



Blast Management Plan

Mount Thorley Warkworth

DOCUMENT CONTROL

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1 PREFACE

1.1 Introduction

Mt Thorley Warkworth (MTW) is an integrated operation of two open cut mines, Warkworth Mining Limited (WML) and Mount Thorley Operations (MTO) which are located adjacent to each other and 15 km south west of Singleton in the Hunter Valley region of New South Wales. The operation supplies international and domestic markets with semi-soft coking coal and thermal coal.

MTW is an open cut mine, using dragline and truck and shovel method. Employees work in shifts to keep the mine operational 24 hours a day, seven days a week.

Operations are centred in the Whittingham Coal Measures of the Hunter Coalfield which is part of a Permian coal basin known as the Sydney basin.

In 2017 MTW produced 11.8 million tonnes of saleable coal.

After being washed and prepared for sale, the coal is loaded onto trains for transportation to Newcastle where it is shipped to international customers via the Port Waratah Coal Terminal.

Development Consent for the Warkworth Continuation Project (SSD-6464) and Mount Thorley Operations 2014 Project (SSD-6465) was granted on 26th November 2015.

The Projects are described in detail in the Environmental Impact Statements and supporting documents (prepared by EMGA Mitchell McLennan, June 2014).

1.2 Scope of the Blast Management Plan

This BMP has been prepared in accordance with the requirements of Schedule 5, Condition 3 of the Approvals, which describes the requirements for all management plans. In addition, the plan meets the

requirements of Schedule 3, Condition 16 (WML) and Schedule 3, Condition 14 (MTO), which sets out the requirements for the BMP. This BMP was submitted to the Secretary of the NSW Department of Planning & Environment (DP&E) for approval on 19 September 2018.

Table 1 below highlights the Approval conditions required to be covered by this AQMP and the sections within this document in which they are addressed.

MTW maintains three (3) Environment Protection Licences (EPL's) issued under the Protection of the Environment Operations Act by the NSW Environment Protection Agency. EPL's 1376 (WML) and 1976 (MTO) contain operating conditions relating to blasting activity. These conditions are also addressed in this BMP (Table 2).

Table 1 - Development Consent conditions addressed by the BMP

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement											
Warkworth Mining Limited (SSD-6464)													
Sch. 2 Cond. 14	<p>Updating & Staging Strategies, Plans or Programs With the approval of the Secretary, the Applicant may:</p> <ul style="list-style-type: none"> (a) Submit any strategy, plan or program required by this consent on a progressive basis; and (b) Combine any strategy, plan or program required by this consent with any similar strategy, plan or program required for the Mt Thorley mine. <p>To ensure these strategies, plans or programs are updates on a regular basis; the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval. With the agreement of the Secretary, the Applicant may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable condition of this consent.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • <i>While any strategy, plan or program may be submitted on a progressive basis, the Applicant will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.</i> • <i>If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies; the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.</i> 	NA											
Sch. 3 Cond. 8	<p>Blasting Criteria The Applicant shall ensure that the blasting on the site does not cause exceedances of the criteria in Table 4.-</p> <p><i>Table 4: Blasting criteria</i></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 35%;">Location</th> <th style="width: 15%;">Airblast overpressure (dB(Lin Peak))</th> <th style="width: 15%;">Ground vibration (mm/s)</th> <th style="width: 35%;">Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Residence on privately owned land</td> <td>120</td> <td>10</td> <td>0%</td> </tr> <tr> <td>115</td> <td>5</td> <td>5% of the total number of blasts over a period of 12 months</td> </tr> </tbody> </table> <p>However, these criteria do not apply if the Applicant has a written agreement with the relevant owner, and has advised the Department in writing of the terms of this agreement.</p>	Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance	Residence on privately owned land	120	10	0%	115	5	5% of the total number of blasts over a period of 12 months	Appendix E
Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance										
Residence on privately owned land	120	10	0%										
	115	5	5% of the total number of blasts over a period of 12 months										
Sch. 3 Cond. 9	<p>Blasting Hours The Applicant shall only carry out blasting on site between 7am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.</p>	Section 5.2.1											
Sch. 3 Cond. 10	<p>Blasting Frequency The Applicant may carry out a maximum of:</p> <ul style="list-style-type: none"> a) 3 blasts a day; and b) 12 blasts a week, averaged over a calendar year, <p>At the site. This condition does not apply to blasts that generate ground vibration of 0.5mm/s or less at any residence on privately-owned land, blast misfires or blasts required to ensure the safety of the mine, its workers or the general public.</p> <p><i>Notes:</i></p>	Section 5.2.2											

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<ul style="list-style-type: none"> • <i>For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.</i> • <i>For the avoidance of doubt, should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast.</i> • <i>In circumstances of recurring unfavourable weather condition (following planned but not completed blast events), to avoid excess explosive sleep times and minimise any potential environmental impacts, the Applicant may seek agreement from the Secretary for additional blasts to be fired on a given day.</i> 	
Sch. 3 Cond. 11	The Applicant shall not carry out more than 1 blast a day within 500 metres of the Putty Road and/or Golden Highway.	Section 5.2.3
Sch. 3 Cond. 12	<p>Property Inspections</p> <p>If the Applicant receives a written request from the owner of any privately-owned land within 2 kilometres of the approved open cut mining pit/s on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant shall:</p> <ol style="list-style-type: none"> a) Commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to: <ul style="list-style-type: none"> • Establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and • Identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and b) Give the landowner a copy of the new or updated property inspection report. <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.</p>	Section 6.1
Sch. 3 Cond. 13	<p>Property Investigations</p> <p>If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Applicant shall:</p> <ol style="list-style-type: none"> a) Commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and b) Give the landowner a copy of the property inspection report. <p>If this independent property investigation confirms the landowner’s claim, and both parties agree with these findings, then the Applicant shall repair the damage to the satisfaction of the Secretary.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.</p>	Section 6.2
Sch. 3 Cond. 14	<p>Operating Conditions</p> <p>During mining operations on site, the Applicant shall:</p> <ol style="list-style-type: none"> a) Implement all reasonable and feasible measures to: <ul style="list-style-type: none"> • Protect the safety of people and livestock in the surrounding area; • Protect public or private infrastructure / property in the surrounding area from any damage; and • Minimise the dust and fume emissions of any blasting; b) Ensure that blasting on the site does not damage the Wambo Homestead, Bulga Bridge, St Phillips Church or the following Aboriginal grinding groove sites: <ul style="list-style-type: none"> • MTW-266~WSW-02-22; • MTW-267~WSW-09-22; 	Sections 3.2, 5.2.2, 5.2.3, and 5.2.4

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<ul style="list-style-type: none"> • MTW-268~WSW-209-23; and • Aboriginal grinding groove site Mt Thorley M 37-6-0163 (prior to its relocation); <p>c) Minimise the frequency and duration of any road closures; and</p> <p>d) Operate a suitable system (including a hotline and website updates) to enable the public to get up-to-date information on the proposed blasting schedule on site,</p> <p><i>Note: To identify the Aboriginal grinding grooves and historic heritage sites referred to in this condition, see the applicable figures in Appendix 5.</i></p>	
Sch. 3 Cond. 15	<p>The Applicant shall not undertake blasting on site within 500m of:</p> <p>a) Any public road; or</p> <p>b) Any land outside the site that is not owned by the Applicant, unless:</p> <ul style="list-style-type: none"> • The Applicant has a written agreement with the applicable infrastructure authority or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Applicant has advised the Department in writing of the terms of this agreement, or • The Applicant has: <ul style="list-style-type: none"> ○ Demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of the people or livestock, or damaging the buildings and/or structures; and ○ Updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the road or land. 	Section 5.2.3
Sch. 3 Cond. 16	<p>Blast Management Plan</p> <p>The Applicant shall prepare a Blast Management Plan for the development to the satisfaction of the Secretary. This plan must:</p> <p>a) Be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to carrying out any development under this consent;</p> <p>b) Describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent;</p> <p>c) Include a road closure management plan for blasting within 500 metres of a public road, that has been prepared in consultation with RMS and Council;</p> <p>d) Include a monitoring program for evaluating the performance of the development, including</p> <ul style="list-style-type: none"> • Compliance with the applicable criteria; • Avoiding any blasting impacts on the heritage items specified in condition 14 above; and • Minimising the fume emissions from the site. 	<p>This BMP</p> <p>Section 3.1.1</p> <p>Section 5</p> <p>Appendix D</p> <p>Appendix E</p>
Sch. 4 Cond. 3	<p>Notification of Landowners / Tenants</p> <p>As soon as practicable after obtaining monitoring results showing:</p> <p>a) An exceedance of any relevant criteria in Schedule 3, the Applicant shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria.</p>	Section 7.1.2.1
Sch. 4 Cond. 4	Independent Review	Section 6.3

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<p>If an owner of privately-owned land considers the development to be exceeding the criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, then the Applicant shall:</p> <ol style="list-style-type: none"> a) Commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to: <ul style="list-style-type: none"> • Consult with the landowner to determine his / her concerns; • Conduct monitoring to determine whether the development is complying with the relevant impact assessment criteria in schedule 3; and • If the development is not complying with these criteria then: <ul style="list-style-type: none"> ○ Determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land; ○ Identify the measures that could be implemented to ensure compliance with the relevant criteria; and b) Give the Secretary and landowner a copy of the independent review within 2 months of the Secretary's decision, unless the Secretary agrees otherwise. 	
Sch. 5 Cond. 2	<p>Adaptive Management</p> <p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <ol style="list-style-type: none"> a) Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; b) Consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measure or other course of action; and c) Implement remediation measures as directed by the Secretary. 	Section 5.4
Sch. 5 Cond. 3	<p>Management Plan Requirements</p> <p>The Applicant shall ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:</p> <ol style="list-style-type: none"> a) Detailed baseline data; b) A description of <ul style="list-style-type: none"> • The relevant statutory requirements (including any relevant consent, licence or lease conditions); • Any relevant limits or performance measures / criteria; • The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development of any management measures; c) A description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures / criteria; d) A program to monitor and report on the: <ul style="list-style-type: none"> • Impacts and environmental performance of the development; • Effectiveness of any management measures (see c above) e) A contingency plan to manage any unpredicted impacts and their consequences; f) A program to investigate and implement ways to improve the environmental performance of the development over time; 	<p>Appendix F</p> <p>Section 5</p> <p>Appendix E</p> <p>Section 5.4</p> <p>Section 7.2</p> <p>Section 7.3</p>

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<p>g) A protocol for managing and reporting any:</p> <ul style="list-style-type: none"> • Incidents; • Complaints; • Non-compliances with statutory requirements; and • Exceedances of the impact assessment criteria and/or performance criteria; and <p>A protocol for periodic review of the plan. <i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>	
Sch. 5 Cond. 4	<p>Annual Review By the end of March each year, the Applicant shall review the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:</p> <ul style="list-style-type: none"> a) Describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year; b) Include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the <ul style="list-style-type: none"> • The relevant statutory requirements, limits or performance measurements / criteria; • The monitoring results of previous years; and • The relevant predictions in the EIS; c) Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance; d) Identify any trends in the monitoring data over the life of the development; e) Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and f) Describe what measures will be implemented over the next year to improve the environmental performance of the development. 	Section 7.1.2.2
Sch. 5 Cond. 5	<p>Review of Strategies, Plans and Programs</p> <ul style="list-style-type: none"> (a) Within 3 months of the submission of an: <ul style="list-style-type: none"> a) Annual review under condition 4 above; b) Incident report under condition 7 below; c) Audit under condition 9 below; or (b) Any modification to the conditions of this consent (unless the conditions require otherwise), or (c) The introduction of any NSW government policy regarding voids, <p>the Applicant shall review, and if necessary revise, the strategies, plans and programs required under this consent to the satisfaction of the Secretary.</p> <p>Where this review leads to revisions in any such document, then within 4 weeks of the review, unless the Secretary agrees otherwise, the revised document must be submitted to the Secretary for approval.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.</i></p>	Section 7.3
Sch. 5 Cond. 7	<p>Incident Reporting</p>	Section 5.4

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	The Applicant shall notify the Secretary and any other relevant agencies immediately of any incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.	
Sch. 5 Cond. 8	<p>Regular Reporting</p> <p>The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.</p>	Section 7.1.2.2
Sch. 5, Cond. 11	<p>Access to Information</p> <p>From the commencement of development under this consent, The Applicant shall:</p> <p>a) Make copies of the following publicly available on its website:</p> <ul style="list-style-type: none"> • The EIS; • Current statutory approvals for the development; • Approved strategies, plans or programs required under the conditions of this consent; • A comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; • The results of real time noise monitoring, updated daily (unless otherwise agreed by the Secretary); • A complaints register, which is to be updated monthly; • Minutes of CCC meetings; • The annual reviews of the development (for the last 5 years, if applicable); • Any independent environmental audit of the development, and the Applicant’s response to the recommendations in any audit; • Any other matter required by the Secretary; and <p>b) Keep this information up to date.</p>	Section 7.1.2.2
Mount Thorley Operations Development Consent (SSD-6465)		
Sch. 2 Cond. 14	<p>Updating & Staging Strategies, Plans or Programs</p> <p>With the approval of the Secretary, the Applicant may:</p> <p>(a) Submit any strategy, plan or program required by this consent on a progressive basis; and</p> <p>(b) Combine any strategy, plan or program required by this consent with any similar strategy, plan or program required for the Warkworth mine.</p> <p>To ensure these strategies, plans or programs are updates on a regular basis; the Applicant may at any time submit revised strategies, plans or programs to the Secretary for approval.</p> <p>With the agreement of the Secretary, the Applicant may prepare any revised strategy, plan or program without undertaking consultation with all parties under the applicable condition of this consent.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • <i>While any strategy, plan or program may be submitted on a progressive basis, the Applicant will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.</i> • <i>If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies; the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.</i> 	NA
Sch. 3 Cond. 6	Blasting Criteria	Appendix E

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
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The Applicant shall ensure that the blasting on the site does not cause exceedances of the criteria in Table 4.

Table 4: Blasting criteria

Location	Airblast overpressure (dB(Lin Peak))	Ground vibration (mm/s)	Allowable exceedance
Residence on privately owned land	120	10	0%
	115	5	5% of the total number of blasts over a period of 12 months

However, these criteria do not apply if the Applicant has a written agreement with the relevant owner, and has advised the Department in writing of the terms of this agreement.

Sch. 3, Cond.7	<p>Blasting Hours</p> <p>The Applicant shall only carry out blasting at the development between 7 am and 5pm Monday to Saturday inclusive. No blasting is allowed on Sundays, public holidays, or at any other time without the written approval of the Secretary.</p>	Section 5.2.1
Sch. 3 Cond. 8	<p>Blasting Frequency</p> <p>The Applicant may carry out a maximum of:</p> <ul style="list-style-type: none"> a) 2 blasts a day; and b) 6 blasts a week, averaged over a calendar year, <p>at the site.</p> <p>This condition does not apply to blasts that generate ground vibration of 0.5mm/s or less at any residence on privately-owned land, blast misfires or blasts required to ensure the safety of the mine, its workers or the general public.</p> <p><i>Notes:</i></p> <ul style="list-style-type: none"> • <i>For the purposes of this condition, a blast refers to a single blast event, which may involve a number of individual blasts fired in quick succession in a discrete area of the mine.</i> • <i>For the avoidance of doubt, should an additional blast be required after a blast misfire, this additional blast and the blast misfire are counted as a single blast.</i> • <i>In circumstances of recurring unfavourable weather condition (following planned but not completed blast events), to avoid excess explosive sleep times and minimise any potential environmental impacts, the Applicant may seek agreement from the Secretary for additional blasts to be fired on a given day.</i> 	Section 5.2.2
Sch. 3 Cond. 9	The Applicant shall not carry out more than 1 blast a day within 500 metres of the Putty Road.	Section 5.2.3
Sch. 3 Cond. 10	<p>Property Inspections</p> <p>If the Applicant receives a written request from the owner of any privately-owned land within 2 kilometres of the approved open cut mining pit/s on site for a property inspection to establish the baseline condition of any buildings and/or structures on his/her land, or to have a previous property inspection updated, then within 2 months of receiving this request the Applicant shall:</p> <ul style="list-style-type: none"> a) Commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to: <ul style="list-style-type: none"> • Establish the baseline condition of any buildings and other structures on the land, or update the previous property inspection report; and • Identify measures that should be implemented to minimise the potential blasting impacts of the development on these buildings and/or structures; and b) Give the landowner a copy of the new or updated property inspection report. <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the property inspection report, either party may refer the matter to the Secretary for resolution.</p>	Section 6.1
Sch. 3 Cond. 11	Property Investigations	Section 6.2

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<p>If the owner of any privately-owned land claims that buildings and/or structures on his/her land have been damaged as a result of blasting on the site, then within 2 months of receiving this claim the Applicant shall:</p> <ol style="list-style-type: none"> a) Commission a suitably qualified, experienced and independent person, whose appointment is acceptable to both parties to investigate the claim; and b) Give the landowner a copy of the property inspection report. <p>If this independent property investigation confirms the landowner's claim, and both parties agree with these findings, then the Applicant shall repair the damage to the satisfaction of the Secretary.</p> <p>If there is a dispute over the selection of the suitably qualified, experienced and independent person, or the Applicant or the landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Secretary for resolution.</p>	
Sch. 3 Cond. 12	<p>Operating Conditions</p> <p>During mining operations on site, the Applicant shall:</p> <ol style="list-style-type: none"> a) Implement all reasonable and feasible measures to: <ul style="list-style-type: none"> • Protect the safety of people and livestock in the surrounding area; • Protect public or private infrastructure / property in the surrounding area from any damage; and • Minimise the dust and fume emissions of any blasting; b) Ensure that blasting on the site does not damage any historic heritage sites; c) Minimise the frequency and duration of any road closures, and avoid road closures during peak traffic periods; and d) Operate a suitable system (including a hotline and website updates) to enable the public to get up-to-date information on the proposed blasting schedule on site, <p><i>Note: To identify the historic heritage sites referred to in this condition, see the applicable figures in Appendix 4.</i></p>	Sections 3.2, 5.2.3 5.2.2 and 5.2.3
Sch. 3 Cond. 13	<p>The Applicant shall not undertake blasting on site within 500m of:</p> <ol style="list-style-type: none"> a) Any public road; or b) Any land outside the site that is not owned by the Applicant, unless: <ul style="list-style-type: none"> • The Applicant has a written agreement with the applicable infrastructure authority or landowner to allow blasting to be carried out closer to the infrastructure or land, and the Applicant has advised the Department in writing of the terms of this agreement, or • The Applicant has: <ul style="list-style-type: none"> ○ Demonstrated to the satisfaction of the Secretary that the blasting can be carried out closer to the infrastructure or land without compromising the safety of the people or livestock, or damaging the buildings and/or structures; and ○ Updated the Blast Management Plan to include the specific measures that would be implemented while blasting is being carried out within 500 metres of the road or land. 	Section 5.2 Appendix D
Sch. 3 Cond. 14	<p>Blast Management Plan</p> <p>The Applicant shall prepare a Blast Management Plan for the development to the satisfaction of the Secretary, and carry out the development in accordance with this plan This plan must:</p> <ol style="list-style-type: none"> a) Be prepared in consultation with the EPA, and submitted to the Secretary for approval prior to carrying out any development under this consent; 	This BMP Section 3.1.1 Section 5

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<p>b) Describe the measures that would be implemented to ensure compliance with the blasting criteria and operating conditions of this consent;</p> <p>c) Include a road closure management plan for blasting within 500 metres of a public road, that has been prepared in consultation with RMS and Council;</p> <p>d) Include a monitoring program for evaluating the performance of the development, including</p> <ul style="list-style-type: none"> • Compliance with the applicable criteria; • Avoiding any blasting impacts on the heritage items specified in condition 12 above; and • Minimising the fume emissions from the site. 	Appendix D Appendix E
Sch. 4 Cond. 3	<p>As soon as practicable after obtaining monitoring results showing:</p> <p>a) An exceedance of any relevant criteria in Schedule 3, the Applicant shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria.</p>	Section 7.1.2.1
Sch. 4 Cond. 4	<p>Independent Review</p> <p>If an owner of privately-owned land considers the development to be exceeding the criteria in schedule 3 at his/her land, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land.</p> <p>If the Secretary is satisfied that an independent review is warranted, then the Applicant shall:</p> <p>a) Commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Secretary, to:</p> <ul style="list-style-type: none"> • Consult with the landowner to determine his / her concerns; • Conduct monitoring to determine whether the development is complying with the relevant impact assessment criteria in schedule 3; and • If the development is not complying with these criteria then: <ul style="list-style-type: none"> ○ Determine if more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land; ○ Identify the measures that could be implemented to ensure compliance with the relevant criteria; and <p>b) Give the Secretary and landowner a copy of the independent review within 2 months of the Secretary's decision, unless the Secretary agrees otherwise.</p>	Section 6.3
Sch. 5 Cond. 2	<p>Adaptive Management</p> <p>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedule 3. Any exceedance of these criteria and/or performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Applicant must, at the earliest opportunity:</p> <p>a) Take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;</p> <p>b) Consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measured or other course of action; and</p> <p>c) Implement remediation measures as directed by the Secretary.</p>	Section 5.4
Sch. 5 Cond. 3	<p>Management Plan Requirements</p> <p>The Applicant shall ensure that the management plans required under this consent are prepared in accordance with any relevant guidelines, and include:</p> <p>a) Detailed baseline data;</p>	Appendix F Section 2

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<p>b) A description of</p> <ul style="list-style-type: none"> • The relevant statutory requirements (including any relevant consent, licence or lease conditions); • Any relevant limits or performance measures / criteria; • The specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development of any management measures; <p>c) A description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures / criteria;</p> <p>d) A program to monitor and report on the:</p> <ul style="list-style-type: none"> • Impacts and environmental performance of the development; • Effectiveness of any management measures (see c above) <p>e) A contingency plan to manage any unpredicted impacts and their consequences;</p> <p>f) A program to investigate and implement ways to improve the environmental performance of the development over time;</p> <p>g) A protocol for managing and reporting any:</p> <ul style="list-style-type: none"> • Incidents; • Complaints; • Non-compliances with statutory requirements; and • Exceedances of the impact assessment criteria and/or performance criteria; and <p>h) A protocol for periodic review of the plan.</p> <p><i>Note: The Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans.</i></p>	<p>Section 5</p> <p>Appendix E</p> <p>Section 5.4</p> <p>Section 7.2</p> <p>Section 7.3</p>
Sch. 5 Cond. 4	<p>Annual Review</p> <p>By the end of March each year, the Applicant shall review the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:</p> <p>a) Describe the development (including any rehabilitation) that was carried out in the past calendar year, and the development that is proposed to be carried out over the current calendar year;</p> <p>b) Include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the</p> <ul style="list-style-type: none"> • The relevant statutory requirements, limits or performance measurements / criteria; • The monitoring results of previous years; and • The relevant predictions in the EIS; <p>c) Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>d) Identify any trends in the monitoring data over the life of the development;</p> <p>e) Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and</p> <p>f) Describe what measures will be implemented over the next year to improve the environmental performance of the development.</p>	<p>Section 7.1.2.2</p>
Sch. 5 Cond. 5	<p>Review of Strategies, Plans and Programs</p>	<p>Section 7.3</p>

