he feels the fence is a great idea but is now causing a secondary problem and that culling needs to be done as a matter of urgency.

Adrian queried if it might help to fence both sides of the road and it was thought that this may create an even greater barrier for kangaroo movement.

Bill confirmed that the company had been undertaking culling and has done some over at Bulga in the past, most efforts were currently focussed at HVO.

ACTION 5: Bill to look into ramping up a Kangaroo Culling Program in the Bulga area, particularly on the section of the Putty Road where the new fencing has been erected.

Tendering for Grazing opportunities

Ian asked if these go out by Tender and Bill confirmed yes, that is the normal process, same as buffer land of properties either side of the mine. Bill advised C&A's Agent is Max Bailey in Singleton and the tendering process goes through that Agent and to people that have expressed an interest in the past. Bigger properties tend to be advertised in the Land Newspaper.

ACTION 6: Bill to provide an overview of the Tendering Process for grazing opportunities on C&A Land.

ADRIAN

Adrian asked what feedback MTW had received on the Draft Visual Screening Plan and Robert advised the only comments received were Adrian's.

General Business - Continued

Ian and Adrian felt that there are a lot of other issues to talk about in this forum other than Wallaby Scrub Road and that the meetings should not be too narrow subject wise.

CCC Meeting Minutes

Ian asked when are the Meeting Minutes uploaded onto the company website as he has been questioned by the community on what the CCC does and the general public want to know if this is the forum to get matters heard. Adrian reiterated he is getting a lot of questions regarding Property Acquisition. Rob confirmed approval of the Meeting Minutes is called for at the following Meeting, at which time they are updated to Endorsed by Chair and uploaded to the Company website.

MTW VPA Funding

Ian advised that since the small meeting at Bulga Hall to talk about the MTW VPA funding that is to be made available to the public he has been asked where that process is up to and questioned if a Committee has been established for this. Ian advised that a number of people want to know how they can get their voice out there in relation to this funding as not everyone has the same ideas and residents feel in Bulga that they are very much restricted to the voice of the BMPA, therefore Ian feels there needs to be opportunity for more community involvement.

Mark noted that Ian raising the MTW VPA was a good opportunity for him to provide some transparency on this funding. Mark has requested an extension on the sign off or agreement with the Council on the VPA on the basis of the changes on Wallaby Scrub Road and some of the allocation discussions. Mark would like more time to work out what is the best outcome for Bulga through the VPA, and whilst the VPA is an agreement with Singleton Council he feels there may be the need for broader discussions on what would be the best outcomes for this substantial amount of money.

Sue asked for clarity on Mark's reference to Wallaby Scrub Road and the VPA as it was her understanding there is no connection between the two. Mark clarified the connection is for MTW to continue mining and the VPA. The way the VPA was proposed is that it be signed off on the basis that the consent conditions can be met and continued on. Potentially if MTW are not allowed to cross Wallaby Scrub Road there is a broader issue forming, in addition Mark also wants to understand what is clearly the best allocation of funds for both Bulga and the broader Community by coming to an agreement with Council and the Community. The total amount that has been agreed on and does not change is $11M.

Adrian and Ian understood that is not all allocated to Bulga and Mark advised there was a percentage proposed that was at least a 50/50 split and it was also proposed as a 60/40 split in favour of Bulga, he confirmed there is ongoing discussions on this. Sue advised there was a report that went to council that suggested a similar split and Sue recalls the community of Bulga be consulted as to what their preference was.

It was confirmed that this was put on Public Exhibition for 28 days and some submissions came back to Council. It was Sue's understanding that the biggest one at the time was that Council were asked by the Department of Planning to put forward a significant piece of infra-structure which ended up being the provision of water and that is when an element at Bulga did not want to see the money utilised that way, so it remains an ongoing matter. Mark feels there is opportunity to have more conversation about what is the best allocation of what is a substantial amount of money.

Ian asked if there will be a Committee for the MTW VPA Funding in the near future and Mark felt that will come out of the VPA once it is agreed. The Government Structure was a number of; Community, Council and Coal & Allied members who would then be the Governance Committee to manage those funds but Mark feels there is the need to go back to the basics on agreeing what those funds are and what the scope of that committee is, so to answer Ian's question Mark advised this has not been signed off as yet. Adrian feels that the people that want to move out of Bulga will not want to have input into how the VPA funding would be spent and what is on offer.

Mark advised that MTW would appreciate any members thoughts on how best to interact with the broader community so more people can have their say in matters such as the allocation of VPA funding and encouraged the CCC to provide this feedback as this would be much better from Mark's point of view.

10. Future Dates

10.1 Warkworth Sands Tour: 22 August 2016

Mark asked the CCC to let all community know that this Tour was open to anyone interested. It was initiated through a request by the BMPA who wanted to gain an understanding on how regeneration is progressing. Ian felt that it would be best to advertise this type of opportunity via a flier at the Bulga Shop as he noted that community information is regularly placed on the counter there and probably the Pub as well, Mark agreed that MTW try some different distribution methods.

10.2 Next Meeting – Monday 14th November 2016

Meet Warkworth Boardroom; 2.00 p.m. to 4.00 p.m.

ACTIONS ARISING FROM THIS MEETING

Action	Page Ref	Description	Who
1	7	MTW to invite representative from Telstra to the next CCC Meeting to discuss mobile network coverage issues in Bulga.	Rob
2	10	MTW to report future plans for Wallaby Scrub Road to the CCC, either at a meeting, or if a meeting is not within 2 weeks via email to all members, inclusive of correspondence either way from any Government body.	Mark
3	11	MTW to present the Criteria and processes regarding Property Affectation and Acquisition in relation to the new consent.	Travis
4	11	Travis to confirm detail on how the 17 May Air & Noise Management Information Session was advertised and to copy future neighbour letters regarding community engagement opportunities to CCC members.	Travis
5	12	Bill to look into ramping up a Kangaroo Culling Program in the Bulga area, particularly on the section of the Putty Road where the new fencing has been erected.	Bill
6	12	Bill to provide an overview of the Tendering Process for grazing opportunities on C&A Land	Bill

Mount Thorley Warkworth Community Consultative Committee

Monday 8 August 2016

Independent Chair: Col Gellatly

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Agenda

1. Welcome
2. Apologies
3. Declaration of pecuniary interests / conflicts of interest
4. Police Inspector – Shane Buggy
5. Correspondence
6. Matters arising from previous meeting (Actions)
7. Company reports
8. Cattle Grazing Trials
9. 2015 Annual Review
10. Community feedback
11. General business & Future Dates

1.0 Welcome

Warkworth Mining Limited
EMERGENCY EVACUATION PROCEDURES

ACTION TO BE TAKEN ON DISCOVERING
A FIRE OR OTHER EMERGENCY

1. ALERT PERSONS NEARBY OF THE SITUATION.
2. EXTINGUISH THE FIRE IF ABLE TO DO SO WITH SAFETY
3. IF NOT ABLE TO PERFORM 2) NOTIFY RECEPTION OF THE EMERGENCY
3. FOLLOW THE EVACUATION PROCEDURES.

ACTION TO BE TAKEN TO EVACUATE THE BUILDING.

1. FOLLOW INSTRUCTIONS OF THE WARDENS.
2. CLOSE YOUR OFFICE DOOR AND TAKE THIS SIGN WITH YOU.
3. WALK TO THE NEAREST EXIT – DO NOT RUN.
4. PROCEED TO THE EMERGENCY MUSTER POINT ABOVE THE FIRE DAM
4. DO NOT RETURN TO WORK AREA FOR ANY REASON.

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2.0 Apologies & others

Apologies

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3.0 Declaration of interests

PECUNIARY AND OTHER INTERESTS

Members should declare any pecuniary or other interest which may be considered to prevent them undertaking their role impartially and in the best interests of the local and broader communities. Examples include holding a private contract with the company or holding voluntary acquisition rights. These guidelines establish no requirement in respect of personal interests other than declaration. However, the committee may determine that a personal interest is sufficient that a member should withdraw from discussion on a particular issue.

Source: *Guidelines for establishing and operating community consultative committees for mining projects, June 2007*

4.0 Police Inspector – Shane Buggy

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5.0 Correspondence

5.1 Business papers

5.2 Correspondence to the committee

6.0 Matters arising from previous meetings

Item	Action
1	Community Member feedback on the EPA's Air Quality Optimisation *[**Complete:** Feedback provided by the 30th June 2016]*
2	Meeting minutes process. *[**Complete**: See Business Paper.]*
3	MTW to follow up with DP&E regarding final dump height of RL180. *[**Ongoing**: See Business Paper.]*
4	MTW to update the CCC on Cattle Grazing Trials. *[**Complete**: This meeting.]*
5	*2015 Annual Review to be Focus Topic at the next meeting* *[**Complete**: This meeting.]*

6.0 Matters arising from previous meetings

Item	Action
6	MTW to continue efforts to meet with Ian to discuss Air Quality Monitoring on the MTIE. *[**Ongoing**: No date has been set.]*
7	MTW to arrange for their Blast Crew to meet with Ian Hedley's Safety Committee to review Emergency Plans & Procedures. *[**Ongoing**: No date has been set.]*
8	MTW to discuss mobile network coverage issues in Bulga with Telstra *[**Complete:*** • *Bulga does sit on the edge of coverage (approx. 10kms from tower)* • *Direct line of site from the Telstra tower to the town of Bulga* • *Dumps should not impact reception*

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7.0 Company Reports

7.1 GM Overview of activities

Mark Rodgers – General Manager

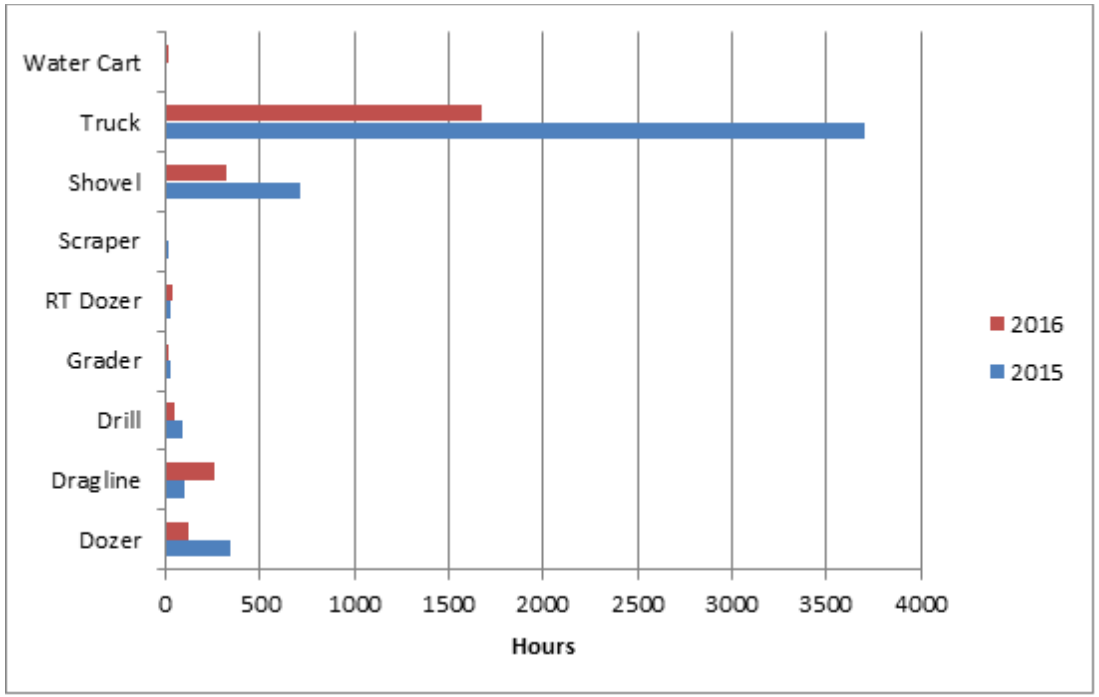

0
3,000
metres
Scale: 1:49.85

Operational Update

Rehabilitation

Rehabilitation target for 2016 = 83.3 ha
(outlined in red)
Works completed 2016:
47.9 ha bulk shaped
17.5 ha topsoiled
21.5 ha composted
8.1 ha seeded

Operational Downtime



YTD 2016 = 2484.56 hours
YTD 2015 = 4984.92 hours

	# CRO Assessments	# Above trigger	# Nights above trigger
YTD 2015	4000	144	46
YTD 2016	3082	62	22

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2016 - MTW Sound Program Plan

MTW Fleet Percentages Fitted with Full Sound Kit				
Trucks	Water Carts	Dozers	Excavator	Drill
86%	71%	70%	75%	43%

8.0 General Business

8.1 Cattle Grazing Trials

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8.0 General Business

8.2 2015 Annual Review

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9.0 Feedback from community representatives

10.0 Future Dates

10.1 Warkworth Sands Tour

9:00 – 11:30 am Tuesday 23rd August 2016

10.2 Next Meeting

2:00 pm Monday 14th November 2016

Warkworth Boardroom

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End of meeting – please travel safely

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Mount Thorley Warkworth

Community Consultative Committee

Business Papers – August 2016

Materials ahead of meeting of the committee on 8 August 2016

Contents page

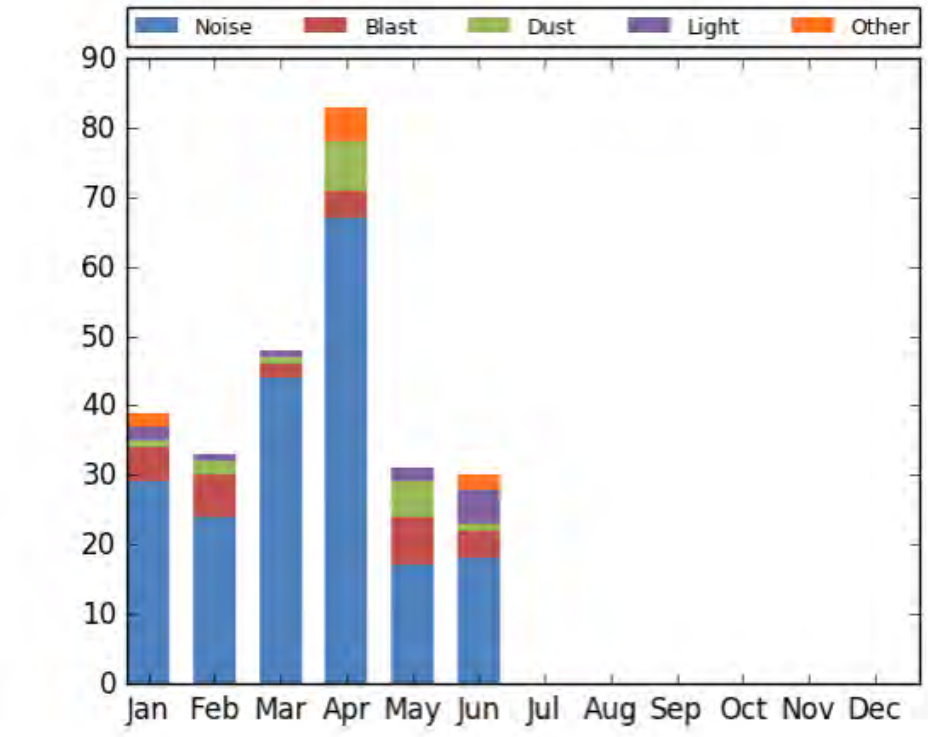
Appendices

1.0 Complaints

Complaints overview for period 1 January to 30 June 2016

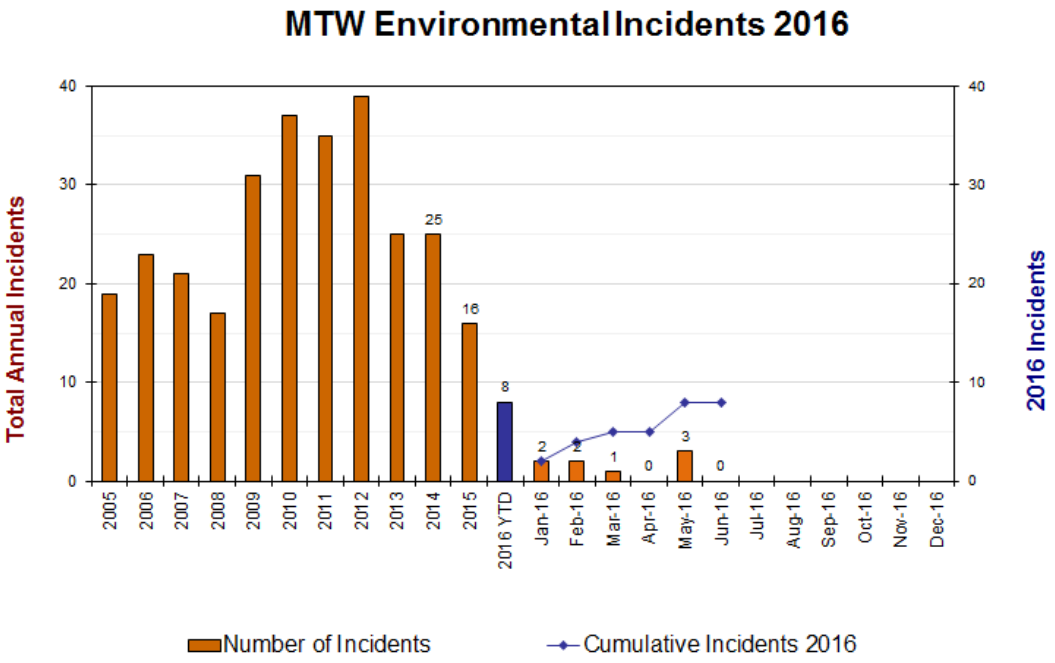
Mount Thorley Warkworth Monthly Complaints Summary

	Noise	Dust	Blast	Lighting	Other	Total
January	29	1	5	2	2	39
February	24	2	6	1	0	33
March	44	1	2	1	0	48
April	67	7	4	0	5	83
May	17	5	7	2	0	31
June	18	1	4	5	2	30
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Total	199	17	28	11	9	264



2.0 Incidents

Overview of environmental incidents for period 1 January to 30 June 2016



Incident summary for the period 1 January to 31 March 2016

Date	Details	Key Actions	Aspect
16-May-2016	**Diesel Spill at Orica Facility** Approximately 50 litres of diesel from the non-return valve spilt whilst mixing with the Ammonium Nitrate in the explosive manufacturing process.	An additional ball valve has been installed between the fuel tank and the check valve as an isolation point. The new valve is turned off at the end of each shift.	Spill-Hydrocarbons
18-May-2016	**Diesel spill at the 120 Fuel Farm** While decanting diesel into bulk storage tank a valve has been closed by an operator refuelling a scraper resulting in the storage tank overtopping, spilling approx. 3000L into a bunded area.	Fuel was collected and disposed of in the Waste Hydrocarbon Tank. Procedure was updated to ensure valves are isolated during refilling of fuel tanks	Spill-Hydrocarbons

Date	Details	Key Actions	Aspect
23-May-2016	**Collector chemical spill at North CHPP** The delivery driver incorrectly connected the Collector line up to the Frother line. Due to limited storage in the frother tanks, the collector has overflowed the frother tank by 5000L into a bunded area.	All overflow material was collected and reused in the North CHPP. The delivery provider has updated their procedure.	Spill-Hydrocarbons

3.0 Environmental monitoring

Monthly summaries of environmental monitoring for the period 1 April 2016 to 30 June 2016

April 2016

Attached as **Appendix A**

May 2016

Attached as **Appendix B**

June 2016

Attached as **Appendix C**

4.0 Rehabilitation plan

At the end of the June rehabilitation is progressing well with 47.9 ha of the targeted areas bulk shaped, 17.5 ha of topsoiled, 21.5 ha composted and 8.1 ha seeded.

Disturbance was predominantly in Warkworth's West Pit area, for mine advance, and to construct a water management contour along the western extent of the disturbance to manage water off pre-strip activities. A total of 76.6 ha has been disturbed at end of June.


Plan of: Topsoiled 2016
Location: MTW
Date: Jun16
Plan By: RPC
Version: 1.0
COAL & ALLIED
N
W
E
S
Legend
Total Topsoiled (YTD + carryover) = 17.5 ha
Planned 2016 Topsoil (47.2 ha)
[includes 9 ha from Glencore Bulga]
Topsoiled YTD (11.6 ha)
2015 Carryover (5.9 ha)
Coal & Allied - Environmental Services


Plan of: Composted 2016
Location: MTW
Date: Jun16
Plan By: RPC
Version: 1.0
COAL & ALLIED
N
W
E
S
Legend
Total Composted (YTD + carryover) = 21.5 ha
Planned 2016 Compost (73.7 ha)
Composted YTD (16.3 ha)
2015 Carryover (5.2 ha)
Coal & Allied - Environmental Services


Plan of: Seeded 2016
Location: MTW
Date: Jun16
Plan By: RPC
Version: 1.0
COAL & ALLIED
N
W
E
S
Legend
Total Claimed Rehab YTD = 8.1 ha
Planned 2016 seeding (83.3 ha)
Seeding claimed YTD (8.1 ha)
Coal & Allied - Environmental Services


Plan of: Disturbance 2016
Location: MTW
Date: Jun16
Plan By: RPC
Version: 1.0
COAL & ALLIED
N
W
E
S
Legend
Total Planned Disturbance 2016 = 149 ha
Planned 2016 New Disturbance (140.4 ha)
Planned 2016 Rehab Disturbance (8.6 ha)
Disturbance YTD (76.6 ha)
Coal & Allied - Environmental Services

5.0 Sound Attenuation Update

Year to date, MTW has attenuated 13 haul trucks bringing the total attenuated to 65. Overall approximately 80% of the heavy mobile equipment has been attenuated.

MTW Fleet Percentages Fitted with Full Sound Kit					
Haul Trucks	Water Carts	Dozers	Excavator	Drill	Total
86%	71%	70%	75%	43%	80%

6.0 Acquisition Update

A presentation with a property acquisition update for Mount Thorley Warkworth is included in **Appendix D** of this Business Paper. No updates have been made to the property portfolio since the last CCC meeting.

7.0 Website Uploads

The following is a list of all documents uploaded to the MTW library of the Rio Tinto website between the period of 1 April 2016 to 30 June. Uploads have been characterised as Additions, being a new document, or a Change, meaning a new version of an existing document. Please refer to the library page of the website for document contents: http://www.riotinto.com/copperandcoal/documents-10401.aspx

Table 1: Uploaded Documents

Document Title	Upload type
Mount Thorley Warkworth EPBC Compliance Report 2016	Addition
Mount Thorley Warkworth Environmental Monitoring Report March 2016	Addition
Mount Thorley Warkworth Environmental Protection Licence 1376 1976 Monthly Meaningful Summary April 2016	Addition
Mount Thorley Warkworth Environmental Protection Licence 1376 1976 Monthly Obtained Data Summary April 2016	Addition
Mount Thorley Warkworth Complaints Register 2016	Change
Mount Thorley Warkworth Environmental Monitoring Report April 2016	Addition
Mount Thorley Warkworth Complaints Register 2016	Change
Mount Thorley Warkworth Environmental Monitoring Report May 2016	Addition
Mount Thorley Warkworth Environmental Protection Licence 1376 1976 Monthly Meaningful Summary May 2016	Addition
Mount Thorley Warkworth Environmental Protection Licence 1376 1976 Monthly Obtained Data Summary May 2016	Addition
Mount Thorley Warkworth Complaints Register 2016	Change
Mount Thorley Warkworth Independent Environmental Audit Report and Appendices May 2016	Addition
Mount Thorley Warkworth Environmental Protection Licence 1376 1976 Monthly Meaningful Summary June 2016	Addition
Mount Thorley Warkworth Environmental Protection Licence 1376 1976 Monthly Obtained Data Summary June 2016	Addition

8.0 Community investment & support

Mount Thorley Warkworth (MTW) site donations

The site donations committee provides an opportunity for employees to assess and make recommendations on requests for sponsorship and donations received by MTW.

Funding is provided in the form of sponsorship or a donation to assist local, community-based organisations. The funding criteria for site donations has been updated to reflect MTW's focus on funding projects and initiatives from the Bulga, Milbrodale, Broke and Singleton area.

Application forms can be requested by emailing CNACommunityRelation@riotinto.com. Alternatively, potential projects and opportunities for support from Coal & Allied can be discussed with Travis Bates – Community Relations Specialist, Singleton.

Year to date, MTW site donations committee has invested $20,433 to 16 local projects and initiatives, including:

- Singleton Council
- Hunter Safety Award
- Singleton Rotary Club on Hunter
- Hunter Valley Group 21 JRL
- Singleton Junior Bulls
- AFOM
- Singleton Theatrical Society
- Wildlife Aid Inc.
- Cancer Council NSW
- Singleton Golf Club Lady Members
- Heights Pet Hospital
- Singleton Beef & Land Management
- Singleton Hospital
- Hunter River Community School
- Branxton Public School
- Mid Hunter Palliative Care Volunteers Inc.

Coal & Allied Community Development Fund (CDF)

The year 2016 marks 18 years of operation of the CDF, which has invested over $14.5 million to support over 120 community projects in the Hunter Valley since its establishment in 1999, across the areas of health, education, environment and economic development.

In 2014, Coal & Allied announced that a further $3 million would be made available to the CDF over a three year period (2015 – 2017) for projects in the Singleton, Muswellbrook and Upper Hunter LGAs. Strategic priority areas have been refined for the 2015-2017 funding cycle to enable a more targeted approach to addressing identified community need and to leverage other resources Coal and Allied may be able to offer to strengthen community partnerships.

Priority areas for the 2015-2017 funding cycle include:

- Economic Development: encouraging the diversity and competitiveness of the Upper Hunter economy
- Community Health: Supporting projects which target health, safety and social wellbeing of the community
- Education: Promoting the value of education and building skills within our community
- Environment and Land Management: Supporting projects that can make a difference on a greater scale. i.e. beyond C&A mining operations

In 2015/2016, the CDF has committed more than $1 million to 13 new programmes aimed at delivering long term benefits for communities in the CDF catchment, which include the Singleton, Muswellbrook and Upper Hunter LGAs. A further $1.5 million is available for allocation in 2016-2017.