Consent Condition	Environmental Performance Conditions	Section of BMP which addresses this requirement
	<p>Within 3 months of the submission of an:</p> <ul style="list-style-type: none"> a) Annual review under condition 4 above; b) Incident report under condition 7 below; c) Audit under condition 9 below; and d) Any modification to the conditions of this consent (unless the conditions require otherwise), <p>The Applicant shall review, and if necessary revise, the strategies, plans and programs required under this consent to the satisfaction of the Secretary.</p> <p>Where this review leads to revisions in any such document, then within 4 weeks of the review, unless the Secretary agrees otherwise, the revised document must be submitted to the Secretary for approval.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.</i></p>	
Sch. 5 Cond. 7	<p>Incident Reporting</p> <p>The Applicant shall notify the Secretary and any other relevant agencies of any incident. Within 7 days of the date of the incident, the Applicant shall provide the Secretary and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.</p>	Section 5.4
Sch. 5 Cond. 8	<p>Regular Reporting</p> <p>The Applicant shall provide regular reporting on the environmental performance of the development on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this consent.</p>	Section 7.1.2.2
Sch. 5, Cond. 11	<p>Access to Information</p> <p>From the commencement of development under this consent, The Applicant shall:</p> <ul style="list-style-type: none"> a) Make copies of the following publicly available on its website: <ul style="list-style-type: none"> • The EIS; • Current statutory approvals for the development; • Approved strategies, plans or programs required under the conditions of this consent; • A comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this consent, or any approved plans and programs; • A complaints register, which is to be updated monthly; • Minutes of CCC meetings; • The annual reviews of the development (for the last 5 years, if applicable); • Any independent environmental audit of the development, and the Applicant’s response to the recommendations in any audit; • Any other matter required by the Secretary; and <p>Keep this information up to date.</p>	Section 7.1.2.2

Table 2 - Environment Protection Licence Conditions addressed in this BMP

EPL reference	Environmental Performance Condition	Where Condition is addressed																		
Warkworth Mining Limited (EPL 1376)																				
P1.4	The following points referred to in the table below are identified in this licence for the purpose of monitoring and/or setting of limits for the emission of noise from the point. Noise	Appendix E																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #e0e0e0;">EPA identification no.</th> <th style="background-color: #e0e0e0;">Type of monitoring point</th> <th style="background-color: #e0e0e0;">Location description</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">4</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Monitoring location identified as "Warkworth" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"</td> </tr> <tr> <td style="text-align: center;">5</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Monitoring location identified as "Wambo Road" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"</td> </tr> <tr> <td style="text-align: center;">6</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Monitoring location identified as "Bulga Village" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"</td> </tr> <tr> <td style="text-align: center;">7</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Monitoring location identified as "Wollemi Peak Road" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"</td> </tr> <tr> <td style="text-align: center;">8</td> <td>Air blast overpressure & ground vibration peak particle velocity monitoring</td> <td>Monitoring location identified as "Putty Road - MTIE" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2105"</td> </tr> </tbody> </table>	EPA identification no.	Type of monitoring point	Location description	4	Air blast overpressure & ground vibration peak particle velocity monitoring	Monitoring location identified as "Warkworth" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"	5	Air blast overpressure & ground vibration peak particle velocity monitoring	Monitoring location identified as "Wambo Road" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"	6	Air blast overpressure & ground vibration peak particle velocity monitoring	Monitoring location identified as "Bulga Village" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"	7	Air blast overpressure & ground vibration peak particle velocity monitoring	Monitoring location identified as "Wollemi Peak Road" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2015"	8	Air blast overpressure & ground vibration peak particle velocity monitoring	Monitoring location identified as "Putty Road - MTIE" in the document titled: "Coal & Allied, Mount Thorley Warkworth, Blast Monitoring Locations, 22-05-2105"	
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L5.1	The airblast overpressure level from blasting operations in or on the premises must not exceed: 115dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 4, 5, 6, 7 or 8 in Condition P1.4.	Appendix E																		
L5.2	The airblast overpressure level from blasting operations in or on the premises must not exceed: 120dB (Lin Peak) at any time; at either monitoring point 4, 5, 6, 7 or 8 in Condition P1.4.	Appendix E																		
L5.3	The ground vibration peak particle velocity from blasting operations carried out in or on the premises must not exceed: 5mm/s for more than 5% of the total number of blasts during each reporting period; at either monitoring point 4, 5, 6, 7 or 8 in Condition P1.4.	Appendix E																		
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L5.5	Blasting in or on the premises must only be carried out between 0700 hours and 1800 hours, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.	Section 5.2.1																		
L5.6	Offensive blast fume must not be emitted from the premises. <i>Definition:</i> <i>Offensive blast fume means post-blast gases from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or at the time at which they are emitted, or any other circumstances:</i> <ol style="list-style-type: none"> 1. <i>Are harmful to (or likely to be harmful to) a person that is outside the premises from which it is emitted, or</i> 2. <i>Interferes unreasonably with (or is unlikely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.</i> 	Appendix C																		

EPL reference	Environmental Performance Condition	Where Condition is addressed												
M1.1	The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	Appendix E												
M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Appendix E												
M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.	Appendix E												
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.	Section 7.2												
M4.2	The record must include details of the following: a) The date and time of the complaint; b) The method by which the complaint was made; c) Any personal details of the complainant which were provided by the complainant, or if no such details were provided, a note to that effect; d) The nature of the complaint; e) The action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) If no action was taken by the licensee, the reasons why no action was taken.	Section 7.2												
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M7.1	To determine compliance with condition(s) L5.1, L5.2, L5.3 and L5.4: a) Airblast overpressure and ground vibration levels must be measured and electronically recorded for monitoring points 4, 5, 6, 7 and 8 for the parameters specified in Column 1 of the table below; and b) The licensee must use the units of measure, sampling method, and sample at the frequency specified opposite in the other columns.	Appendix E												
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R4.2	Reporting of exceedance of blasting limits The licensee must report any exceedance of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedance becomes known to the licensee or to one of the licensee's employees or agents.	Section 7.1.2												
Mount Thorley Operations(EPL 1976)														
P1.4	The following points referred to in the table below are identified in this licence for the purposes of weather and/or noise monitoring and/or setting of limits for the emission of noise from the premises.	Appendix E												

EPL reference	Environmental Performance Condition	Where Condition is addressed
Noise/Weather		
EPA identification no.	Type of monitoring point	Location description
5	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast monitor "Warkworth" at co-ordinates 314311 6394906 (Easting Northing) shown as point 5 on plan titled "Coal & Allied Mt Thorley Operation EPL 1976" dated 25/7/2017 EPA REF DOC17/390769
6	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast monitor "Wambo Road" at co-ordinates 313263 6388714 (Easting Northing) shown as point 6 on plan titled "Coal & Allied Mt Thorley Operation EPL 1976" dated 25/7/2017 EPA REF DOC17/390769
7	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast Monitor "Bulga Village" at co-ordinates 314252 6385592 (Easting Northing) shown as point 7 on plan titled "Coal & Allied Mt Thorley Operation EPL 1976" dated 25/7/2017 EPA REF DOC17/390769
8	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast monitor "Wollemi Peak Road" at co-ordinates 315133 6384578 (Easting Northing) shown as point 8 on plan titled "Coal & Allied Mt Thorley Operation EPL 1976" dated 25/7/2017 EPA REF DOC17/390769
9	Air blast overpressure & ground vibration peak particle velocity monitoring	Blast monitor "Putty Road - MTIE" at co-ordinates 322584 6389730 (Easting Northing) shown as point 9 on plan titled "Coal & Allied Mt Thorley Operation EPL 1976" dated 25/7/2017 EPA REF DOC17/390769
14	Meteorological Station	Meteorological station at co-ordinates 318484 6387405 (Easting Northing) shown as point M4.1 on plan titled "Coal & Allied Mt Thorley Operation EPL 1976" dated 25/7/2017 EPA REF DOC17/390769
L4.1	Blasting in or on the premises must only be carried out between 0700 hours and 1800 hours, Monday to Saturday. Blasting in or on the premises must not take place on Sundays or Public Holidays without the prior approval of the EPA.	Section 5.2.1
L4.2	The airblast overpressure level from blasting operations in or on the premises must not exceed: 115dB (Lin Peak) for more than 5% of the total number of blasts during each reporting period; at either monitoring point 5, 6, 7, 8 or 9 in Condition P1.4	Appendix E
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1.3 Objectives

The purpose of this BMP is to provide reasonable and feasible measures to address potential blasting impacts of the Project as identified in the Approvals and satisfy the relevant conditions of the Approvals.

This BMP describes procedures required to ensure compliance with the Approval conditions relating to blasting impacts. This BMP also provides a mechanism for assessing blast monitoring results against the relevant blast impact assessment criteria.

The key elements of the mitigation strategies will be:

- to ensure that blast design incorporates controls on the maximum instantaneous charge to ensure blasting-induced vibration is within acceptable limits (this will also be addressed through monitoring); and
- managing key environmental issues associated with air blast overpressure and vibration impacts as a result of operational activities that may affect:
 - Communities (Warkworth, Bulga, Long Point, Hambledon Hill, Mount Thorley);
 - Residences within zone of affectation;
 - Residences beyond zone of affectation;
 - Neighbouring mines; and
 - Sensitive infrastructure.
- The objectives of this BMP are to:
 - Meet the requirements of the Approval;
 - Set out the notification procedure;
 - Describe the process for assessing real-time weather conditions prior to blasting;
 - Set out the hours of blasting;
- Ensure good blast design and evacuation procedures are in place to ensure safety from fly rock;
- Set out a Road Closure Management Plan (see Appendix D);
- Describe the monitoring programme and how it will be implemented and maintained (Appendix E);
- Detail the controls to be implemented to minimise blasting impacts off site;
- Manage community complaints in a timely and effective manner; and
- Detail the procedure for reporting blast criteria exceedances to relevant stakeholders.

2. REGULATORY REQUIREMENTS

2.1 Background

This BMP has been prepared to fulfil the requirements of relevant legislation, the Approvals, EA commitments, EPL conditions and relevant standards and guidelines.

2.1.1 Project Approvals

The Approvals and subsequent amendments were assessed under the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act.). Development Consent for the Warkworth Continuation Project (SSD-6464) and Mount Thorley Continuation Project (SSD-6465) was granted on 26th November 2015.

The Approvals stipulate the blasting criteria that operational activities at MTW must comply with.

2.1.2 Environmental Protection Licences

The *Protection of the Environment Operations Act 1997* (NSW) (PoEO Act) is the principal piece of legislation regulating pollution emissions in NSW.

EPL's 1376 for Warkworth Coal Mine (issued on 21 August 2000) and 1976 for Mount Thorley Operations (issued on 28 September 2000) stipulate a range of conditions relating to Blasting. These conditions are reproduced in Table 2.

While the primary intent of this BMP is to describe the measures which will be implemented to ensure compliance with the relevant conditions of MTW's Planning Approvals, the EPL requirements are also listed for completeness.

2.1.3 Dangerous Goods

Dangerous goods are regulated under the *Work Health and Safety Act 2011* (NSW) and *Explosives Act 2003* (NSW). Yancoal Australia will ensure that all regulatory requirements in relation to dangerous goods management are met. The storage of explosives or

explosive precursors, are to be managed in accordance with MTW's work instructions and site procedures such as MTW-10-WI-MINE-244-011 'Firing a Shot'. These are internal documents which are regularly updated.

3. CONSULTATION

The relevant conditions of the Approvals detailing the requirements for this BMP stipulate the agencies and parties to be consulted during the preparation of this BMP.

3.1 Government Agencies

3.1.1 EPA

In a letter dated 19 July 2018, the EPA advised "The EPA encourages the development of such plans to ensure that proponents have met their statutory obligations and designated environmental objectives. However, the EPA does not review these documents as our role is to set environmental objectives for environmental/conservation management, not to be directly involved in the development of strategies to achieve those objectives. (see Appendix A).

3.1.2 Singleton Council (SC)

MTW holds approval from Singleton Council (SC) allowing for closure of the Golden Highway, Putty Road, Wallaby Scrub Road, and Charlton Road. Current Singleton Council Approvals are described in Table 3. These approval instruments are included in the Road Closure Management Plan (Appendix D).

Table 3 - Singleton Council Road Closure Approvals

Public Road	Singleton Council Reference	Expiry Date
Charlton Road	11477/2018	30/06/2019
Wallaby Scrub Road	11487/2018	30/06/2019
Jerrys Plains Road	11488/2018	30/06/2019

Putty Road	11486/2018	30/06/2019
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3.1.3 Roads and Maritime Service (RMS)

The current MTW Road Closure Management Plan was submitted to the Roads & Maritime Service (RMS, formerly the NSW RTA) following the (then approved) Warkworth Extension Project).

The Plan has been revised following the approval of the Warkworth Continuation and Mt Thorley Operations 2014 Projects, and submitted to RMS for further comment. This BMP will be updated following receipt of RMS feedback to the revised plan.

MTW holds Road Occupancy Licences allowing for the closure of the Putty Road and Golden Highway. The current licenses are described in Table 4, and are included in the Road Closure Management Plan.

Table 4 - RMS Road Occupancy Licences

Public Road	Road Occupancy Licence no.	Expiry Date
Putty Road	536871	31/01/2019
Golden Highway	535473	31/12/2018

4. EXISTING CHARACTER & IMPACT ASSESSMENT CRITERIA

4.1 Existing Character

Mt Thorley Warkworth (MTW) is an integrated operation of two open cut mines, Warkworth Mining Limited (WML) and Mt Thorley Operations (MTO)

which are located adjacent to each other and 15 km south west of Singleton in the Hunter Valley region of New South Wales.

The operation supplies international and domestic markets with semi-soft coking coal and thermal coal. MTW is generally bounded by public roads – the Golden Highway alongside the Northern and Eastern WML boundary, Wallaby Scrub and Charlton Roads to the West. The operation is bisected by Putty Road, WML to the North of the road, and MTO to the South. MTO shares its southern boundary with the adjoining Glencore Bulga Coal Surface Operations (BCSO).

Surrounding land uses include Mining (nearby operations include Bulga Coal, Wambo Coal and Hunter Valley Operations), agriculture (to the east in the areas of Mt Thorley and Hambledon Hill),

Industrial pursuits in the Mt Thorley Industrial Estate, and nearby residential communities of Bulga, Milbrodale, Warkworth and Long Point.

The township of Singleton is located approximately 7km to the east of WML. An overview of the layout of MTW is presented in Figure 1.

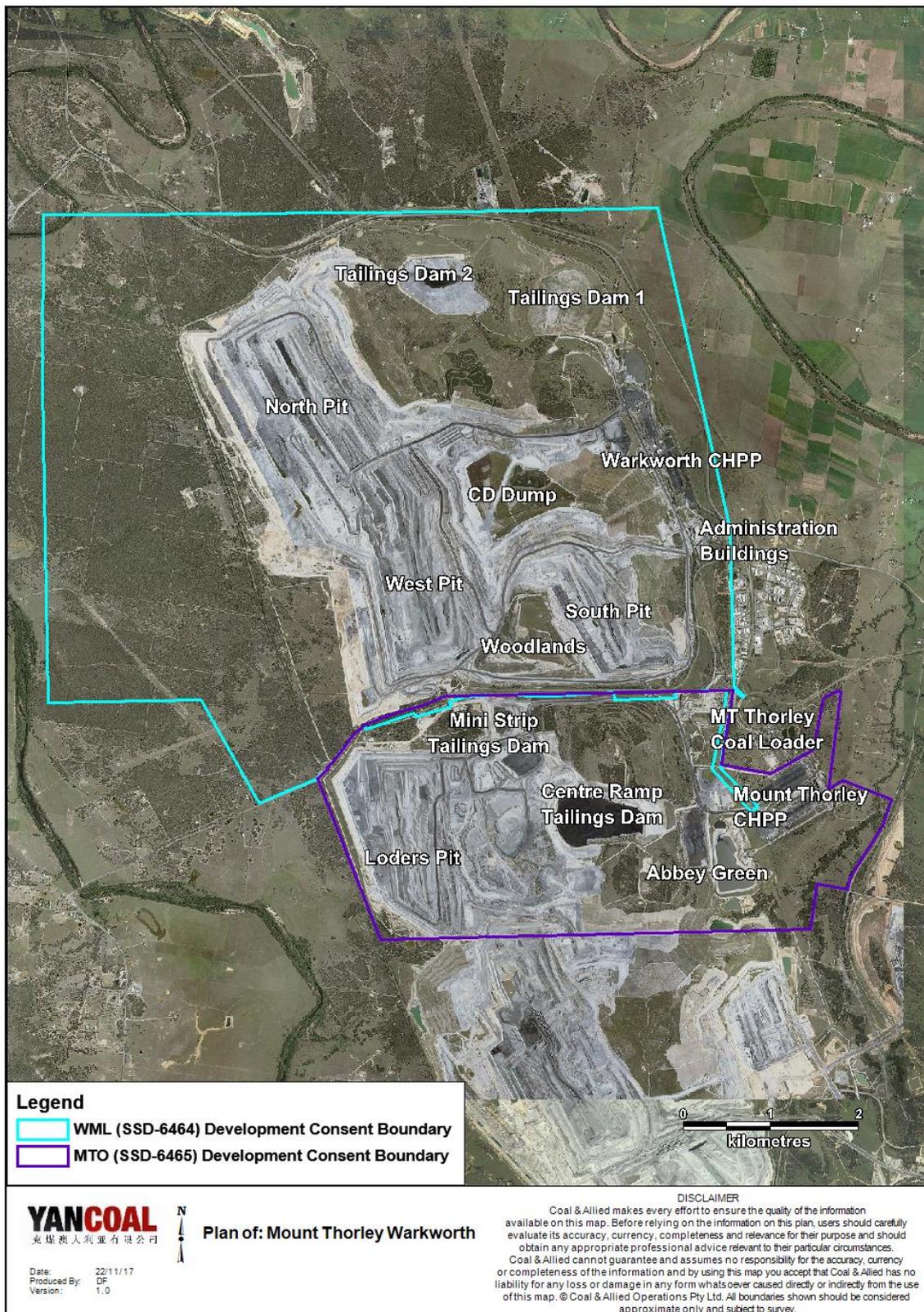


Figure 1 - Layout of MTW

4.2 Impact Assessment Criteria

4.2.1 Residence on Privately Owned Land

The Approvals and EPL's specify airblast overpressure impact assessment criteria and ground vibration impact assessment criteria for residences on privately-owned land (Table 1).

The Blast Monitoring Programme describes the monitoring locations which have been selected to ensure accurate assessment of airblast overpressure and ground vibration impacts in the vicinity of the nearest privately owned residences.

4.2.2 Public Infrastructure

Bulga Bridge (spanning Wollombi Brook on the Putty Road, to the West of MTW) is the only public infrastructure considered to be within such proximity to MTW for consideration under this BMP.

A report by Enviro Strata consulting and dated 27 June 2012, commissioned in association with the (then approved) Warkworth Extension Project details an independent assessment of the potential impacts of that project on the Bulga Bridge.

The report is reproduced as Appendix G. The report recommends a ground vibration limit of 50mm/sec be applied to the bridge.

This recommendation however does not take account of the close proximity of local residents to the bridge.

Given the 5mm/sec (5%) and 10mm/sec limits assigned for all privately owned residences stipulated in the Approvals, a specific management limit of 50mm/sec is not considered valuable in this instance.

Accordingly, MTW will monitor ground vibration for all blasts at the existing "Bulga Village" monitoring location (situated approximately 180m from the centre of the bridge), allowing for assessment of impacts on

the bridge and nearby sensitive receptors simultaneously.

4.3 Heritage Features

4.3.1 St. Phillip's Church

The Enviro Strata Consulting report dated 27 June 2012, commissioned in association with the (then approved) Warkworth Extension Project recommends a ground vibration limit of 5mm/sec be applied to St. Phillip's Church.

The report is reproduced in Appendix G. Assessment of blasting impacts on St. Phillip's Church will be assessed through ongoing monitoring undertaken at the "Warkworth" monitoring location (refer to Appendix E).

4.3.2 Wambo homestead

The Enviro Strata Consulting report dated 27 June 2012, commissioned in association with the (then approved) Warkworth Extension Project recommends a ground vibration limit of 5mm/sec be applied to Wambo Homestead.

Independent modelling of the blasts required for the extension was undertaken (refer to Appendix G), it was determined that ground vibration levels from MTW blasts will not reach a level to damage these structures or approach the vibration limit (5mm/s) for other mining operations which are in a closer proximity.

To ensure MTW blasts do not approach the criteria of 5mm/s limit with a 5% allowable exceedances during a 12 month period, there will be an internal threshold of 4 mm/s.

MTW will investigate additional measures if site law predictions for Wambo Homestead consistently reach 4mm/sec.

4.3.3 Aboriginal Grinding Groove sites

The WML Approval (Condition 14(b) in Schedule 3) lists four grinding groove sites that require specific management measures to prevent unexpected impacts from blasting.

A report by Enviro Strata Consulting dated 27 June 2012, and commissioned in association with the (then approved) Warkworth Extension Project, investigated these four sites in detail to assess likely blasting impacts and propose the management measures required to ensure blasting impacts are avoided. The grinding groove sites and proposed management measures are described in Table 5. The Enviro Strata Consulting report is reproduced as Appendix G.

Table 5 - Aboriginal Grinding Groove site management

Site / Reference	Location	Management Strategy
MTW-266~WSW-09-22(266)	Proximity to Wollombi Brook	Remain in-situ
MTW-267~WSW-09-22(267)	Proximity to Wollombi Brook	Remain in-situ
MTW-268~WSW-09-22(268)	Proximity to Wollombi Brook	Remain in-situ
M 37-6-0163 (Site M)	East of Wallaby Scrub Road	Relocation

Sites 266, 267 and 268 are not considered at risk of ground vibration or flyrock impacts. Regarding these sites, the Enviro Strata Consulting report concludes:

“in view of a substantial distance from the proposed pit there will be no risks from blasting. In this case, the distance alone will provide a sufficient buffer.”

Ground vibration and flyrock impacts on Site M are proposed to be managed through prompt relocation of

the artefact. Please refer to the MTW Aboriginal Heritage Management Plan (AHMP) for further information on the relocation process, and proposed timing for completion of the relocation.

5. BLAST MANAGEMENT CONTROLS

5.1 Introduction

In order to mitigate any potential impacts from blasting activities, a number of management controls will be implemented throughout the life of MTW operations. These controls are detailed in Section 5.2 below.

5.2 Operational controls

Yancoal Australia will implement the following blast management practices over the life of the project:

5.2.1 Permissible Blasting Hours

Blasting at MTW is permissible between the hours of 7am and 5pm, Monday to Saturday inclusive. Blasting will be undertaken in accordance with the blasting frequency limits specified in the approvals:

- WML – 3 blasts per day, and 12 blasts per week (averaged over a calendar year), and not more than 1 blast per day within 500m of the Putty Road and/or Golden Highway and
- MTO – 2 blasts per day, and 6 blasts per week (averaged over a calendar year), and not more than 1 blast per day within 500m of the Putty Road.

It should be noted that blast misfires, blasts required to ensure the safety of the mine, workers, or general public, or blasts which generate less than 0.5mm/sec ground vibration at any private residence are not subject to the above conditions.

The approvals stipulate circumstances in which application can be made to the Secretary to enable blasting to be undertaken outside of the above conditions, including blasts required to be fired to

avoid perverse environmental outcomes such as blast fume where unfavourable weather prevents completion of planned blasts.

No blasting will be undertaken on Sundays, public holidays or any other time, unless written approval is obtained from the Secretary. In such circumstances (possible under extraordinary circumstances), MTW will also endeavour to telephone the DP&E Singleton office and the EPA to seek verbal approval from the regulatory authorities.

- DP&E Singleton Compliance Office – (02) 6575 3400
- Environment Protection Authority Newcastle Office – (02) 4908 6800, or self-report line 131 555

5.2.2 Meteorological considerations

Blasting is scheduled and undertaken in a responsible manner, taking account of best available weather forecast information as follows:

- 4 – 7 days in advance of blasting – scheduling undertaken in consideration of forecast meteorological conditions (use of publicly available forecast information);
- 1 – 3 days in advance of blasting - site specific blast plume predictions and updated weather forecast information is used to refine the blast schedule, taking account a range of factors such as shot size and location, requirement for closure of public roads, and risk-assessed likelihood of dust / fume associated with the blast;
- Morning of the planned blast – Site specific blast plume predictions are used to determine the optimum time for firing.
- Approaching blast detonation - review of the blasting permissions page for the appropriate Pit area (see Appendix B) which considers wind speed and wind direction relative to sensitive receptors and public roads;

- There may be circumstances where blasts may need to be fired in less than ideal weather conditions. In these circumstances MTW will take additional controls to minimise impacts such as implementation of exclusion zones. Such decisions will be taken at the appropriate level of the organisational hierarchy;

5.2.3 Best Practice measures

- Ensuring adequate burden is present on all faces. Where necessary face surveying (laser profiling) techniques will be employed to measure overburden between the blast face and blast holes to ensure sufficient burden is present to prevent blowouts and blast anomalies; Use of adequate stemming lengths; and of suitable quality material for all blasts;
- Management of blast fume in accordance with the MTW Post-blast fume generation mitigation and management plan;
- MTW will monitor blasts as mining progresses, in accordance with the existing blast monitoring system, so that blast prediction site laws can be further refined and future blast designs can be optimised based on more detailed site information; and
- Where possible, and for investigative purposes MTW will collect photos and video footage of blasts, including images of blast plumes in the event of offsite migration.

5.2.4 Notifying Interested Parties

- The Blasting Schedule Hotline is the primary tool by which members of the public can find information relating to MTW temporary road closures. MTW uses its best endeavours to align the road closure with the advertised time and limit the road closure duration to minimise inconvenience to road users. It should be noted however that the primary concern for MTW is to mitigate safety and environmental impacts from blasting, hence this will take

precedence over adherence to road closure scheduling.

A number of factors including meteorological conditions, operations impediments and unforeseen circumstances on the public road will often result in road closures being brought forward or delayed from the scheduled time.

Advertised road closure times publicised via the methods described herein represent MTW's best assessment of the likely blasting time at the time of publish, and are subject to change.

- The hotline is updated on the morning of each day on which there is a scheduled road closure and can be reached on (freecall) **1800 099 669**. The hotline will advise of a one hour window for the proposed road closure (e.g. between 10am and 11am);
- In the event that a road closure is to occur outside the blasting window, and once the revised time is understood, MTW will update the hotline for another one hour window;
- Where mandated, notice of temporary road closures will be provided via the posting of signs on the affected road(s) in the 24 hours prior to blasting;
- Where necessary, information will be made available to neighbouring mines, relevant authorities (in the event of a road closure), and internal contacts prior to blasting.
- The blasting hotline number will be advertised in road closure notifications placed in local print media, as well as MTW's Daily Report website.

5.2.5 Monitoring and Administration

- Documentation of the date, location of the blast and quantity of explosive used each day;
- Detailed monitoring of blasts over the life of MTW at relevant blast sensitive locations (refer to Appendix E);
- Ad-hoc visual monitoring of blast events where pre-blast risk assessment identifies the need, including use of cameras situated on Charlton Ridge and WML Maintenance Workshop;
- Training will be provided to all relevant personnel on environmental obligations in relation to blasting controls.
- Periodic internal reviews of blast management procedures to evaluate performance and identify corrective action if required.

5.3 Management of Flyrock

The generation of fly rock is managed by incorporating appropriate controls in blast designs.

These controls include design of stemming lengths and stemming materials to minimise the potential for generating flyrock.

Adequate burden, which is the distance from a charge to a free face, is maintained to minimise the risk of generating flyrock due to face bursting. These measures are used to minimise the risk of damage to property, equipment or powerlines from flyrock.

Appropriate stemming will be used to improve stemming confinement and hence reduce the chance of flyrock and elevated airblast overpressure.

An appropriate exclusion zone will be established around each blast site in accordance with relevant mine safety regulations prior to firing a blast.

Generally, the blast exclusion zone will be a minimum of 300 metres for equipment and 500 metres for

personnel. The exclusion zone will be established beyond the expected range of any fly rock with an additional safety margin. The establishment of this zone will minimise the risk of any injuries to people or livestock due to flyrock.

Where an unusual level of flyrock is generated by blasting this information will be recorded and used to continually re-assess the adequacy of blast design controls in reducing the generation of flyrock. The information will also be used to re-assess the size of the safety exclusion zone established for people and livestock in the vicinity of a blast.

5.4 Management of Unpredicted Impacts

5.4.1 Blast Fume

Blast fume is managed in accordance with the MTW Post-blast fume generation mitigation and management plan (see Appendix C).

5.4.2 Airblast overpressure / Ground Vibration exceedance

In the event that a blast event registers airblast overpressure or ground vibration results greater than the allowable limits, or significantly different from the predicted results, MTW will undertake a detailed investigation into the event.

Where corrective actions are identified to prevent a recurrence, these will be entered into the action management system, and tracked to completion.

5.5 Continuous Improvement

MTW will continuously seek to further improve blasting management through the following:

- Investigation into new and emerging technologies, implementing new controls where required;
- Learning from incidents and improving controls;

- Thoroughly investigating any exceedance and non-compliance events; and
- Review of blast monitoring data for emerging trends.

5.6 Monitoring Programme

Blast and vibration monitoring at MTW will be undertaken in accordance with the Blast Monitoring Programme set out in Appendix E. The monitoring programme includes a protocol for evaluating compliance with the blasting criteria in the approvals.

6. PROPERTY INVESTIGATIONS AND INSPECTIONS

6.1 Property Inspections

In accordance with Condition 12 of Schedule 3 (WML) and Condition 10 of Schedule 3 (MTO), MTW will undertake the actions as described to establish the baseline condition of buildings and/or structures, or to update a previous inspection.

6.2 Property Investigations

If Yancoal Australia receives a written claim that buildings and/or structures on a landowners' land have been damaged as a result of blasting on site then MTW will investigate the claim and, where the property investigation confirms the landowner's claim, repair the damage in accordance with the requirements of Condition 13, Schedule 3 (WML) or Condition 11 of Schedule 3 (MTO) of the Approvals, whichever is relevant.

6.3 Independent Review Process

Where the owner of privately-owned land has reasonable grounds to believe that MTW (WML or MTO) is exceeding blast criteria, they may request an independent review from the Secretary, as per Condition 4 of Schedule 4 of the Approvals. If the independent review determines that WML / MTO is not complying with the relevant criteria, then MTW will

work in conjunction with the landowner and the Secretary to develop and implement remedial actions as appropriate.

7. IMPLEMENTATION OF THE BMP

7.1 Reporting

7.1.1 Internal reporting

Determining exceedances of blasting criteria will be undertaken in accordance with the protocol for evaluating compliance (Blast Monitoring Programme), reproduced in Appendix E.

The Senior Drill and Blast Engineer will report any potential or confirmed blast exceedance to relevant site personnel, including the Site Environmental Advisor, Manager – Mining and Environmental Advisor – Systems & Monitoring. The initial advice will include an in-house assessment of meteorological conditions and the validity of the peak airblast overpressure and ground vibration results.

Where the peak results are confirmed to have occurred outside of the calculated arrival time window, no escalation of the possible exceedance will occur, and a theoretical value will be used in place of the measured peak.

Where the in-house assessment is unable to discount the result on the basis of meteorology or arrival time, the result will be referred to a specialist consultant for determination.

If there is a non-compliance with the blast impact assessment criteria an investigation will be undertaken, assessing the circumstances of the non-compliance. Resulting actions will be developed and assigned to the appropriate person, and tracked to completion.

7.1.2 External Reporting

7.1.2.1 Emergency / Non-compliance reporting

The Environmental Advisor – Systems and Monitoring will co-ordinate the reporting of any confirmed non-compliance in writing to the Department as soon as practicable following receipt of information confirming the non-compliance.

Airblast Overpressure / Ground vibration non-compliances will also be reported to the EPA as required.

The Environmental Advisor – Operations will co-ordinate the reporting of any confirmed reportable blast fume events in line with the clarification note issued by the Department of Planning and Environment on 7 July 2014:

*“Notify the Department of Planning and Environment compliance office in Singleton of any blast producing post-blast fume that rates 3 at its highest extent and leaves the site (see definition below), and any blast that rates 4 or 5. It is not the intention that all shots required to be reported will require a formal incident report, as this will depend on a number of factors. Within this report the quantity of explosive and/or the number of blast holes should be included. The purpose of this is to provide a guide to size the fume event;
Site – includes any active mine site’s project approval boundary and any closed portion of public road.”*

In addition, in accordance with the relevant conditions of the Approvals, within seven days of becoming aware of the incident, MTW will provide the Secretary and any relevant agencies with a detailed report of the incident.

The report will include the following details:

- The date, time and nature of exceedance/incident;

- Identify the likely cause of exceedance/incident;
- Describe the response action that has been undertaken to date; and
- Describe the proposed measures to address the exceedance/incident.

MTW will implement mitigation measures for future blasts as necessary and will monitor future blasts for effectiveness and improvement opportunities.

In accordance with Condition 3 of Schedule 4 of the Approvals, as soon as practicable after obtaining monitoring results showing a non-compliance of the blasting criteria, Yancoal Australia will notify the affected landowner and/or tenants in writing of the non-compliance, and provide regular monitoring results to each of these parties until the project is again complying with the relevant criteria.

7.1.2.2 Regular reporting

Blast monitoring data, collected in accordance with this BMP will be made available on MTW's website (<https://insite.yancoal.com.au>) via the Monthly Environmental Management Report, and Annual Review.

Ground Vibration and Airblast Overpressure data will also be presented in the Monthly EPL monitoring data summary to satisfy the reporting requirements of the PoEO Act.

7.2 Complaints Management

Community Complaints are lodged via the Community Complaints line, 1800 656 892.

The hotline number is prominently displayed on the Yancoal Australia website and regularly advertised in the local newspaper. The Complaints Hotline operates 24 hours per day, seven days a week. Complaints will be recorded and investigated by MTW staff.

Complaints lodged via other means (letter, in person, fax etc.) will also be recorded and investigated by the Site Environmental Advisor.

Where the investigation identifies potential non-compliance with a consent or licence condition, action to mitigate the cause of the complaint will be taken.

The details of all complaints, and any mitigating actions taken, will be circulated to senior management and other key personnel. Where requested, follow-up correspondence with the complainant will be provided.

It is a condition of EPL's 1376, 1976 and 24 that MTW maintain a register of pollution complaints. MTW maintains a register of all complaints, recording the following information (at minimum):

- Date and time of the complaint;
- Method by which the complaint was made;
- Any personal details of the complainant which were provided;
- The nature of complaint;
- Any action taken in relation to the complaint; and
- If no action, the reason why no action was taken.

A record of each complaint will be kept for a minimum of four years, and will be produced on request to any authorised officer of the EPA.

A monthly summary of complaints received will be reported on MTW's website (<https://insite.yancoal.com.au>).

7.3 Review of this Management Plan

This BMP will be reviewed within three months of the submission of the Annual Review and updated to the satisfaction of the Secretary where necessary.

This BMP will also be reviewed, and revised if necessary, within three months of the completion of an Independent Environmental Audit, any non-compliance of the Approvals' criteria or any modification to the conditions of the Approvals.

The BMP may also be reviewed/revised at any time (e.g. other than at triggered events described above), to ensure it is updated on a regular basis.

Any major amendments to this BMP that affect its application will be undertaken in consultation with the appropriate regulatory authorities and stakeholders, and to the satisfaction of the Secretary. Minor changes such as formatting edits may be made with version control on the Project website.

-

7.4 Roles and Responsibilities

Table 9.1: Roles and Responsibilities¹

Manager – Environment & Community
<ul style="list-style-type: none">• Oversee the implementation of the BMP• Regulator liaison• Technical oversight
Manager – Mining
<ul style="list-style-type: none">• Direction and operational oversight
Dragline Drill and Blast Superintendent
<ul style="list-style-type: none">• Implementation of operational aspects of Blast Management Plan• Co-ordination of incident investigations• Co-ordination of review of Road Closure Management Plan and Post-blast fume generation mitigation and management plan
Drill and Blast Engineer
<ul style="list-style-type: none">• Blast design and scheduling• Review of blast monitoring data and manual trigger of blast events• Investigation into blast exceedance, incidents and complaints• Maintain records for blasts initiated
Mining Supervisor
<ul style="list-style-type: none">• Blasting in accordance with this BMP and site procedures• Road closures
Community Response Officer
<ul style="list-style-type: none">• Visual observations and recording of blasts where possible
Environment - Operations
<ul style="list-style-type: none">• Involvement in investigations of blasting exceedances, incidents or complaints with the Drill and Blast Engineer• Manage blasting related complaints in accordance with complaints management procedure
Environment - Systems and Monitoring
<ul style="list-style-type: none">• Implement and maintain the blast monitoring and real time environmental monitoring network• Coordinate periodic review of monitoring data and subsequent reporting• Implement and maintain blasting permissions pages and predictive forecast tools
Shot-firers
<ul style="list-style-type: none">• Notify the Drill and Blast Engineer and Blasting Supervisor of any factors that may lead to non-compliance with this BMP• Load and fire blasts in accordance with design supplied by the Drill and Blast Engineer• Ensure update of the blasting hotline

¹ Roles and responsibilities may be changed from time to time outside of the approval process of this BMP

REFERENCES

- Mount Thorley Development Consent (DA 34/95);
 - Warkworth Mining Limited Development Consent (DA 300_9_2002_i);
 - The EIS titled “Warkworth Continuation 2014”, dated June 2014 and prepared by EMGA Mitchell McLennan;
 - The EIS titles “Mount Thorley Continuation 2014”, dated June 2014 and prepared by EMGA Mitchell McLennan;
 - MTW Pollution Incident Response Management Plan ;
 - MTW Heritage Management Plan ;
 - CNA-09-EWI-SITE-003 (Environmental Complaints Line) ;
 - CNA-09-EWI-SITE-058 (Complaints Database) ;
 - Mount Thorley Warkworth Blast Impact Assessment of the Warkworth Extension Project on Wambo Homestead, St Phillips Church and Bulga Bridge – Enviro Strata Consulting. 27/6/2012;
 - Environmental Planning and Assessment Act 1979;
 - Workplace Health and Safety Act 2011 (NSW);
 - Explosives Act 2003 (NSW);
 - Protection of the Environment Operations Act 1997 (NSW); and
 - Australian and New Zealand Environment and Conservation Council ANZECC. 1990. Technical Basis for Guidelines to Minimise Annoyance due to Blasting Overpressure and Ground Vibration.
-

Appendix A – Consultation with the EPA



DOC18/502102-01, EF16/906 and EF13/3817

Yancoal Mt Thorley Warkworth
Via e-mail at: gary.mulhearn@yancoal.com.au
PO BOX 267
SINGLETON NSW 2330
Attention: Mr Gary Mulhearn

19 July 2018

Dear Mr Mulhearn

**Environment Protection Licences 1376 and 1976
Environment Management Plans**

Reference is made to your letter dated 18 July 2018 to the Environment Protection Authority ("EPA") in relation consultation for Mt Thorley Warkworth's draft noise, air quality, blasting and water management plans.

The EPA encourages the development of such plans to ensure that proponents have met their statutory obligations and designated environmental objectives. However, the EPA does not review these documents as our role is to set environmental objectives for environmental/conservation management, not to be directly involved in the development of strategies to achieve those objectives.

The EPA notes that you have not provided us with a copy of the plans, and reminds you that you must comply with your Environment Protection Licences.

If you require any further information regarding this matter please contact Natasha Ryan on (02) 4908 6833.

Yours sincerely

A handwritten signature in black ink, appearing to read "Natasha Ryan".

NATASHA RYAN
Regional Operations Officer
Environment Protection Authority

Phone 131 555
Phone 02 4908 6800

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FAX: +61 2 6570 1576
WEBSITE: www.yancoalaustralia.com.au
ABN 42 001 385 842

18 July 2018

Ms Natasha Ryan
Environmental Protection Authority NSW
PO Box 448G
Newcastle NSW 2300

Dear Natasha,

Re: Yancoal Mount Thorley Warkworth – EPA Consultation on Noise, Air Quality, Blasting and Water Management Plans

Yancoal Mt Thorley Warkworth's (MTW's) development consents (SSD-6464 and SSD-6565) granted under the Environmental Planning and Assessment Act 1979 (EP&A Act), require MTW to consult with the Environment Protection Authority (EPA) during development of Environmental Management Plans for Noise, Air Quality, Blasting and Water.

MTW has existing Environmental Management Plans in place, prepared to comply with the relevant development consent conditions which have been approved by DP&E previously (available on the MTW website (<https://insite.yancoal.com.au/document-library/management-plans-mtw>)). I can advise that MTW previously consulted with the EPA on the plans listed above as part of their development, and a written response was provided to Coal & Allied Operations (reference DOC 14/115042. EF13/2793).

I would like to advise that MTW have drafted updates to aforementioned plans after submission of an Annual Review Report, in preparation for submission to the Department of Planning and Environment for approval. As part of consultation with the EPA required by SSD-6464 and SSD-6465, I would like to seek a response from the EPA on the review and consultation of the updated Environmental Management Plans mentioned above.

Should you have any questions or wish to obtain further information regarding the above, please contact me on (02) 4993 7334 or 0403 963 081 or via email on gary.mulhearn@yancoal.com.au.

Yours faithfully,



Gary Mulhearn
Environment & Community Manager
Yancoal Mt Thorley Warkworth

Appendix B – Blasting Permissions and Tools

WML – North Pit North Blasting Permissions

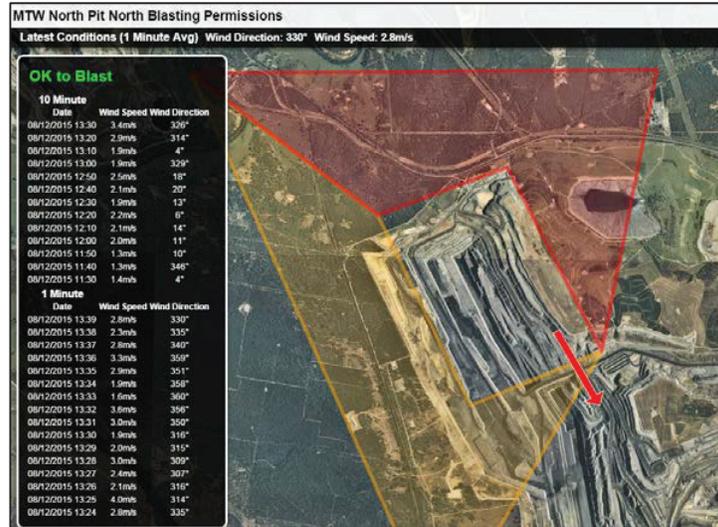


Figure 1 - WML North Pit North blasting permissions page

Rules

Consider road closure or delaying blast if one minute wind direction between 45 and 115 degrees
Do not blast if one minute wind speed above 4 m/sec and one minute wind direction between 260 and 360 degrees
Otherwise ok to blast

Figure 2 - WML North Pit North blasting permissions – rules

WML – West Pit North / North Pit South Blasting Permissions

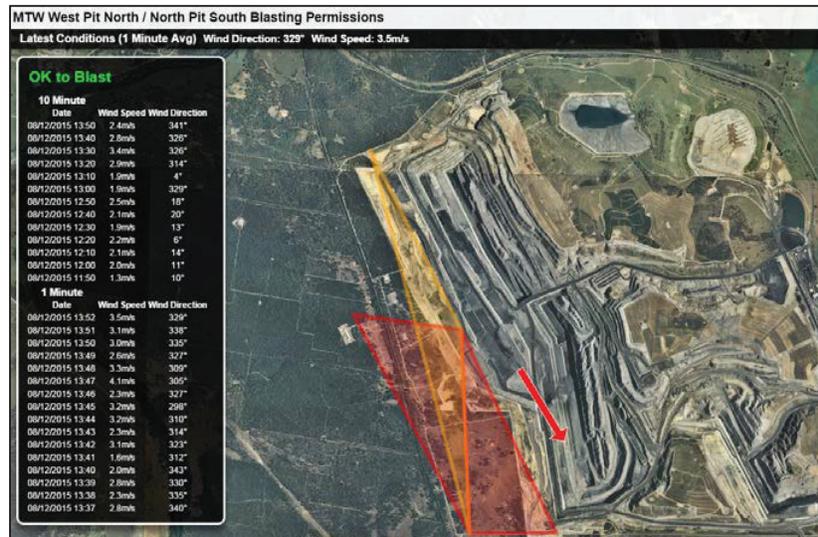


Figure 3 - WML West Pit North / North Pit South blasting permissions

Rules

Consider road closure or delaying blast if one minute wind speed above 4 m/sec and one minute wind direction between 10 and 150 degrees
Consider road closure or delaying blast if ten minute wind speed above 4 m/sec and ten minute wind direction between 10 and 150 degrees
Do not blast if one minute wind speed above 8 m/sec
Do not blast if ten minute wind speed above 8 m/sec
Do not blast if one minute wind speed above 4 m/sec and one minute wind direction between 330 and 25 degrees
Do not blast if ten minute wind speed above 4 m/sec and ten minute wind direction between 330 and 25 degrees
Otherwise ok to blast