Table 2: Coal & Allied CDF projects approved in 2015/2016

Programme	Partner
Enterprise Facilitation	Sirolli Institute
Supporting Children's Developing Social Competence	Early Links Inclusion Support Service
Science and Engineering Challenge, and SMART Program (2015 - 2017)	University of Newcastle
Upper Hunter Education Fund Scholarships (2015 - 2017)	Upper Hunter Education Fund
Upper Hunter Beef Bonanza	Upper Hunter Beef Bonanza
Singleton High School Agricultural Course	Singleton High School
University of Newcastle Scholarships	University of Newcastle
Singleton Community College Strategic Plan	Singleton Community College
HSC Study Camps	Upper Hunter Education Fund
Business Development Officer	Singleton Business Chamber
Early Learning Program	Milbrodale Public School
Book Week	Singleton Primary Schools

Table 3: Active Coal & Allied CDF programmes running throughout 2015/2016.

Programme	Partner
Upper Hunter Shire Council Community Engagement	Upper Hunter Shire Council
Building Skills and Leadership Capacity in Rural NSW	Royal Agricultural Society (NSW)Foundation
Hunter Youth Leadership Program	The Australian Outward Bound Development Fund
People in Your Neighbourhood- Sustainability Street	Muswellbrook Shire Council
Tocal Schools Steer Challenge	Department of Primary Industries Tocal College
Local SME Supply Chain Participant project	HunterNet
Scholarship Program	University of Newcastle
Economic Development and Funding Coordinator	Singleton Council
Business Development Officer	Singleton Business Chamber
Singleton Place Making (ended in July 2015)	Singleton Council
Science and Engineering Challenge and SMART Program	University of Newcastle
Enterprise Facilitation	Sirolli Institute
Upper Hunter Beef Bonanza	UHBB
Supporting Children's Developing Social Competence	Early Links
Upper Hunter Education Fund Scholarships	UHEF

Coal & Allied Aboriginal Community Development Fund (ACDF)

The overarching strategy of the fund is to contribute to building more resilient, healthy and sustainable local and regional Aboriginal communities. As such, the fund continues to place a strong focus on strategic education and economic development partnerships and supports cultural events and programs which reflect the growing pride and commitment of Aboriginal people to share their culture with the wider community.

At the April meeting of the ACDF the following sponsorships and partnerships were approved:

- NAIDOC program at Singleton High School and support for a wider Singleton community event
- Renewed funding for the highly successful Singleton Schools Aboriginal Dance Program
- Upper Hunter NAIDOC program - Muswellbrook NAIDOC community day, Upper Hunter Schools events and Upper Hunter NAIDOC Week Awards
- Sponsorship of the Wupa @ Wanaruah Cultural Art Trail – an annual event held at venues in Pokolbin area each year http://www.wupaatwanaruah.com.au
- Education assistance to support a Singleton resident to continue his professional development and formal studies

Divestment of Mt Pleasant project

Upon completion of the sale of Mt Pleasant, the ACDF is expected to transfer to the new owners, MACH Energy Australia. There are not expected to be any significant changes in the medium term to the operation of the ACDF and it will continue to be accessible to any Aboriginal person living in the Upper Hunter Valley (UHV) or organisations undertaking a project to benefit specific Aboriginal groups or the wider Aboriginal community in the UHV.

Table 4: ACDF projects – Active and newly approved projects

Programme	Partner
Max Potential	Future Achievement Australia Foundation
Microenterprise Development in the Upper Hunter	Many Rivers Microfinance
Wonnarua Mining Rehabilitation Operations	Wonnarua Mining Rehab Pty Ltd (Wonnarua Nation Aboriginal Corp)
Study Assistance	Fiona Murray
Study Assistance	Jacob Ellis
Ka Wul - New Definition	Singleton High School
Singleton Art Prize	Rotary Club of Singleton on Hunter Inc.
Partnerships for Success	Graham (Polly Farmer) Foundation
CEO and Strategic Planning	Wonnarua Nation Aboriginal Corp

The Australian Outward Bound Scholarships	Australian Outward Bound
Singleton Schools and Community NAIDOC Week	Singleton Schools Management Group
Upper Hunter schools and community NAIDOC week activities	Wanaruah Local Aboriginal Land Council
School Based Administration Traineeship	Wanaruah Local Aboriginal Land Council
Singleton Schools Aboriginal Dance Group	Broke Public School
NAIDOC Week Celebrations	St James Public School Scone
Wupa @ Wanaruah Art and Cultural Event	Ungooroo Aboriginal Corporation

9.0 Draft Process for CCC Meeting Materials

What	Timeline	Who
Notice of meeting & call for agenda items	4 weeks prior (Monday)	MTW
Agenda items close	2 weeks prior (second Friday after call for items)	All
Confirm Agenda items for inclusion	Monday following close (2 weeks prior)	Chair
Business Paper & Agenda circulated	Monday prior to meeting	MTW
MEETING	2nd Monday of 2nd month of each quarter	All
Draft minutes	2nd Monday after meeting (13 days)	MTW
Draft Minutes sent for Technical Review	2nd Monday after meeting	MTW
Technical Review Comments close	3rd Monday after meeting (7 days)	MTW
Finalise Draft Minutes	7 days	MTW
Endorsed by Chair	4th Monday after meeting	Chair
Circulate Endorsed Draft Minutes for Comment	4th Monday after meeting	MTW
Comments Close	5th Monday after Meeting	All
Finalise Minutes	7 days	MTW
Final minutes	42 days after meeting	MTW

10.0 DP&E Response to Approved MTW Dump Heights

The Department of Planning & Environment have provided a response to the CCC queries on the assessment of the MTW dump heights during the approvals process:

> The MTW consent includes a final rehabilitation plan and cross sections (Appendix 6), which indicate that the emplacements will vary in height up to approximately 190 m AHD.
>
> The Department's assessment report (pg. 76) includes consideration of the variation, stating:
>
> *"It is important to note that the visible elements of the mining operations would be the overburden emplacements, which would be 4 to 5 km from Bulga Village. In some places the emplacement would be 190 m AHD, which is an increase of around 30 m AHD over existing heights. The Department notes that due to the undulating nature of the final landform the majority of it would be similar or lower than 160 m AHD, which is the current maximum approved height for the overburden emplacements."*
>
> The PAC's first review report also acknowledges the change (pg.47), stating:
>
> *"The visible elements of the mining complex from Bulga village will be the overburden emplacements associated with the Warkworth extension, which would be located approximately 4 to 5 kilometres from the village. In some areas the emplacement would be 190 metres AHD, which is a significant increase of around 30 metres AHD over existing heights."*

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Appendix A

Environmental Monitoring
April 2016

COAL & ALLIED

Managed by Rio Tinto Coal Australia

Mount Thorley Warkworth

Monthly Environmental Report

April 2016

Coal & Allied Operations Pty Ltd

ABN 16 000 023 656

Lemington Road, Ravensworth via Singleton NSW 2330 Australia

PO Box 315 Singleton NSW 2330 Australia

Telephone +61 2 6570 0300 Facsimile +61 2 6570 0399

CONTENTS

Figures

Tables

Revision History

Version No.	Person Responsible	Document Status	Date
1.0	**Environmental Advisor**	**Draft**	**16/05/2016**
1.1	**Environmental Specialist**	**Final**	**17/05/2016**

1.0 INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Mount Thorley Warkworth (MTW). This report includes all monitoring data collected for the period 1st April to 30th April 2016.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to Figure 3: Air Quality Monitoring Locations).

2.1.1 Rainfall

Rainfall for the period is summarised in Table 1, the year-to-date trend and historical trend are shown in Figure 1.

Table 1: Monthly Rainfall MTW

2016	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
April	15.6	258.2

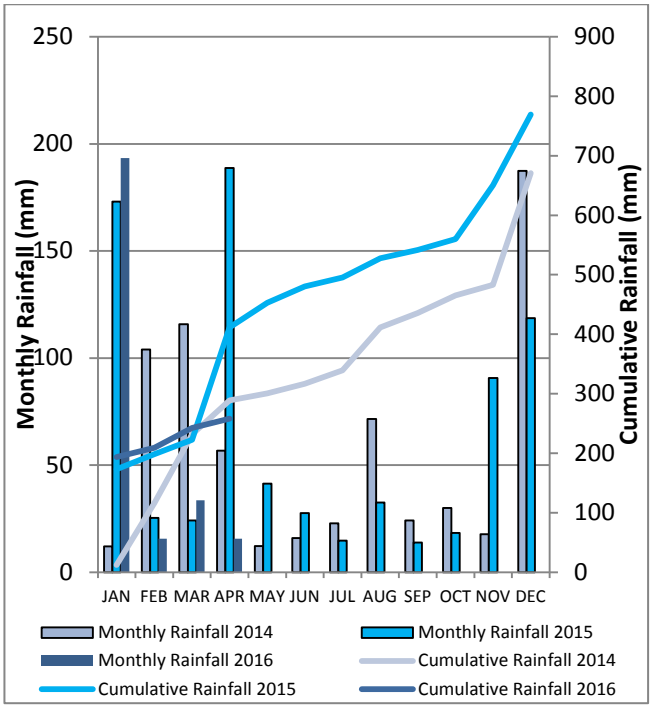

Figure 1: Rainfall Trend YTD

2.1.2 Wind Speed and Direction

Winds from the South were dominant throughout the reporting period as shown in Figure 2.

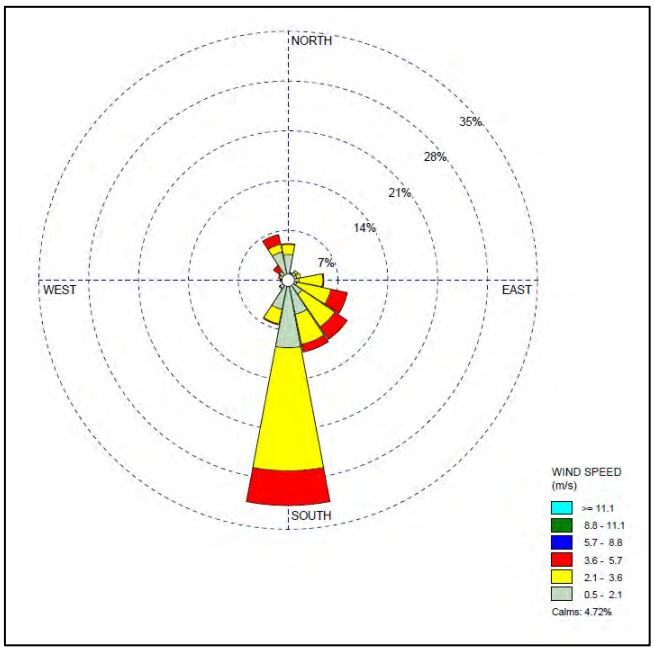

Figure 2: Charlton Ridge Wind Rose – April 2016

Figure 3: Air Quality Monitoring Locations

2.2 Depositional Dust

To monitor regional air quality, MTW operates and maintains a network of nine depositional dust gauges, situated on private and mine owned land surrounding MTW.

Figure 4 displays insoluble solids results from depositional dust gauges during the reporting period compared against the year-to-date average and the annual impact assessment criteria.

During the reporting period the DW14 and D122 monitors recorded monthly results above the long term impact assessment criteria of 4.0 g/m^2 per month. The field notes associated with the results confirm the presence of insects. As such the results are considered contaminated and will be excluded from calculation of the annual average.

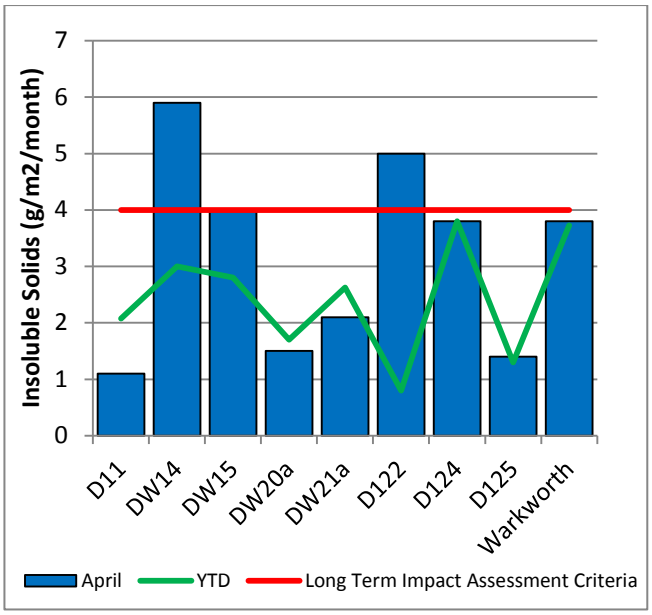

Figure 4: Depositional Dust – April 2016

2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM_{10}). The location of these monitors can be found in Figure 3. Each HVAS was run for 24 hours on a six-day cycle in accordance with EPA requirements.

2.3.1 HVAS PM_{10} Results

Figure 5 shows the individual PM_{10} results at each monitoring station against the short term impact assessment criteria of 50µg/m^3.

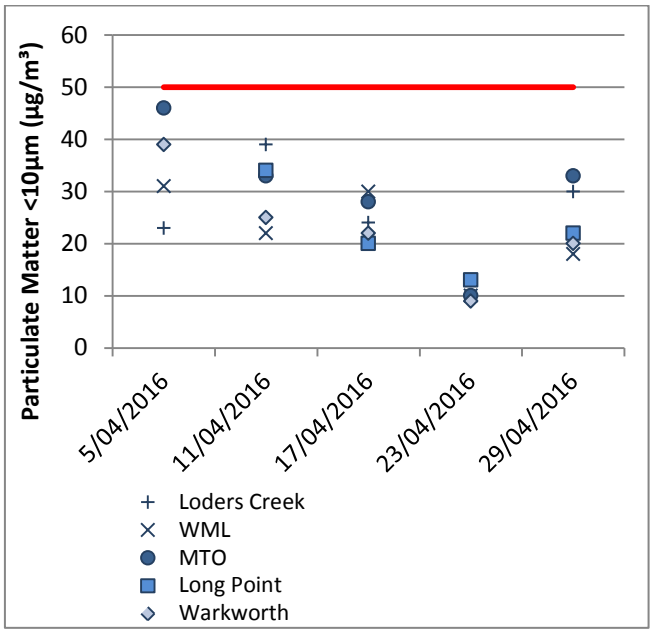

Figure 5: Individual PM_{10} Results –April 2016

The Long Point HVAS did not run on the 5th of April due to a power outage.

Figure 6 shows the annual average PM_{10} results against the long term impact assessment criteria.

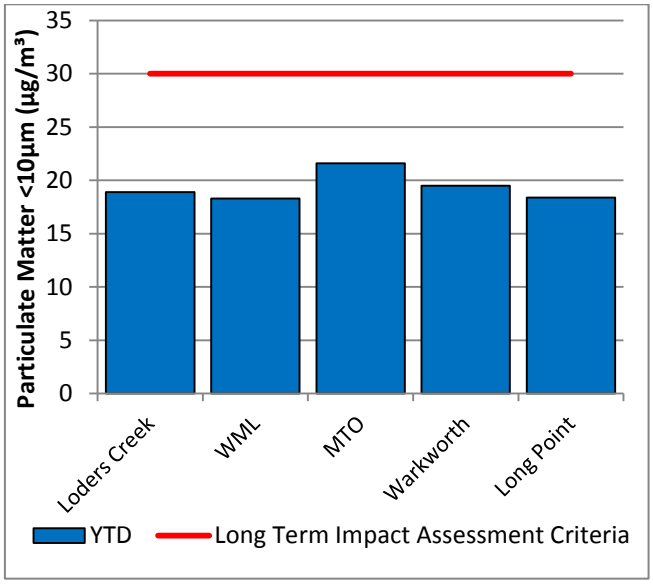

Figure 6: Annual Average PM_{10} – April 2016

2.3.2 TSP Results

Figure 7 shows the annual average TSP results compared against the long term impact assessment criteria of 90µg/m³.

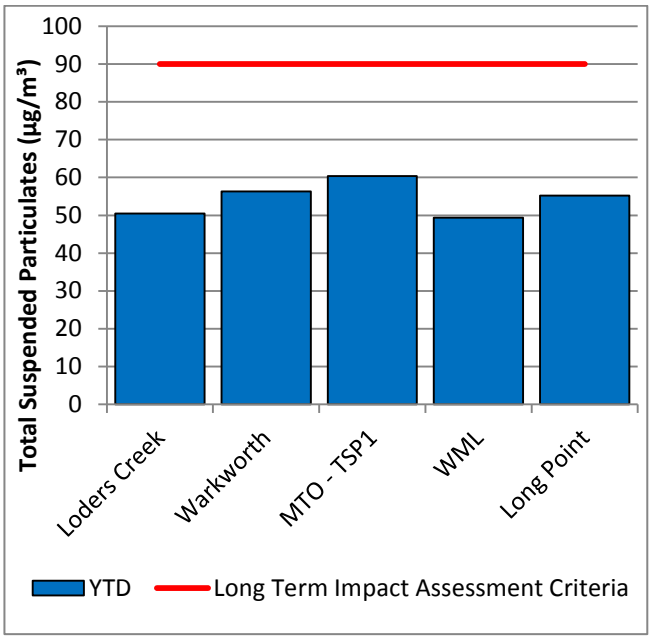

Figure 7: Annual Average Total Suspended Particulates – April 2016

2.3.3 Real Time PM_{10} Results

Mount Thorley Warkworth maintains a network of real time PM_{10} monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger limits.

Results for real time dust sampling are shown in Figure 8, including the daily 24 hour average PM_{10} result and the annual PM_{10} average.

Data was not available on 21st and 22nd April 2016 (MTIE), 29th and 30th April (Bulga) or from 22nd to 28th April (Warkworth) due to communication and equipment issues.

2.3.4 Real Time Alarms for Air Quality

During April, the real time monitoring system generated 72 automated air quality related alerts, including 1 alert for adverse meteorological conditions and 71 alerts for elevated PM_{10} levels.

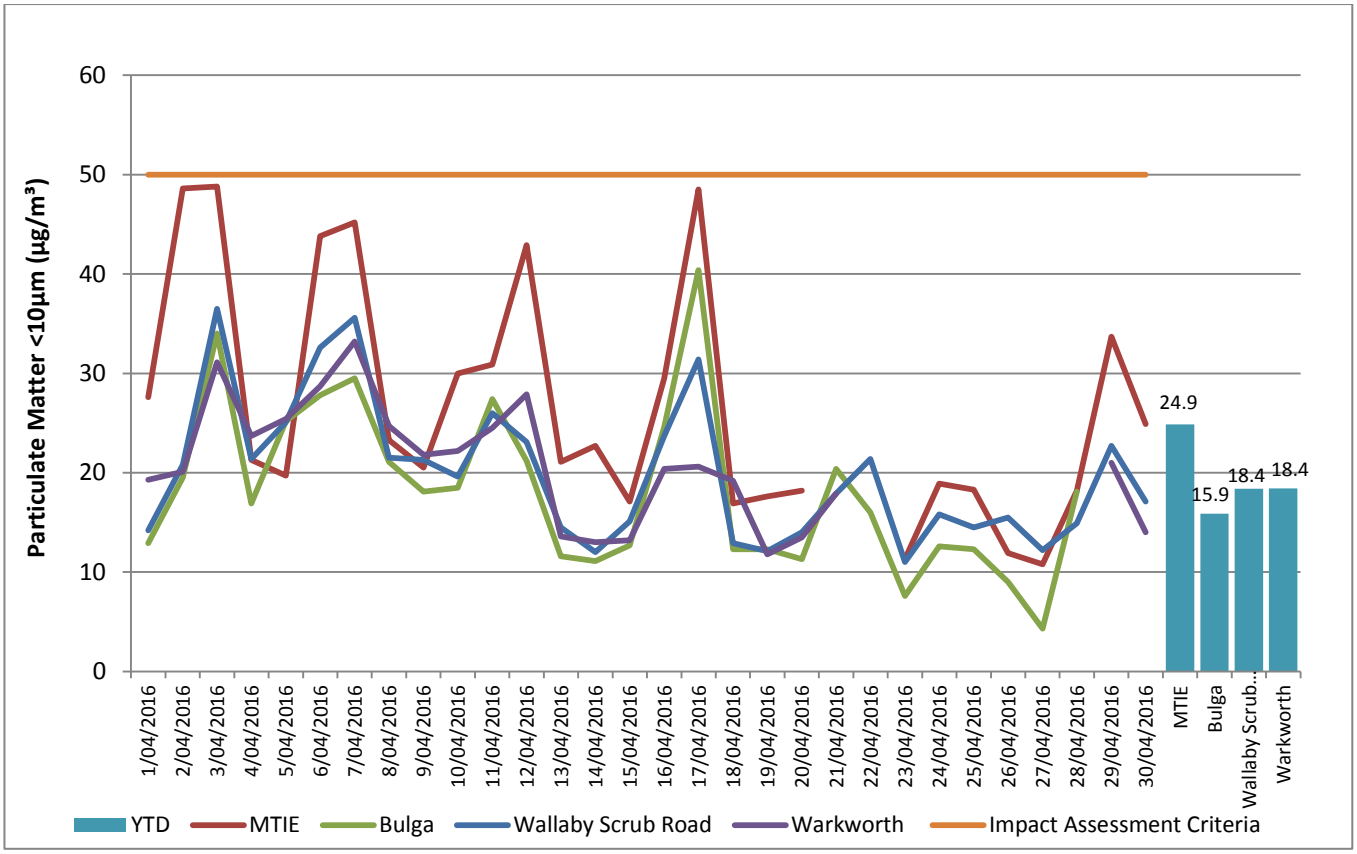

Figure 8: Real Time PM_{10} daily 24hr average and annual average – April 2016

3.0 WATER QUALITY

MTW maintains a network of surface water and groundwater monitoring sites.

3.1 Surface Water

Monitoring is conducted at mine site dams and surrounding natural watercourses.

Surface water courses are sampled on a monthly or quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). The Hunter River and the Wollombi Brook are sampled both upstream and downstream of mining operations, to monitor the potential impact of mining on the river. Other Hunter River tributaries are also monitored.

Results of monitoring are reported quarterly, next available in the June 2016 report.

3.2 Groundwater Monitoring

Groundwater monitoring is undertaken on a quarterly basis in accordance with the MTW Groundwater Monitoring Programme.

Groundwater results are reported quarterly, next available in the June 2016 report.

3.3 HRSTS Discharge

MTW participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points Dam 1N and Dam 9S. Discharges can only take place subject to HRSTS regulations.

During the reporting period no water was discharged under the HRSTS.

4.0 BLAST MONITORING

MTW have a network of six blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors.

The location of these monitors can be found in Figure 15.

4.1 Blast Monitoring Results

During April 2016, 31 blasts were initiated at MTW. Figure 9 to Figure 14 show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in Table 2.

Table 2: Blasting Limits

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period
120	0%
Ground Vibration (mm/s)	**Comments**
5	5% of the total number of blasts in a 12 month period
10	0%

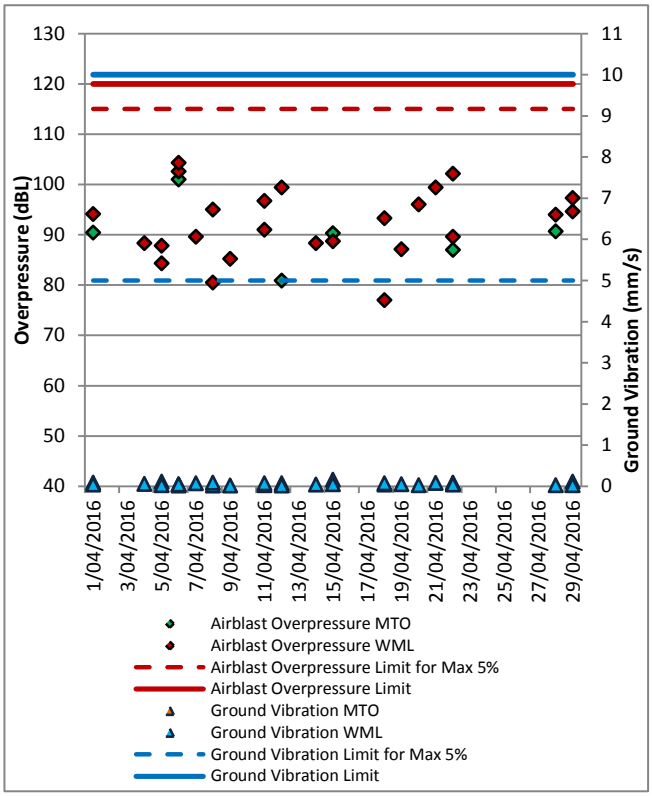

Figure 9: Abbey Green Blast Monitoring Results – April 2016

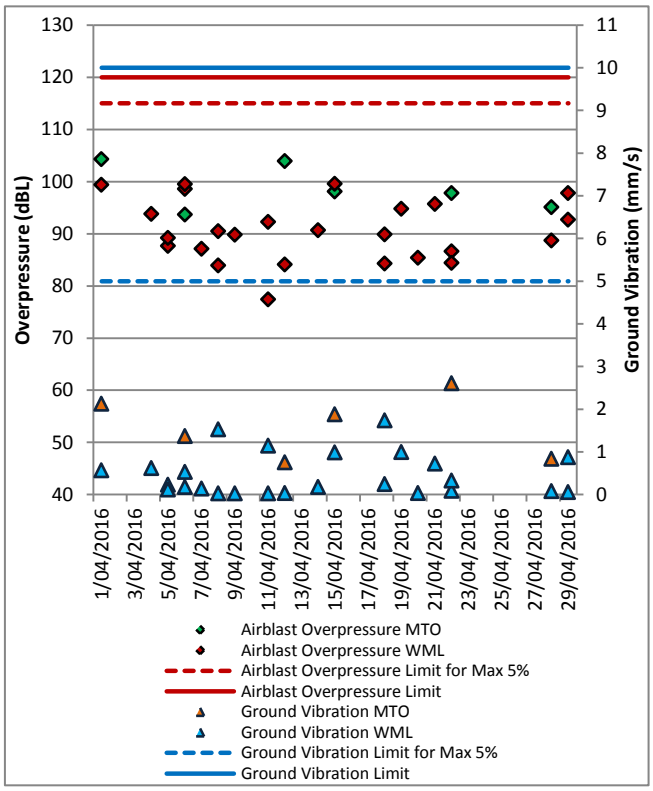

Figure 10: Bulga Village Blast Monitoring Results – April 2016

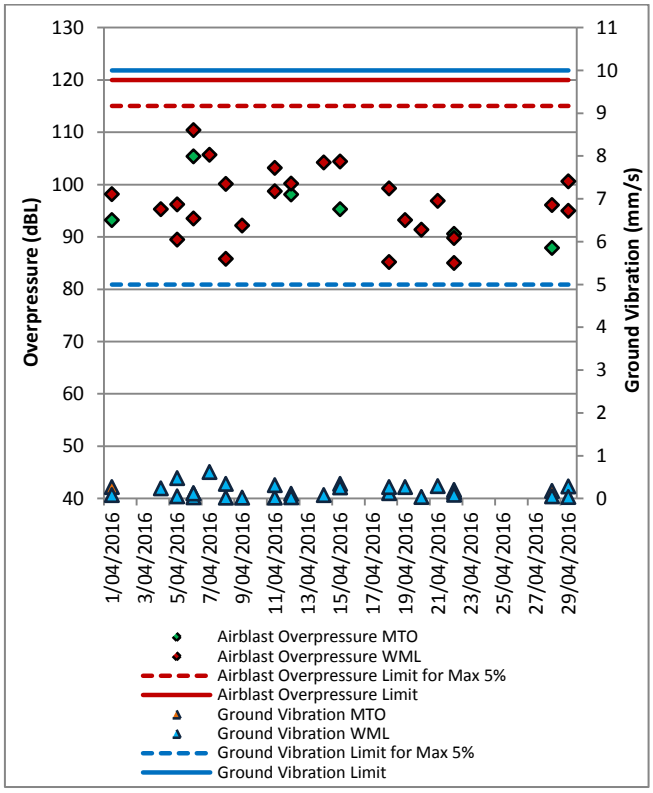

Figure 11: MTIE Blast Monitoring Results – April 2016

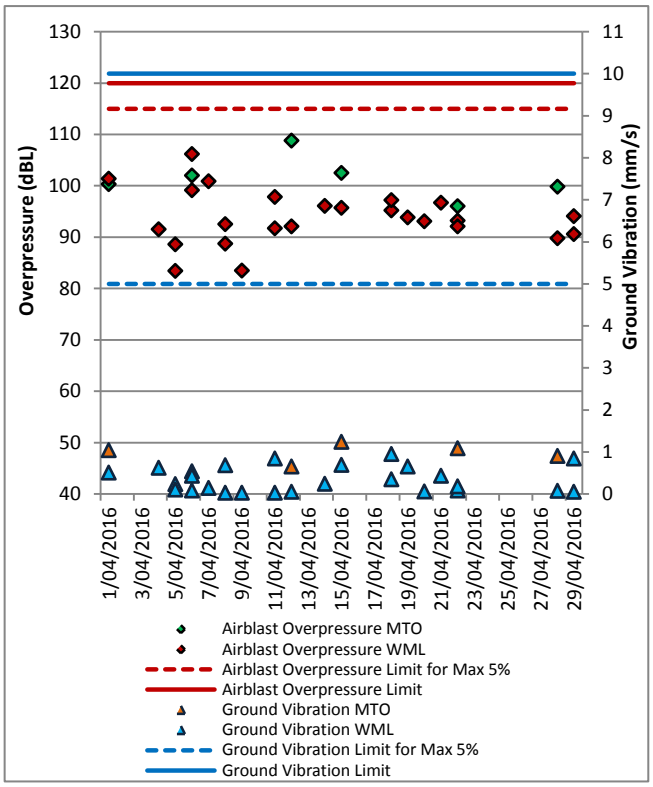

Figure 14: Wollemi Peak Road Blast Monitoring Results – April 2016

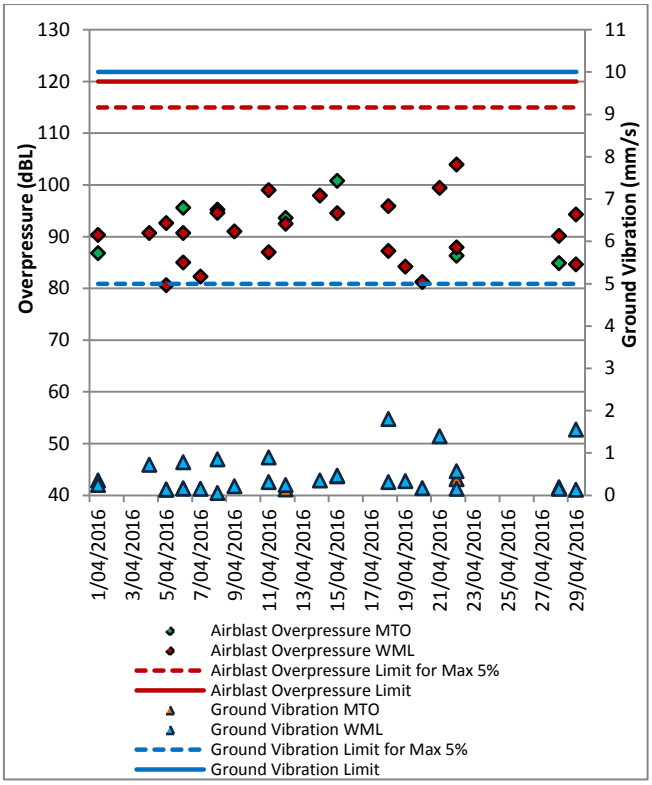

Figure 13: Warkworth Blast Monitoring Results - April 2016

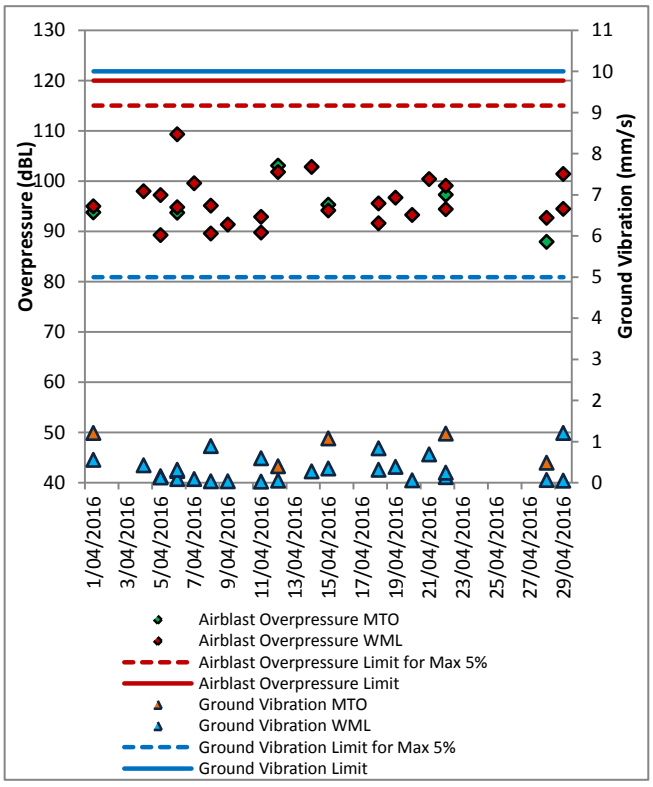

Figure 12: Wambo Road Blast Monitoring Results – April 2016

Figure 15: MTW Blast Monitoring Location Plan

5.0 NOISE

Routine attended noise monitoring is carried out in accordance with the MTW Noise Management Plan. A review against EIS predictions will be reported in the Annual Review. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Real time noise monitoring also occurs at nine sites surrounding MTW. Noise monitoring locations are displayed in Figure 16.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the nights of 7th/8th April 2016. All measurements complied with the relevant criteria. Results are detailed in Table 3 to Table 6.

5.1.1 WML Noise Assessment

Compliance assessments undertaken against the WML noise criteria are presented in Tables 3 and 4.

Table 3: $L_{Aeq,\ 15\ minute}$ Warkworth Impact Assessment Criteria – April 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total $L_{Ceq} - L_{Aeq}$	Revised WML L_{Aeq}[5,6]
Bulga RFS	7/04/2016 22:49	2.5	F	35	No	IA	NA	20	IA
Bulga Village	8/04/2016 0:14	2.2	F	38	No	25	NA	17	30
Gouldsville	8/04/2016 1:06	2.8	E	37	Yes	NM	Nil	18	NM
Inlet Rd	7/04/2016 23:29	2.3	F	38	No	IA	NA	10	IA
Inlet Rd West	7/04/2016 23:50	2.5	E	35	Yes	IA	Nil	8	IA
Long Point	8/04/2016 1:05	2.8	E	36	Yes	IA	Nil	23	IA
South Bulga	7/04/2016 22:00	1.8	F	35	Yes	IA	Nil	16	IA
Wambo Rd	8/04/2016 0:35	2.4	D	38	Yes	26	Nil	13	26

Table 4: $L_{Aeq,\ 15\ minute}$ Warkworth - Land Acquisition Criteria – April 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total $L_{Ceq} - L_{Aeq}$[7]	Revised WML L_{Aeq}[5,6]
Bulga RFS	7/04/2016 22:49	2.5	F	40	No	IA	NA	20	IA
Bulga Village	8/04/2016 0:14	2.2	F	43	No	25	NA	17	30
Gouldsville	8/04/2016 1:06	2.8	E	43	Yes	NM	Nil	18	NM
Inlet Rd	7/04/2016 23:29	2.3	F	43	No	IA	NA	10	IA
Inlet Rd West	7/04/2016 23:50	2.5	E	40	Yes	IA	Nil	8	IA
Long Point	8/04/2016 1:05	2.8	E	40	Yes	IA	Nil	23	IA
South Bulga	7/04/2016 22:00	1.8	F	40	Yes	IA	Nil	16	IA
Wambo Rd	8/04/2016 0:35	2.4	D	40	Yes	26	Nil	13	26

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Warkworth mine (WML);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values.

5.1.3 MTO Noise Assessment

Compliance assessments undertaken against the MTO noise criteria are presented in Tables 5 and 6.

Table 5: $L_{Aeq,\ 15minute}$ Mount Thorley - Impact Assessment Criteria – April 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion dB	Criterion Applies?[1,6]	MTO L_{Aeq} dB[2,4]	Exceedance[3]	Total L_{Ceq} – L_{Aeq}[7]	Revised MTO L_{Aeq}[5,6]
Bulga RFS	7/04/2016 22:49	2.5	F	37	No	<20	NA	20	<25
Bulga Village	8/04/2016 0:14	2.2	F	38	No	IA	NA	17	IA
Gouldsville	8/04/2016 1:06	2.8	E	35	Yes	IA	Nil	18	IA
Inlet Rd	7/04/2016 23:29	2.3	F	37	No	26	NA	10	26
Inlet Rd West	7/04/2016 23:50	2.5	E	35	Yes	25	Nil	8	25
Long Point	8/04/2016 1:05	2.8	E	35	Yes	IA	Nil	23	IA
South Bulga	7/04/2016 22:00	1.8	F	36	Yes	IA	Nil	16	IA
Wambo Rd	8/04/2016 0:35	2.4	D	38	Yes	IA	Nil	13	IA

Table 6: $L_{A1,\ 1Minute}$ Mount Thorley - Impact Assessment Criteria – April 2016

Location	Date and Time	Wind Speed (m/s)[5]	VTG[5]	Criterion dB	Criterion Applies?[1,6]	MTO $L_{A1,\ 1min}$ dB[2,4]	Exceedance[3]
Bulga RFS	7/04/2016 22:49	2.5	F	47	No	<20	NA
Bulga Village	8/04/2016 0:14	2.2	F	48	No	IA	NA
Gouldsville	8/04/2016 1:06	2.8	E	45	Yes	IA	Nil
Inlet Rd	7/04/2016 23:29	2.3	F	47	No	30	NA
Inlet Rd West	7/04/2016 23:50	2.5	E	45	Yes	29	Nil
Long Point	8/04/2016 1:05	2.8	E	45	Yes	IA	Nil
South Bulga	7/04/2016 22:00	1.8	F	46	Yes	IA	Nil
Wambo Rd	8/04/2016 0:35	2.4	D	48	Yes	IA	Nil

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Mt Thorley Operations (MTO);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values.

5.1.4 INP Low Frequency

In accordance with the requirements of the NSW Industrial Noise Policy (INP), the low frequency modification factor has been applied where appropriate. It should be noted that the Industrial Noise Policy does not give guidance on the application of the penalty where more than one target noise source is audible. The L_{Ceq} levels reported above are “Total”, or “Total mine noise” at best, and cannot be attributed accurately to a single mine. Accordingly, where the INP criteria for the application of the Low Frequency modification factor is triggered, the penalty has been applied to the dominant mine noise source (either of WML or MTO).

There were no exceedances of criteria recorded during the reporting period.

Figure 16: Noise Monitoring Location Plan

5.2 Noise Management Measures

A program of targeted supplementary attended noise monitoring is in place at MTW, supported by the real-time directional monitoring network and ensuring the highest level of noise management is maintained. The supplementary program is undertaken by MTW personnel and involves:

- Routine inspections from both inside and outside the mine boundary;
- Routine and as-required handheld noise assessments (undertaken in response to noise alarm and/or community complaint), comparing measured levels against consent noise limits; and
- Validation monitoring following operational modifications to assess the adequacy of the modifications.

Where a noise assessment identifies noise emissions which are exceeding the relevant noise limit(s) for any particular residence, modifications will be made so as to ensure that the noise event is resolved within 75 minutes of identification. The actions taken are commensurate with the nature and severity of the noise event, but can include:

- Replacement of non-attenuated equipment with sound attenuated equipment;
- Changing the haul route to a less noise sensitive haul;
- Changing dump locations (in-pit or less exposed dump option);
- Reducing equipment numbers;
- Shut down of task; or
- Site shut down.
- A summary of these assessments undertaken during April are provided in Table 7.

Table 7: Supplementary Attended Noise Monitoring Data – April 2016

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
632	5	2	0.8

Note: Measurements are taken under all meteorological conditions, including conditions under which the consent noise criteria do not apply.

6.0 OPERATIONAL DOWNTIME

During April, a total of 200.8 hours of equipment downtime was logged in response to environmental events such as dust, noise and elevated wind impacts. Operational downtime by equipment type is shown in Figure 17.

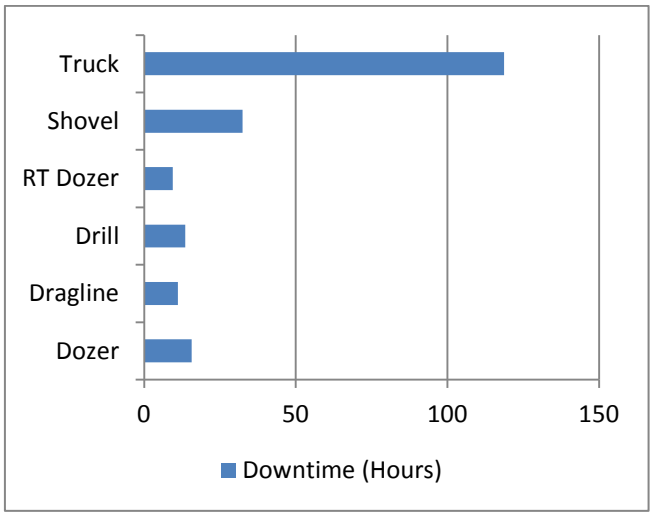

Figure 17: Operational Downtime by Equipment Type – April 2016

7.0 REHABILITATION

During April, 7.7 Ha of land was released. Year-to-date progress can be viewed in Figure 18.

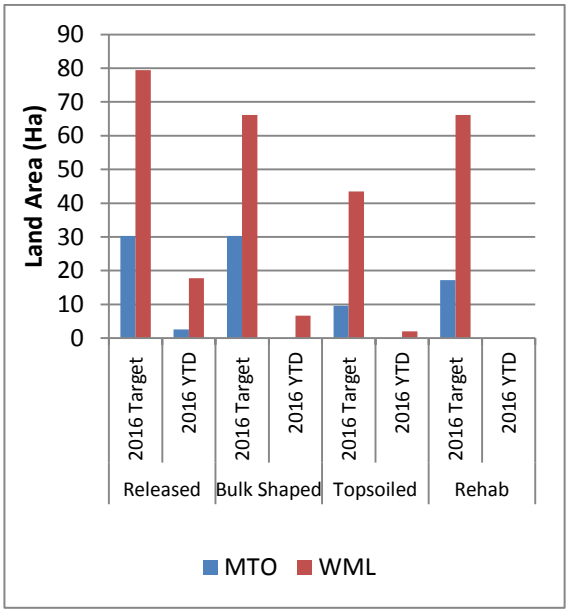

Figure 18: Rehabilitation YTD – April 2016

8.0 ENVIRONMENTAL INCIDENTS

There were no reportable environmental incidents during the reporting period.

9.0 COMPLAINTS

During the reporting period 83 complaints were received, details of these complaints are shown in Figure 19 below.

	Noise	Dust	Blast	Lighting	Other	Total
January	29	1	5	2	2	39
February	24	2	6	1	0	33
March	44	1	2	1	0	48
April	67	7	4	0	5	83
May	-	-	-	-	-	-
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Total	164	11	17	4	7	203

Figure 19: Complaints Summary - YTD April 2016

Appendix A: Meteorological Data

Table 8: Meteorological Data – Charlton Ridge Meteorological Station – April 2016

Date	Air Temperature Maximum (°C)	Air Temperature Minimum (°C)	Relative Humidity Maximum (%)	Relative Humidity Minimum (%)	Wind Direction Average (°)	Wind Speed Average (m/sec)	Rainfall(mm)
1/04/2016	30.2	12.4	94.4	16.7	209.1	2.0	0.0
2/04/2016	34.3	12.3	79.7	7.7	230.0	2.3	0.0
3/04/2016	28.6	16.1	88.9	37.9	148.7	3.1	0.0
4/04/2016	28.6	17.6	91.4	41.6	137.6	2.6	0.0
5/04/2016	31.4	13.5	95.3	29.8	138.1	1.6	0.0
6/04/2016	34.9	15.3	88.5	19.6	257.6	2.9	0.0
7/04/2016	26.5	16.5	79.2	33.8	157.7	2.7	0.0
8/04/2016	22.8	15.1	94.9	63.5	167.5	2.1	0.0
9/04/2016	26.3	13.2	97.1	43.9	158.8	1.7	0.2
10/04/2016	32.5	13.5	94.8	16.7	216.3	1.9	0.0
11/04/2016	29.9	10.8	78.8	17.2	189.6	2.0	0.0
12/04/2016	26.3	14.4	85.7	40.5	159.4	2.6	0.0
13/04/2016	24.8	14.4	84.2	46.3	159.2	2.7	0.0
14/04/2016	26.4	14.3	90.0	43.7	150.2	2.7	0.0
15/04/2016	27.9	11.6	96.1	32.3	164.3	1.6	0.0
16/04/2016	29.8	11.4	92.3	25.9	178.2	1.5	0.0
17/04/2016	24.7	14.8	93.1	50.0	160.0	2.9	1.8
18/04/2016	24.9	14.1	91.8	45.2	165.7	2.4	0.2
19/04/2016	26.1	13.8	91.9	42.0	163.1	2.0	0.0
20/04/2016	27.4	13.5	94.5	41.2	154.4	2.0	0.0
21/04/2016	25.2	13.8	93.9	54.6	162.8	1.4	0.0
22/04/2016	29.2	11.5	96.0	29.2	197.4	1.6	10.6
23/04/2016	20.6	12.7	93.4	57.1	175.3	4.0	0.6
24/04/2016	23.3	12.0	90.0	38.8	164.2	3.8	0.0
25/04/2016	24.3	10.2	87.6	44.5	164.7	2.9	0.0
26/04/2016	24.9	12.0	91.0	48.1	148.5	2.5	0.0
27/04/2016	24.6	9.8	94.6	51.1	155.2	2.3	0.0
28/04/2016	26.9	10.7	97.8	31.8	158.1	1.6	0.0
29/04/2016	28.0	10.7	90.3	32.6	173.4	1.6	0.0
30/04/2016	20.4	14.6	96.5	66.0	217.2	1.3	2.2

COAL & ALLIED

Managed by Rio Tinto Coal Australia

Appendix B

Environmental Monitoring
May 2016

Mount Thorley Warkworth

Monthly Environmental Report

May 2016

Coal & Allied Operations Pty Ltd

ABN 16 000 023 656

Lemington Road, Ravensworth via Singleton NSW 2330 Australia

PO Box 315 Singleton NSW 2330 Australia

Telephone +61 2 6570 0300 Facsimile +61 2 6570 0399

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Figures

Tables

Revision History

Version No.	Person Responsible	Document Status	Date
1.0	**Environmental Advisor**	**Draft**	**16/06/2016**
1.1	**Environmental Specialist**	**Final**	**17/06/2016**

1.0 INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Mount Thorley Warkworth (MTW). This report includes all monitoring data collected for the period 1st May to 31st May 2016.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to Figure 3: Air Quality Monitoring Locations).

2.1.1 Rainfall

Rainfall for the period is summarised in Table 1, the year-to-date trend and historical trend are shown in Figure 1.

Table 1: Monthly Rainfall MTW

2016	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
May	10.6	268.8

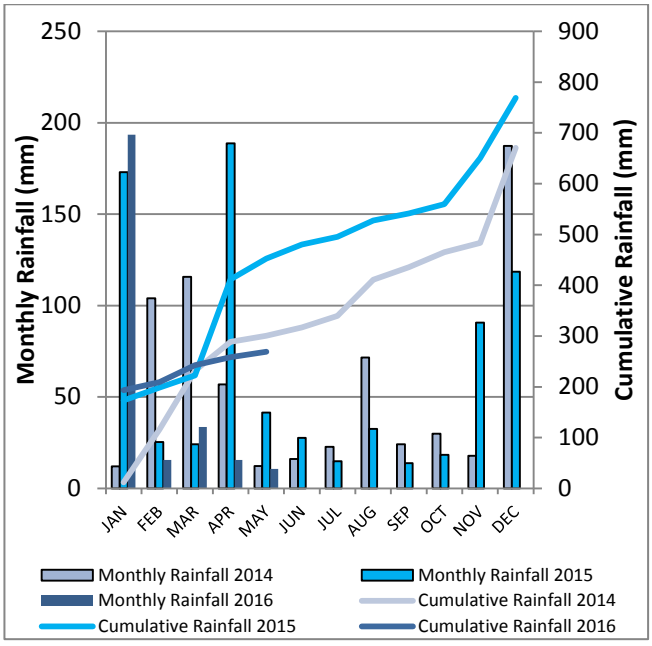

Figure 1: Rainfall Trend YTD

2.1.2 Wind Speed and Direction

Winds from the Northwest were dominant throughout the reporting period as shown in Figure 2.

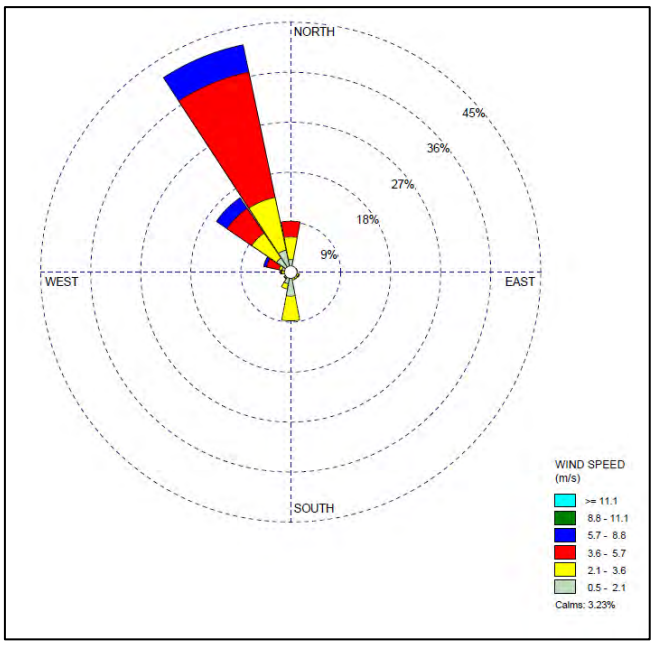

Figure 2: Charlton Ridge Wind Rose – May 2016

Figure 3: Air Quality Monitoring Locations

2.2 Depositional Dust

To monitor regional air quality, MTW operates and maintains a network of nine depositional dust gauges, situated on private and mine owned land surrounding MTW.

Figure 4 displays insoluble solids results from depositional dust gauges during the reporting period compared against the year-to-date average and the annual impact assessment criteria.

During the reporting period the DW14, D122 and D124 monitors recorded monthly results above the long term impact assessment criteria of 4.0 g/m^2 per month. Field notes associated with DW14 and D122 confirm the presence of insects and bird droppings. As such the results are considered contaminated and will be excluded from calculation of the annual average. There is no evidence to suggest that the D124 result is contaminated. Accordingly, this result will be included in the annual average calculation.

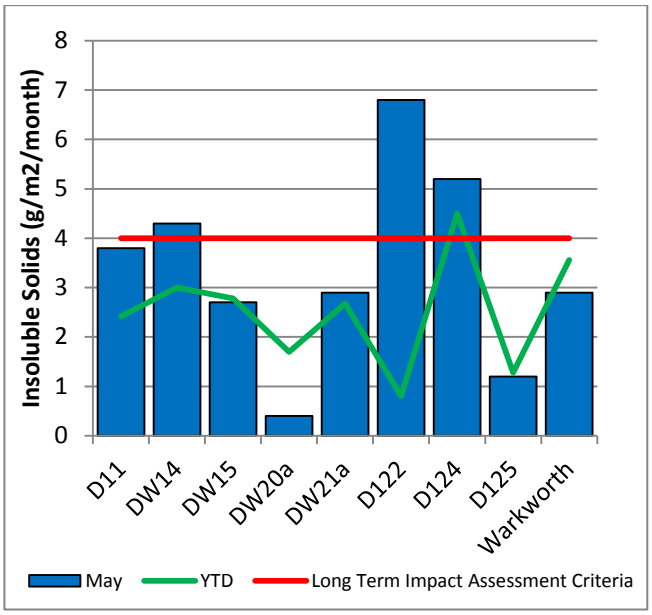

Figure 4: Depositional Dust – May 2016

2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM_{10}). The location of these monitors can be found in Figure 3. Each HVAS was run for 24 hours on a six-day cycle in accordance with EPA requirements.