Figure 4 WML West Pit North / North Pit South blasting permissions - rules

WML – West Pit South Blasting Permissions

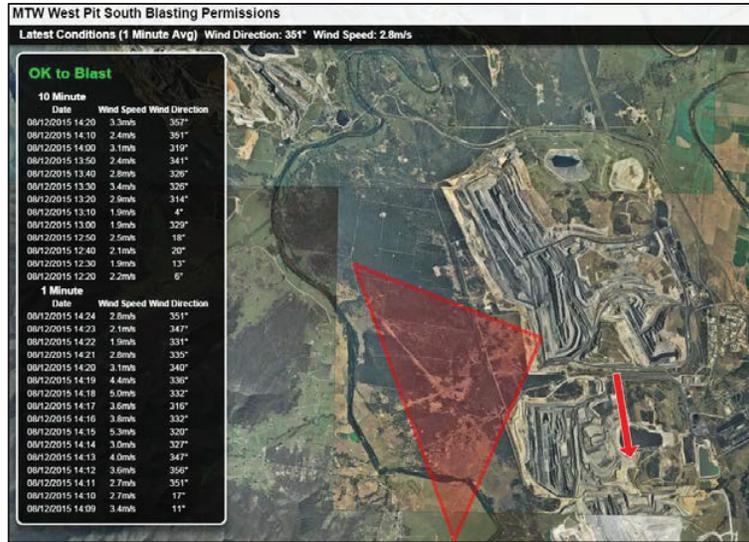


Figure 5 - WML West Pit South blasting permissions page

Rules

- Do not blast if one minute wind speed above 2.5 m/sec and one minute wind direction between 30 and 105 degrees
- Do not blast if ten minute wind speed above 2.5 m/sec and ten minute wind direction between 30 and 105 degrees
- Do not blast if time between 18:00 and 7:00
- Do not blast if day is Sunday
- Otherwise ok to blast

Figure 6 - WML West Pit South blasting permissions - rules

WML – South Pit South Blasting Permissions

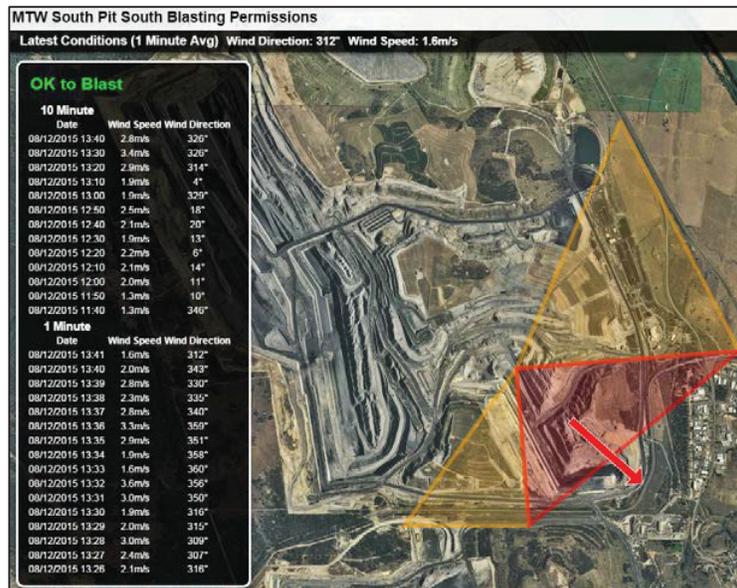


Figure 7 - WML South Pit South blasting permissions page

Rules

- Consider road closure or delaying blast if one minute wind direction between 200 and 260 degrees
- Consider road closure or delaying blast if ten minute wind direction between 0 and 45 degrees
- Do not blast if one minute wind speed above 6 m/sec and one minute wind direction between 260 and 360 degrees
- Do not blast if ten minute wind speed above 6 m/sec and ten minute wind direction between 260 and 360 degrees
- Do not blast if time between 18:00 and 7:00
- Do not blast if day is Sunday
- Otherwise ok to blast

Figure 8 - WML South Pit South blasting permissions – rules

MTO – Loders Pit North Blasting Permissions

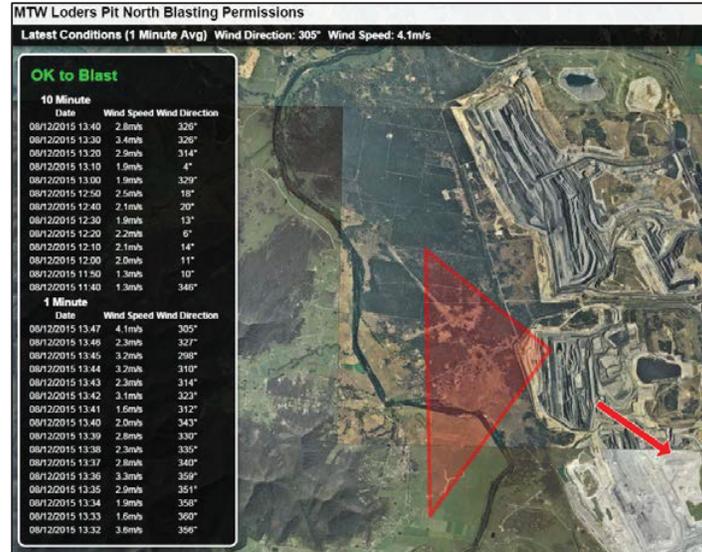


Figure 9 - MTO Loders Pit North blasting permissions page

Rules

- Do not blast if one minute wind speed above 2.5 m/sec and one minute wind direction between 45 and 125 degrees
- Do not blast if ten minute wind speed above 2.5 m/sec and ten minute wind direction between 45 and 125 degrees
- Do not blast if time between 17:00 and 7:00
- Do not blast if day is Sunday
- Otherwise ok to blast

Figure 10 - MTO Loders Pit North blasting permissions - rules

MTO – Loders Pit South Blasting Permissions

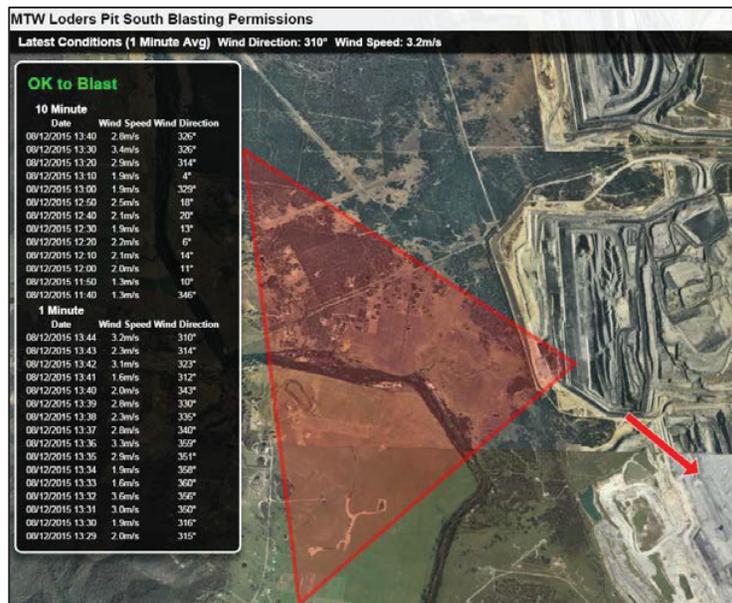


Figure 11 - MTO Loders Pit South blasting permissions page

Rules

- Do not blast if one minute wind speed above 2.5 m/sec and one minute wind direction between 60 and 125 degrees
- Do not blast if ten minute wind speed above 2.5 m/sec and ten minute wind direction between 60 and 125 degrees
- Do not blast if time between 17:00 and 7:00
- Do not blast if day is Sunday
- Otherwise ok to blast

Figure 12 - MTO Loders Pit South blasting permissions – rules

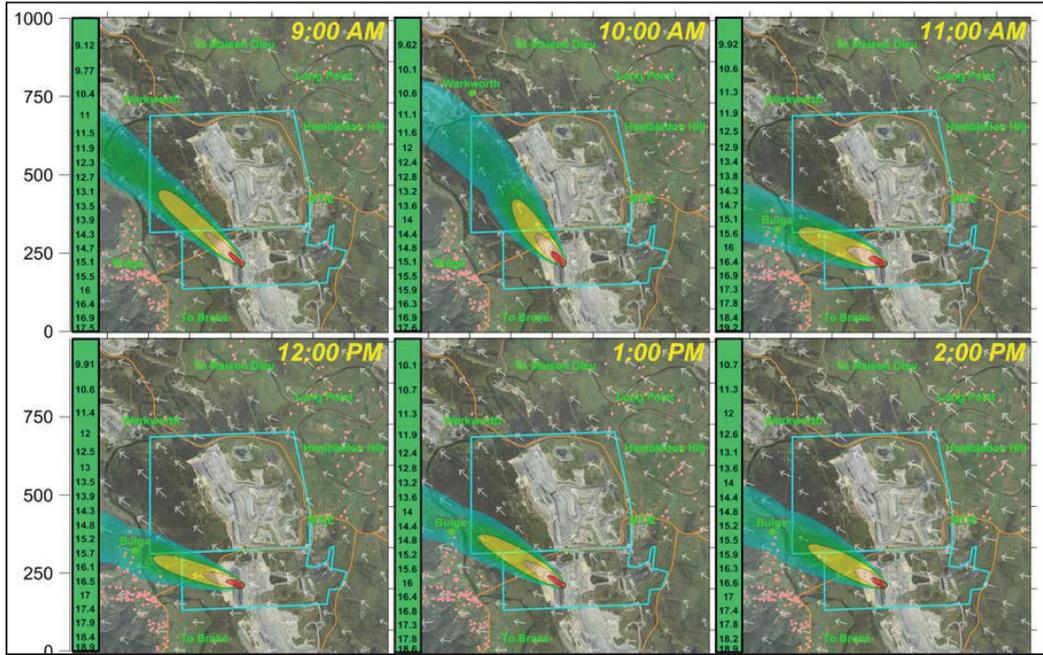


Figure 13 - Site specific blast plume prediction tool

Appendix C – Post Blast Fume Generation Mitigation and Management Plan

Mount Thorley Warkworth: Post Blast Fume Generation Mitigation and Management Plan



Edition: Revised
Date: November2017

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1. Introduction

This document has been prepared to provide a protocol for the mitigation and management of post blast NO_x fumes from blasting operations at Mt Thorley Warkworth (MTW) and is based on the AEISG Code of Practice (2011). This provides the basis on which to make blasting decisions to minimise the incident and severity of post blast fume events at MTW.



Figure 1: MTW Operations & local communities

2. NOx Fume

All blasting explosives produce large volumes of gas in very short time span (milliseconds).

The application of ammonium nitrate based blasting explosives in the field, under variable conditions, can lead to non-ideal explosive reactions and the production of Nitric oxide (NO) and Nitrogen dioxide (NO₂). Nitric oxide is unstable in air and readily oxidises to nitrogen dioxide. Nitrogen dioxide is identifiable by the generation of orange/brown clouds.

3. The causes of fume in blasting

Fumes are generated as a result of an explosive not reacting with a full, high order, steady state detonation. The causes of this are many and variable. This protocol groups causes into categories and further identifies controls that are best able to control the variable. The seven main categories that contribute to post blast fume are listed below in the order in which they are encountered in the mining process:

1. Geological conditions
2. Climate/seasonality.
3. Blast design.
4. Explosive product selection.
5. Explosive quality.
6. Contamination of explosive in the blast-hole.
7. On-bench practices.

4. Identification of persons to prevent fumes

This section identifies the persons in the organisation and their role in relation to ensuring post blast fume from blasts is minimised.

- Drill and Blast Superintendent
- Mine Operations Planner
- Geologist
- Drill & Blast Engineer
- Drill Supervisor
- Drill Operator
- Shotfiring and Pumps Supervisor
- Shotfirer
- Traffic Road Runner
- Trainee Shotfirer / Shotfirer Assistant
- MMU Operator
- Explosives Manufacturer/Supplier

Person	Role	Responsibilities/Remarks
Drill and Blast Superintendent	Manage all drill and blast operations for the site.	<p>Incorporation of process steps and hazards related to blast fume into Standard Operating Procedures for drilling, charging, stemming, blast guarding, post blast inspection</p> <p>Adequate resourcing of blasting activities.</p> <p>Reporting on the tracking of fume ratings to mine management</p> <p>Resolve any environmental blast permissions issues</p> <p>Risk review for extended fume management zone</p> <p>Escalate fume events to the appropriate level and team</p>
Mine Operations Planner	Plan the mine/pit operations to extract coal	Design extraction plan to minimise those blasting activities such as box cuts or blast areas that do not have a free face. Designs to consider separate removal of softer weathered horizons
Geologist	Provide data on ground conditions to assist blast designer with shot	<p>Accurate provision of ground data across the proposed shot.</p> <p>Geology & rock mass conditions.</p>
Drill and Blast Engineer	Design a blast to provide good extraction of material while manage blasting hazards	<p>Maintenance of the site Blast Management Plan</p> <p>Maintain site design matrices, charging rules, procedures and workflow for design</p> <p>Conduct preload risk rating</p> <p>Blast design to consider:</p> <ul style="list-style-type: none"> • Conduct preload risk rating • Explosive product selection appropriate to ground and water conditions. • Geology & rock mass conditions. • Historical blast performance for the current area. • Weather conditions during loading and firing. <p>Conduct prefire risk rating</p> <p>Assist with risk review for extended fume management zone</p> <p>Capture blast videos; to be kept for at least one year.</p> <p>Measure post blast fume concentrations and refine site fume site-law (under development)</p> <p>Post blast assessment and blast fume records</p>
Drill Supervisor	Supervise drill activities on the bench	Conduit between drill activity and Drill & Blast Engineer.

Drill Operator	To provide drilled holes for the loading of explosives for a shot.	<p>Accurately drill the shot plan and report variations.</p> <p>Report anomalous ground conditions to drill supervisor and/or Drill and Blast Engineer</p> <p>Collar protection of holes.</p>
Shotfiring and Pumps Supervisor	Manage day to day blasting operations and bench dewatering as required	<p>Competence of blast team – including fume management training</p> <p>Review the use of products appropriate to conditions.</p> <p>Review actual loaded condition of blast prior to shot being fired.</p> <p>Compliance check of on bench activity.</p> <p>On bench water management.</p> <p>Notification of blast activities to affected teams</p> <p>Assist with risk review for extended fume management zone</p>
Shotfirer	Manage all explosives activities on bench.	<p>Supervision of Trainee Shotfirer</p> <p>Compliance with design.</p> <p>Notify any variations from design.</p> <p>Recording explosive use data.</p> <p>Supervision of loading technique;</p> <ul style="list-style-type: none"> • Preventing contamination of the explosive column. • Stemming. • Accurate placement of gas bags. • Monitor product usage during loading <p>Manage MMU's on bench operations;</p> <ul style="list-style-type: none"> • Ensuring QC density checks completed. • Hose handling for pumped products. <p>Conduit between on-bench and blast supervisor.</p> <p>Identifying and reporting hole slumping.</p> <p>Assist with risk review for extended fume management zone</p> <p>Checking blasting permissions page prior to firing to ensure favourable conditions.</p> <p>Initiate emergency if fume travels beyond fume management zone</p>

Traffic Road runner	Manage road closure activities under direction of shotfirer	<p>Measure post blast fume concentrations to ensure roadway safe</p> <p>If fume migrates from the fume management zone, monitor travel path and if possible measure concentration level.</p> <p>In the event of impending fume event assist with distribution of “fume event protocol” for vehicles stopped for road closure.</p>
Trainee Shotfirer / Shotfirer Assistant	<p>Support Shotfiring activities</p> <p>On bench activities as directed by the Shotfirer</p>	<p>Measuring the depth of holes.</p> <p>Identifying water conditions down hole prior to loading.</p> <p>Positioning of primers in blast holes.</p> <p>Accurate placement of gas bags.</p> <p>Identifying hole slumping.</p>
MMU Operator	<p>Manufacture blasting explosives</p> <p>On bench activities as directed by the Shotfirer</p>	<p>Compliance with Shotfirers loading instructions.</p> <p>MMU Calibration.</p> <p>Adequate and correct process chemicals. Manufacture QC checks.</p> <p>Generate delivery/production records.</p> <p>Comply with system for effective stock rotation of AN prill and emulsion.</p>
Explosives manufacturer/ Supplier	Provide explosives fit for purpose	<p>Manufacturing equipment compliance</p> <p>Provision of precursors and formulation to ensure minimum amount of fume.</p> <p>Change management of formulation to ensure fumes are minimised in product.</p> <p>Design, calibration and operation of explosives manufacturing equipment to deliver consistent explosives within specification.</p> <p>Provide recommendations for product use and training as required.</p> <p>Share best practices or learning relating to fume management.</p>

5. Causes & Control Matrix

The following matrix covers each potential causes and situations that may contribute to fume generation, identified in section 3 of this protocol. For each potential cause, a likely indicator and control measure is outlined.

Primary Cause 1: Geological conditions		
Potential Cause	Likely indicators	Control measures
Blasting in weak/soft strata (Incorrect Timing and Pattern Design)	<ul style="list-style-type: none"> • Specific areas known to contain weak/soft strata only • Excessive Powder Factor 	Understand geology of each shot and design blast (timing and explosive product) to ensure adequate relief in weak/soft strata, for example incorporation of a free face, reduction of powder factor, modified timing and increased stemming.
Explosive product seeping into cracks	<ul style="list-style-type: none"> • Slumping • Specific areas known to contain a high incidence of faulted/fractured ground only • Not achieving designed collar height when loading as per load sheet 	Consider manufacturer's recommendations on explosive product
		Consider use of blast hole liners or bag off above cracking
		Record and monitor blast holes which have slumped or require excessive explosive product to reach stemming height, but where water is not present.
Dynamic water in holes	<ul style="list-style-type: none"> • Slumped blast holes • Usually when using non water-resistant explosive products 	Minimise sleep time of shot
		Consider manufacturer's recommendations on explosive product
		Understand hydrology of pit and plan blasting to avoid interaction between explosives and dynamic water (either natural or from other pit operations) Check after pumping to understand recharge rate of the drill hole.
Moisture in clay	<ul style="list-style-type: none"> • When clay or clay rich strata present 	If the drill holes are defined as wet, then water resistant explosive products with appropriate energy will be used in the loading of these holes.
Blast hole deterioration	<ul style="list-style-type: none"> • Traceable to specific geological 	Minimise time between drilling and loading
		Use hole savers

between drilling and loading	<p>areas</p> <ul style="list-style-type: none"> • Dipped depth inconsistent with drilled depth indicating hole collapse 	<p>Drill and Blast Engineer to ensure benches are unaffected by backbreak from earlier blasts, for example presplits,</p> <p>Optimise drilling practices to minimise hole damage.</p>
Ground movement	<ul style="list-style-type: none"> • Horizon offset (bench, etc.) • Area previously known for misfires 	<p>Design sequence timing to prevent hole movement and dislocation of explosives columns.</p>

Primary Cause 2: Climate / seasonality

Potential Cause	Likely indicators	Control measures
Rainfall on a sleeping shot.	<ul style="list-style-type: none"> • Excessive rainfall • Slumping of holes • Ponding of water on pattern 	<p>Review rainfall forecasts for planned sleep time of shot and select explosive products according to manufacturer's recommendations.</p>
		<p>Minimise sleep time for dry blast hole explosive products if rain is predicted. Consider early firing of blast.</p>
		<p>Bench design for water runoff with appropriate bunding & drainage.</p>
		<p>If a large rain event is predicted to impact on a live shot, than the top of blast holes will be protected to prevent water ingress by constructing contour drains to divert water away from hole collars with an excavator.</p>
		<p>Consider removing water affected product.</p>
		<p>Loaded drill holes are to be inspected for slumping prior to initiation after a rainfall event.</p>

Primary Cause 3: Blast Design		
Potential Cause	Likely indicators	Control measures
Explosive desensitisation due to the blast hole depth	<ul style="list-style-type: none"> In deep holes only 	Reduce bench height
		Ensure adequate relief in deep holes
		Consider manufacturer's recommendations on explosive product selection and blast design for deep holes
Inappropriate priming and/or placement	<ul style="list-style-type: none"> Residue product 	Consider manufacturer's recommendations on explosive product initiation, in general, top and bottom priming in holes greater than 15m deep.
Inter-hole explosive desensitisation	<ul style="list-style-type: none"> Blast holes drilled closer together than planned Blast hole deviation differs greatly from planned 	Review the design and adjust for actual drilling
		Review product selection and adjust for new design
Intra-hole explosive desensitisation in decked blast holes	<ul style="list-style-type: none"> When using decks only 	Appropriate separation of explosive decks. Initiator timing.
Excessive confinement (Incorrect Timing and Pattern Design)	<ul style="list-style-type: none"> Specific to blasts known to be confined No free face present Excessive Powder Factor 	Understand geology of each shot and design blast (timing and explosive product) to ensure adequate relief in all strata. Consider incorporation of a free face, reduction of powder factor, modified timing, depth of blast, etc.

Primary Cause 4: Explosive product selection		
Potential Cause	Likely indicators	Control measures
Non water-resistant explosive products loaded into wet or dewatered holes	<ul style="list-style-type: none"> Blasts containing wet/dewatered blast holes only 	Consider manufacturer's recommendations on explosive product
		Education of bench crew on explosive product recommendations from current
		Discipline in on-bench practices Follow load sheet
Excessive energy in strata desensitising adjacent explosive product columns	<ul style="list-style-type: none"> Specific to areas known to contain weak/soft strata only 	Understand geology of each shot and design blast (timing and explosive product) to match, for example reduction of powder factor.
		Consider manufacturer's recommendations on explosive product selection
		Obtain appropriate technical assistance if required to ensure optimal result
Primer of insufficient strength to initiate explosive column	<ul style="list-style-type: none"> For blasts using a particular primer type / size 	Consider manufacturer's recommendations on compatibility of initiating systems with explosives
Desensitisation of explosive column from in-hole detonating cord	In areas where in-hole cord initiation is used	Consider manufacturer's recommendations on compatibility of initiating systems with explosives

Primary Cause 5: Explosive quality		
Potential Cause	Likely indicators	Control measures
Explosive product incorrectly formulated	<ul style="list-style-type: none"> All areas associated with loading from a specific delivery system Product appearance abnormal 	<p>Explosives formulated by supplier to an appropriate oxygen balance to minimise the likelihood of post-blast fume</p> <p>Development and maintenance of an explosive QA/QC programme.</p>
Inadequate mixing of raw materials	<ul style="list-style-type: none"> In all areas associated with loading from a specific delivery system Product appearance abnormal 	Visual check
		Density check MMU Calibration check
Delivery system metering incorrectly (on bench incorrect manufacture of product)	<ul style="list-style-type: none"> All blasts and all locations utilising explosive product(s) that incorporate a specific precursor 	Regular calibration of MMU
		Quality control of explosive products conducted in accordance with manufacturer's recommendations
Explosive precursors not manufactured or supplied to specification or degradation during transport and storage	<ul style="list-style-type: none"> Traceable to a precursor which has degraded between manufacture and use 	Contractor Management System – Audits of supplier to ensure compliance with QA/QC systems.