2.3.1 HVAS PM_{10} Results

Figure 5 shows the individual PM_{10} results at each monitoring station against the short term impact assessment criteria of 50µg/m^3.

On 23/05/2016 one HVAS PM_{10} unit recorded a result greater than the short term (24hr) PM_{10} impact assessment criteria; Long Point (72 µg/m^3). At the time of preparation of this report, the result is under investigation. Preliminary advice has been provided to the Department of Planning & Environment.

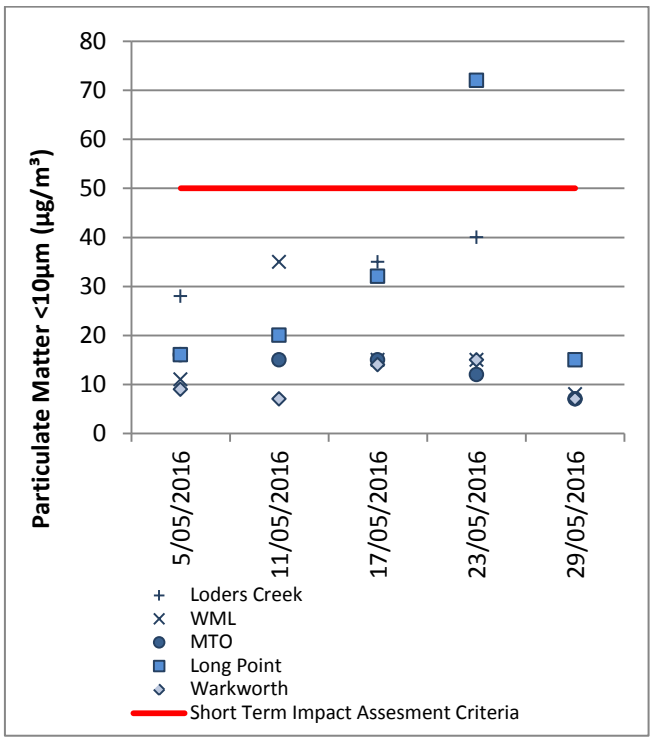

Figure 5: Individual PM_{10} Results –May 2016

Figure 6 shows the annual average PM_{10} results against the long term impact assessment criteria.

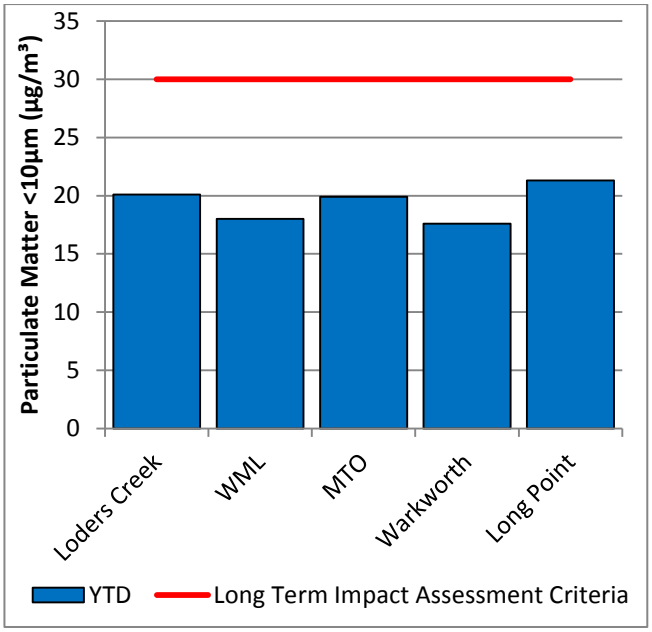

Figure 6: Annual Average PM_{10} – May 2016

2.3.2 TSP Results

Figure 7 shows the annual average TSP results compared against the long term impact assessment criteria of 90µg/m³.

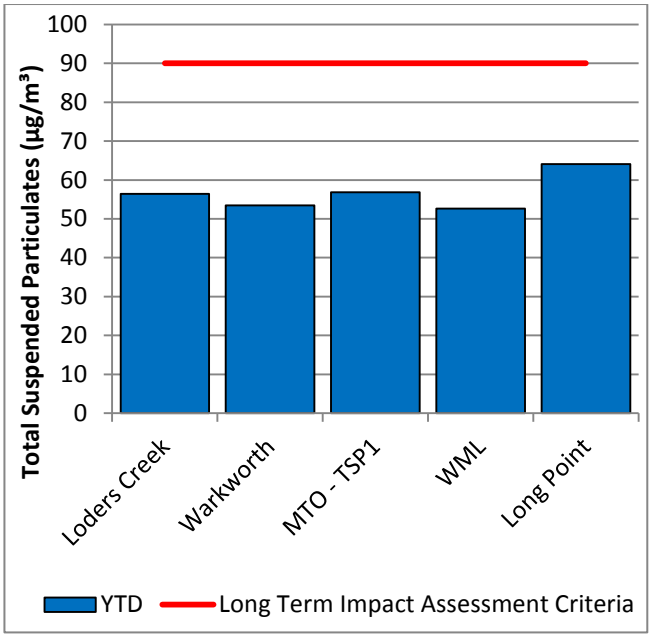

Figure 7: Annual Average Total Suspended Particulates – May 2016

2.3.3 Real Time PM_{10} Results

Mount Thorley Warkworth maintains a network of real time PM_{10} monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger limits.

Results for real time dust sampling are shown in Figure 8, including the daily 24 hour average PM_{10} result and the annual PM_{10} average.

Data was not available from the 1st to 3rd May 2016 (Bulga) due to equipment issues.

2.3.4 Real Time Alarms for Air Quality

During May, the real time monitoring system generated 59 automated air quality related alerts, including 27 alerts for adverse meteorological conditions and 32 alerts for elevated PM_{10} levels.

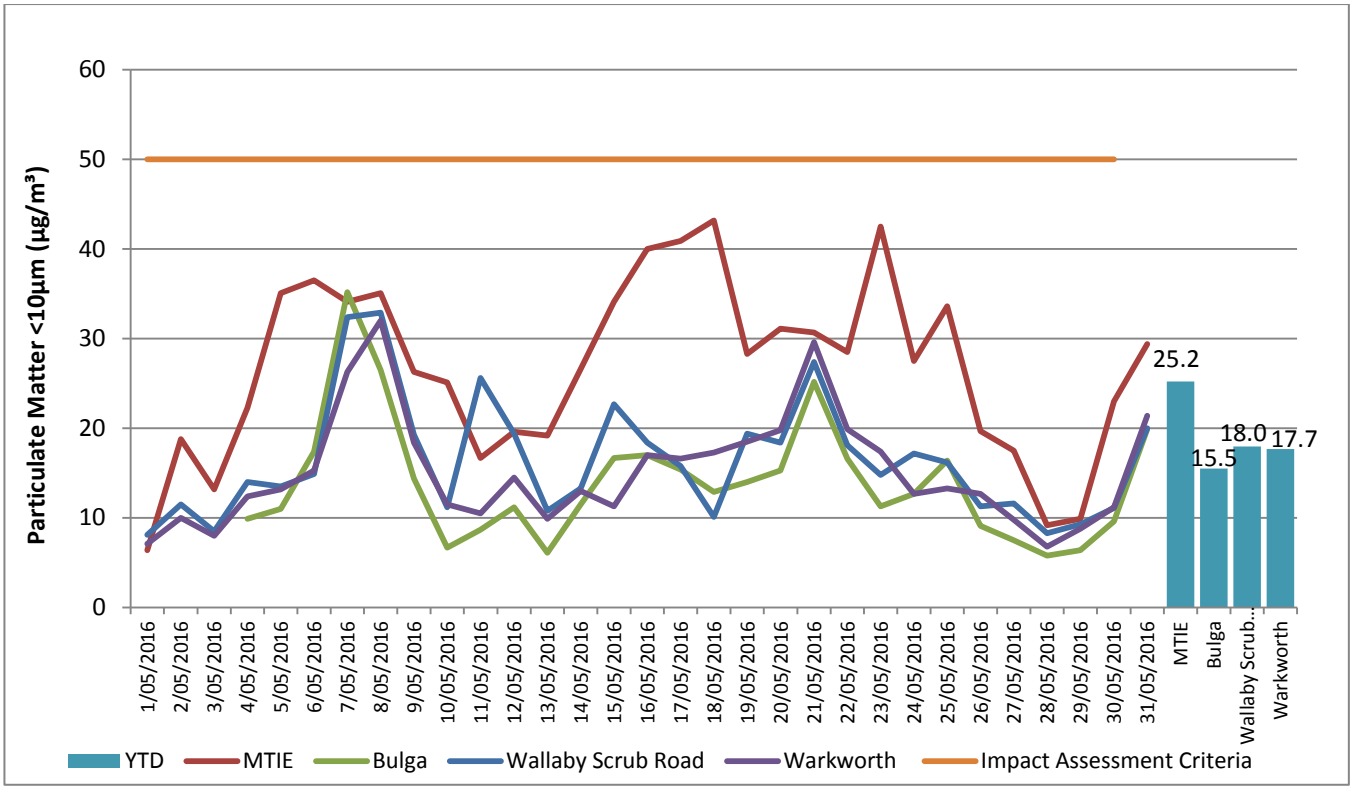

Figure 8: Real Time PM_{10} daily 24hr average and annual average – May 2016

3.0 WATER QUALITY

MTW maintains a network of surface water and groundwater monitoring sites.

3.1 Surface Water

Monitoring is conducted at mine site dams and surrounding natural watercourses.

Surface water courses are sampled on a monthly or quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). The Hunter River and the Wollombi Brook are sampled both upstream and downstream of mining operations, to monitor the potential impact of mining on the river. Other Hunter River tributaries are also monitored.

Results of monitoring are reported quarterly, next available in the June 2016 report.

3.2 Groundwater Monitoring

Groundwater monitoring is undertaken on a quarterly basis in accordance with the MTW Groundwater Monitoring Programme.

Groundwater results are reported quarterly, next available in the June 2016 report.

3.3 HRSTS Discharge

MTW participates in the Hunter River Salinity Trading Scheme (HRSTS), allowing discharge from licensed discharge points Dam 1N and Dam 9S. Discharges can only take place subject to HRSTS regulations.

During the reporting period no water was discharged under the HRSTS.

4.0 BLAST MONITORING

MTW have a network of six blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors.

The location of these monitors can be found in Figure 15.

4.1 Blast Monitoring Results

During May 2016, 28 blasts were initiated at MTW. Figure 9 to Figure 14 show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in Table 2.

Table 2: Blasting Limits

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period
120	0%
Ground Vibration (mm/s)	**Comments**
5	5% of the total number of blasts in a 12 month period
10	0%

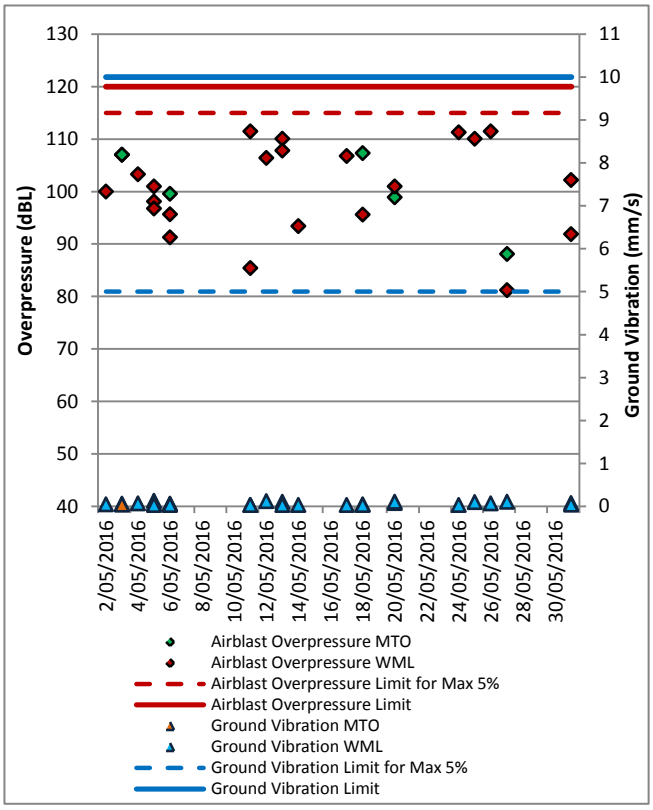

Figure 9: Abbey Green Blast Monitoring Results – May 2016

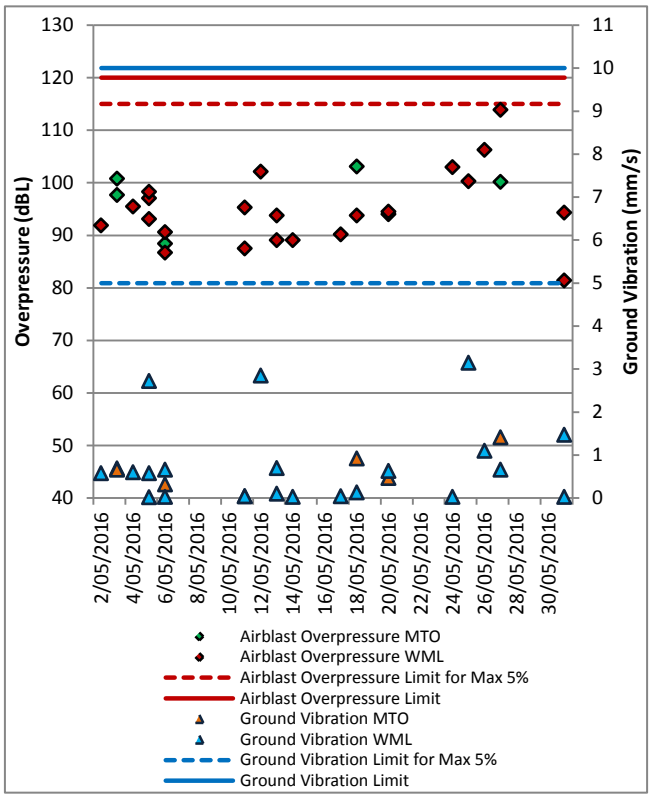

Figure 10: Bulga Village Blast Monitoring Results – May 2016

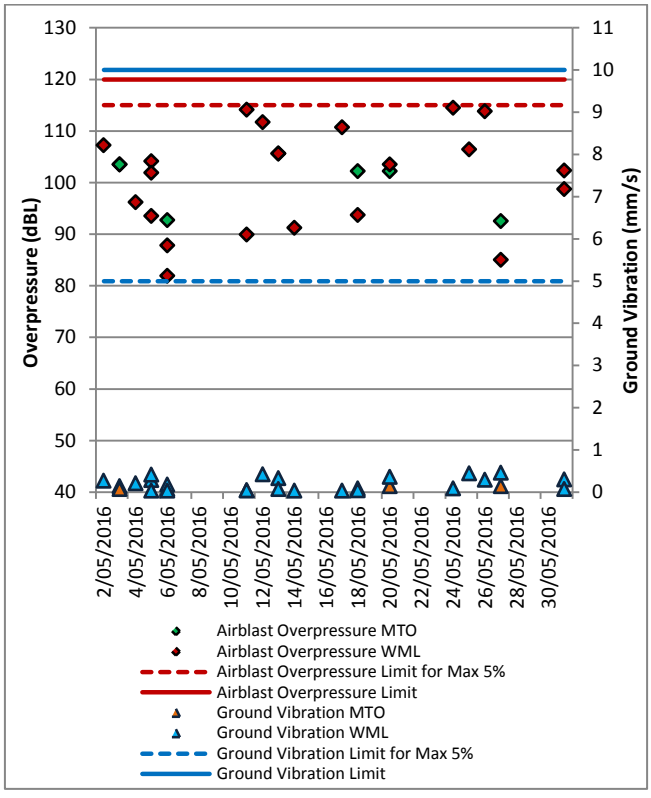

Figure 11: MTIE Blast Monitoring Results – May 2016

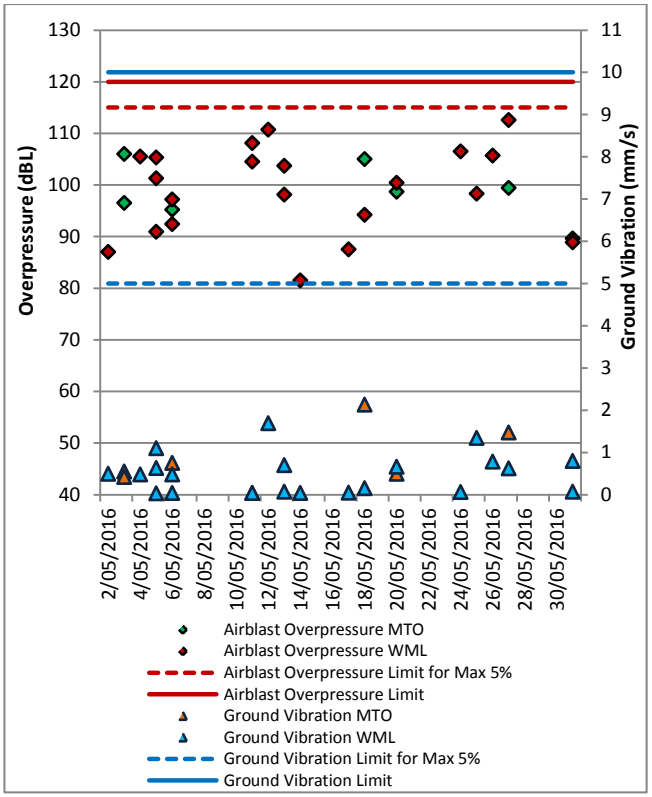

Figure 12: Wollemi Peak Road Blast Monitoring Results – May 2016

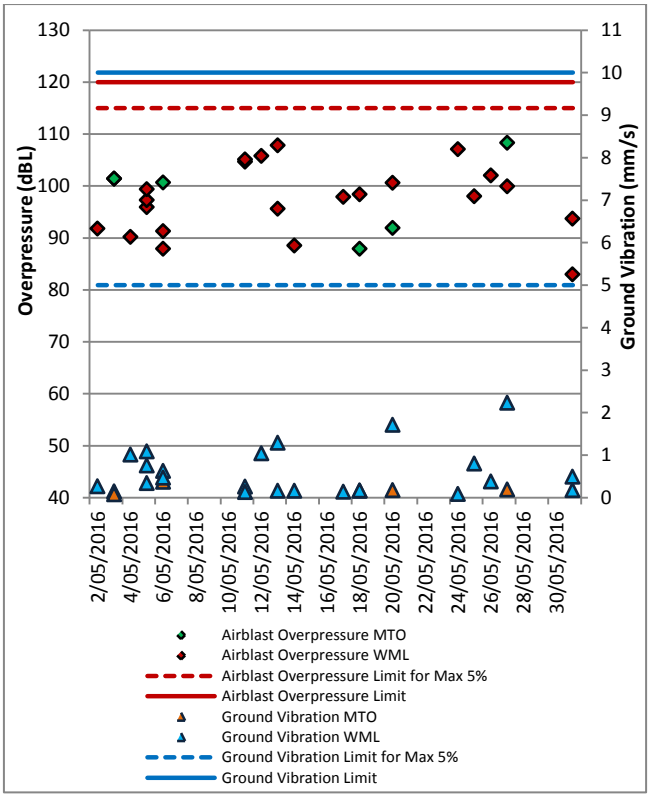

Figure 14: Warkworth Blast Monitoring Results - May 2016

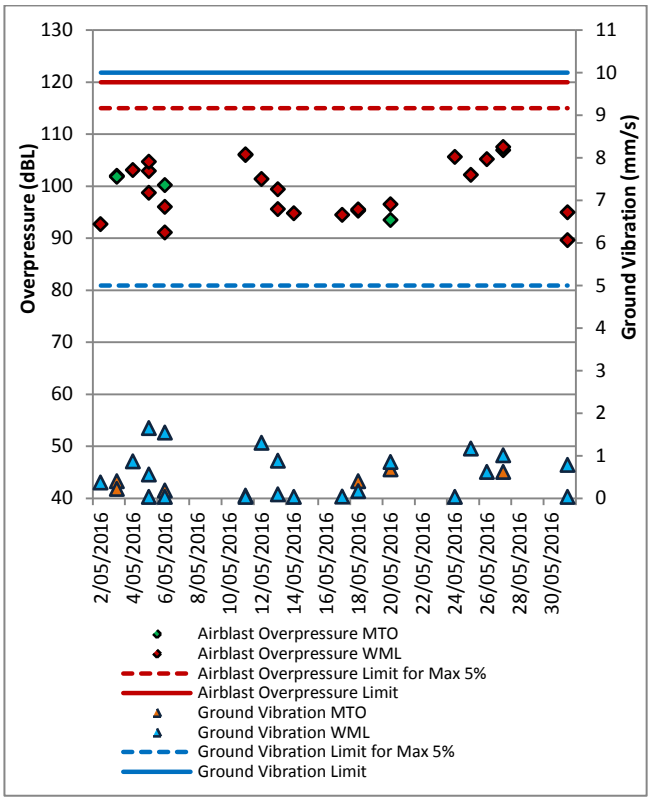

Figure 13: Wambo Road Blast Monitoring Results – May 2016

Figure 15: MTW Blast Monitoring Location Plan

5.0 NOISE

Routine attended noise monitoring is carried out in accordance with the MTW Noise Management Plan. A review against EIS predictions will be reported in the Annual Review. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Real time noise monitoring also occurs at nine sites surrounding MTW. Noise monitoring locations are displayed in Figure 16.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the night of 30th/31st May 2016. All measurements complied with the relevant criteria. Results are detailed in Table 3 to Table 6.

5.1.1 WML Noise Assessment

Compliance assessments undertaken against the WML noise criteria are presented in Tables 3 and 4.

Table 3: $L_{Aeq,\ 15\ minute}$ Warkworth Impact Assessment Criteria – May 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total $L_{Ceq} - L_{Aeq}$	Revised WML L_{Aeq}[5,6]
Bulga RFS	31/05/2016 0:43	2.8	D	35	Yes	IA	Nil	18	IA
Bulga Village	30/05/2016 23:23	2.2	E	38	Yes	IA	Nil	21	IA
Gouldsville	30/05/2016 22:23	1.7	E	37	Yes	30	Nil	20	35
Inlet Rd	30/05/2016 23:45	2.1	D	35	Yes	<25	Nil	20	<25
Inlet Rd West	31/05/2016 0:10	2.1	D	35	Yes	27	Nil	19	27
Long Point	30/05/2016 22:00	2.1	D	36	Yes	IA	Nil	17	IA
South Bulga	31/05/2016 1:05	3	D	35	Yes	IA	Nil	20	IA
Wambo Rd	30/05/2016 22:59	0.1	F	38	Yes	<25	Nil	19	<25

Table 4: $L_{Aeq,\ 15\ minute}$ Warkworth - Land Acquisition Criteria – May 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total $L_{Ceq} - L_{Aeq}$[7]	Revised WML L_{Aeq}[5,6]
Bulga RFS	31/05/2016 0:43	2.8	D	40	Yes	IA	Nil	18	IA
Bulga Village	30/05/2016 23:23	2.2	E	43	Yes	IA	Nil	21	IA
Gouldsville	30/05/2016 22:23	1.7	E	43	Yes	30	Nil	20	35
Inlet Rd	30/05/2016 23:45	2.1	D	40	Yes	<25	Nil	20	<25
Inlet Rd West	31/05/2016 0:10	2.1	D	40	Yes	27	Nil	19	27
Long Point	30/05/2016 22:00	2.1	D	40	Yes	IA	Nil	17	IA
South Bulga	31/05/2016 1:05	3	D	40	Yes	IA	Nil	20	IA
Wambo Rd	30/05/2016 22:59	0.1	F	40	Yes	<25	Nil	19	<25

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Warkworth mine (WML);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values.

5.1.3 MTO Noise Assessment

Compliance assessments undertaken against the MTO noise criteria are presented in Tables 5 and 6.

Table 5: $L_{Aeq,\ 15minute}$ Mount Thorley - Impact Assessment Criteria – May 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion dB	Criterion Applies?[1,6]	MTO L_{Aeq} dB[2,4]	Exceedance[3]	Total L_{Ceq} – L_{Aeq}[7]	Revised MTO L_{Aeq}[5,6]
Bulga RFS	31/05/2016 0:43	2.8	D	37	Yes	33	Nil	18	38
Bulga Village	30/05/2016 23:23	2.2	E	38	Yes	30	Nil	21	35
Gouldsville	30/05/2016 22:23	1.7	E	35	Yes	IA	Nil	20	IA
Inlet Rd	30/05/2016 23:45	2.1	D	37	Yes	32	Nil	20	37
Inlet Rd West	31/05/2016 0:10	2.1	D	35	Yes	31	Nil	19	36
Long Point	30/05/2016	2.1	D	35	Yes	IA	Nil	17	IA
South Bulga	31/05/2016 1:05	3	D	36	Yes	31	Nil	20	36
Wambo Rd	30/05/2016 22:59	0.1	F	38	Yes	31	Nil	19	36

Table 6: $L_{A1,\ 1Minute}$ Mount Thorley - Impact Assessment Criteria – May 2016

Location	Date and Time	Wind Speed (m/s)[5]	VTG[5]	Criterion dB	Criterion Applies?[1,6]	MTO $L_{A1,\ 1min}$ dB[2,4]	Exceedance[3]
Bulga RFS	31/05/2016 0:43	2.8	D	47	Yes	36	Nil
Bulga Village	30/05/2016 23:23	2.2	E	48	Yes	41	Nil
Gouldsville	30/05/2016 22:23	1.7	E	45	Yes	IA	Nil
Inlet Rd	30/05/2016 23:45	2.1	D	47	Yes	40	Nil
Inlet Rd West	31/05/2016 0:10	2.1	D	45	Yes	39	Nil
Long Point	30/05/2016 22:00	2.1	D	45	Yes	IA	Nil
South Bulga	31/05/2016 1:05	3	D	46	Yes	39	Nil
Wambo Rd	30/05/2016 22:59	0.1	F	48	Yes	39	Nil

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Mt Thorley Operations (MTO);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values.

5.1.4 INP Low Frequency

In accordance with the requirements of the NSW Industrial Noise Policy (INP), the low frequency modification factor has been applied where appropriate. It should be noted that the Industrial Noise Policy does not give guidance on the application of the penalty where more than one target noise source is audible. The L_{Ceq} levels reported above are “Total”, or “Total mine noise” at best, and cannot be attributed accurately to a single mine. Accordingly, where the INP criteria for the application of the Low Frequency modification factor is triggered, the penalty has been applied to the dominant mine noise source (either of WML or MTO).

Application of the low frequency modification factor during May 2016 results in a 1dB exceedance of the Mt Thorley LAeq criteria at the Bulga RFS and Inlet Road West monitoring locations. These results have been reported in writing to the Department of Planning & Environment.

Figure 16: Noise Monitoring Location Plan

5.2 Noise Management Measures

A program of targeted supplementary attended noise monitoring is in place at MTW, supported by the real-time directional monitoring network and ensuring the highest level of noise management is maintained. The supplementary program is undertaken by MTW personnel and involves:

- Routine inspections from both inside and outside the mine boundary;
- Routine and as-required handheld noise assessments (undertaken in response to noise alarm and/or community complaint), comparing measured levels against consent noise limits; and
- Validation monitoring following operational modifications to assess the adequacy of the modifications.

Where a noise assessment identifies noise emissions which are exceeding the relevant noise limit(s) for any particular residence, modifications will be made so as to ensure that the noise event is resolved within 75 minutes of identification. The actions taken are commensurate with the nature and severity of the noise event, but can include:

- Replacement of non-attenuated equipment with sound attenuated equipment;
- Changing the haul route to a less noise sensitive haul;
- Changing dump locations (in-pit or less exposed dump option);
- Reducing equipment numbers;
- Shut down of task; or
- Site shut down.
- A summary of these assessments undertaken during May are provided in Table 7.

Table 7: Supplementary Attended Noise Monitoring Data – May 2016

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
525	3	1	0.6

Note: Measurements are taken under all meteorological conditions, including conditions under which the consent noise criteria do not apply.

6.0 OPERATIONAL DOWNTIME

During May, a total of 340.2 hours of equipment downtime was logged in response to environmental events such as dust, noise and elevated wind impacts. Operational downtime by equipment type is shown in Figure 17.

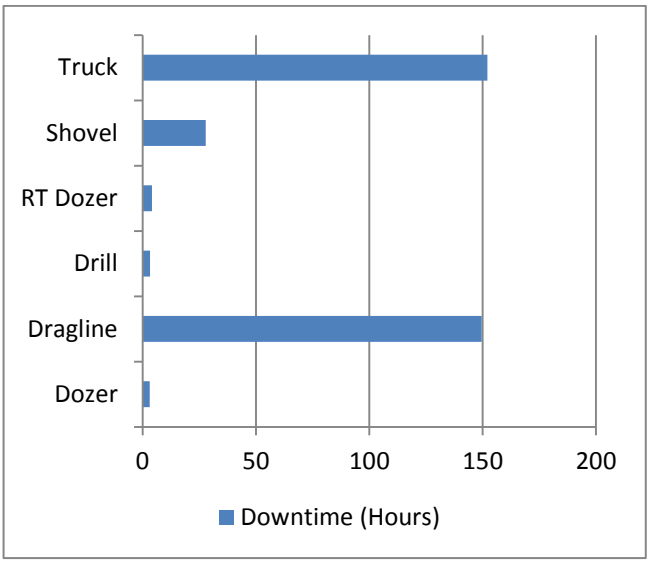

Figure 17: Operational Downtime by Equipment Type – May 2016

7.0 REHABILITATION

During May, 3.0 Ha of land was released, 3.6 Ha of land was bulk shaped, 1.6 Ha of land was topsoiled and 8.2 Ha of land was composted. Year-to-date progress can be viewed in Figure 18.

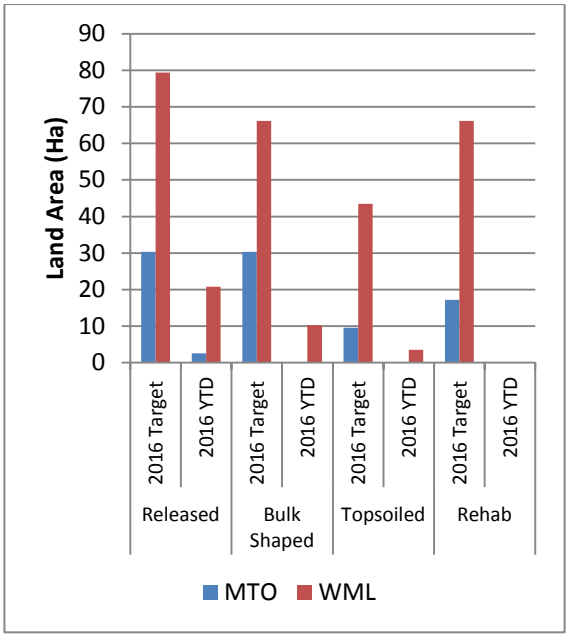

Figure 18: Rehabilitation YTD – May 2016

8.0 ENVIRONMENTAL INCIDENTS

There were no reportable environmental incidents during the reporting period.

9.0 COMPLAINTS

During the reporting period 31 complaints were received, details of these complaints are shown in Figure 19 below.

	Noise	Dust	Blast	Lighting	Other	Total
January	29	1	5	2	2	39
February	24	2	6	1	0	33
March	44	1	2	1	0	48
April	67	7	4	0	5	83
May	17	5	7	2	0	31
June	-	-	-	-	-	-
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Total	181	16	24	6	7	234

Figure 19: Complaints Summary - YTD May 2016

Appendix A: Meteorological Data

Table 8: Meteorological Data – Charlton Ridge Meteorological Station – May 2016

Date	Air Temperature Maximum (°C)	Air Temperature Minimum (°C)	Relative Humidity Maximum (%)	Relative Humidity Minimum (%)	Wind Direction Average (°)	Wind Speed Average (m/sec)	Rainfall(mm)
1/05/2016	21.3	12.9	98.3	72.2	259.2	3.2	9.6
2/05/2016	24.3	11.3	96.8	47.4	272.8	2.5	0.0
3/05/2016	24.9	14.3	88.7	37.4	294.5	4.3	0.0
4/05/2016	25.9	11.9	77.8	32.3	273.8	3.2	0.0
5/05/2016	25.4	10.2	87.2	28.1	236.8	2.2	0.0
6/05/2016	27.4	8.1	89.4	27.6	206.4	1.9	0.0
7/05/2016	24.9	8.8	92.9	46.0	167.8	1.5	0.0
8/05/2016	22.2	11.7	94.9	62.2	172.3	1.2	0.0
9/05/2016	25.8	14.9	92.7	51.5	240.8	2.6	0.6
10/05/2016	22.0	13.4	77.2	43.5	308.9	5.6	0.0
11/05/2016	21.3	10.4	82.3	27.0	301.6	5.0	0.0
12/05/2016	21.4	10.5	72.5	40.4	299.1	5.4	0.0
13/05/2016	25.7	10.4	82.3	24.7	277.8	3.3	0.0
14/05/2016	25.7	7.1	86.4	25.5	243.8	1.9	0.0
15/05/2016	23.4	7.0	78.1	26.6	299.6	3.5	0.0
16/05/2016	24.4	8.6	87.4	31.1	210.8	1.4	0.0
17/05/2016	26.8	10.4	79.7	31.6	249.6	2.9	0.0
18/05/2016	22.7	8.3	80.2	30.3	269.7	2.4	0.0
19/05/2016	23.5	8.5	73.2	25.2	283.7	3.7	0.0
20/05/2016	24.4	8.1	76.9	31.5	223.3	3.1	0.0
21/05/2016	23.5	10.0	90.2	43.3	156.7	2.1	0.0
22/05/2016	26.2	9.7	95.7	37.8	208.4	1.8	0.0
23/05/2016	27.7	10.8	89.2	22.9	266.8	3.4	0.0
24/05/2016	21.7	6.3	66.0	25.7	288.0	4.3	0.0
25/05/2016	21.9	3.6	78.2	17.1	294.3	3.3	0.0
26/05/2016	18.1	10.2	84.2	46.3	278.0	5.0	0.0
27/05/2016	18.6	9.2	81.1	23.4	304.7	5.4	0.0
28/05/2016	16.2	7.3	87.8	41.7	304.4	4.7	0.4
29/05/2016	17.7	4.7	90.3	35.9	286.3	4.0	0.0
30/05/2016	17.9	0.5	91.6	23.5	211.6	1.7	0.0
31/05/2016	20.0	2.5	84.6	31.2	175.7	2.0	0.0

COAL & ALLIED

Managed by Rio Tinto Coal Australia

Appendix C

Environmental Monitoring
June 2016

Mount Thorley Warkworth

Monthly Environmental Report

June 2016

Coal & Allied Operations Pty Ltd

ABN 16 000 023 656

Lemington Road, Ravensworth via Singleton NSW 2330 Australia

PO Box 315 Singleton NSW 2330 Australia

Telephone +61 2 6570 0300 Facsimile +61 2 6570 0399

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Figures

Tables

Revision History

Version No.	Person Responsible	Document Status	Date
1.0	**Environmental Advisor**	**Draft**	**28/07/2016**
1.1	**Environmental Specialist**	**Final**	**29/07/2016**

1.0 INTRODUCTION

This report has been compiled to provide a monthly summary of environmental monitoring results for Mount Thorley Warkworth (MTW). This report includes all monitoring data collected for the period 1 June to 30 June 2016.

2.0 AIR QUALITY

2.1 Meteorological Monitoring

Meteorological data is collected at MTW's 'Charlton Ridge' meteorological station (refer to Figure 3: Air Quality Monitoring Locations).

2.1.1 Rainfall

Rainfall for the period is summarised in Table 1, the year-to-date trend and historical trend are shown in Figure 1.

Table 1: Monthly Rainfall MTW

2016	Monthly Rainfall (mm)	Cumulative Rainfall (mm)
June	96.2	365

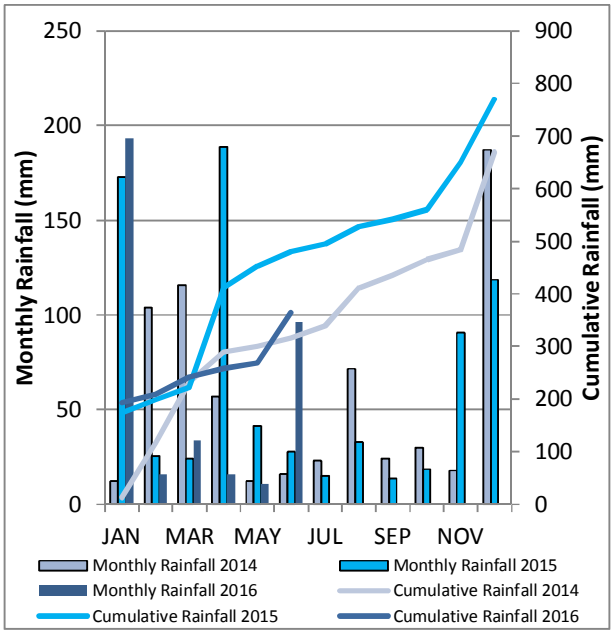

Figure 1: Rainfall Trends YTD

2.1.2 Wind Speed and Direction

Winds from the Northwest were dominant throughout the reporting period as shown in Figure 2.

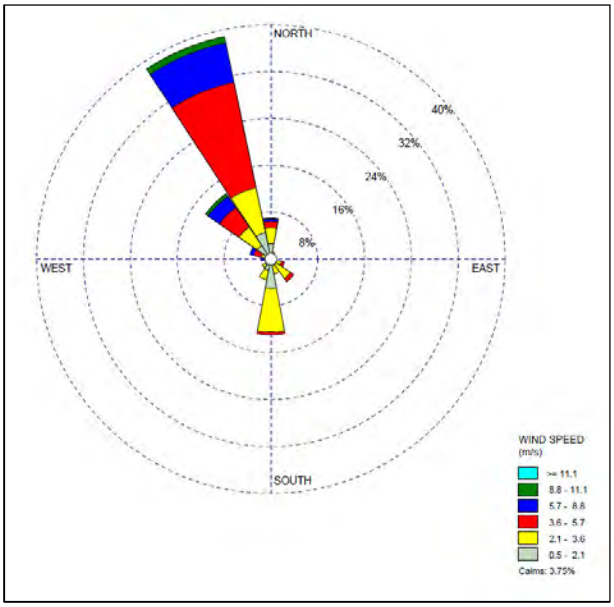

Figure 2: Charlton Ridge Wind Rose – June 2016

Figure 3: Air Quality Monitoring Locations

2.2 Depositional Dust

To monitor regional air quality, MTW operates and maintains a network of nine depositional dust gauges, situated on private and mine owned land surrounding MTW.

Figure 4 displays insoluble solids results from depositional dust gauges during the reporting period compared against the year-to-date average and the annual impact assessment criteria.

Monitors DW20A, D122 and D124 recorded results of 4.1, 4.4 and 4.1 g/m² respectively for the month. The field notes associated with the D124 result confirms the presence of insects and bird droppings. As such the result is considered contaminated and will be excluded from calculation of the annual average. There is no evidence to suggest that the DW20a or the D122 result is contaminated. Accordingly, this result will be included in the annual average calculation.

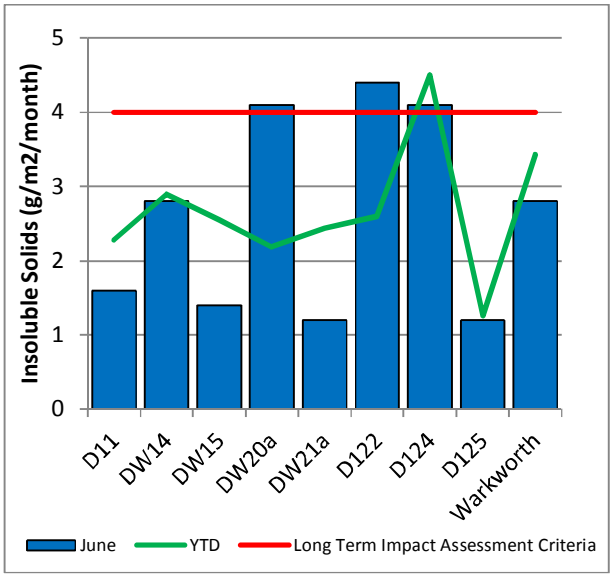

Figure 4: Depositional Dust – June 2016

2.3 Suspended Particulates

Suspended particulates are measured by a network of High Volume Air Samplers (HVAS) measuring Total Suspended Particulates (TSP) and Particulate Matter <10µm (PM_{10}). The location of these monitors can be found in Figure 3. Each HVAS was run for 24 hours on a six-day cycle in accordance with EPA requirements.

2.3.1 HVAS PM_{10} Results

Figure 5 shows the individual PM_{10} results at each monitoring station against the short term impact assessment criteria of 50µg/m³.

The Long Point HVAS failed to collect a valid sample on the 10th June due to a technical issue.

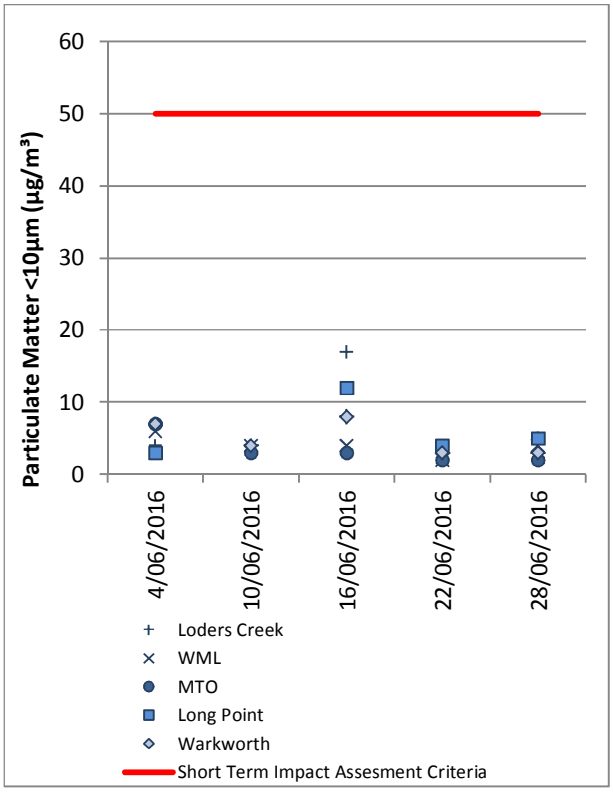

Figure 5: Individual PM_{10} Results – June 2016

Figure 6 shows the annual average PM_{10} results against the long term impact assessment criteria.

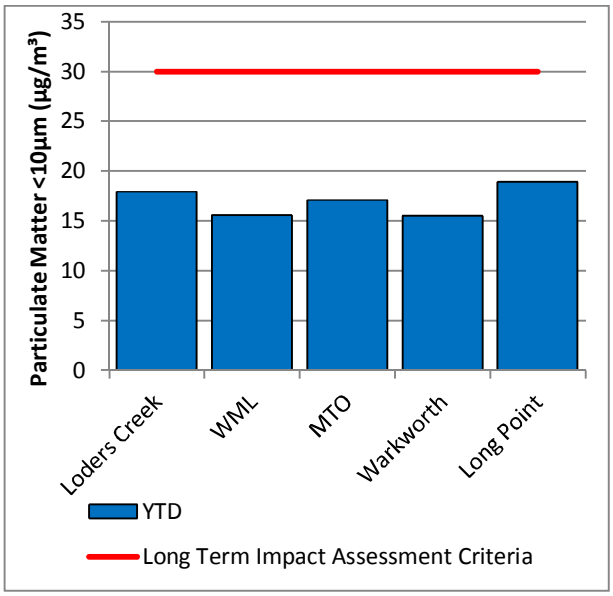

Figure 6: Annual Average PM_{10} – June 2016

2.3.2 TSP Results

Figure 7 shows the annual average TSP results compared against the long term impact assessment criteria of 90µg/m³.

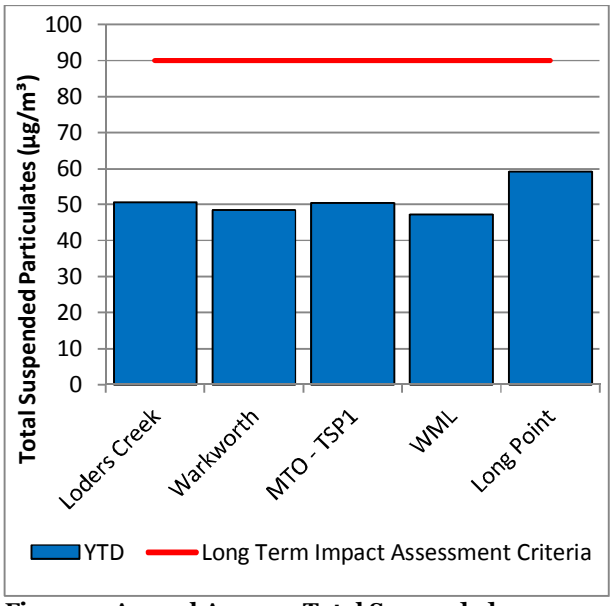

Figure 7: Annual Average Total Suspended Particulates – June 2016

2.3.3 Real Time PM_{10} Results

Mount Thorley Warkworth maintains a network of real time PM_{10} monitors. The real time air quality monitoring stations continuously log information and transmit data to a central database, generating alarms when particulate matter levels exceed internal trigger limits.

Results for real time dust sampling are shown in Figure 8, including the daily 24 hour average PM_{10} result and the annual PM_{10} average.

Data was not available on the 16th June 2016 (MTIE) due to equipment issues.

2.3.4 Real Time Alarms for Air Quality

During June, the real time monitoring system generated 34 automated air quality related alerts, including 25 alerts for adverse meteorological conditions and 9 alerts for elevated dust levels.

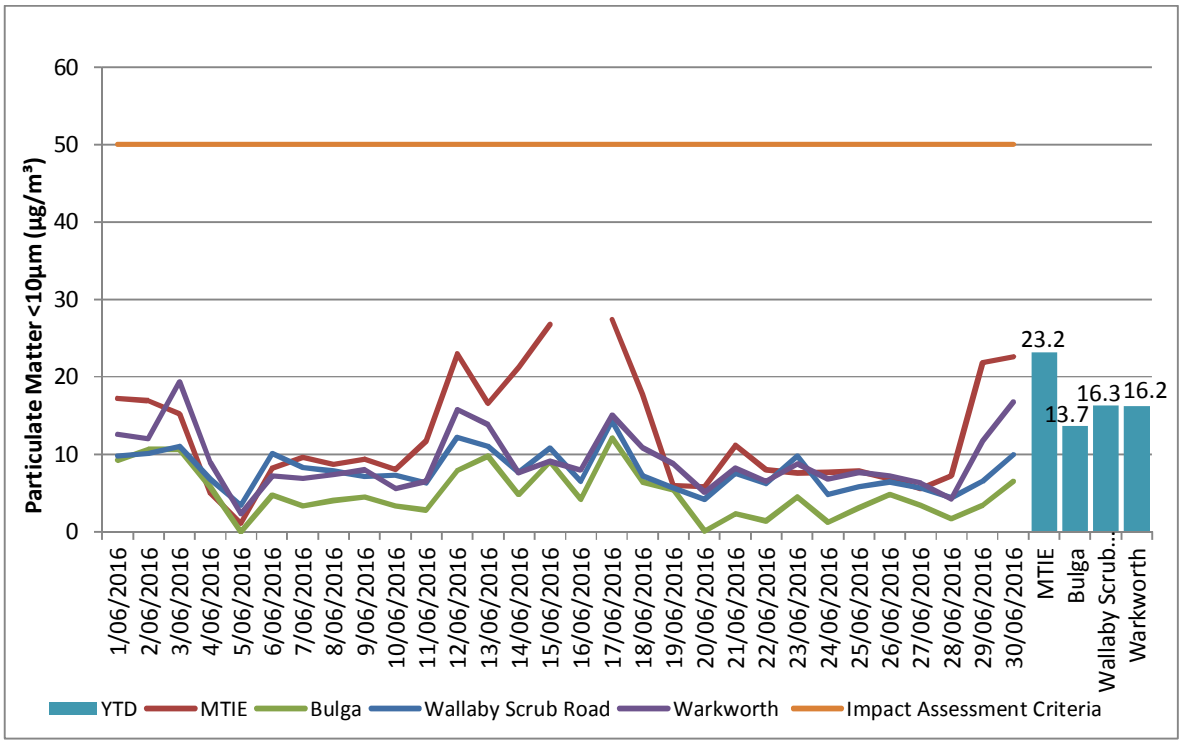

Figure 8: Real Time PM_{10} 24hr average and Year-to-date average – June 2016

3.0 WATER QUALITY

MTW maintains a network of surface water and groundwater monitoring sites.

3.1 Surface Water

Monitoring is conducted at mine site dams and surrounding natural watercourses. The surface water monitoring locations are outlined in Figure 15.

Surface water courses are sampled on a monthly or quarterly sampling regime. Water quality is evaluated through the parameters of pH, Electrical Conductivity (EC) and Total Suspended Solids (TSS). The Hunter River and the Wollombi Brook are sampled both upstream and downstream of mining operations, to monitor the potential impact of mining on the river. Other Hunter River tributaries are also monitored.

3.1.1 Surface Water Monitoring Results

Figure 9 to Figure 11 show the long term surface water trend (2013 – current) within MTW mine dams. Figure 12 to Figure 14 show the long term surface water trend (2013 - current) in surrounding watercourses.