<p>Initiation explosives not manufactured to specification or degradation during transport and storage</p>	<ul style="list-style-type: none"> • Damaged packing or out- of-date stock • Misfire 	<p>MTW-10-WI-MINE-244-002 Conduct Magazine Operations requires</p> <ul style="list-style-type: none"> • At time of stock-take or delivery, check manufacturing date of stock and condition of boxes • If there are multiple boxes of the same item open, the Magazine Keeper should (where possible) consolidate items into a single box to minimise the number of opened boxes, without exceeding the maximum quantity allowed for each box • Rotate stock in a systematic manner that ensures that older stock gets used first
<p>Raw material changes</p> <p>Product Degradation</p>	<ul style="list-style-type: none"> • All areas associated with loading from a specific delivery system • Product appearance changed • Slumping of holes 	<p>Change management procedures in place by suppliers</p> <p>Prior notification to suppliers from site change management systems where other raw materials are supplied by the customer, for example diesel fuels</p> <p>Sleep time of 4 days maximum for all shots.</p> <p>Sleeping a shot more than 4 days requires the approval by the Drill and Blast Superintendent.</p> <p>Any sleeping shot is inspected daily by the shot firer when in attendance.</p>

Primary Cause 6: Contamination of explosives in the blast hole

Potential Cause	Likely indicators	Control measures
Explosive product mixes with mud/sediment at bottom of hole.	<ul style="list-style-type: none"> • Blasts containing wet/dewatered blast holes only • Dipped depth inconsistent with drilled depth indicating hole collapse 	Optimise drilling practices to minimise blast hole damage
		Ensure appropriate loading practices are followed during charging
		Ensure primer is positioned in undamaged explosive product
		Where mud or sediment is identified in a hole from dipping, a gas bag will be used to separate mud/sediment from explosive product.
		Use blast hole savers
Penetration of stemming material into top of explosive column (fluid/pumpable explosive products)	<ul style="list-style-type: none"> • Blasts charged with fluid/pumpable explosive products only 	Use appropriate stemming material
		Ensure explosive product is gassed to manufacturers specifications before stemming
Water entrainment in explosive product	<ul style="list-style-type: none"> • Blasts containing wet/dewatered blast holes only • Dynamic water present • Historical groundwater information 	Adjust explosive product selection according to manufacturer's recommendations depending on changing conditions.
		Ensure appropriate loading practices are followed during charging
		Eliminate top loading into wet blast holes that cannot be dewatered
		Ensure all primers are positioned in undamaged explosive product
		Use of gas bags in dewatered or contaminated blast holes
		Protect top of explosives column to prevent water ingress
		Reduce excessive hose lubrication during charging.

	Adjust explosive product selection according to manufacturer's recommendations for wet environment.
	Verify correct hose handling practices are in place
	Load low blast holes last where practical
	Minimize sleep time where practical

Primary Cause 7: On bench practices		
Potential Cause	Likely indicators	Control measures
Hole condition incorrectly identified	<ul style="list-style-type: none"> • Slumping of holes • Unexpected material in drill cuttings 	Assess all holes prior to loading in particular presence and extent of any
		Use number and location of wet holes as a basis for explosive product selection and determining loading sequence
		Minimise time between drilling and loading, especially in soft and clay strata. Note: Enough time should be allowed for any dynamic water in the hole to be identified
		Assess holes for slumping on any sleeping shots
	Minimise sleep time	
Blast not drilled as per plan	<ul style="list-style-type: none"> • Can be correlated with incorrectly drilled patterns 	Drillers to report holes not complying with plan. Verify drill hole accuracy in areas considered critical using drill hole positioning and recording system. Adjust design as necessary.
Dewatering of holes diverts water into holes previously loaded with dry hole explosive products	<ul style="list-style-type: none"> • Visual inspections of water on bench. • Bench setup, understanding gradient of bench for water runoff 	Load wet holes in a sequence that ensures other holes are not impacted. Adjust explosive product selection according to manufacturer's recommendations.

6. Management of fume

Due to the close proximity of the Putty Road, Charlton Road, Wallaby Scrub Road and Mount Thorley Industrial Estate to Mount Thorley Warkworth lease boundaries, blasting restrictions detailed in MTW-13-ENVMPR-SITE-E6-013 MTW Blast and Vibration Monitoring Programme such as wind speeds and directions, are strictly observed. Any shot expected to produce fume that is in close proximity to the aforementioned public areas require a road closure as per MTW-Road Closure Management Plan

Within site boundaries, the blasting exclusion zone and sentry procedure takes into account the location of mine personnel on the lease at the time of detonation. A minimum 500 m exclusion zone is the standard for MTW however may be extended to any distance at the shotfirer's discretion. This includes reducing the risk of exposure to personnel downwind of a blast with the potential for fume.

The health and safety risks of blast fumes and information for treating medical staff is outlined in Appendix 3 & 4. In the event that a post-load risk rating indicates the likelihood of fume the following protocol is to apply.

Report / Record	Responsibility	Content
Identify factors contributing to potential fume	Drill and Blast Engineer	<ul style="list-style-type: none"> • Horizon history • Clay / weak material • Rain during loading • Holes slumping • Product selection issues • Product delivery issues • Excessive sleep time • Dynamic water
Defining Fume Management Zone	Competent group consisting of Superintendent, Supervisor, Engineer and Shotfirer – all persons inside the FMZ to be evacuated and area sentried prior to blast	Extent of zone based on <ul style="list-style-type: none"> • Likely fume level at blast to be assessed by group based on above factors • Wind speed and direction • Inversions • Cloud cover • Time of day • Atmospheric stability • Temperature • Humidity • Dispersion model (Fume dispersion site-law under development)
Fume management zone notifications	D&B Engineer	A hardcopy plan with FMZ clearly marked on current aerial photo along with any sensitive

	<p>Supervisor</p> <p>D&B Engineer / Supervisor</p> <p>Environmental Officer</p>	<p>sites (Roads, Bulga Coal, Industrial Area)</p> <p>Internal notifications</p> <ul style="list-style-type: none"> ▪ Daily blast schedule email, Daily planning meeting ▪ Time permitting – TBT fume protocols - windows up, a/c on recirculation ▪ ESO to be on standby for high potential events <p>Bulga Coal where appropriate</p> <p>Road closure notifications - As per Road Closure Management Plan</p> <p>External Stakeholders such as DP&E, EPA, Community, etc.</p>
<p>Firing Blast – as per MTW-10-WI-MINE-244-011- FIRING A SHOT & MTW-10-WI-MINE-244-009 Closing Public Roads</p>	<p>Traffic Road runner</p> <p>All</p> <p>Shotfirer</p> <p>D&B Engineer</p>	<p>Fume level measurements as part of road inspection</p> <p>Fume protocol for vehicle occupants – verbal or document - Windows up and a/c on recirculation</p> <p>Fume observation - Warning message to potentially impacted parties if required –</p> <ul style="list-style-type: none"> • Windows up and a/c on recirculation <p>To utilize fume monitor when conducting post blast inspection</p> <p>Video blast</p> <p>Fume level measurements (monitoring)</p>
<p>Fume Emergency</p>	<p>All</p>	<p>Shot firer, supervisor or sentry or any witness to raise emergency based on observations. ESO and OCE to coordinate response.</p> <p>Advice for anyone potentially affected by fume</p> <ul style="list-style-type: none"> • Get out of the cloud. • Seek fresh air.

		<ul style="list-style-type: none"> • Use water to reduce the amount of exposure to wash out eyes and clear nose and throat <p>See Appendix 3 & 4 for health and safety risks of fume and advice for treating medical staff</p>
Reporting	<p>Shotfirer</p> <p>D&B Engineer</p> <p>Supervisor</p>	<p>MTW-10-REG-MINE-245-001 Shotfiring Shift Report.</p> <p>Assess FMZ against forecast</p> <p>Update fume dispersion site law based on new measurements</p> <p>Notify Explosives Supplier of fume event to aid in investigation and communication</p> <p>The following fume events shall be raised as incidents:</p> <ul style="list-style-type: none"> • Any blast fume required to be reported to external stakeholders (see below); • the visible fume cloud travels beyond the blast exclusion zone; • when any person has been directly exposed to fumes <p>Note that a road closed for the purpose of blasting is considered part of the site</p> <p>The following factors should be considered for inclusion in any post-blast incident report:</p> <ul style="list-style-type: none"> • date and time of blast; • explosives type, quantity, initiation type; • ground geology (soft, faults, wet); • post-blast NOx gas rating, eg 0 – 5 & A-C; • duration of any post-blast NOx gas event (measure of time to disperse); • direction of movement of any post-blast NOx plume; • movement of any post-blast NOx gas plume relative to the established exclusion zone and any established management zone (ie maintained within, exceeded); • climate conditions, including temperature, humidity, wind speed and direction, cloud cover, rain;

7. Documentation and records

The documentation and records used for the preparation and firing of a blast are retained in the Drill and Blast Office. The records contain:

Report / Record	Responsibility	Content
Blast design and performance record	Drill and Blast Engineer	<ul style="list-style-type: none"> • Blast Design • Drill Pattern Plans • Preload risk rating • Load Sheet • Blasting Schedule <ul style="list-style-type: none"> o Location of Blast o Type of Blast • Pre-fire risk rating • Video of blast <ul style="list-style-type: none"> o Operator is to ensure that filming continues post detonation, to ensure any potential fume or dust clouds are captured. • Environmental records <ul style="list-style-type: none"> • Air Blast • Vibration • Fume rating • Measured fume concentration and weather details
Explosives stock control	Shotfirer	<ul style="list-style-type: none"> • Quantity (weight/numbers of units) of explosives delivered • Quantity (weight/numbers of units) of explosives used on a shot basis

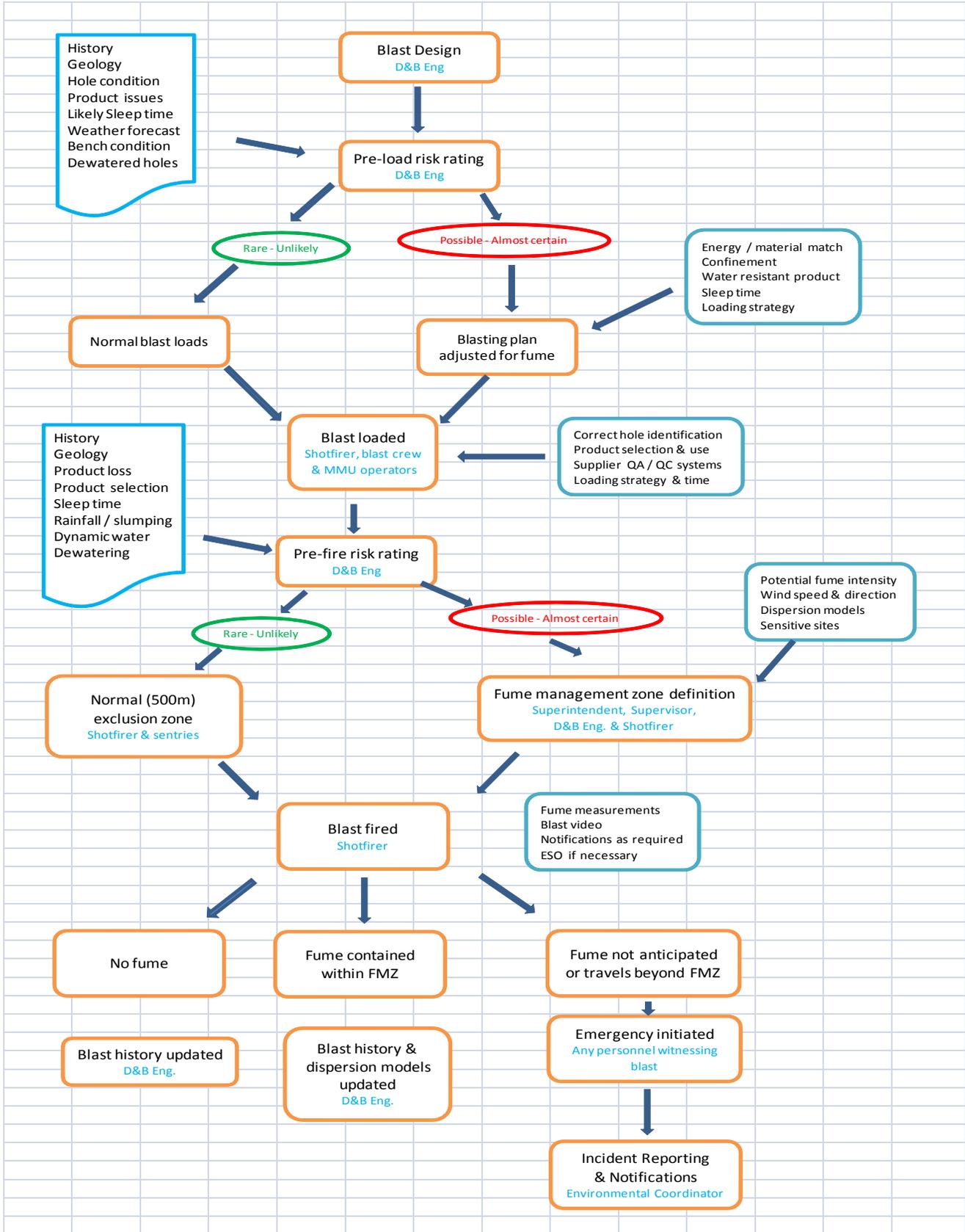
Shotfiring Report	Shotfirer in charge	<ul style="list-style-type: none"> • Date/time of firing • Name, type and location of shot • Explosives type, tonnages delivered of explosives used • Number of holes charged (for day/total) • Pattern Size • Hole Diameter • Average Hole Depth • Numbers of holes fired • General comment on blast loading progress or results. • Environmental comments • Fume Category
Drill Shift Report	Drill Operator	<ul style="list-style-type: none"> • Drill Number • Location/Pattern No. • Burden & Spacing • Operator Name • Bit Size • Date/Time/Shift • Drilling task by the Hour • Hole Number • Hole Depth • Comments – including where holes are drilled off the designed location by more than 0.5m • Total Summary for shift

8. Glossary

Wet Hole – A wet hole is defined as any drill hole containing more than 1 metre of water at the bottom of the hole and/or having wet sides anywhere down the hole. Any hole that has been dewatered is classified as a wet hole.

Dry Hole – A dry hole is defined as any drill hole having less than 1 metre of static water at the bottom of the hole. Should water be detected through the dipping process, a gas bag is used to close off the bottom of the hole, prior to the loading of any explosive product.

APPENDIX 1 – GENERALISED FLOWCHART FOR FUME EVENT



APPENDIX 2 - VISUAL NO_x GASES RATING SCALE

The following table, together with the Field Colour Chart on the next page, details how NO_x gases from a surface blast can be assessed [Ref 6, AESIG].

Level	Typical Appearance
Level 0 No NO _x gas	
Level 1 Slight NO _x gas	
1A Localised	
1B Medium	
1C Extensive	
Level 2 Minor yellow/orange gas	
2A Localised	
2B Medium	
2C Extensive	
Level 3 Orange gas	
3A Localised	
3B Medium	
3C Extensive	
Level 4 Orange/red gas	
4A Localised	
4B Medium	
4C Extensive	
Level 5 Red/purple gas	
5A Localised	
5B Medium	
5C Extensive	

Field Colour Chart.

Assessing the amount of NO_x produced from a blast will depend on the distance the observer is from the blast and the prevailing weather conditions. The Field Colour Chart can be used to assess the level of NO_x that is produced in a surface blast.

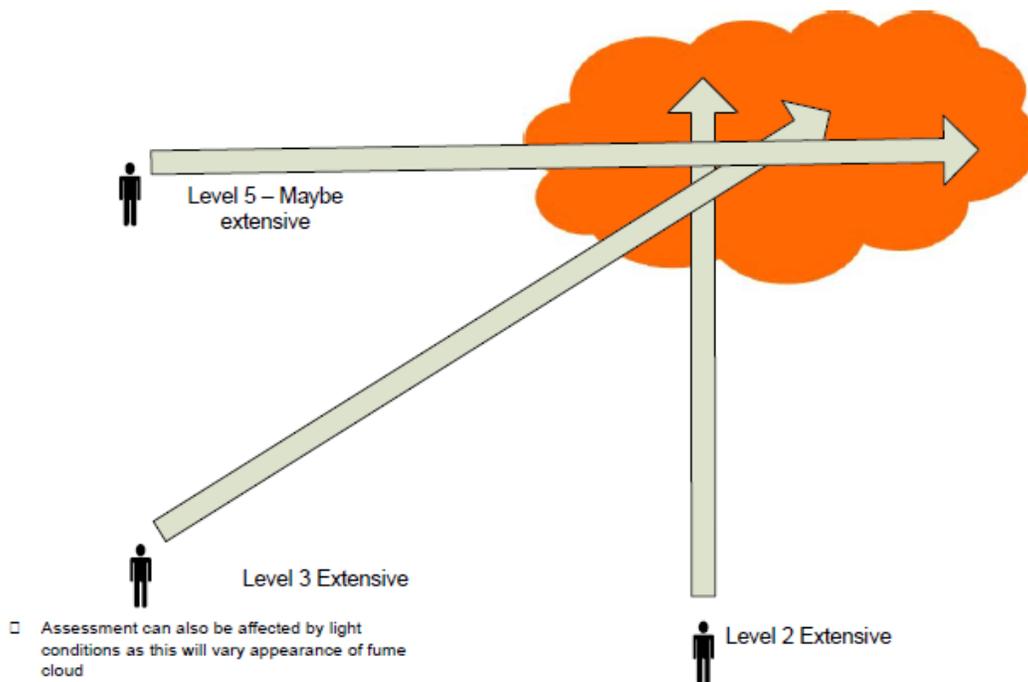
Pantone colour numbers have been included in the Field Colour Chart to ensure colours will always be produced correctly thereby ensuring a reasonable level of standardisation in reporting fume events across the mining industry.

Level	Colour	Pantone Number
Level 0 No Fume		Warm Grey 1C (RGB 244, 222, 217)
Level 1 Fume		Pantone 155C (RGB 244, 219, 170)
Level 2 Minor yellow/orange fume		Pantone 157C (RGB 237, 160, 79)
Level 3 Moderate orange fume		Pantone 158C (RGB 232, 117, 17)
Level 4 Significant orange fume		Pantone 1525C (RGB 181, 84, 0)
Level 5 Major red/purple fume		Pantone 161C (RGB 99, 58, 17)

Observation Issues

The angle of the person to the fume event will influence the assessment. Where possible and without placing persons in the path of a fume cloud there should be a number of observers to record the level. This can be moderated to give a more accurate indication of the cloud.

The issue is that the observer position and fume cloud orientation may influence the rating given.



EFFECT OF ANGLE TO FUME CLOUD AFFECTING ASSESSMENT

APPENDIX 3 – HEALTH AND SAFETY RISKS OF BLAST FUMES

NIOSH Pocket Guides

The US National Institute for Occupational Safety and Health (NIOSH) produces the *NIOSH Pocket Guide to Chemical Hazards* (NPG)... “intended as a source of general industrial hygiene information on several hundred chemicals/classes for workers, employers, and occupational health professionals. The NPG does not contain an analysis of all pertinent data, rather it presents key information and data in abbreviated or tabular form for chemicals or substance groupings (e.g. cyanides, fluorides, manganese compounds) that are found in the work environment. The information found in the NPG should help users recognize and control occupational chemical hazards.”

The NIOSH Pocket Guides for NO, NO₂ and CO are reproduced with authority of the US Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA.

The guides can be accessed through the NIOSH Pocket Guide to Chemical Hazards homepage: <http://www.cdc.gov/niosh/npg/default.html>

Note that the exposure limits do not necessarily match the Australian STEL and TWA.

Health and Safety Risks of Blast Fumes

Nitrogen Dioxide (NO₂)

NO₂ is a toxic gas that irritates the eyes and mucous membranes, primarily by dissolving on contact with moisture and forming a mixture of nitric and nitrous acids.

Inhalation can result in respiratory tract irritation and pulmonary oedema. Onset of pulmonary oedema can be delayed and can cause death, so personnel who have been exposed to NO₂ must be observed in hospital for at least 12 hours. Changes in pulmonary function are evident at exposures levels of 2 to 3 ppm NO₂ [Ref 9]; asthmatics are particularly sensitive, potentially suffering significant broncho-spasm at very low concentrations.

NO₂ varies in colour from light orange through to reddish-brown, depending on the concentration and the light conditions. NO₂ is visible in concentrations above 2.5 ppm [Ref 5], although from a distance (such as viewing a blast) the concentrations may need to be above 30 ppm to be observed [Ref 2].

NO₂ has a sharp, biting odour and can be detected by smell at low concentrations (< 0.5 ppm), but the sense of smell can be subdued above 4 ppm. It has a higher molar mass (46) than air (28.8) and consequently tends to travel across the ground, dispersing over distance.

The STEL for NO₂ is 5 ppm (9.4 mg/m³), TWA is 3 ppm (5.6 mg/m³), and 20 ppm is considered IDLH (immediately dangerous to life or health).

The US National Institute for Occupational Safety and Health (NIOSH) recommended short term

exposure limit is 1 ppm

Concentration	Symptoms
~ 800 ppm	15 seconds exposure lethal by reflex choking if not rescued. Extremely irritating to the eyes, nose and throat.
~ 350 ppm	5 minutes exposure lethal by reflex choking if not rescued. Extremely irritating to the eyes, nose and throat
~ 250 ppm	Lethal to man 15 minutes by reflex choking. Airway reactivity and resistance makes breathing more difficult with time. Less than 5 minutes exposure causes potentially fatal pulmonary oedema
~ 200 ppm	Lethal to man in 30 minutes by reflex choking. Airway reactivity and resistance makes breathing difficult.
150 ppm	For 10 minutes or less causes coughing; eye, nose and throat irritation; headache; nausea and vomiting. Longer exposure can cause permanent eye damage and potentially fatal delayed pulmonary oedema
90 ppm	For 40 minutes has caused moderate irritation to the eyes and mucous membranes and potentially fatal delayed pulmonary oedema. The delay may be up to 70 hours when symptoms of cyanosis (turning blue), shortness of breath, restlessness, headache and frothy yellow or brown sputum appear. If untreated, fluids or froth can flood the lungs (i.e. drowning) or can be infected by viruses or bacteria resulting in bronchitis or pneumonia which may be fatal to a weakened patient.
50 ppm	Moderately irritating to the eyes and mucous membranes within 10 minutes and long exposure can cause permanent eye damage.
4-5 ppm:	For 15 minutes will cause increased airway reactivity (constriction of airways), airway resistance (more effort needed to breathe), and decreased diffusion of gases in the lungs
4 ppm	For 10 minutes anaesthetises the nose so it can no longer smell
0.1 ppm	For 2 hours can result in increased airway reactivity for asthmatics or people with chronic bronchitis.