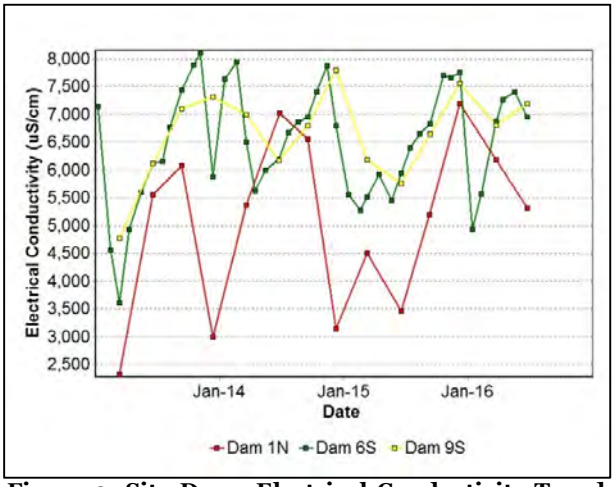

Figure 9: Site Dams Electrical Conductivity Trend 2013 – Current

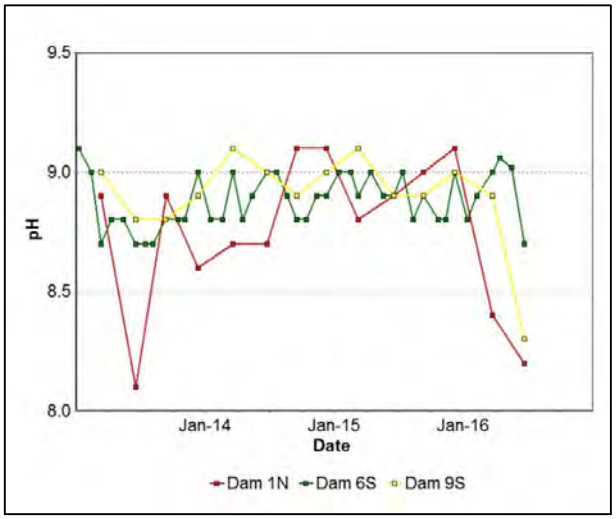

Figure 10: Site Dams pH Trend 2013 - Current

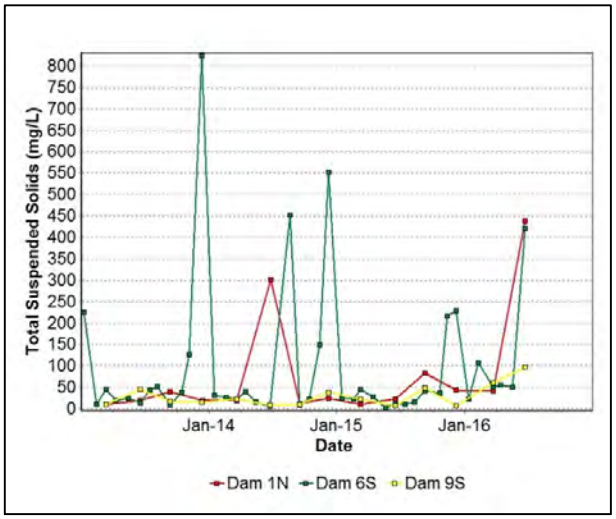

Figure 11: Site Dams Total Suspended Solids Trend 2013 – Current

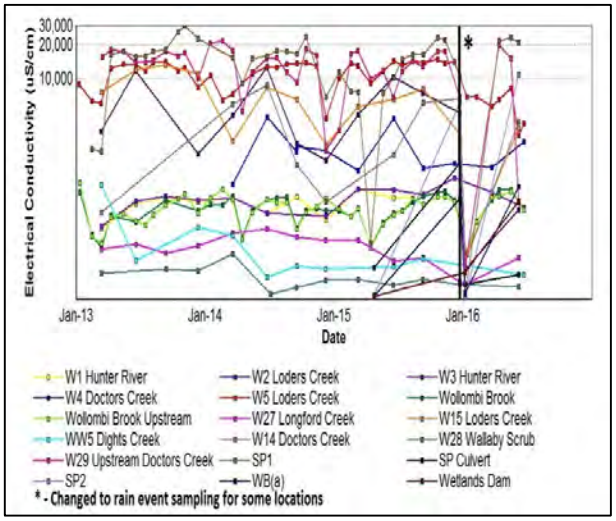

Figure 12: Watercourse Electrical Conductivity Trend 2013 - Current

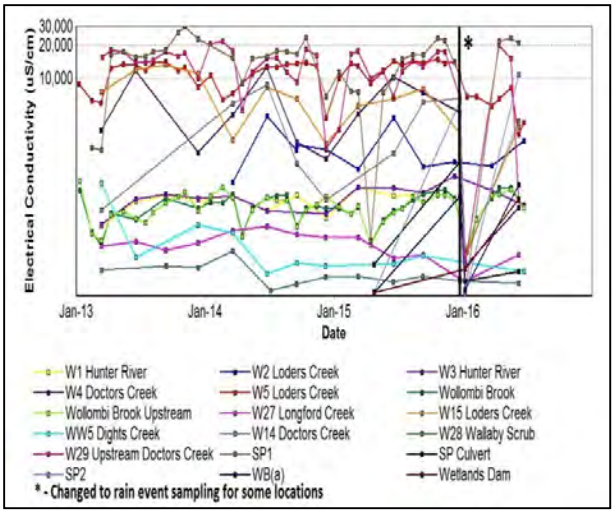

Figure 13: Watercourse pH Trend 2013 – Current

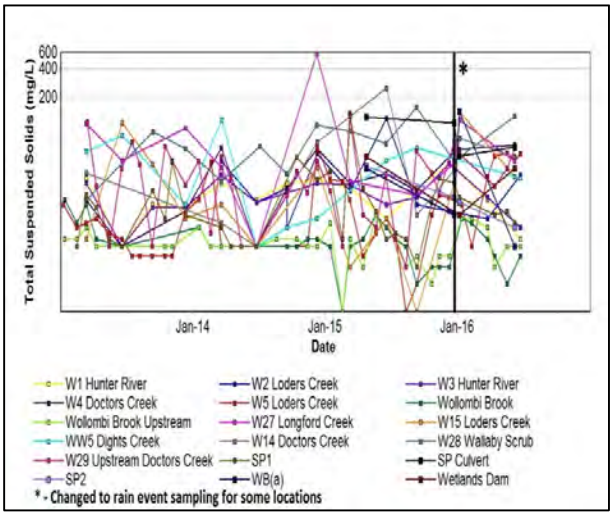

Figure 14: Watercourse Total Suspended Solids Trend 2013 – Current

3.1.2 Surface Water Trigger Tracking

Internal trigger limits have been developed to assess monitoring data on an on-going basis, and to highlight potentially adverse surface water impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the MTW Water Management Plan.

During quarter 1 and quarter 2 of 2016 12 internal trigger limits were breached, summarised in Table 2.

Table 2: Surface Water Trigger Tracking - June 2016

Site	Date	Trigger Limit Breached	Action Taken in Response
SP1	06/01/2016	pH –5th Percentile	Watching Brief*
W2	22/06/2016	pH –5th Percentile	Watching Brief*
W4	06/01/2016	pH –5th Percentile	Watching Brief*
W15	06/01/2016	pH –5th Percentile	Watching Brief*
W27	06/01/2016	pH –5th Percentile	Watching Brief*
W29	06/01/2016	pH –5th Percentile	Watching Brief*
Wollombi Brook	12/01/2016	pH –5th Percentile	Watching Brief*
Wollombi Brook Upstream	12/01/2016	pH –5th Percentile	Watching Brief*
W4	06/01/2016	TSS – 50mg/L (ANZECC criteria)	Elevated TSS associated with high runoff due to rainfall event (106mm of rain recorded from 3/01/2016 to 6/01/2016). Consistent with upstream sample W29; no mine site sources of sediment identified. No follow up required.
W14	06/01/2016	TSS – 50mg/L (ANZECC criteria)	Elevated TSS associated with high runoff due to rainfall event (106mm of rain recorded 3/01/2016 to 6/01/2016). Upstream sample W29 indicates source of sediment primarily from runoff from downstream farming properties. No follow up required.
W15	06/01/2016	TSS – 50mg/L (ANZECC criteria)	W15: Elevated TSS associated with high runoff due to rainfall event (106mm of rain recorded 3/01/2016 to 6/01/2016). W5 not on revised rain event sampling protocol so unable to determine sediment source. Monitoring programme to be updated to include W5 on rain event sampling protocol.
W27	06/01/2016	TSS – 50mg/L (ANZECC criteria)	Elevated TSS associated with high runoff due to rainfall event (106mm of rain recorded 3/01/2016 to 6/01/2016). Review of site indicates upstream erosion and sediment

	controls in place and compliant. No follow up required.

* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.

Figure 15: Surface Water Monitoring Location Plan

3.2 Groundwater Monitoring

Groundwater monitoring is undertaken on a quarterly basis in accordance with the MTW Groundwater Monitoring Programme.

Figures 16 to 58 show the long term water quality trends (2013 – current) for groundwater bores monitored at MTW.