Symptoms of nitrogen dioxide exposure [Ref 1]

Nitric Oxide (NO)

NO is a colourless gas, with a slightly irritating odour. It is slightly soluble in water and forms nitrous and nitric acid. Mild exposure can cause shortness of breath, coughing and chest pains, but more severe exposure (above 100 ppm) can lead to pulmonary oedema, cyanosis, or respiratory failure [Ref 8].

The TWA is 25 ppm (31 mg/m³), and 100 ppm is IDLH (immediately dangerous to life or health).

Concentration	Symptoms
~ 8,000 ppm (0.8%)	Sudden unconsciousness followed by death in 1 minute by chemical asphyxiation. Higher concentrations may be fatal in less time
~ 3,000 ppm (0.3%)	Dizziness or drowsiness in minutes quickly followed by unconsciousness and death in 5 Minutes
~ 1,600 ppm	Muscular tremors, loss of coordination, faster breathing, faster heart rate, drowsiness, dizziness, excess salivation and vomiting may occur in 5 minutes with unconsciousness in 10 minutes and death in 15 minutes
~ 400 ppm	First symptoms, similar to 1,600 ppm above, appear within 2 hours when Methemoglobin concentration reaches 30-40%. Vomiting may cease and unconsciousness may occur within 3 hours. Still has the potential to be fatal if Methemoglobin concentration of blood reaches 70- 90%
0.3 – 0.9 ppm	Pungent odour

Symptoms of nitric oxide exposure [Ref 1]

Carbon Monoxide (CO)

CO is a colourless, odourless and tasteless gas. It is readily absorbed through the lungs, where it displaces oxygen in blood through the formation of CO-haemoglobin, leading to headache, fatigue, dizziness, drowsiness and nausea. Large amounts of CO can lead to rapid loss of consciousness and death.

Atmospheric CO (ppm)	CO-Hb in Blood (%)	Symptoms
1950	80	Rapidly fatal.
800-1220	60-70	Unconsciousness; intermittent convulsions; respiratory failure; death if exposure is prolonged.
350-520	40-50	Headache; confusion; collapse; fainting upon exertion.

220	30	Decided headache; irritability; easy fatigability; disturbed judgment; possible dizziness; dimness of vision.
120	20	Shortness of breath with moderate exertion; occasional headache with throbbing in the temples.
70	10	Shortness of breath upon vigorous exertion; possible tightness across the forehead.

Symptoms of carbon monoxide exposure. The table gives the levels of COHb in the blood which tend to form at equilibrium with various concentrations of CO in the air and the clinical effects observed [Ref 10].

The TWA is 30 ppm (34 mg/m³). Short-term excursions should never exceed 400 ppm [Ref 12].

Sulphur Dioxide (SO₂)

SO₂ is a colourless gas with a characteristic pungent and irritating odour. It is a severe irritant of the eyes, mucous membranes and skin, due to the rapid formation of sulphurous acid on contact with moist membranes. High concentrations can cause respiratory paralysis or pulmonary oedema.

Concentration	Symptoms
80 – 100 ppm	May cause an increased incidence of nasopharyngitis, shortness of breath on exertion (dyspnea), and chronic fatigue
10 – 50 ppm	For 5 to 15 minutes: irritation of the eyes, nose and throat; rhinorrhea (discharge of thin nasal mucus), choking, cough, and in some instances reflex broncoconstriction with increase pulmonary resistance.
10 ppm	Upper respiratory irritation; nose bleeds
5 ppm	Coughing after 5 minutes
3 ppm	Odour threshold
0.3 – 1 ppm	Detectable by taste

Symptoms of sulphur dioxide exposure [Ref 15]

The STEL for SO₂ is 5 ppm (13 mg/m³), TWA is 2 ppm (5.2 mg/m³), and 100 ppm is considered IDLH (immediately dangerous to life or health) [Ref 15].

Hydrogen Sulphide (H₂S)

H₂S is a colourless gas with a strong 'rotten egg' odour. It is irritating to the eyes and the respiratory tract, and may cause effects on the central nervous system. Inhalation may lead to pulmonary oedema, and as with NO₂, the effects may be delayed by several hours.

Concentration	Symptoms
400 – 700 ppm	Loss of consciousness and possible death after 30 – 60 minutes
50 – 200 ppm	Severe respiratory tract irritation; eye irritation
100 ppm	Loss of sense of smell due to olfactory fatigue
20 ppm	Neurological effects including memory loss and dizziness
5 – 10 ppm	Minor metabolic effects
2 ppm	Bronchial restriction in some asthmatics
0.008 ppm	Odour threshold

Symptoms of hydrogen sulphide exposure [Ref 16, 17]

The STEL for H₂S is 15 ppm (21 mg/m³), TWA is 10 ppm (14 mg/m³), and 100 ppm is considered IDLH (immediately dangerous to life or health).

APPENDIX 4 - INFORMATION FOR TREATING MEDICAL STAFF

Those exposed to NOx gases should seek immediate medical treatment and consideration should be given to placing those exposed under observation for at least 24 hours after exposure.

To assist medical staff the following guide should be provided.

Advice to Medical Staff in the Treatment of Those Who Have Been Exposed to NOx Gases.

The patient may have been exposed to NOx. This is a gas usually produced on mines after the use of explosives. NOx consists of multiple combinations of nitrogen and oxygen (N₂O, NO, NO₂, N₂O₄, N₂O₃, N₂O₅). Nitrogen dioxide (NO₂) is the principle hazardous nitrous gas. NOx irritates the eyes and mucous membranes primarily by dissolving on contact with moisture and forming a mixture of nitric and nitrous acids. But this is not the only mechanism by which injury may occur. Inhalation results in both respiratory tract irritation and pulmonary oedema. High level exposure can cause methaemoglobinaemia. Some people, particularly asthmatics, can experience significant broncospasm at very low concentrations.

The following effects are commonly encountered after NOx exposure:

ACUTE

- Cough
- Shortness of breath
- Irritations of the mucous membranes of the eyes, nose and throat

SHORT TERM

- Pulmonary oedema which may be delayed for up to 4-12 hours

MEDIUM TERM

- R.A.D.S. (Reactive Airways Dysfunction Syndrome)
- In rare cases bronchiolitis obliterans which may take from 2-6 weeks to appear

LONG TERM

- Chronic respiratory insufficiency

High level exposure particularly associated with methaemoglobinaemia can cause chest pain, cyanosis, and shortness of breath, tachapnea, and tachycardia. Deaths have been reported after exposure and are usually delayed. Even non irritant concentrations of NOx may cause pulmonary oedema. Symptoms of pulmonary oedema often don't become manifest until a few hours after exposure and are aggravated by physical effort. Prior to transfer to you the patient should have been advised to rest and if any respiratory symptoms were present should have been administered oxygen. The patient will need to be treated symptomatically but as a base line it is suggested that the following investigations are required:

- Spirometry

- Chest x-ray
- Methheamoglobin estimation

Because of the risk of delayed onset pulmonary edema it is recommended that as a precaution the patient be observed for up to 12 hours. As no specific antidote for NOx exists, symptoms will have to be treated on their merits.

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- Environmental Procedure ATT09-02-11
- Environmental Procedure EP9.2
- MTW-13-ENVMPR-SITE-E6-013 MTW Blast and Vibration Monitoring Programme
- MTW-02-LC-SITE-E10-026 MTW Temporary Closure of Roads for Blasting
- MTW-10-MHMP-241 Explosives Major Hazard Management Plan
- MTW-10-WI-MINE-244-001 Approving and Trialling Explosives and Equipment Work Instruction
- MTW-10-WI-MINE-244-009 Closing Public Roads Work Instruction
- MTW-10-WI-MINE-244-002 Conduct Magazine Operations Work Instruction
- MTW-10-WI-MINE-244-013 Dealing with a Misfire Work Instruction
- MTW-10-WI-MINE-244-016 Dealing with Elevated Temperatures and Reactive Ground Work Instruction
- MTW-10-WI-MINE-244-015 Dealing with Obsolete Explosives Work Instruction
- MTW-10-WI-MINE-244-004 Demarcating and Accessing a Loaded Shot Work Instruction
- MTW-10-WI-MINE-243-002 Drilling a Shot Work Instruction
- MTW-10-WI-MINE-244-011 Firing a Shot Work Instruction
- MTW-10-WI-MINE-244-006 Loading Blast Holes Work Instruction
- MTW-10-WI-MINE-244-010 Postponing Firing of a Tied In Shot Work Instruction
- MTW-10-WI-MINE-244-005 Priming Blast Holes and Distributing IE Work Instruction
- MTW-10-WI-MINE-243-003 Redrilling a Shot Work Instruction
- MTW-10-WI-MINE-244-007 Stemming Blast Holes Work Instruction
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Administration, *Nitric Dioxide in Workplace Atmospheres* (ID182), <http://www.osha.gov/dts/sltc/methods/inorganic/id182/id182.html>

US Occupational Safety & Health Administration, *Carbon Monoxide in Workplace Atmospheres*, <http://www.osha.gov/dts/sltc/methods/inorganic/id209/id209.html>

National Occupational Health and Safety Commission, *Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment*, (NOHSC:1003), Australian Government Publishing Service, Canberra, 1995.

Document Control

Revision History

This protocol is to be reviewed at least every three years or as otherwise directed by the Secretary of Department of Planning & Environment. The review process is to reflect changes in environmental legislation and guidelines, and changes in technology or operational procedures.

Date	Version	Author	Notes
2013	1.0	Bill Arnold	Original document
2014	2.0	Bill Arnold	Revised for WML Mod 6 Approval
16/07/2015	3.0	Bill Arnold / Gerard Gleeson	Revised for WML Continuation / MTO 2014 Project Approvals
03/12/2015	3.1	Bill Arnold / Gerard Gleeson	Revised for WML Continuation / MTO 2014 Project Approvals
15/01/2016	3.2	Bill Arnold / Gerard Gleeson	Revised following feedback from DP&E
14/07/2017	3.3	Bill Arnold/Doug Fenton	Revised to include updated AEISG fume rating scale
30/11/2017	4.0	Dominic Brown	Revised to new ownership format

Appendix D – Road Closure Management Plan

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold



MTW ROAD CLOSURE MANAGEMENT PLAN

Document control

Version	Date	Revision Description	Prepared by	Reviewed by
1.0	31/08/2012	Original document as submitted to RMS, SSC and DoPI	Nicola Proctor	Mark Nolan
2.0	26/09/2012	Revised following feedback from RMS	Kelly O'Mullane	Mark Nolan
3.0	24/07/2014	Revised (Warkworth Extension disapproval, Warkworth Modification 6 Approval)	Gerard Gleeson	Andrew Speechly
3.1	08/09/2014	Minor revision of V3.0 following DP&E feedback	Gerard Gleeson	Andrew Speechly
4.0	03/12/2015	Major revision – approval of Warkworth Continuation and Mount Thorley Operations 2014 Projects	Gerard Gleeson	Andrew Speechly Glenn Meyn
5.0	06/11/2017	Revised to meet recommendations of a traffic management plan as set out in the RMS manual	Bill Arnold	Glenn Meyn Jared Everett Andrew Speechly
6.0	14/06/2018	Minor revisions – update of listed work instruction and rplan, Singleton Argus Newspaper Ad and Appendices	Melissa Cedelland	Gary Mulhearn Shannon Lineham

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1. Overview

1.1 Objectives

The primary objective of this plan is to safely manage temporary closures of Putty Road, Wallaby Scrub Road, Charlton Road, Golden Highway or combinations thereof for the purposes of blasting.

Fundamental to achieving this objective is to:

- Ensure safety and protection of potentially affected persons and property;
- Minimise road closure periods;
- Minimise inconvenience on road users, local residents and businesses;
- Notify in advance relevant stakeholders, including the public, of blasts that will temporarily close either **Putty, Charlton or Wallaby Scrub Roads or Golden Highway** or combinations thereof; and
- Ensure that emergency service activities are not restricted by road closure events.

This Traffic Management Plan outlines:

- NSW Department of Planning and Environment requirements for closing a public road for blasting activities;
- Singleton Council's requirements for closing a public road for blasting activities;
- RMS Requirements for closing a public road for blasting activities;
- Responsibilities for road closure;
- Remedial action measures;
- Flyrock management; and
- Major hazards before controls are implemented

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2. Legal and Other Requirements

The following requirements shall apply to all public road closures for the purposes of blasting at MTW.

2.1 NSW Department of Planning and Environment

Consent Conditions and requirements for Road Closure Plan are detailed in:

- *Warkworth Continuation Project Development Consent (SSD-6464) November 2015*
- *Mount Thorley Operations 2014 Development Consent (SSD-6465) November 2015*

2.2 Council Conditions

Singleton Shire Council have prescribed their requirements for public road closures for the purpose of blasting at MTW, and are detailed in the appendices.

2.3 Road Occupancy Licences

Only Putty Road and the Golden Highway have been identified as roads requiring Road Occupancy Licences for public road closures for the purpose of blasting at MTW. Respective ROLS and their underlying conditions are detailed in the appendices.

2.4 Legislation, Standards and Guidance

- *Roads Act NSW 1993*
- *NSW Work Health & Safety Act 2011 (WHS)*
- *NSW Work Health and Safety Regulation 2011*
- *AS 1743-2001 Road Sign Specifications*
- *Road Rules 2008*
- *RMS | Traffic Control at Work Sites Manual*

2.5 Work Instructions and Plans

The following internal work instruction and plan shall support the Traffic Management Plan:.

- *MTW-10-WI-MINE-244-011 Firing a Shot Work Instruction*
- *MTW-10-ENVMP-SITE-060 Blast Management Plan*

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3. Management of Road Closures

3.1 Site Overview

Mount Thorley Warkworth operations are bounded by the Golden Highway to the north and east, Wallaby Scrub Road and Charlton Roads to the west, with Putty Road splitting the Warkworth and Mount Thorley Operations.



Figure 1: Aerial photo depicting the roads

Road closure approval has been limited to combinations of:

- **Putty Road** for approximately 6km from a point no less than 600m west of Charlton Road intersection to the intersection with Golden Highway;
- **Charlton Road** for approximately 7km from intersection with Putty Road and Cobcroft Road;
- **Wallaby Scrub Road** for approximately 8km from intersection with Putty Road and Golden Highway; and
- **Golden Highway** for approximately 4km from Long Point Road to Warkworth Village

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3.2 Requirements to Close Public Roads

Public roads will be temporarily closed whenever:

- Blasting is to be carried out within 500m of a public road; and / or
- Risk assessment has identified that portions of the road may be subject to post blast emissions, dust or other blasting risks.

3.3 Notifications

3.3.1 Singleton Argus Newspaper

The intention to temporarily close roads for the purposes of blasting shall be advertised in the Singleton Argus in the edition prior to the planned blasting event.

The advertisement will appear in the Public Notices section and be in the following format or similar:



3.3.2 Advanced Warning Signs

Where mandated, notice of temporary road closures will be provided via the posting of signs on the affected road(s) in the 24 hours prior to blasting. Signs will comply with *AS 1743-2001 Road Sign Specifications*.

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3.3.3 Notification to Singleton Shire Council

Singleton Shire Council Infrastructure Group must be notified by 12PM on the previous day for any blasts after 7AM. The approval format is by either facsimile 02. 6572 4197 or email ssc@singleton.nsw.gov.au and should detail:

- Proposed date and time of the blast;
- Roads that may be required to be closed;
- Advertising haven taken place; and
- Conditions that may result in deferral of the blast.

3.3.4 Blasting Hotline

The Blasting Schedule Hotline is the primary tool by which members of the public can find information relating to MTW temporary road closures. MTW uses its best endeavours to align the road closure with the advertised time and limit the road closure duration to minimise inconvenience to road users.

The Blasting Hotline is updated on the morning of each day on which there is a scheduled road closure and can be reached on (freecall) **1800 099 669**. The hotline will advise of a one hour window for the proposed road closure (eg between 10am and 11am).

In the event that a road closure is to occur outside the blasting window, and once the revised time is understood, MTW will update the hotline for another one hour window, where practicable.

3.3.5 Emergency Services Notification

Emergency services to be notified include:

Rural Fire Service hunintervalley.team@rfs.nsw.gov.au

3.3.6 Roads and Maritime (RMS)

Where required, Road Occupancy Licences need to be activated and de-activated in accordance with RMS requirements. These requirements do change from time to time, however the most up to date procedures for this process can be found in the current Road Closures folder.

3.4 Traffic Control

All traffic control shall be undertaken in accordance with the *RMS Traffic Control at Work Sites Manual*. Traffic control devices will be set up in accordance with the approved Traffic Control Plan for each work zone, however the specific location of signage and the position of the Traffic Controller will take into consideration any external factors such as the threat of protestors or the prevailing weather conditions on a given day.

Where adjustments to approved Traffic Control Plans are required, these shall only be undertaken by suitably trained and authorised personnel in possession of current licensing. Dimension D should only be modified to accommodate prevailing environmental conditions, the preference to maintain routes of detour or alternate accesses or to isolate traffic controllers from the threat of harassment or interference. In all cases, such changes to Dimension D shall be undertaken by trained and authorised personnel.

3.5 Closing Public Roads

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The duration of closure events will be minimised by delaying closures until just prior to the blast. The Traffic Controllers will be positioned at selected points to ensure the safety of all road users. The section of the blocked road shall be large enough to contain any potential passing blast plume or flyrock.

Closures will occur at strategic locations along the road that are highly visible to oncoming traffic and will seek to minimise potential impacts on road users accessing alternate routes. Closure locations will take into consideration the accumulated traffic volume and queue lengths so as where possible, normal traffic access to side roads is not compromised.

Temporary road closures should be scheduled, where practicable, for outside peak traffic flow periods (see 4.3.2 *Peak Times to Avoid*).

3.6 Clearing Public Roads

For the purposes of this plan, road closures and requirements to clear personnel extends to all vehicular traffic, pedestrians, cyclists and people in general. This is consistent with the definition of “traffic” as per the *RMS Traffic Control at Work Sites Manual* – “all vehicles, persons or animals travelling on a road”.

The public roads shall be cleared systematically between traffic control points by one or more personnel who are familiar with the requirements of the task.

It has been apparent that from time to time, members of the public knowingly place themselves at risk by making attempts to remain unidentified and unseen during the road clearing process, or to refuse to leave the area when asked. MTW personnel take every practicable measure to ensure the roads are clear of personnel prior to firing blasts, however at times, law enforcement may be required. Consideration to seeking assistance from Police has been identified as part the risk management process and further details can be found in *the RMS Traffic Control at Work Sites Manual Section 8.2.5 (g) Seeking Police Cooperation*.

Local police can be contacted on **02. 6578 7499**



3.7 Public Safety

The duration of closure events will be minimised by delaying closures until just prior to blasts and by completing post-blast safety inspections immediately following blasts. Although Mount Thorley Warkworth (MTW) will endeavour to minimise the duration of closures, **public safety is the primary objective** and will not be compromised by efforts to reduce closure duration.

From time to time, it may be impracticable to remove people or equipment from the road closure zone, but they may be outside the immediate danger zone of 500m of the blast itself. Approval may be sought at Superintendent level (or above) to authorise blasting to proceed in these situations, with additional controls in place to ensure the safety of the people remaining inside the zone.

Items of plant such as street sweepers, water carts etc. that may be utilised to assist with post blast clean-up may remain within the road closure zone, but cannot be within the immediate 500m danger zone until after the blast has been fired and permission has been granted by the road closure coordinator to enter the area.

Road closures are planned for less than 20 minute durations, however under certain circumstances these closures may go longer to ensure that road users are not subjected to environmental or physical hazards such as:

- *Dust;*
- *Post blast fume and gasses; and / or*
- *Flyrock or other debris on roads.*

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

3.8 Provision for Emergency Services

In the event that emergency vehicles require clear and immediate access through a closed section of public road, the Traffic Controller will immediately communicate with the Road Closure Co-ordinator to ensure a safe thoroughfare is provided for emergency services vehicles. Where possible, and with the safety of all persons being maintained, blasting will be postponed until emergency services have passed safely.

3.9 Re-opening Roads

Following blasting, the affected roads will be visually inspected to determine whether any dust, post blast emissions, fly rock, other blast debris or any other hazards are present.

To facilitate this task, the Road Closure Coordinator should maintain video footage and use a gas monitor to determine levels of post blast gasses.

For reference only, low level alarm limits for 8 hours exposure of certain gasses are as follow:

Gas detected	Low Level Alarm	High Level Alarm
NO ₂	3 ppm	5 ppm
NO	25 ppm	30 ppm
CO	180 ppm	200 ppm
CO ₂	12,500 ppm	30,000 ppm

The public road shall not be reopened until gas levels and visibility have returned to a level below which they pose no risk to road users.

Where flyrock or other blast debris are present on the road, the road shall remain closed until it is cleaned to a trafficable condition or alternate traffic control is in place to control traffic flow around the hazard.

3.10 Deferral of Blasting

From time to time, some conditions beyond the control of MTW will result in the deferral of blasting by 24 hours or less. In these circumstances, Singleton Shire Council approval is required via the Council's Infrastructure Administration Officer (ssc@singleton.nsw.gov.au), and public notice signage (see 3.3.2 *Advanced Warning Signs*) shall be updated to reflect the change.

In the case of a deferral of blasting in excess of 24 hours, MTW is required to re-advertise the new details in accordance with 3.3 *Notifications* where possible.

3.11 Work Zone Information

3.11.1 Cultural and Heritage Data

Aboriginal cultural heritage consists of places and items that are of significance to Aboriginal people because of their traditions, observations, lores, customs, beliefs and history. The traditional Wonnarua people are acknowledged and access to identified areas of cultural significance is controlled by signage and locked gates.

There are no other identified items of cultural or heritage significance within the work zone.

3.11.2 Hydrological Data

There are no dams, watercourses or other water storage facilities that will impact the work zone.

3.11.3 Meteorological Data

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

Meteorological data that will affect the safe completion of the works will be assessed on the day. Resources to assess meteorological data includes but is not limited to:

- **Terrock Envmet model** – local predictions of post blast emissions based on site model, predicted hourly
- **Blast Plume Risk Assessment** – to determine the likelihood of post blast emissions and their predicted path based on local environmental conditions.
- **MTW Blast Permissions** – DP&E approved blasting rules and conditions for environmentally constrained blasting.

3.11.4 Geotechnical and Geological Data

No excavation, drilling or boring will be undertaken as part of the works, and no geotechnical nor geological conditions have been identified that will have impact on the works.

4. Risk Management and Improvement

4.1 Overview

Hazard Identification and risk assessment analysis of the blasting activities has identified risk events/items that will be managed by effective traffic management planning and the implementation of this Traffic Management Plan.

All identified risks have been treated by development of this TMP. Unforeseen risks arising during the event activities will be treated in accordance with standard work practices and procedures where appropriate.

In establishing adequate controls for the hazards identified, a structured approach has been used via the hierarchy of control as outlined below:



Control measures must reduce the risk to 'As Low as Reasonably Practicable (ALARP)'.

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

Where administrative controls are relied on, they must be appropriate. Where work procedures are relied on as a control, they must be understood and followed as a result of training and enforcement.

4.2 Description of Roads

In 2014 a study of the road network surrounding MTW was undertaken for the purpose of an Environmental Impact Statement for the proposed mine continuation project. As part of that study, the traffic movements associated with Wallaby Scrub Road, Putty Road, Charlton Road and the Golden Highway in the vicinity were analysed in detail.

4.2.1 Golden Highway

A national road freight route linking the Hunter Region with the central inland regions of NSW. The route is generally two-lane two-way road with a posted speed limit of 100 km/hr. The roadway is generally constructed to a major highway design standard, with marked centre and edge lines and sealed shoulders which typically have a minimum width of 1-2m in many locations. This road is an RMS controlled road that requires a Road Occupancy Licence for closure.



Golden Highway looking west

4.2.2 Putty Road

Generally an undivided 100 km/hr sealed road which runs between the townships of Singleton in the Hunter Valley to Windsor in the northern outskirts of Sydney. The Putty Road divides the Mount Thorley (MTO) and Warkworth (WML) leases and has marked centre and edge lines between the Golden Highway Intersection and the town of Bulga to the west. This road is an RMS controlled road that requires a Road Occupancy Licence for closure.



Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

Putty Road looking east

Putty Road looking west

4.2.3 Charlton Road and Wallaby Scrub Road

Both two lane rural roads which link the Golden Highway near Wambo with Broke Road approximately 3km east of Bulga Village. The route crosses Putty Road approximately 3km east of Bulga village. These roads generally have 100 km/hr speed limits and variable road pavement width and conditions, such that the edge and centre lines are not typically marked. These roads are not RMS controlled roads.



Charlton Road looking north



Wallaby Scrub Road looking south

4.3 Traffic Analysis

4.3.1 Traffic Survey

Road (both Directions)	Average Weekday Daily Traffic Movements	Morning Peak Hourly Traffic Movements		Afternoon Peak Hourly Traffic Movements	
		Time	Traffic Movements	Time	Traffic Movements
Golden Highway	3,314	6:00AM	268	4:00PM	275
Wallaby Scrub Road	921	6:00AM	96	3:00PM	115
Putty Road (west of MTW)	686*		69*		74*
Charlton Road	Observed traffic movements are lower than Wallaby Scrub Road				

*Note *Actual daily traffic volumes were surveyed in 2014 at 2 locations on Golden Highway and Wallaby Scrub Road. The daily traffic volume for Putty Road was determined from comparisons of the peak hourly intersection traffic volumes and is an estimate only.*

During school period between 8:15AM and 8:45AM and again at 3:45PM to 4:15PM, 3 school buses pass through the work zones.

According to the current Sydney Trains timetable, the following trains arrive and depart from Singleton train station from Monday to Friday weekly:

Direction	06:56AM	10:40AM	07:55PM	09:40PM
Scone to Newcastle				
Newcastle to Scone	04:31AM	09:19AM	5:34PM	07:04PM

Consideration of traffic to meet this train schedule should be given to road closures that fall between 09:00AM And 10:40 AM

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MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

4.3.2 Peak times to Avoid

Peak times to be avoided for road closures in the vicinity of Mount Thorley Warkworth mine are:

Morning: 5:45AM to 8:45AM (outside the normal consent conditions for blasting_
9:00AM to 10:40AM
Afternoon: 3:00PM to 5:00PM

however, it is recognised that from time to time these periods may not be avoidable due to prevailing environmental conditions.

4.3.3 Predicted Queue Lengths

Based on a median blast firing times of 12:50PM based on 2015 and 2016 records, and road closure duration of 15 minutes, typical queue lengths have been estimated for nominated road closure points on Wallaby Scrub Road, Putty Road, Charlton Road and the Golden Highway. These queue lengths assume that the road user will not choose to use the alternate routes that are available.

Road	Direction	Queue Length	Direction	Queue Length
Golden Highway	East Bound	31	West Bound	34
Putty Road	East Bound	12	West Bound	14
Wallaby Scrub Road	North Bound	7	South Bound	12
Charlton Road	North Bound	<7*	South Bound	<7*

*Note *Values for Charlton Road estimated from field observation.*

4.3.4 Existing and Proposed Speed Zones

Note: see *Appendices* for referenced Traffic Control Plans

Road	Existing Speed	Proposed Approach Speed to Traffic Controller	Approved Traffic Control Plan
Golden Highway	100 km / hr	60 km / hr	Use TCP 57 to reduce approach speed from 100km / hr to 60 km / hr
Putty Road	100 km / hr	60 km / hr	
Wallaby Scrub Road	100 km / h or 80km / hr	60 km / hr	
Charlton Road	100 km / hr	60 km / hr	

Road	Proposed Speed through Work Zone	Approved Traffic Control Plan	Additional information relating to TCP
Golden Highway	No vehicular , pedestrian or other traffic is permitted within the work zone whilst blasting operations are being undertaken	Use TCP 47 to prevent access to the work zone whilst blasting activities are being undertaken.	No electric detonators used in work zone. No footpaths established. Local features can affect derivation of D
Putty Road			
Wallaby Scrub Road			
Charlton Road			

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

4.3.5 Variations to Standard TCPs

4.3.5.1 Wallaby Scrub Road

Observations and limiting factors

- Road pavement typically less than 6m
- No centre lines are marked
- Shoulder and verge in places is undefined and / or non-existent
- Heavy vehicles pass with little room to manoeuvre
- Frequency of pedestrians is very low – no footpaths are established
- Installation of barrier boards on verges and on road pavement creates hazards for traffic controller
- Installation of barrier boards on verges and on road pavement may impede the safe and efficient passage of emergency vehicles
- Barrier boards cannot be established until the last car has passed through
- Road is narrow enough that traffic controller can manage pedestrian and vehicular traffic without the use of barrier boards
- Use of barrier boards increases the duration of establishing and disestablishing the closure point
- Vehicles tend to travel at 100km / hr along Wallaby Scrub Road

Recommendations to TCPs for Wallaby Scrub Road

- Adopt $D=100$ for derivation of TCPs for Wallaby Scrub Road. Use the tolerances set out in the Manual as a guide, taking into account local features and restrictions.

Section 3.5.8 of the manual allows for tolerances in setting out TCPs and devices – tolerances may be exceeded where local features intervene.

- Omit the requirement for duplicate signs on Wallaby Scrub Road. This relates directly to TCP 47 and 57.

Under section 3.2.4 of Manual, duplication of signs may be dispensed with where it is impractical (ie where it would be necessary to cross the road on foot carrying signs, the shoulder is too narrow to position the signs or to park the work vehicle).

Under sections 3.4.2 and 3.4.3 of the Manual, workers shall not cross roads or carriageways on foot when erecting or moving signs (or devices)

- Omit the requirement for T4-7 and T4-3 on TCP 47

Electric detonators are not used – TCP 47 allows for these signs to be omitted where electric detonators are not used

- Omit the requirement for barricading across the road and road shoulders, which are steep or non-existent in places.

Under section 3.4.4 of the manual, at sites where it is difficult to remove control signs and devices due to traffic conditions, volumes, shoulder width or road alignment, special arrangements (incorporating a site specific TCP and appropriate safe procedures) to compliment the above principals shall be adopted to maintain worker safety.

Barrier boards cannot be established until the last vehicle has passed out of the work zone, making the inclusion of barrier boards a redundant control in TCP 47.

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

- Include procedure for use of patrolling vehicles and positive 2-way communication between traffic controllers to ensure vehicles cannot proceed into the danger zone without being detected and pulled up.

Under the definitions section of the Manual, the purpose a the safety barrier is to resist penetration of an errant vehicle and as far as practicable, to redirect errant vehicles back onto the travelled path. A manned vehicle in conjunction with positive two way communication is a far more effective barrier and more efficient way to respond to issues.

- Identify areas for safe parking for workers and turnaround for queuing traffic (if applicable).
- All conflicting speed signs to be covered

Under Section 8.2.5 of the Manual, when a roadworks speed zone is introduced, speed restriction signs or markings or advisory speed signs in the zone which show conflicting speeds shall be covered or moved.

4.3.5.2 Charlton Road

Observations and limiting factors

- Road pavement typically less than 8m
- No centre lines are marked
- Shoulder and verge in places is undefined and / or non-existent
- Heavy vehicles pass with little room to manoeuvre
- Frequency of pedestrians is very low – no footpaths are established
- Installation of barrier boards on verges and on road pavement creates hazards for traffic controller
- Installation of barrier boards on verges and on road pavement may impede the safe and efficient passage of emergency vehicles
- Barrier boards cannot be established until the last car has passed through
- Road is narrow enough that traffic controller can manage pedestrian and vehicular traffic without the use of barrier boards
- Use of barrier boards increases the duration of establishing and disestablishing the closure point
- Vehicles tend to travel at 100km / hr along Charlton Road
- Long straights before closure points allow adequate sight distance

Recommendations to TCPs for Charlton Road

- Adopt $D=100$ for derivation of TCPs for Charlton Road. Use the tolerances set out in the Manual as a guide, taking into account local features and restrictions.

Section 3.5.8 of the manual allows for tolerances in setting out TCPs and devices – tolerances may be exceeded where local features intervene.

- Omit the requirement for duplicate signs on Charlton Road. This relates directly to TCP 47 and 57.

Under section 3.2.4 of Manual, duplication of signs may be dispensed with where it is impractical (ie where it would be necessary to cross the road on foot carrying signs, the shoulder is too narrow to position the signs or to park the work vehicle).

Under sections 3.4.2 and 3.4.3 of the Manual, workers shall not cross roads or carriageways on foot when erecting or moving signs (or devices)

- Omit the requirement for T4-7 and T4-3 on TCP 47

Plan	
MTW Road Closure And Traffic Management Plan	
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Electric detonators are not used – TCP 47 allows for these signs to be omitted where electric detonators are not used

- Omit the requirement for barricading across the road and road shoulders, which are steep or non-existent in places.

Under section 3.4.4 of the manual, at sites where it is difficult to remove control signs and devices due to traffic conditions, volumes, shoulder width or road alignment, special arrangements (incorporating a site specific TCP and appropriate safe procedures) to compliment the above principals shall be adopted to maintain worker safety.

Barrier boards cannot be established until the last vehicle has passed out of the work zone, making the inclusion of barrier boards a redundant control in TCP 47.

- Include procedure for use of patrolling vehicles and positive 2-way communication between traffic controllers to ensure vehicles cannot proceed into the danger zone without being detected and pulled up.

Under the definitions section of the Manual, the purpose a the safety barrier is to resist penetration of an errant vehicle and as far as practicable, to redirect errant vehicles back onto the travelled path. A manned vehicle in conjunction with positive two way communication is a far more effective barrier and more efficient way to respond to issues.

- Identify areas for safe parking for workers and turnaround for queuing traffic
- All conflicting speed signs to be covered

Under Section 8.2.5 of the Manual, when a roadworks speed zone is introduced, speed restriction signs or markings or advisory speed signs in the zone which show conflicting speeds shall be covered or moved.

4.3.5.3 Putty Road

Observations and limiting factors

- Road pavement typically less than 8m
- Generally, centre lines are marked. Armco is a predominate feature along the eastern (Singleton) end
- Shoulder and verge in places is undefined and / or non-existent
- Heavy vehicles pass with little room to manoeuvre
- Frequency of pedestrians is very low – no footpaths are established
- Installation of barrier boards on verges and on road pavement creates hazards for traffic controller
- Installation of barrier boards on verges and on road pavement may impede the safe and efficient passage of emergency vehicles
- Barrier boards cannot be established until the last car has passed through
- Road is narrow enough that traffic controller can manage pedestrian and vehicular traffic without the use of barrier boards
- Use of barrier boards increases the duration of establishing and disestablishing the closure point
- Vehicles tend to travel at 100km / hr along Charlton Road

Recommendations to TCPs for Putty Road

- Adopt $D=100$ for derivation of TCPs for Putty Road. Use the tolerances set out in the Manual as a guide, taking into account local features and restrictions.

Section 3.5.8 of the manual allows for tolerances in setting out TCPs and devices – tolerances may be exceeded where local features intervene.

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

- Use duplicate signage for R4-216 (60 roadwork ahead) on divided road
- Omit the requirement for T4-7 and T4-3 on TCP 47

Electric detonators are not used – TCP 47 allows for these signs to be omitted where electric detonators are not used

- Omit the requirement for barricading across the road and road shoulders, which are steep or non-existent in places.

Under section 3.4.4 of the manual, at sites where it is difficult to remove control signs and devices due to traffic conditions, volumes, shoulder width or road alignment, special arrangements (incorporating a site specific TCP and appropriate safe procedures) to compliment the above principals shall be adopted to maintain worker safety.

Barrier boards cannot be established until the last vehicle has passed out of the work zone, making the inclusion of barrier boards a redundant control in TCP 47.

- Include procedure for use of patrolling vehicles and positive 2-way communication between traffic controllers to ensure vehicles cannot proceed into the danger zone without being detected and pulled up.

Under section 3.4.4 of the manual, at sites where it is difficult to remove control signs and devices due to traffic conditions, volumes, shoulder width or road alignment, special arrangements (incorporating a site specific TCP and appropriate safe procedures) to compliment the above principals shall be adopted to maintain worker safety.

Barrier boards cannot be established until the last vehicle has passed out of the work zone, making the inclusion of barrier boards a redundant control in TCP 47.

- Identify areas for safe parking for workers and turnaround for queuing traffic
- All conflicting speed signs to be covered

Under Section 8.2.5 of the Manual, when a roadworks speed zone is introduced, speed restriction signs or markings or advisory speed signs in the zone which show conflicting speeds shall be covered or moved.

4.3.5.4 Golden Highway

Observations and limiting factors

- Road pavement typically less than 8m
- Generally, centre lines are marked.
- Shoulder and verge in places are well defined
- Frequency of pedestrians is very low – no footpaths are established
- Installation of barrier boards on verges and on road pavement creates hazards for traffic controller
- Barrier boards cannot be established until the last car has passed through
- Installation of barrier boards on verges and on road pavement may impede the safe and efficient passage of emergency vehicles
- Road is narrow enough that traffic controller can manage pedestrian and vehicular traffic without the use of barrier boards
- Use of barrier boards increases the duration of establishing and disestablishing the closure point
- Vehicles tend to travel at 100km / hr along the Golden Highway

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

Recommendations to TCPs for Golden Highway

- Adopt $D=100$ for derivation of TCPs for Golden Highway. Use the tolerances set out in the Manual as a guide, taking into account local features and restrictions.

Section 3.5.8 of the manual allows for tolerances in setting out TCPs and devices – tolerances may be exceeded where local features intervene.

- Use duplicate signage for R4-216 (60 roadwork ahead) on divided road
- Omit the requirement for T4-7 and T4-3 on TCP 47

Electric detonators are not used – TCP 47 allows for these signs to be omitted where electric detonators are not used

- Omit the requirement for barricading across the road and road shoulders, which are steep or non-existent in places.

Under section 3.4.4 of the manual, at sites where it is difficult to remove control signs and devices due to traffic conditions, volumes, shoulder width or road alignment, special arrangements (incorporating a site specific TCP and appropriate safe procedures) to compliment the above principals shall be adopted to maintain worker safety.

Barrier boards cannot be established until the last vehicle has passed out of the work zone, making the inclusion of barrier boards a redundant control in TCP 47.

- Include procedure for use of patrolling vehicles and positive 2-way communication between traffic controllers to ensure vehicles cannot proceed into the danger zone without being detected and pulled up.

Under the definitions section of the Manual, the purpose a the safety barrier is to resist penetration of an errant vehicle and as far as practicable, to redirect errant vehicles back onto the travelled path. It is felt that a manned vehicle in conjunction with positive two way communication is a far more effective barrier and more efficient way to respond to issues.

- Identify areas for safe parking for workers and turnaround for queuing traffic (if applicable).
- All conflicting speed signs to be covered

Under Section 8.2.5 of the Manual, when a roadworks speed zone is introduced, speed restriction signs or markings or advisory speed signs in the zone which show conflicting speeds shall be covered or moved.

4.4 Checklist

The attached checklist shall be completed by the Road Closure Coordinator prior to, during and after the undertaking of the works. In order to make quick and decisive improvements to the Road Closure process, this checklist may have minor variations. The most up-to-date version of the checklist can be found in the current Road Closures folder.

4.5 Incidents and Near Misses

Plan MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

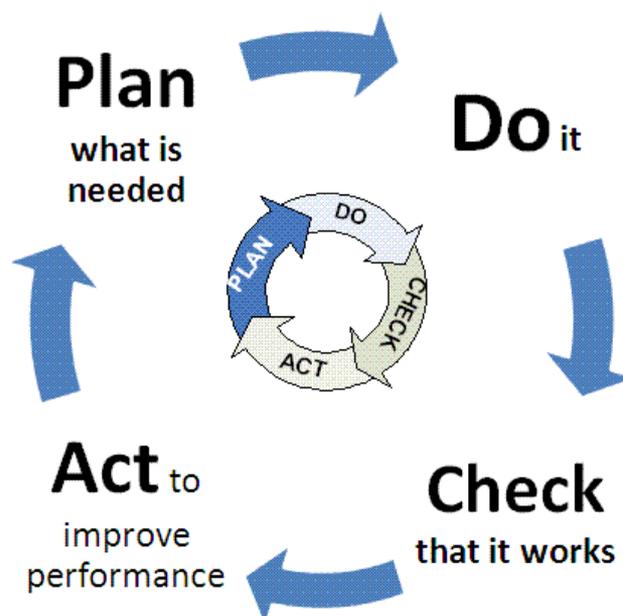
Where incidents or near misses are to be reported, the MTW internal incident reporting system shall be used, and where required, such reports shall be forwarded to Workcover NSW and / or NSW Police and / or other relevant regulatory authorities.

4.6 Review and Improvement

Any opportunities for improvement shall be recorded and used in the review of the Traffic Management Plan for the purpose of continuous improvement.

The continuous improvement process is designed to:

- Identify areas of opportunity for improvement of traffic management;
- Determine the cause or causes of non-conformances and deficiencies;
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies;
- Verify the effectiveness of the corrective and preventative actions; and
- Document any changes in procedures resulting from process improvement.



5. Roles and Responsibilities

5.1 Drill & Blast Engineer

- Ensure that all relevant licencing, consents and legal requirements are current.
- Identify blasts that will require public road closures.
- Identify the portions of roads that are required to be closed, taking into account the location of the blast and the prevailing environmental conditions.

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

- Ensure correct and timely notifications are made in accordance with Singleton Shire Council conditions, the requirements of any Road Occupancy Licences and any other prescribed or relevant notifications in regards to road closures for the purposes of blasting.

These requirements include (but are not limited to):

- *Advertising in latest edition of Singleton Argus*
 - *Notification to Singleton Shire Council*
 - *Coordinating the display of advanced warning signage (Public Road signage)*
 - *Coordinating blasting times with neighbouring mines*
 - *Notification of residents who have driveways affected by road closures*
 - *Advising Emergency Services of road closures*
 - *RMS notifications and ROL activations*
 - *Advising MTW Environmental Service for update of website for road closure schedule*
 - *Ensure that the blasting hotline is updated with the most relevant blast information regarding road closures for the day*
- Ensure that the Road Closure Management Plan undergoes regular review and check for relevance against required legislation, standards, guidelines and for overall effectiveness to identify opportunities for improvement.

5.2 Road Closure Coordinator

- The Road Closure Coordinator is an MTW employee who is charged with the responsibility of managing the road closure operations.
- The Traffic Control contractors report directly to the Road Closure Coordinator when undertaking Traffic Control duties and all communications between the traffic control operations and the Shotfirer-in-charge are channelled through the Road Closure Coordinator.

Coordinate the Traffic Control contractor to ensure that road signage and other traffic control devices are set up and in place in a timely manner to minimise delays.

- Ensure that all relevant RMS licences are current and are carried by people undertaking traffic control duties
- Ensure that any adjustments to the approved Traffic Control Plans are undertaken and authorised by persons with relevant experience and training, and are authorised to do so.
- Ensure that the closed portion of the public road is systematically checked for traffic and other road users prior to initiating the blast.
- Ensure that all reasonable and practicable steps are taken to ensure that no people remain in the immediate 500m Blast Danger Zone, and that any other people, plant or vehicles that remain in the closed portion of the public road are authorised to do so at Superintendent level or above.
- Undertake post-blast inspections of the closed portions of the public road, and coordinate any remedial actions that are required to be undertaken.
- Coordinate the re-opening of the public roads in consultation with the Shotfirer-In-Charge, taking into account the location and the nature of the blast, any post blast gas or emissions, debris or flyrock on the road, or any other hazards that may pose a risk to road users.

Plan	
MTW Road Closure And Traffic Management Plan	
Owner: Superintendent DD&B	Author: Bill Arnold

- Ensure that all relevant systems relating to the road closure are closed out, including all checklists and the recovery or placement of advanced warning signage (Public Road signage) for future blasts.
- Report any breaches or incidents relating to this plan to the Drill and Blast Engineer.

5.3 Traffic Controller

- Ensure that all Traffic Control operations are undertaken in accordance to the relevant legislation, standards and guidelines that apply.
- Ensure that all road signage and other traffic control devices are in a serviceable condition and are positioned / used in accordance with the Traffic Control Plan and the *RMS Traffic Control at Work Sites Manual*.
- Ensure that the details of any breaches or incidents relating to this plan are reported to the Road Closure Coordinator. In the event of a breach, do not leave your post unless your personal safety or the safety of other road users is at risk.
- Undertake traffic control duties under the direction of the Road Closure Coordinator.