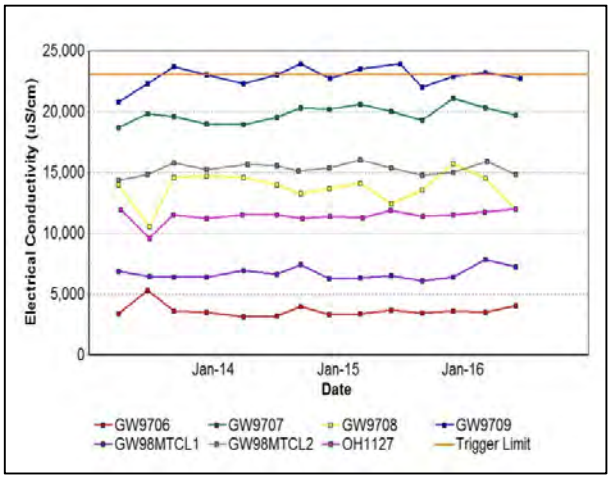

Figure 16: Bayswater Seam Electrical Conductivity Trend – June 2016

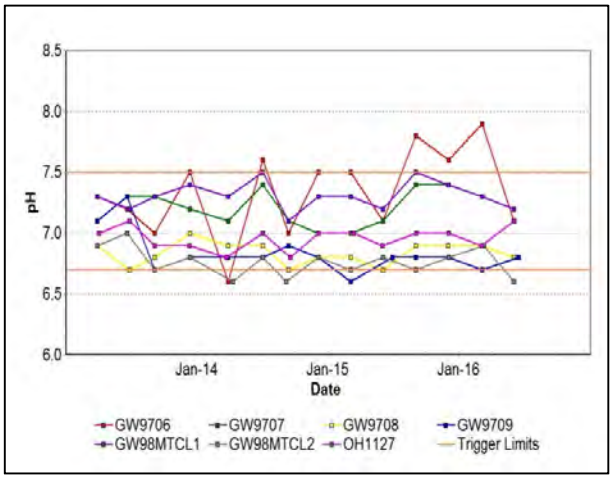

Figure 17: Bayswater Seam pH Trend – June 2016

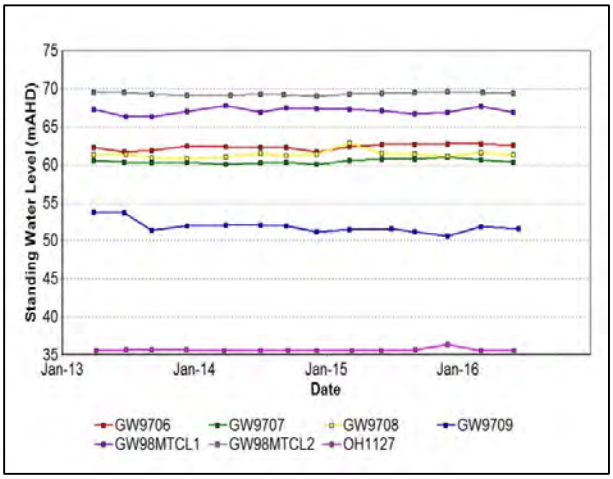

Figure 18: Bayswater Seam Standing Water Level - June 2016

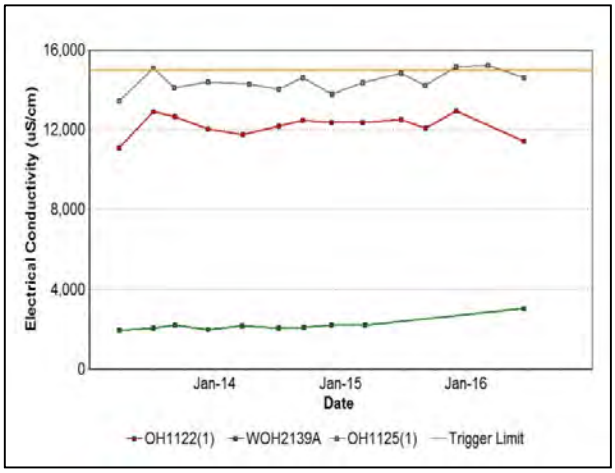

Figure 19: Blakefield Seam Electrical Conductivity Trend - June 2016

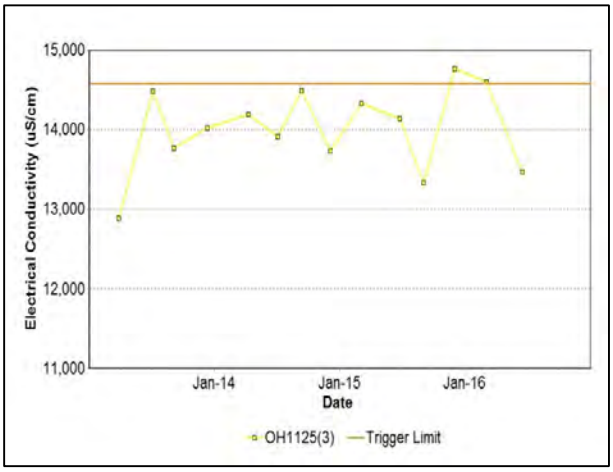

Figure 22: Bowfield Seam Electrical Conductivity Trend - June 2016

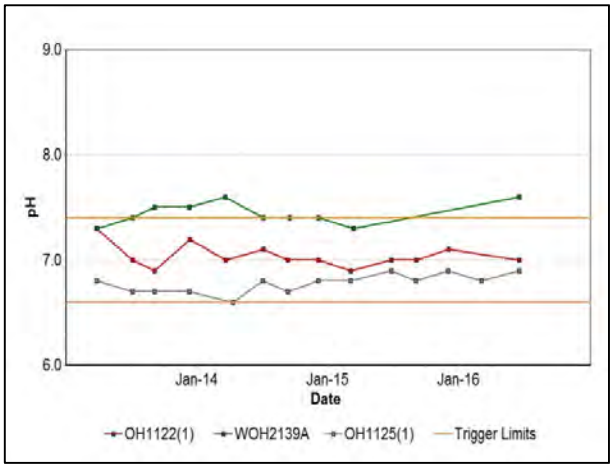

Figure 20: Blakefield Seam pH Trend - June 2016

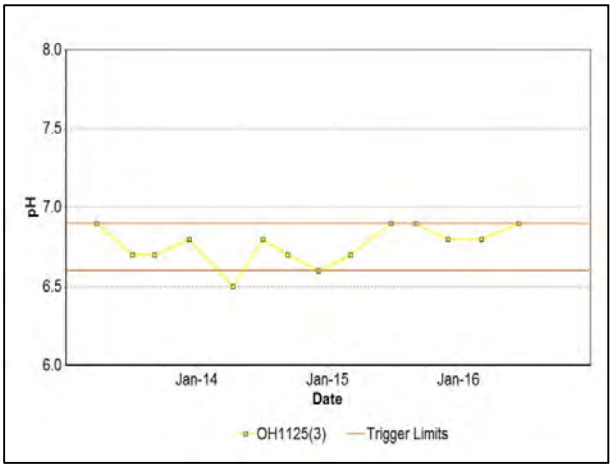

Figure 23: Bowfield Seam pH Trend – June 2016

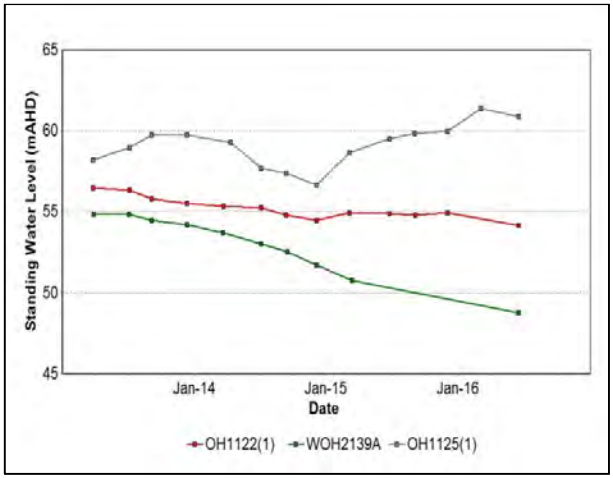

Figure 21: Blakefield Seam Standing Water Level Trend - June 2016

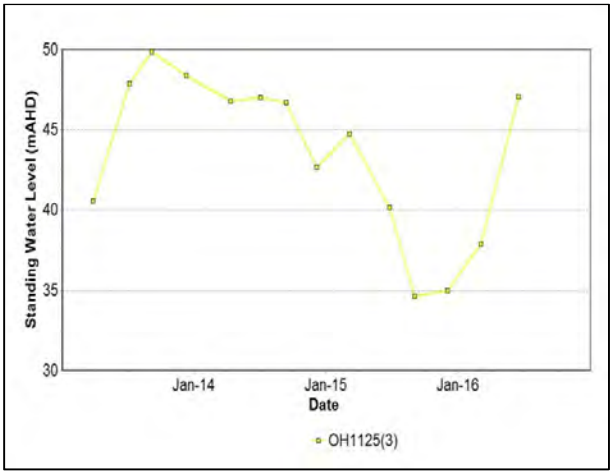

Figure 24: Bowfield Seam Standing Water Level Trend - June 2016

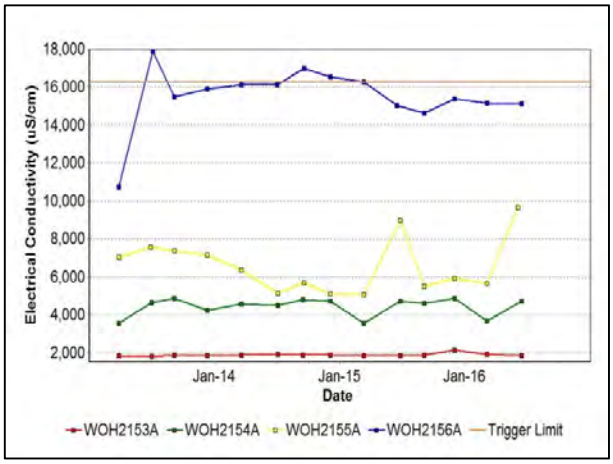

Figure 25: Redbank Seam Electrical Conductivity Trend - June 2016

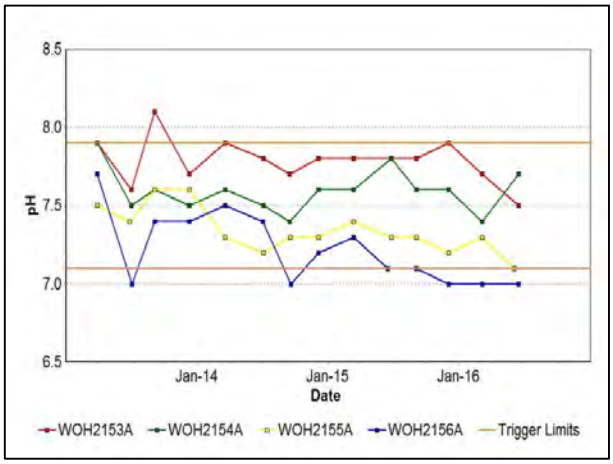

Figure 26: Redbank Seam pH Trend – June 2016

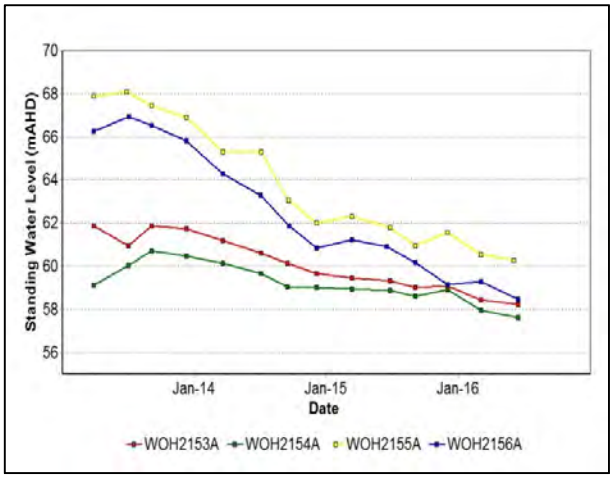

Figure 27: Redbank Seam Standing Water Level - June 2016

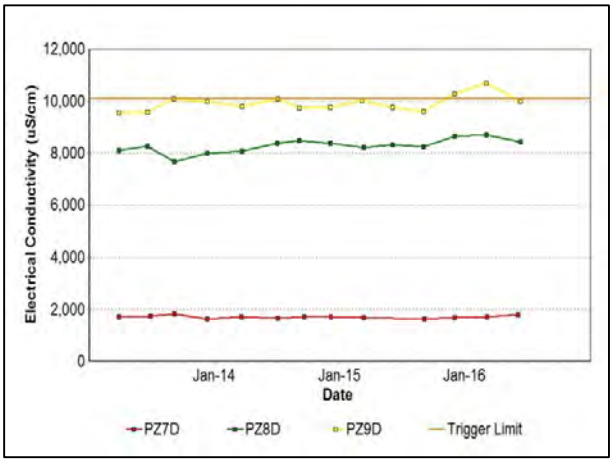

Figure 28: Shallow Overburden Seam Electrical Conductivity Trend - June 2016

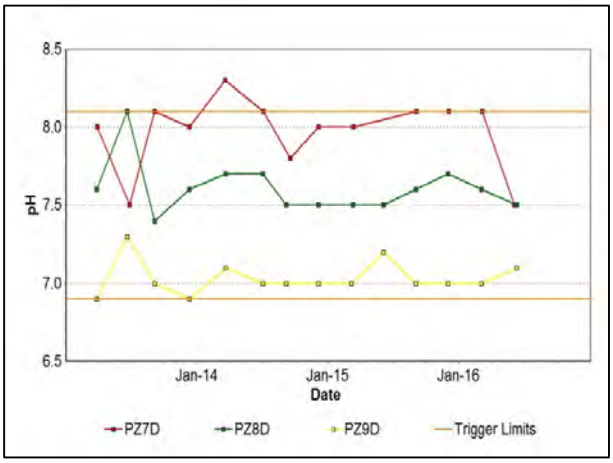

Figure 29: Shallow Overburden Seam pH Trend - June 2016

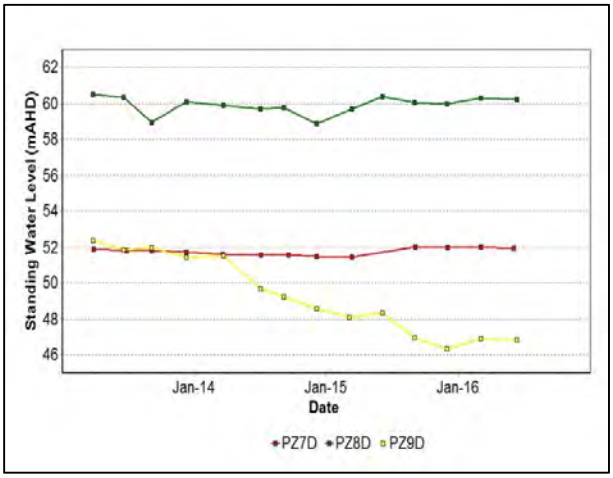

Figure 30: Shallow Overburden Seam Standing Water Level Trend - June 2016

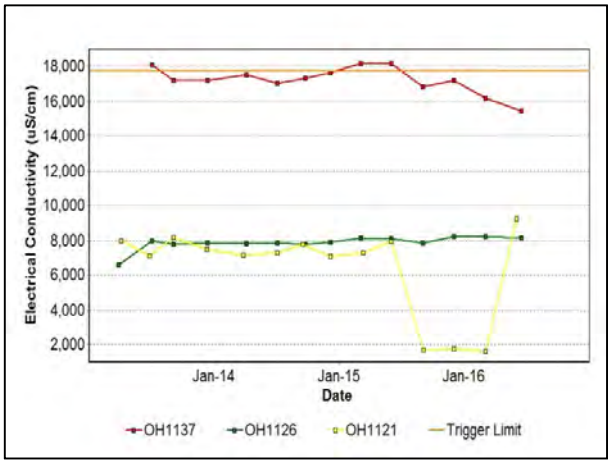

Figure 31: Vaux Seam Electrical Conductivity Trend – June 2016

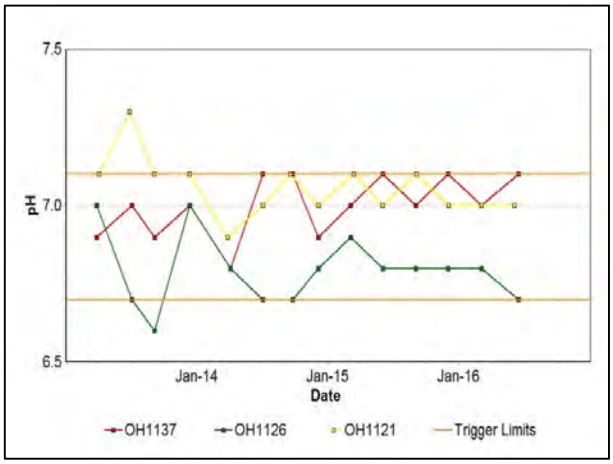

Figure 32: Vaux Seam pH Trend - June 2016

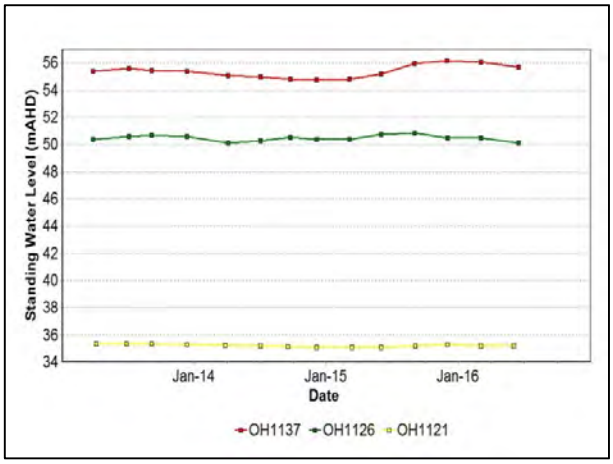

Figure 33: Vaux Seam Standing Water Level Trend - June 2016

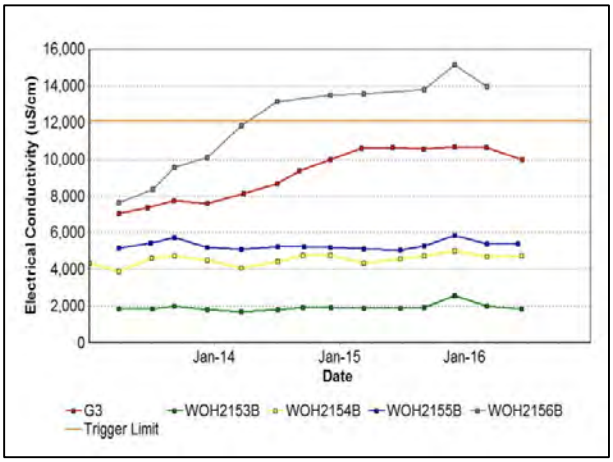

Figure 34: Wambo Seam Electrical Conductivity Trend - June 2016

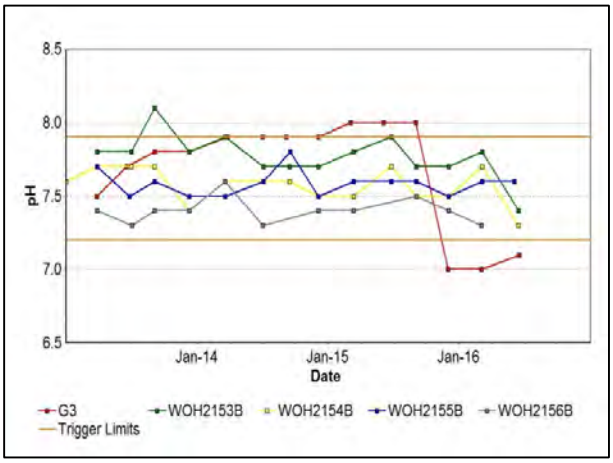

Figure 35: Wambo Seam pH Trend - June 2016

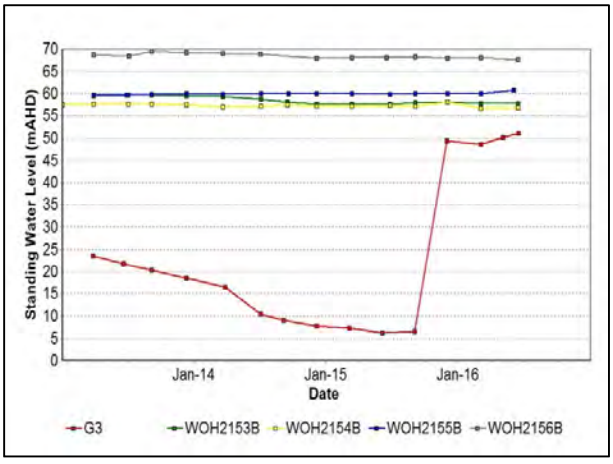

Figure 36: Wambo Seam Standing Water Level Trend - June 2016

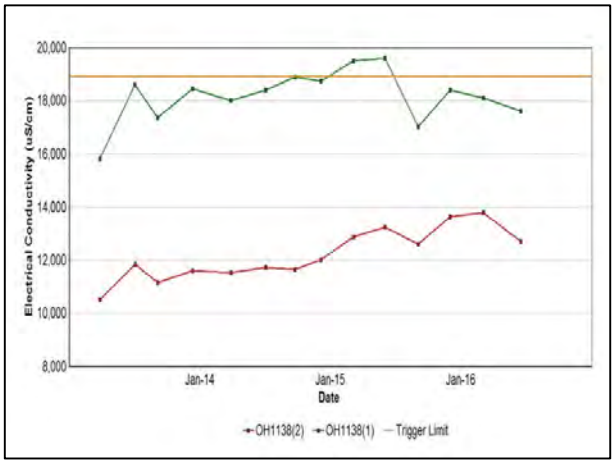

Figure 37: Warkworth Seam Electrical Conductivity Trend – June 2016

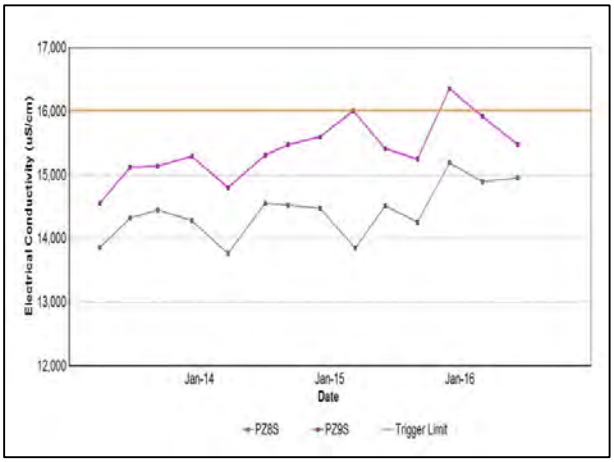

Figure 40: Wollombi Alluvium Electrical Conductivity Trend - June 2016

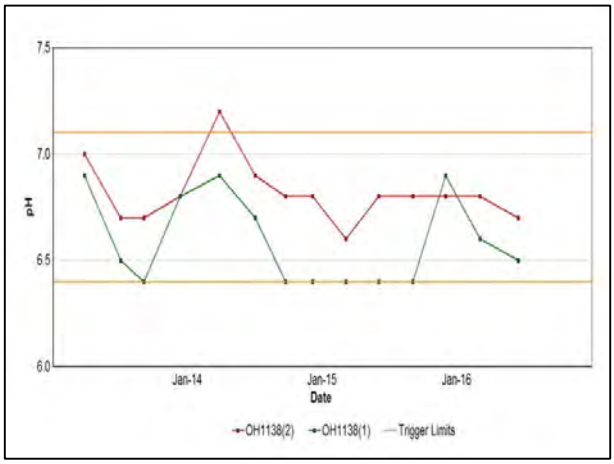

Figure 38: Warkworth Seam pH Trend - June 2016

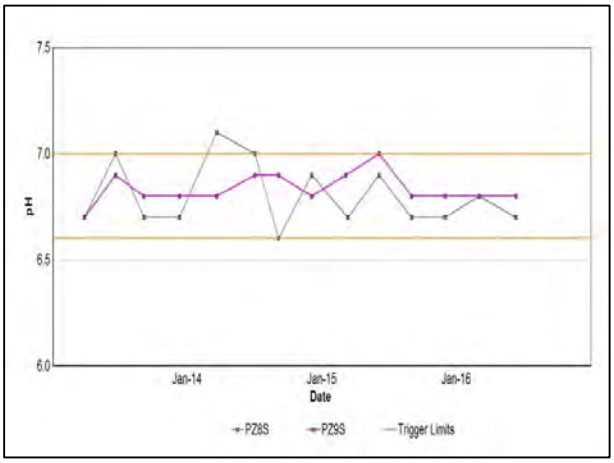

Figure 41: Wollombi Alluvium pH Trend – June 2016

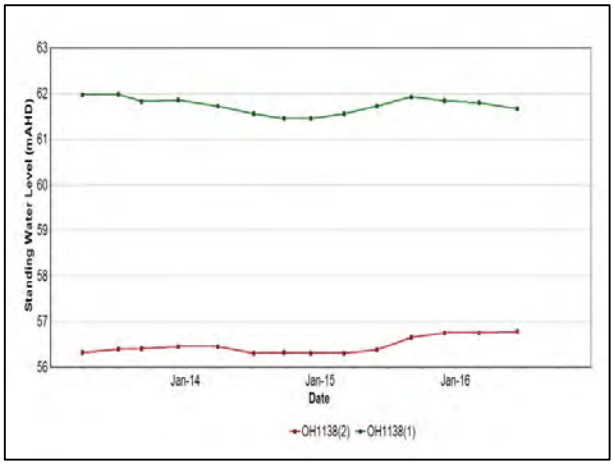

Figure 39: Warkworth Seam Standing Water Level Trend - June 2016

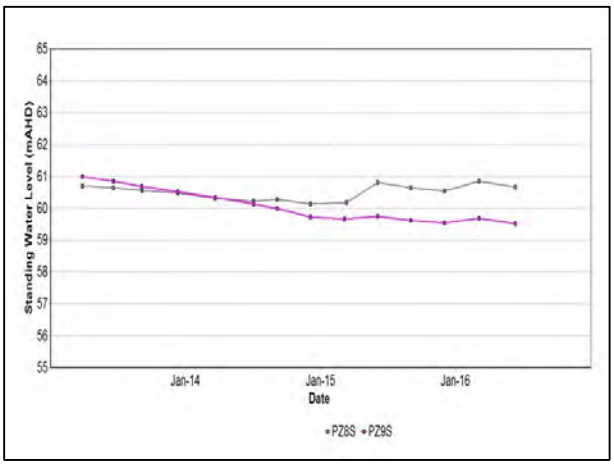

Figure 42: Wollombi Alluvium Standing Water Level Trend - June 2016

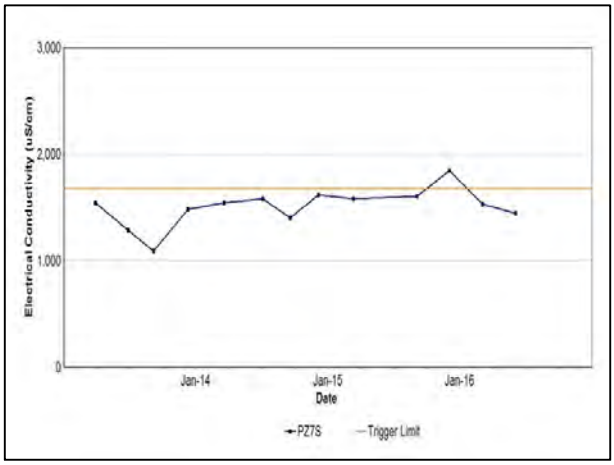

Figure 43: Aeolian Warkworth Sands Electrical Conductivity Trend – June 2016

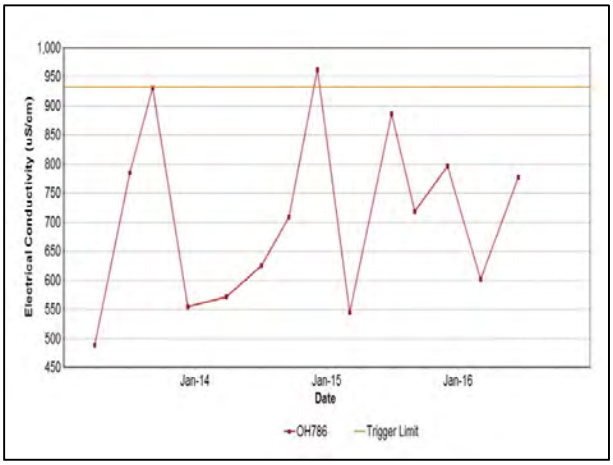

Figure 46: Hunter River Alluvium 1 Seam Electrical Conductivity - June 2016

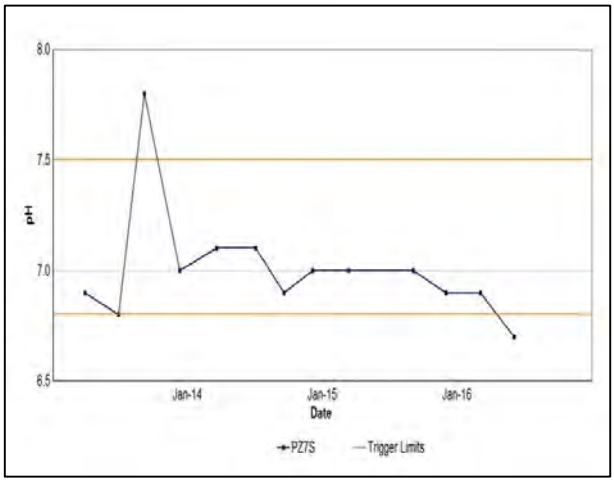

Figure 44: Aeolian Warkworth Sands pH Trend - June 2016

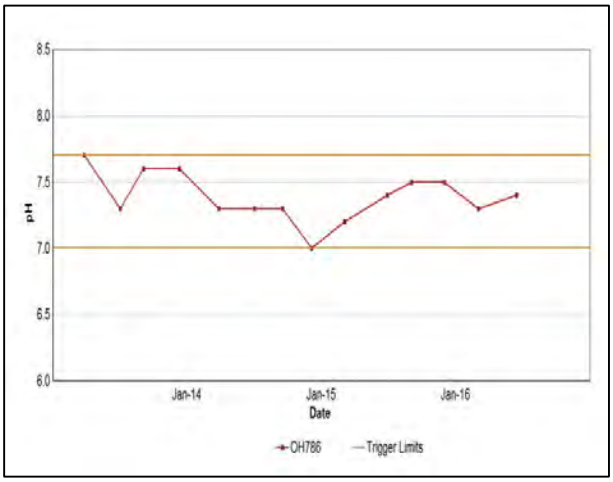

Figure 47: Hunter River Alluvium 1 Seam pH Trend - June 2016

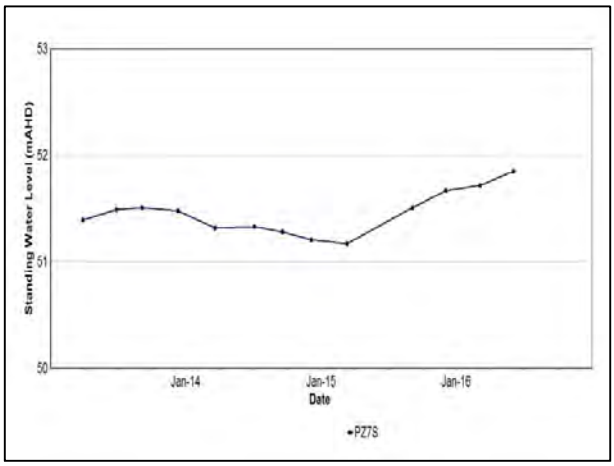

Figure 45: Aeolian Warkworth Sands Standing Water Level Trend - June 2016

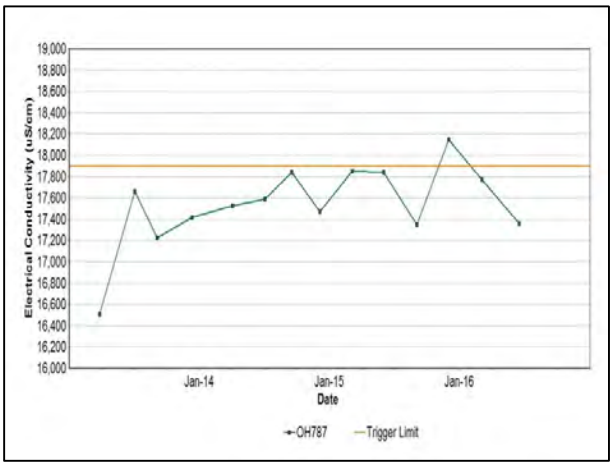

Figure 48: Hunter River Alluvium 2 Seam Electrical Conductivity - June 2016

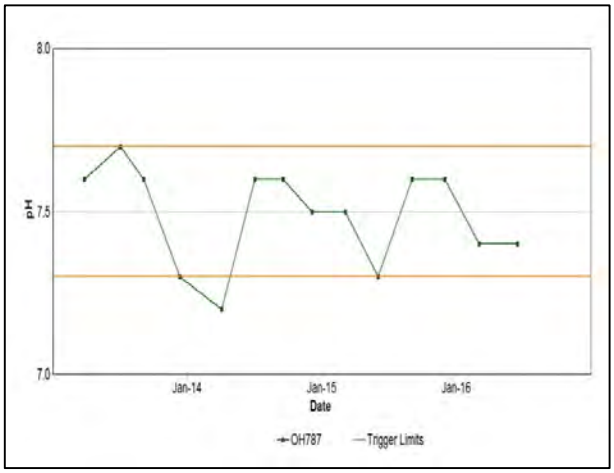

Figure 49: Hunter River Alluvium 2 Seam pH Trend - June 2016

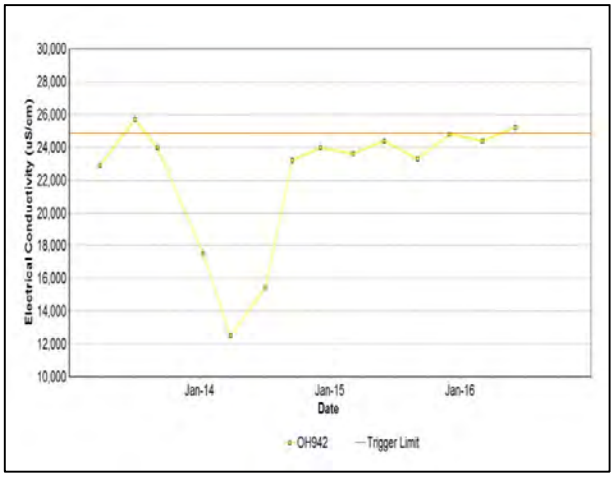

Figure 50: Hunter River Alluvium 3 Seam Electrical Conductivity - June 2016

Figure 51: Hunter River Alluvium 3 Seam pH Trend - June 2016

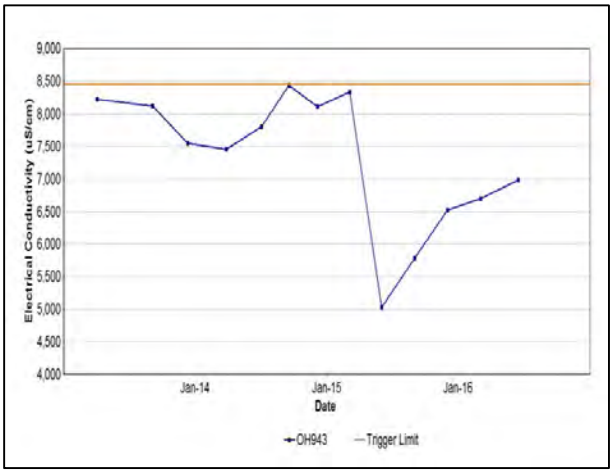

Figure 52: Hunter River Alluvium 4 Seam Electrical Conductivity - June 2016

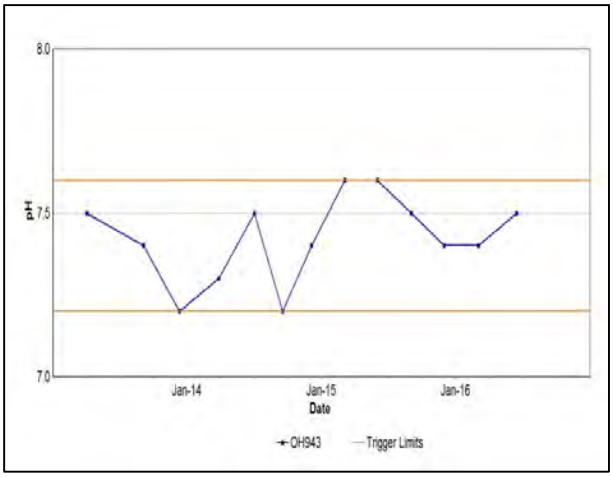

Figure 53: Hunter River Alluvium 4 Seam pH Trend - June 2016

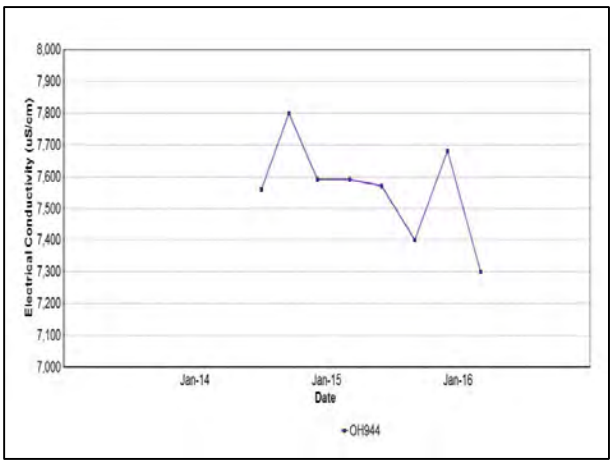

Figure 54: Hunter River Alluvium 5 Seam Electrical Conductivity - June 2016

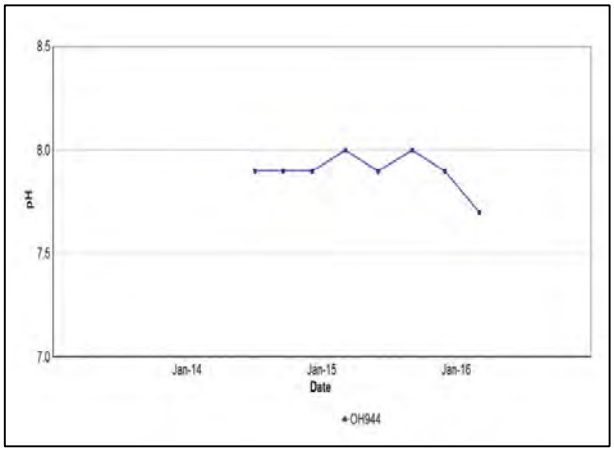

Figure 55: Hunter River Alluvium 5 Seam pH Trend - June 2016

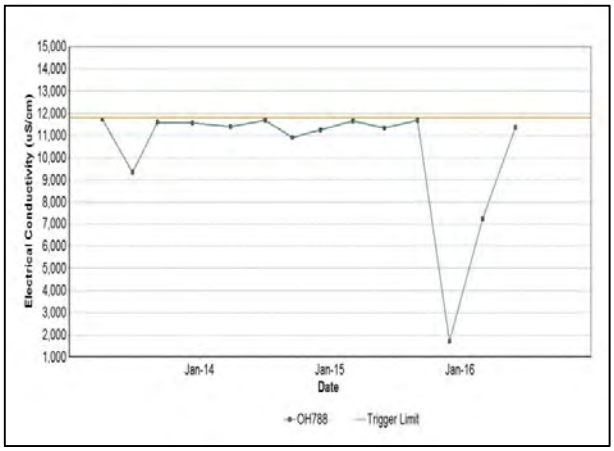

Figure 56: Hunter River Alluvium 6 Seam Electrical Conductivity - June 2016

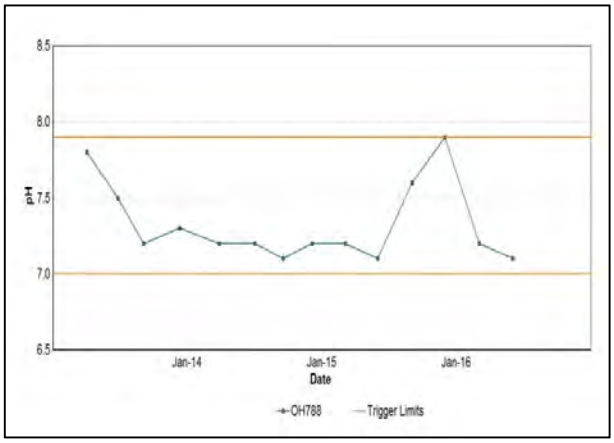

Figure 57: Hunter River Alluvium 6 Seam pH Trend - June 2016

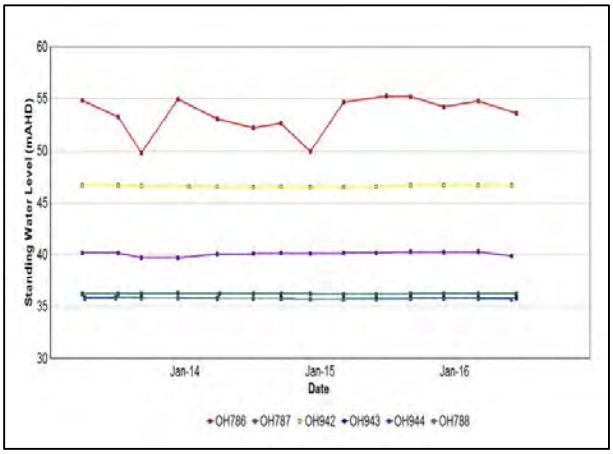

Figure 58: Hunter River Alluvium Standing Water Level Trend - June 2016

3.2.1 Groundwater Trigger Tracking

Internal trigger limits have been developed to assess monitoring data on an on-going basis, and to highlight potentially adverse groundwater impacts. The process for evaluating monitoring results against the internal triggers and subsequent responses are outlined in the MTW Water Management Plan. Locations of groundwater bores are shown in Figure 59.

During quarter 1 and quarter 2 of 2016 a number of trigger limits were breached and investigated, summarised in Table 3.

Table 3: Groundwater Triggers - 2016

Site	Date	Trigger Limit Breached	Action Taken in Response
GW9709	04/03/2016	EC – 95th Percentile	Watching Brief*
OH1125(3)	03/03/2016	EC – 95th Percentile	Watching Brief*
OH1125(1)	03/03/2016	EC – 95th Percentile	Watching Brief*
PZ9D	03/03/2016	EC – 95th Percentile	Watching Brief*
WOH2156B	04/03/2016	EC – 95th Percentile	Elevated EC is likely the result of coal seam depressurisation, as evidenced by falling water level. This trend is consistent with effects of nearby mining. No further action required.
OH942	02/06/2016	EC – 95th Percentile	Watching Brief*
OH942	03/03/2016	PH –5th Percentile	Watching Brief*
OH944	03/03/2016	PH –5th Percentile	Watching Brief*
PZ7S	03/03/2016	PH –5th Percentile	Watching Brief*
GW9706	04/03/2016	PH – 95th Percentile	Trend consistent with nearby monitoring bore GW9707. Water level steady and does not indicate impact due to mining. Watching brief to be maintained.
GW98MTCL2	01/06/2016	PH –5th Percentile	Watching Brief*
WOH2156A	04/03/2016	PH - 5th Percentile	Low pH is likely the result of coal seam depressurisation, as evidenced by falling water level. This trend is consistent with effects of nearby mining. No further action required.
WOH2156A	14/06/2016	PH - 5th Percentile	Low pH is likely the result of coal seam depressurisation, as evidenced by falling water level. This trend is consistent with effects of nearby mining. No further action required.
WOH2139A	16/06/2016	PH – 95th Percentile	Watching Brief*
G3	03/03/2016	PH – 5th Percentile	Watching Brief. Large variance in Standing Water level indicates damage to the piezometer, currently under investigation.
G3	16/06/2016	PH – 5th Percentile	Investigation determined bore has partially collapsed to 65 m depth below ground. Bore will continue to be monitored and data assessed on a routine basis to identify if trend is deleterious.

* = Watching brief established pending outcomes of subsequent monitoring events. No specific actions required.

Figure 59: Groundwater Monitoring Location Plan

4.0 BLAST MONITORING

MTW have a network of six blast monitoring units. These are located at nearby privately owned residences and function as regulatory compliance monitors.

The location of these monitors can be found in Figure 66.

4.1 Blast Monitoring Results

During June 2016, 25 blasts were initiated at MTW. Figure 60 to Figure 65 show the blast monitoring results for the reporting period against the impact assessment criteria. The criteria are summarised in Table 4.

Table 4: Blasting Limits

Airblast Overpressure (dB(L))	Comments
115	5% of the total number of blasts in a 12 month period
120	0%
Ground Vibration (mm/s)	**Comments**
5	5% of the total number of blasts in a 12 month period
10	0%

During the reporting period no blasts exceeded the 115 dB(L) 5% threshold for airblast overpressure or 5mm/s 5% threshold for ground vibration.

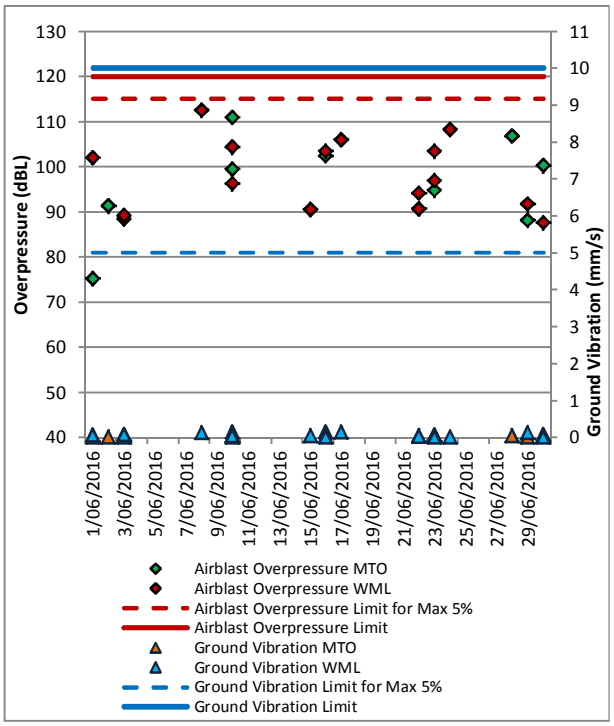

Figure 60: Abbey Green Blast Monitoring Results - June 2016

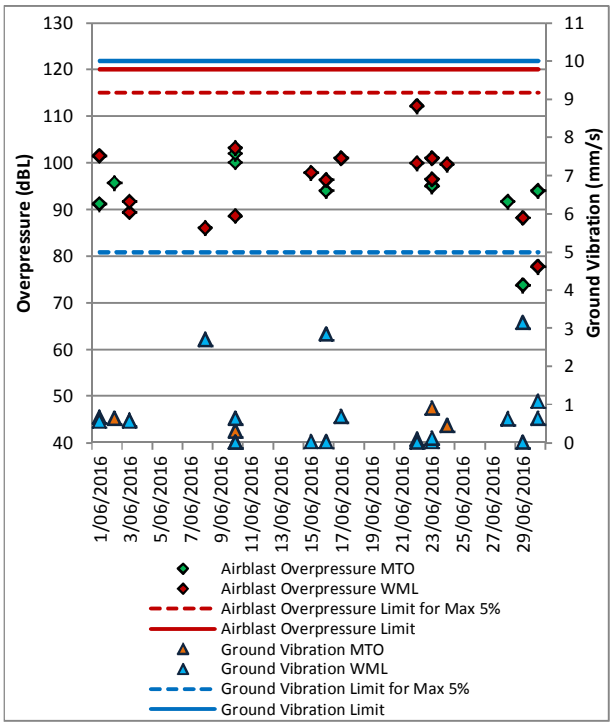

Figure 61: Bulga Village Blast Monitoring Results - June 2016

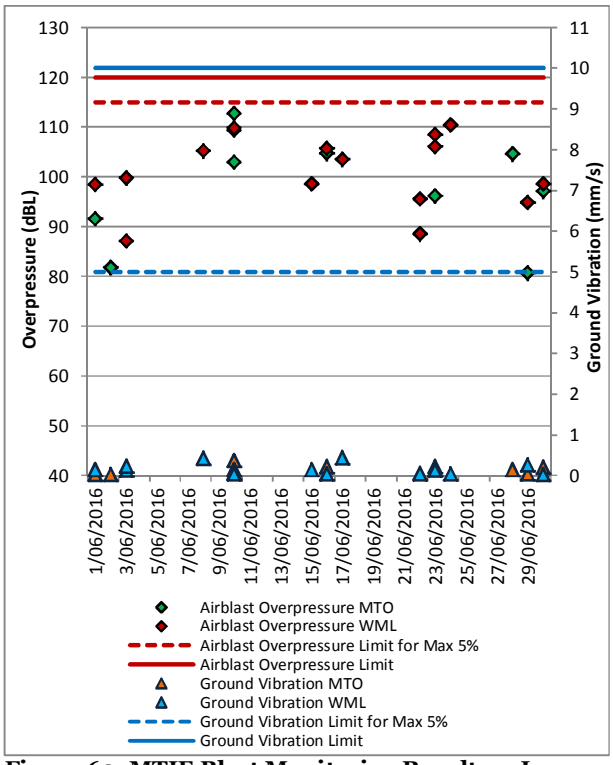

Figure 62: MTIE Blast Monitoring Results – June 2016

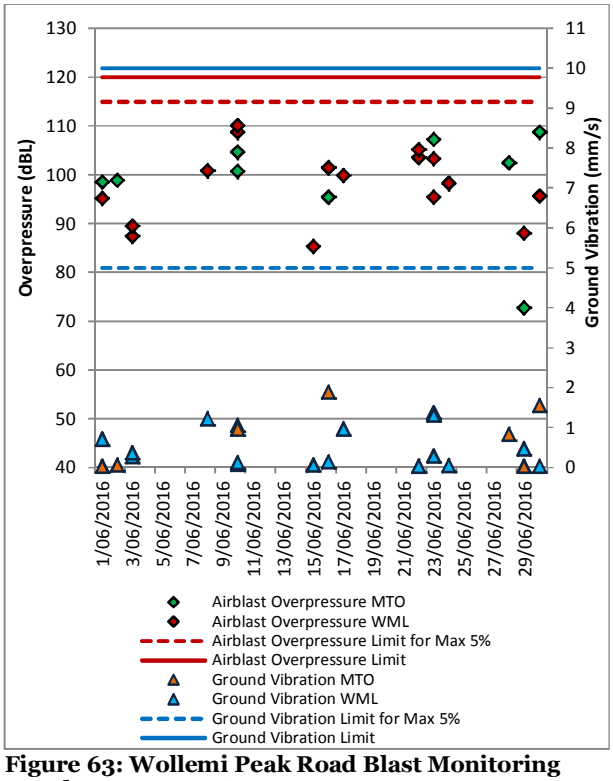

Figure 63: Wollemi Peak Road Blast Monitoring Results - June 2016

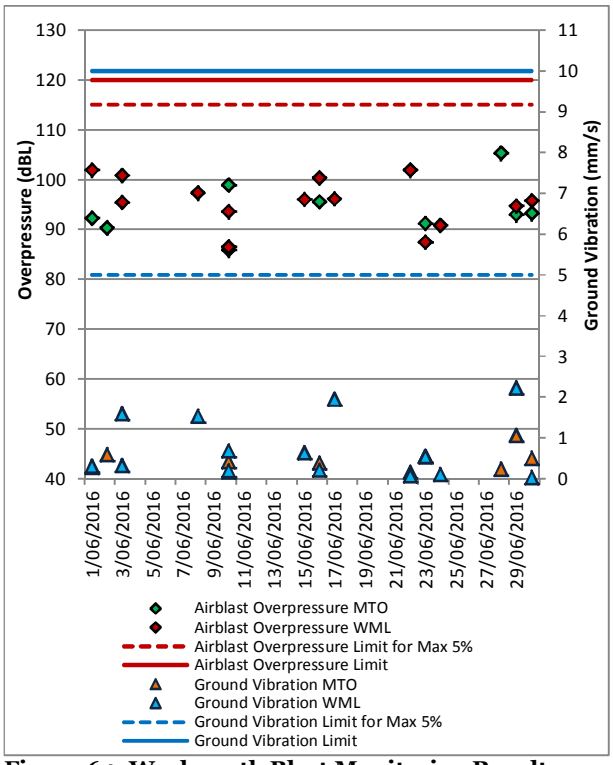

Figure 64: Warkworth Blast Monitoring Results - June 2016

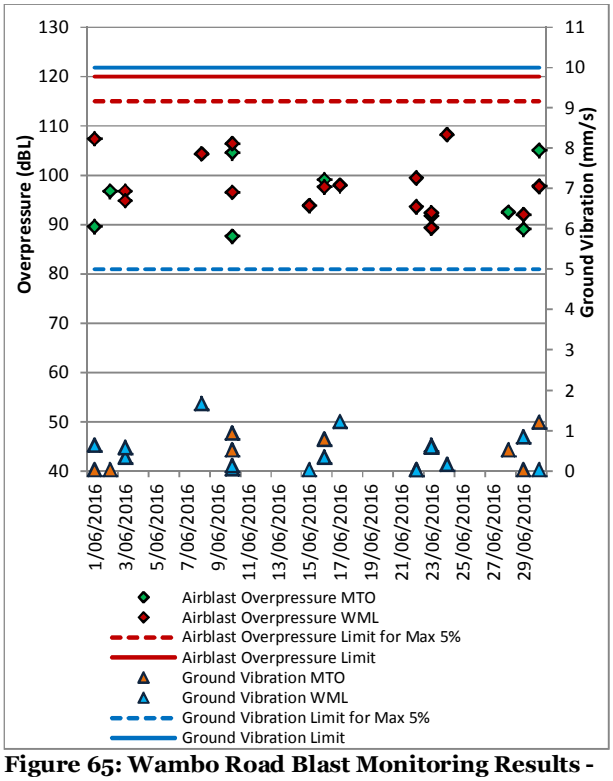

Figure 65: Wambo Road Blast Monitoring Results - June 2016

Figure 66: Blast and Vibration Monitoring Location Plan

5.0 NOISE

Routine attended noise monitoring is carried out in accordance with the MTW Noise Management Plan. A review against EIS predictions will be reported in the Annual Review. The purpose of the noise surveys is to quantify and describe the acoustic environment around the site and compare results with specified limits. Unattended monitoring (real time noise monitoring) also occurs at seven sites surrounding MTW. The attended noise monitoring locations are displayed in Figure 67.

5.1 Attended Noise Monitoring Results

Attended monitoring was conducted at receiver locations surrounding MTW on the night of 16/17 June 2016. All measurements complied with the relevant criteria. Results are detailed in **Error! Reference source not found.**5 to **Error! Reference source not found.**8.

5.1.1 WML Noise Assessment

Compliance assessments undertaken against the WML noise criteria are presented in Tables 5 and 6.

Table 5: LAeq, 15 minute Warkworth Impact Assessment Criteria – June 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total $L_{Ceq} - L_{Aeq}$	Revised WML L_{Aeq}[5,6]
Bulga RFS	16/06/2016 22:50	1.8	D	35	Yes	35	Nil	20	40
Bulga Village	16/06/2016 23:15	2.1	D	38	Yes	35	Nil	22	40
Gouldsville	17/06/2016 0:44	1.7	E	37	Yes	<30	Nil	23	<35
Inlet Rd	16/06/2016 21:56	2.1	D	35	Yes	31	Nil	21	36
Inlet Rd West	16/06/2016 21:18	0	F	35	Yes	29	Nil	21	34
Long Point	17/06/2016 0:20	2	E	36	Yes	<30	Nil	21	<35
South Bulga	16/06/2016 22:24	1.4	D	35	Yes	33	Nil	19	38
Wambo Rd	16/06/2016 23:39	2.2	E	38	Yes	34	Nil	22	39

Table 6: LAeq, 15 minute Warkworth - Land Acquisition Criteria – June 2016

Location	Date and Time	Wind Speed (m/s)[5]	Stability Class	Criterion (dB(A))	Criterion Applies?[1,6]	WML L_{Aeq} dB[2,4]	Exceedance[3]	Total $L_{Ceq} - L_{Aeq}$[7]	Revised WML L_{Aeq}[5,6]
Bulga RFS	16/06/2016 22:50	1.8	D	40	Yes	35	Nil	20	40
Bulga Village	16/06/2016 23:15	2.1	D	43	Yes	35	Nil	22	40
Gouldsville	17/06/2016 0:44	1.7	E	43	Yes	<30	Nil	23	<35
Inlet Rd	16/06/2016 21:56	2.1	D	40	Yes	31	Nil	21	36
Inlet Rd West	16/06/2016 21:18	0	F	40	Yes	29	Nil	21	34
Long Point	17/06/2016 0:20	2	E	40	Yes	<30	Nil	21	<35
South Bulga	16/06/2016 22:24	1.4	D	40	Yes	33	Nil	19	38
Wambo Rd	16/06/2016 23:39	2.2	E	40	Yes	34	Nil	22	39

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Warkworth mine (WML);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values.

5.1.2 MTO Noise Assessment

Compliance assessments undertaken against the MTO noise criteria are presented in **Error! Reference source not found.**7 and 8**.**

Table 7: LAeq, 15minute Mount Thorley - Impact Assessment Criteria – June 2016

Location	Date and Time	Wind Speed (m/s)[5]	VTG	Criterion dB	Criterion Applies?[1,6]	MTO L_{Aeq} dB[2,4]	Exceedance[3]	Total L_{Ceq} – L_{Aeq}[7]	Revised MTO L_{Aeq}[5,6]
Bulga RFS	16/06/2016 22:50	1.8	D	37	Yes	35	Nil	20	40
Bulga Village	16/06/2016 23:15	2.1	D	38	Yes	IA	Nil	22	IA
Gouldsville	17/06/2016 0:44	1.7	E	35	Yes	IA	Nil	23	IA
Inlet Rd	16/06/2016 21:56	2.1	D	37	Yes	IA	Nil	21	IA
Inlet Rd West	16/06/2016 21:18	0	F	35	Yes	25	Nil	21	25
Long Point	17/06/2016 0:20	2	E	35	Yes	IA	Nil	21	IA
South Bulga	16/06/2016 22:24	1.4	D	36	Yes	33	Nil	19	38
Wambo Rd	16/06/2016 23:39	2.2	E	38	Yes	IA	Nil	22	IA

Table 8: LA1, 1Minute Mount Thorley - Impact Assessment Criteria – June 2016

Location	Date and Time	Wind Speed (m/s)[5]	VTG[5]	Criterion dB	Criterion Applies?[1,6]	MTO $L_{A1,1min}$ dB[2,4]	Exceedance[3]
Bulga RFS	16/06/2016 22:50	1.8	D	47	Yes	46	Nil
Bulga Village	16/06/2016 23:15	2.1	D	48	Yes	IA	Nil
Gouldsville	17/06/2016 0:44	1.7	E	45	Yes	IA	Nil
Inlet Rd	16/06/2016 21:56	2.1	D	47	Yes	IA	Nil
Inlet Rd West	16/06/2016 21:18	0	F	45	Yes	36	Nil
Long Point	17/06/2016 0:20	2	E	45	Yes	IA	Nil
South Bulga	16/06/2016 22:24	1.4	D	46	Yes	41	Nil
Wambo Rd	16/06/2016 23:39	2.2	E	48	Yes	IA	Nil

Notes
1. Noise emission limits apply during all meteorological conditions except the following: during periods of rain or hail; average wind speed at microphone height exceeds 5 m/s; wind speeds greater than 3 m/s measured at 10 metres above ground level; stability category F temperature inversion conditions and wind speeds greater than 2m/s at 10m above ground level; or stability category G temperature inversion conditions;
2. Estimated or measured LA1,1minute attributed to Mt Thorley Operations (MTO);
3. NA in exceedance column means atmospheric conditions outside conditions specified in project approval and so criterion is not applicable. NA (not applicable) in criterion column means criterion not specified for this location;
4. Bolded results in red are possible exceedances of relevant criteria; and
5. Criterion may or may not apply due to rounding of meteorological data values

5.1.3 INP Low Frequency Assessment

In accordance with the requirements of the Industrial Noise Policy, the low frequency modification factor has been applied where appropriate. It should be noted that the Industrial Noise Policy does not give guidance on the application of the penalty where more than one target source is audible. The L_{Ceq} levels reported above are "Total", or "Total mine noise" at best, and cannot be attributed accurately to a single mine. Accordingly, where the INP criteria for the application of the Low Frequency penalty is triggered, the penalty has been applied to the dominant mine noise source (either of WML or MTO).

Application of the low frequency modification factor during June 2016 results in a 3dB exceedance of the Mt Thorley L_{Aeq} impact assessment criteria at the Bulga RFS and a 2dB exceedance at the South Bulga monitoring location. Application of the low frequency modification factor during June 2016 also results in exceedances of the WML L_{Aeq} impact assessment criteria at Bulga RFS, Bulga Village, Inlet Road, South Bulga and Wambo Road by 5 dB, 2 dB, 1 dB, 3 dB and 1 dB respectively. These results have been reported in writing to the Department of Planning & Environment.

Figure 67: Noise Monitoring Location Plan

5.2 Noise Management Measures

A program of targeted supplementary attended noise monitoring is in place at MTW, supported by the real-time directional monitoring network and ensuring the highest level of noise management is maintained. The supplementary program is undertaken by MTW personnel and involves:

- Routine inspections from both inside and outside the mine boundary;
- Routine and as-required handheld noise assessments (undertaken in response to noise alarm and/or community complaint), comparing measured levels against consent noise limits; and
- Validation monitoring following operational modifications to assess the adequacy of the modifications.

Where a noise assessment identifies noise emissions which are exceeding the relevant noise limit(s) for any particular residence, modifications will be made so as to ensure that the noise event is resolved within 75 minutes of identification. The actions taken are commensurate with the nature and severity of the noise event, but can include:

- Replacement of non-attenuated equipment with sound attenuated equipment;
- Changing the haul route to a less noise sensitive haul;
- Changing dump locations (in-pit or less exposed dump option)
- Reducing equipment numbers;
- Shut down of task; or
- Site shut down.
- A summary of these assessments undertaken during June are provided in Table 9.

Table 9: Supplementary Attended Noise Monitoring Data –June 2016

No. of assessments	No. of assessments > trigger	No. of nights where assessments > trigger	% greater than trigger
440	10	4	2.3

Note: Measurements are taken under all meteorological conditions, including conditions under which the consent noise criteria do not apply.

6.0 OPERATIONAL DOWNTIME

During June, a total of 58.4 hours of equipment downtime was logged in response to environmental events such as dust, noise and elevated wind impacts. Operational downtime by equipment type is shown in Figure 68.

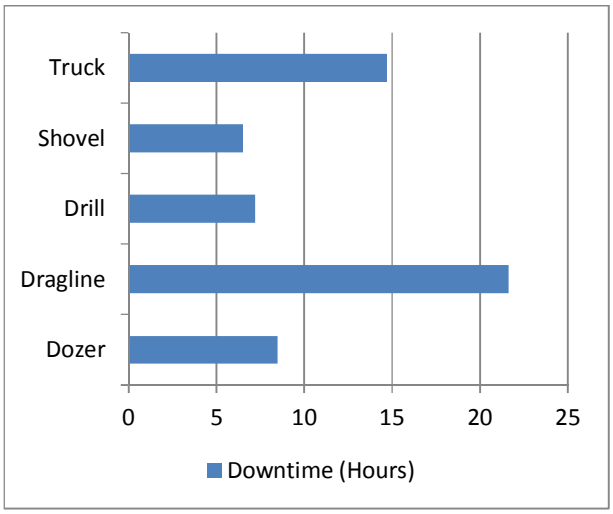

Figure 68: Operational Downtime by Equipment Type – June 2016

1.0 REHABILITATION

During June, 30.01 Ha of land was released, 18.8Ha was bulk shaped, 8.1Ha was topsoiled, 8.1Ha was composted and 8.1Ha was rehabilitated. Year-to-date progress can be viewed in Figure 69.

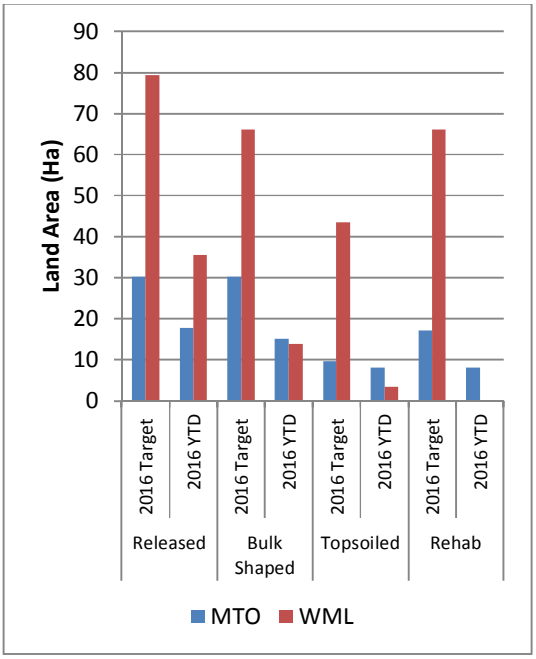

Figure 69: Rehabilitation YTD - June 2016

8.0 ENVIRONMENTAL INCIDENTS

During the reporting period there were no reportable environmental incidents.

9.0 COMPLAINTS

During the reporting period 30 complaints were received, details of these complaints are displayed in Figure 70 below.

	Noise	Dust	Blast	Lighting	Other	Total
January	29	1	5	2	2	39
February	24	2	6	1	0	33
March	44	1	2	1	0	48
April	67	7	4	0	5	83
May	17	5	7	2	0	31
June	18	1	4	5	2	30
July	-	-	-	-	-	-
August	-	-	-	-	-	-
September	-	-	-	-	-	-
October	-	-	-	-	-	-
November	-	-	-	-	-	-
December	-	-	-	-	-	-
Total	199	17	28	11	9	264

Figure 70: Complaints Summary - YTD June 2016

Appendix A: Meteorological Data

Table 10: Meteorological Data – Charlton Ridge Meteorological Station – June 2016

Date	Air Temperature Maximum (°C)	Air Temperature Minimum (°C)	Relative Humidity Maximum (%)	Relative Humidity Minimum (%)	Solar Radiation Maximum (W/Sq. M)	Wind Direction Average (°)	Wind Speed Average (m/sec)	Rainfall(mm)
1/06/2016	19.32	7.829	94	42.52	732.5	165.8	2.153	0
2/06/2016	18.95	9.08	88.6	51.83	640.9	159.6	2.061	0
3/06/2016	18.82	9.79	88.9	58.85	441.3	157.5	2.742	0
4/06/2016	17.69	12.35	97.3	68.72	167.5	141.2	3.073	27.4
5/06/2016	14.38	11.67	98.7	77.49	153.3	294.6	3.674	31.6
6/06/2016	17.45	9.25	80.5	43.04	775.6	300.7	5.876	0
7/06/2016	17.55	9.08	81.5	49.1	773.2	304.1	5.399	0
8/06/2016	19.73	9.76	82.5	42.21	539.2	297.6	4.89	0
9/06/2016	17.03	11.36	93.7	50.23	792.6	294.1	4.443	1.2
10/06/2016	19.53	9.63	81.1	48.98	752.2	303.7	4.794	0
11/06/2016	17.87	7.837	78.02	43.14	672.6	285.8	3.857	0
12/06/2016	17.13	6.171	77.24	40.07	679.6	167.7	2.429	0
13/06/2016	18.9	6.919	90	47.79	570.7	161.2	1.514	0
14/06/2016	20.5	5.661	97.1	38.59	509.3	224.9	1.924	0
15/06/2016	19.91	5.068	93.4	45.04	484.3	189.6	1.449	0.2
16/06/2016	19.89	5.059	98.2	46.29	481.1	227.2	1.635	0.2
17/06/2016	19.54	5.157	94.7	55.72	592.2	238.7	1.701	0
18/06/2016	20.87	10.79	97.2	62.68	648.6	209.3	1.271	1.2
19/06/2016	15.5	11.2	98.3	89.6	80.9	146.6	2.259	30.4
20/06/2016	16.18	10.02	98.4	66.99	718.5	285.9	6.312	0.6
21/06/2016	14.59	10.37	87.4	54.01	777.1	309.7	8.27	0
22/06/2016	18.32	9.49	86.4	40.22	744	300.8	5.548	0
23/06/2016								
24/06/2016	16.15	5.797	88.3	34.82	715.5	286.4	4.672	2.2
25/06/2016	14.14	3.079	76.69	28.86	567.3	276	2.554	0
26/06/2016	12.76	-0.579	90.3	41.45	648.6	263.9	1.781	0
27/06/2016	12.75	4.456	94.7	57.64	824	291.8	3.295	1.2
28/06/2016	17.02	3.519	77.81	34.72	544.2	276.8	2.822	0
29/06/2016	16.24	3.011	90.6	38.5	540	230.6	1.834	0
30/06/2016	10.04	8.17	63.69	59.73	18.19	300.5	4.073	0

COAL & ALLIED

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Appendix D

Acquisition Update - Mount Thorley Warkworth Property Portfolio

Rio Tinto

Mount Thorley Warkworth property portfolio update

March 2016

Approach

Property purchases are based on the following:

- Regulatory criteria (those properties identified as being within a zone of acquisition due to predicted impacts under current operating consent. The majority of properties owned by Coal & Allied fall into this category);

How are properties managed?

- Properties within the mining lease may or may not be tenanted depending on their distance from the operation.
- Some of the properties were purchased as part of consent conditions requiring offer of acquisition to owners. Many have been owned for some time over the 30 year life of the operation (e.g. along Putty Road).
- Properties that are tenanted are offered for lease on the open market at market rates, and are managed through local real estate agents.
- Properties must be managed in accordance with Coal & Allied's standards of property management.

Current property portfolio

1909 Putty Road, Bulga
1870 Putty Road, Bulga
1758 Putty Road, Bulga
1804 Putty Road, Bulga
1855 Putty Road, Bulga
1893 Putty Road, Bulga
1906 Putty Road, Bulga
1951 Putty Road, Bulga
2119 Putty Road, Bulga
2042 Putty Road, Bulga
1946 Putty Road, Bulga
1946 Putty Road, Bulga
608 Hambledon Hill Road, Singleton
271 Wallaby Scrub Road, Bulga
277 Wallaby Scrub Road, Bulga
896 Putty Rd, Mt Thorley
288 Jerrys Plains Road, Singleton
11 Inlet Road , Bulga
36 Inlet Road, Bulga
1 Wambo Rd, Bulga
89 Wambo Rd , Bulga
910 Putty Rd, Mt Thorley
129 Wambo Rd, Bulga
181 Wambo Rd, Bulga
313 Wambo Road, Bulga
317 Wambo Rd, Bulga
248 Wambo Road, Bulga
367 Wambo Rd, Bulga