6. APPENDICES

- **Traffic Control Training Overview**
- **Activating ROLs Guide**
- **Road Closure Check List**
- **Traffic Control Schemes and Plans**
- **RMS Road Occupancy Licences**
- **Singleton Council Road Closure Approval**

Traffic Control Training

TRAINING COURSE OVERVIEW AS OF 1 JULY 201,

	Traffic Controller	Implement Traffic Control Plans	Prepare a Work Zone Traffic Management Plan
Description	<p>This course provides training for personnel who are required to control traffic with a Stop/Slow bat.</p> <p>This course does not qualify a participant to set up or work with traffic control plans.</p> <p>This program is a good entry point for those wishing to establish themselves into the traffic control/management industry</p> <p>All training and assessment is carried out by RMS Approved Training Providers and qualified RMS Approved trainer/assessors.</p>	<p>This course provides training for personnel who are required to set up and work with Traffic Control Guidance Schemes/Traffic Control Plans at a work site.</p> <p>This course does not qualify a participant to control traffic with a Stop/Slow bat, or to modify existing traffic control plans.</p> <p>This program is suited to those who have Traffic Controller experience and wish to further their career within the traffic control/management industry</p> <p>All training and assessment is carried out by RMS Approved Training Providers and qualified RMS Approved trainer/assessors.</p>	<p>This course provides training for personnel who are required to design new traffic management plans and TCGS/TCP's for road works, produce major upgrades of standard plans and/or inspect traffic control plans on road construction sites.</p> <p>This course does not qualify a participant to control traffic with a Stop/Slow bat or set up work with traffic control plans.</p> <p>This program is suited to experienced traffic control/management operators</p> <p>All training and assessment is carried out by RMS Approved Training Providers and qualified RMS Approved trainer/assessors.</p>
Learning Outcomes	<ul style="list-style-type: none"> • Stop/direct road users using a stop/slow bat and understand stopping sight distances • Maintain traffic incident reports • Understand the Traffic Control Guidance Schemes (TCGSs) also known as Traffic Control Plan (TCPs) for the site • Assess and respond to changes in the environment, for example traffic volumes, weather conditions, road conditions, Work Health and Safety (WHS) and operational requirements • Carry out risk assessments for personal safety • Participate in toolbox talks (specific to traffic control) • Use communication methods and devices • Conform to traffic control policy and procedures 	<ul style="list-style-type: none"> • Identify safety implications of traffic control at road works and personal responsibilities. • Set up, Monitor and Close down traffic control devices according to a nominated TCGS/TCP, to WHS and legislative requirements. • Operate a two-way radio correctly and effectively. • Check, clean and store equipment on completion of work and close down a TCGS/TCP. • Select a TCGS/TCP to suit site conditions, traffic volumes and work activities, and adjust a to suit the specific road environment (see additional notes) • Know the basic function of the TCGS/TCP system • Adapt to all Work Health and Safety (WHS) and operational requirements • Use the site/location assessment, distinguish topographical landmarks and carry out authorised risk control • Conduct an onsite check of a TCGS/TCP to identify any unexpected risks/hazards • Plan for emergencies that may arise • Ensure spacing between signs and traffic control devices is in line with a TCGS/TCP • Understand speed, environment, type and class of vehicles, traffic density, sight lines, environmental conditions, 	<ul style="list-style-type: none"> • Prepare a Work Zone Traffic Management Plan (TMP). • Collect all required information about a given roadwork project to enable the preparation of a TCGS/TCP. • Design a TCGS/TCP, based on risk assessment, statutory and regulatory requirements, standards, road authority requirements and project brief. • Select and modify a TCGS/TCP based on risk assessment, statutory and regulatory requirements, standards, road authority requirements and project brief. • Draw up a TCGS/TCP to recognise other graphical representations such as pedestrian movement plans, vehicle movement plans, and notification of authorities. • Determine the recommended spacing between signs and traffic control devices in line with standards; measure width of trafficable surface; calculate edge clearances to barriers, cones and clearance to work personnel. • Incorporate Environmental Management Plans • Conduct an onsite check and inspection of the plan and to identify any unexpected hazards/risks. • Identify approvals required; identify approval agencies, types of approvals for roadway access, railway reserve access, authority to install signs on roads, variation to standards.

		<p>weather patterns and surface type</p> <ul style="list-style-type: none"> • Maintain traffic incident reports • Monitor traffic controllers 	<ul style="list-style-type: none"> • Understand speed, environment, type and class of vehicles, traffic density, sight lines, environmental condition, weather patterns and surface type. • Monitor and interpret control systems to apply to the drawing, selection and design. • Use approved methods and follow recognised local legislation. • Use the site/location assessment, distinguish topographical landmarks and carry out authorised risk control • Collate traffic volume data, type and class of vehicles • Determine lane capacity, road network performance and lane closure restrictions • Identify impacts from any concurrent or adjacent works • Identify times and dates of any planned public events that may result in increased or redistributed traffic patterns • Identify affected stakeholders and type of notification required and prepare notifications • Calculate costings for TMP development and implementation
Units of Competency	<p>RIIWHS201D Work safely and follow WHS policies and work procedures RIICOM201D Communicate in the workplace RIIWHS205D Control traffic with a stop/slow bat</p>	<p>RIIWHS201D Work safely and follow WHS policies and work procedures RIICOM201D Communicate in the workplace RIIWHS302D Implement traffic management plan</p>	<p>RIIWHS201D Work safely and follow WHS policies and work procedures RIIRIS301D Apply risk management processes RIIGOV401D Apply, monitor and report on compliance systems RIICWD503D Prepare work zone traffic management plan</p>
Recommended Target Audience	<ul style="list-style-type: none"> • Field Staff 	<ul style="list-style-type: none"> • Field Staff • Team leaders 	<ul style="list-style-type: none"> • Works Supervisors • Surveillance Officers • Road Safety Auditors • Project Managers
Course pre Requisites	<p>Currently there are no pre requisites</p>	<p>Currently there are no pre requisites It is recommended that you have experience in Traffic Control</p>	<p>There are no training package pre-requisites for these units of competency, although RMS has set minimum course pre requisites to obtain a photocard in NSW, see below</p> <p>Participants who hold one of the following</p> <ul style="list-style-type: none"> • Current 'Apply Traffic Control Plans' photocard • Current 'Implement Traffic Control Plans' photocard (full qualification) • Current 'Select and Modify Traffic Control Plans' photocard • Current 'Design and Inspect Traffic Control Plans' photocard • (Equivalent qualifications from other jurisdictions) <p>Or</p> <p>For those who do not hold formal Traffic Control/Management qualifications such as engineers and project managers and they wish to complete the course, they will be eligible if, they hold a tertiary qualification that is relative to the road construction, civil construction or engineering. This must be determined upon enrolment and a thorough training needs analysis (TNA) is required</p>

Course Timing	Generally course timing will be based on the individual and or group. 1 (one) full day of training is a minimum for new entrants into the industry who have never held this qualification, to include classroom theory and simulated practical training.	Generally course timing will be based on the individual and or group. 1 (one) full day of training is a minimum for those who have never undertaken these activities prior and have never held this qualification, to include classroom theory and simulated practical training.	Generally course timing will be based on the individual and or group, although RMS stipulates a minimum of 3 (three) full days of training (excludes additional time for post work project assessments)
Training	Training will include; <ul style="list-style-type: none"> Classroom activities Theory questionnaires and group activities Minimum practical traffic control simulation using full scale devices and vehicles in controlled and safe environments 	Training will include; <ul style="list-style-type: none"> Classroom activities Theory questionnaires and group activities Minimum practical implementation, monitoring and removing TCGS/TCP's simulation using full scale devices and vehicles in controlled and safe environments 	Training will include <ul style="list-style-type: none"> Classroom activities Theory questionnaires and group activities. Use of regulatory and statutory manuals and documents Project management that includes case studies and document preparation Use of TCP/TCGS development software
Assessment Requirements	Assessments are to be completed as per the RII Resources and Infrastructure training package requirements, whereby all units of competency must be assessed on the job on a minimum of 2 (two) separate occasions (in the context of traffic control at worksites) Assessments will include <ul style="list-style-type: none"> Theory questionnaires and activities On the job practical application and observation (by an RMS approved trainer/assessor) Provision of workplace samples and documentation 	Assessments are to be completed as per the RII Resources and Infrastructure training package requirements, whereby all units of competency must be assessed on the job via 3 (three) separate live projects (in the context of traffic control at worksites) Assessments will include <ul style="list-style-type: none"> Theory questionnaires and activities On the job practical application and observation (by an RMS approved trainer/assessor) Provision of workplace samples and documentation 	Assessments are to be completed as per the RII Resources and Infrastructure training package requirements, whereby all units of competency must be assessed by qualified assessors (in the context of traffic control at worksites) Assessments will include <ul style="list-style-type: none"> Theory questionnaires and activities Practical activities and observation (by an RMS approved trainer/assessor) Development of TCGS/TCP's Development of 2 (two) Traffic Management Plan projects Provision of workplace samples and documentation
Language Literacy and Numeracy (LLN)	Language, Literacy and Numeracy levels have been mapped for each course in an effort to demonstrate the minimum levels that are required to complete training. In addition the mapping exercise also identifies levels that may be required in the workplace, below is a sample of LLN levels. LLN level equal to or above the following: READING: Level 2 Ability to read appropriate signage for the tasks required and understands clear consistent formats that are written in simple sentences Interpret instructions and information from notices, forms and other forms of written instructions WRITING: Level 2 Writes short texts with simple structures. Fills in details on simple forms and can complete workplace checklists Records simple and routine information ORAL COMMUNICATION: Level 2	Language, Literacy and Numeracy levels have been mapped for each course in an effort to demonstrate the minimum levels that are required to complete training. In addition the mapping exercise also identifies levels that may be required in the workplace, below is a sample of LLN levels. LLN level equal to or above the following: READING: Level 2-3 Ability to read appropriate signage for the tasks required and can read and interpret traffic control plans that include specialised symbols WRITING: Level 2-3 Writes clear sequenced instructions for using routine/everyday activities. Records simple and routine information from a telephone message Can write tasks to be completed by other staff. Completes a range of forms requiring routine and factual data, e/g/ WHS records, inspection reports and checklists.	Language, Literacy and Numeracy levels have been mapped for each course in an effort to demonstrate the minimum levels that are required to complete training. In addition the mapping exercise also identifies levels that may be required in the workplace, below is a sample of LLN levels. LLN level equal to or above the following: READING: Level 4-5 Ability to read and understand highly complex information and can reflect on the explicit and implied purpose of the text and its potential impact Reviews relevant national, state and local legislation and regulations relevant to the job role Identifies and extracts relevant information from complex diagrams, graphs and charts. Identifies critical information from a plan and can translate and convey concepts and ideas. Analyses and evaluates the validity of information sources and make recommendations. Understands specialised vocabulary and acronyms relevant to own fields of expertise and interest

	<p>Asks simple questions and makes statements with reasonable effectiveness where this involves short utterances and highly familiar content. Can use a range of nonverbal communication support such as gestures and facial expressions to express meaning. Can describe a routine task, using workplace specific vocabulary as appropriate supported by body language. Communicates using radio equipment, e.g. to report to base on a location or field emergency</p> <p>NUMERACY: Level 2 Locates and recognises simple, everyday mathematical information in highly familiar short and simple oral and or written materials. Ability to calculate braking distances and speed of oncoming traffic Follows simple instructions and can measure content, time and distance</p>	<p>ORAL COMMUNICATION: Level 2-3 Demonstrates language use appropriate to some different interactional purposes, e.g. gives and opinion or explanation, makes and enquiry or seeks clarification. Can identify key information relevant to an exchange. Can explain routine procedures and give clear sequenced instructions to others. Follows directions to perform a sequence of tasks and listens for specific information in a formal workplace meeting. Asks questions to clarify and confirm instructions. Listens to clear, sequenced instructions of several steps and asks clarifying questions as required. Communicates using radio equipment, e.g. to report to base on a location or field emergency.</p> <p>NUMERACY: Level 2-3 Interprets and comprehends a range of everyday mathematical information that is embedded in familiar and routine texts. Can interpret and familiar and routine maps and plans. Uses appropriate technological devices to measure, estimate and calculate length/distance. Selects and uses appropriate tools and hand held device. e.g. uses tape measure to measure. Problem solving processes using developing estimation, and other assessment skills. Ability to calculate braking distances and speed of oncoming traffic.</p>	<p>WRITING: Level 4-5 Ability to write and organise content in a manner that supports the purposes and format of what is required. Can demonstrate sophisticated control of a broad range of text types. Writes a technical/design brief or a complex work instruction based on client or stakeholder requirement Prepares data for team or stakeholder using graphs Writes clear and detailed instructions organised sequentially to be completed. Compiles reports with input from a range of sources. Understands and uses appropriate specialised vocabulary in a variety of situations</p> <p>ORAL COMMUNICATION: Level 4-5 Engages in complex oral negotiations, such as exploring issues, problem solving, reconciling points of view or bargaining. Determines clients or stakeholder requirements to inform a design or technical brief. Actively participates in workplace meetings. Listens to a set of instructions detailing changes to work processes and notes key changes and the reasons for the changes. Sequences complex technical instructions to ensure understanding, including pitfalls to be avoided when training others to use equipment. Interacts effectively with members of the public to identify and remedy problems.</p> <p>NUMERACY: Level 4-5 Ability to draw upon mathematical knowledge and experience, diagrammatic, symbolic and other mathematical processes. Can extract, interpret and comprehend detailed maps and plans. Uses and applies relevant ratio, rates and proportions e.g. scales on maps and plans. Uses developed estimating and assessment skills to check the outcomes and decide on the appropriate degree of accuracy required. Selects and flexibly uses a range of specialised tools, hand held devices, computers and technological processes.</p> <p>LEARNING: Level 4-5 Ability to draw selectively on experience to adapt past learning to new circumstances Draws on a repertoire of strategies to clarify and extend understanding Develops and trials own approaches to a task when templates and guides are not available Actively seeks feedback from others as a way of improving performance, e.g. approaches peers, manager or customers Attempts complex tasks/activities requiring sophisticated</p>
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			conceptualisation and analysis that may be carried out over an extended period of time, e.g. major projects requiring research and recommendations Draws on prior knowledge to assess, and where required renegotiate, the nature and scope of what has to be done Develops a brief for a complex project that includes several staff with different skills Uses software options to organise and present complex information Uses highly developed formatting, drafting and editing skills to refine thinking and clarify a message for others
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Additional Notes

Implement Traffic Control Plans

RMS has recently added the following task to this qualification

'Select traffic guidance scheme to suit site conditions, traffic volumes and work activities'

This is based on the performance criteria 2.1 from the RIIWHS302D unit of competency

There are strict provisions placed on this ability, see below

Minimum Conditions

- Must be selected from approved TCP/TCGS signed off by qualified persons (persons who hold current 'Design and Inspect Traffic Control Plans' or 'Prepare a Work zone Traffic Management Plan')
- Blank TCP/TCGS cannot be selected from the TCAWS manual and used (unless approved and signed off by qualified persons)
- Approved TCP/TCGS must be current (within the past 6-12months)
- No modifications can be made by the implementer (modifications can only be completed by a qualified person)
- Implementers will be able to make minor adjustments as per A.S 4.1.6 and Traffic Control at Worksites manual section 3.5.8 'Tolerances on positioning signs and devices'
- A risk assessment must be undertaken on each occasion as per general standards
- This change can only be applied for qualifications achieved post 1/7/2015
- Holders of the old 'Apply Traffic Control Plans' who wish to be able to undertake this additional task will need to upgrade to the new 'Implement Traffic Control Plans' qualification

Activating Road Occupancy Licence (ROL) for Road Closures - Blasting

- When closing Putty Road or Golden Highway for the purposes of blasting, we need to activate the relevant ROL prior to closing the road
 - Putty Road ROL# - **536871**
 - Golden Highway ROL# - **535473**
 - Both licences allow us to close roads between 9:00AM until 5:00PM
- This applies to
 - **Putty Road Closure**
 - **4-Way Road Closure**
 - **Golden Highway Road Closure**
- This **DOES NOT** apply to single Wallaby Scrub Road or Charlton Road closures
- Try and select a start time a few minutes before when you think they will close the road. Preferable to be early (up to 15 minutes), than late by a minute
- If there are multiple road closures during one day, they may be covered in the one shift.
 - Eg. Putty Road Closure at 10am and 4-Way road closure at 2pm. Select start time based on when you think they will close the road for the 10am shot. Select end time no later than 5pm.
 - If there is a Putty Road closure and Golden Highway closure on the same day, you will need to activate both licences separately.
- If you have any concerns, call the Traffic Management Centre (TMC) – **1800 679 782**



1. Go to myrol.transport.nsw.gov.au



ROL verification

ROL #

2. Enter ROL #
Putty Road #: 536871
Golden Highway #: 535473

Licensee contact number

3. Enter Licensee Number
Shannon - 0437573623



4. If you are not a robot, check this box and follow the Captcha prompts.



5. Click Verify ROL to log in

ROL # 780158

Hello there!

What would you like to do?

Activate shift

Deactivate shift

Hand over shift

Check shift status

Click on “Activate Shift” to begin the activation process. This will take you to another screen where you will fill in details and then request shift activation.

ROL # 780158

Shift activation request

▼ About you

Your name

Your mobile number

I accept terms and conditions of the ROL number specified here

Ready to commence work

Enter **YOUR** name and mobile number. You will receive a text later once the shift has been approved.

Check these two boxes.

> Shift location and time

> Traffic Management

Open the "Shift location and time" tab

Request shift activation

[<< Back to main menu](#)

ROL # 780158

Shift activation request

> About you

▼ Shift location and time

Location

Subject road

PUTTY RD

From

CHARLTON RD, BULGA

To

GOLDEN HWY, MOUNT THORLEY

Actual boundaries

Select start time of road closure. Listen in on Ch. 11 to shotfirer calls to get an idea on how far off they are to closing the road. Generally, the road will only be closed once all sentries are in position and the shotfirer has called for sentries to move to Ch. 4. If in doubt, contact Road Closure Coordinator – John Hunter or equivalent on Ch. 11.

Shift Timings

Your start time

d/MM/yyyy h:mm a



Your end time

d/MM/yyyy h:mm a



Select end time when road will be re-opened. Our licence is allowed to stay open until 5pm, so leave sufficient time between start and end time in case of any substantial delays.

> Traffic Management

Request shift activation

Open "Traffic Management" tab.

ROL # 780158

Shift activation request

- > About you
- > Shift location and time
- ▼ Traffic Management

Lanes closed

- Lane 1 (kerb lane/s)
- Shoulder
- Median Shoulder

Flow management

- Stop / Slow Control

Direction

Eastbound and Westbound ▼

Items TMC will need to set:

- Flashing traffic signals
- VMS messages
- VSLS speed reduction
- Adjustment to Electronic Lane Status signs

Speed limit reduction

- Zone/1:100 Km/h reduced to 60 Km/h

Check the speed limit reduction zone box

Click Request shift activation.

Request shift activation

<< Back to main menu



ROL # 2011111

Shift activation request

Your shift activation request has been received.

<< Back to main menu

You will receive a confirmation that your request has been received (Above).

If you have entered information incorrectly, you will receive the following notification (Below). Revise incorrect details and request activation again.



Your shift will then be activated by the TMC and you will receive an SMS. If you don't receive an SMS within 10 minutes, call TMC on 1800 679 782.



ROL # 2011111

Hello there!

What would you like to do?

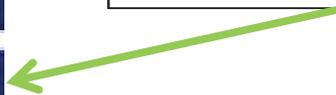
Activate shift

Deactivate shift

Hand over shift

Check shift status

Check the shift status here to make sure shifts have been approved for activation/deactivation



Sometimes "Deactivate shift" will not be selectable until you check shift status after activation.

ROL # 2011111

Hello there!

What would you like to do?

- Activate shift
- Deactivate shift
- Hand over shift
- Check shift status

1. Tap Deactivate Shift

Shift deactivation request

About you

Your name

Angela Wu

Your mobile number

0401023961

Shift deactivation details

I accept terms and conditions of the ROL number specified here



Control setup removed



Manual devices removed



Request shift deactivation

ROL # 2011111

Shift deactivation request

Your shift deactivation request has been received.

<< Back to main menu

5. You will receive confirmation that the request has been received

2. Enter your details

3. Check all three boxes

4. Click Request shift deactivation

ROL # 2011111

Hello there!

What would you like to do?

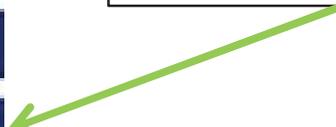
Activate shift

Deactivate shift

Hand over shift

Check shift status

Check the shift status
after deactivation and
once approved, log off.



MOUNT THORLEY WARKWORTH - ROAD CLOSURE CHECKLIST

Date: Road Closure Coordinator: Blast:

Closing Road?	Road Occupancy Licence	Advertised Argus	SCC Notification	Advanced Warning Signs	Blasting Hotline	Reduced Speed Zone established	Reduced Speed Zone dis-established	Time Closed	Time Re-opened
Wallaby Scrub Road	N/A								
Putty Road	534855								
Charlton Road	N/A								
Golden Hwy	535473								

	Yes	No	Comment
Is the Traffic Control Plan approved?			CARS IN QUEUE
Is the Traffic Control Plan on site?			
Are all signs and devices set out as in the Traffic Control Plan?			
If 'no', have modifications been approved by an authorised person?			
Are advanced warning signs used appropriately?			
Are the requirements incorporated for safe clearance to workers and traffic approach speeds?			
Are all signs and devices used in a serviceable condition and fit for use?			
Are all sign faces compliant with AS1742.3?			
Are all traffic controllers trained, authorised and fit for duty?			
Do all traffic controller understand the requirements of the Traffic Management Plan?			
Are all traffic controllers able to communicate with each other and the Road Closure Coordinator?			
Has an assessment of expected queue lengths been undertaken and documented?			
At the end of the work have all signs and devices been removed?			
At the end of the work has the pre-existing speed limit been re-established?			
Are there any opportunities for improvements to this TMP that have been identified?			
Are there any incidents or near-misses to report?			

SITE SKETCH

PLEASE DRAW AND ADD NOTES ON DIAGRAM AS REQUIRED

SIGNS AND DEVICES REGISTER

All signs and devices are to conform to AS1742, and are only to be placed and removed by people trained and authorised to do so.

List others used	WIND SPEED LOW MED HIGH <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	WIND DIRECTION N W E S
	WEATHER Sunny <input type="checkbox"/> Overcast <input type="checkbox"/> Foggy <input type="checkbox"/> Raining <input type="checkbox"/>	VISIBILITY Good <input type="checkbox"/> Average <input type="checkbox"/> Poor <input type="checkbox"/> Very Poor <input type="checkbox"/>
	COMMENTS	

BLASTING HOTLINE

Time Designated Window

Between and
Between and
Between and

Blast Fired: _____
Blast Delay Reasons: _____



**Traffic Control at Work Sites
Location Checklist**

Road No: Location: **MOUNT THORLEY WARKWORTH**
 Type of Work: **TEMPORARY ROAD CLOSURE FOR BLASTING**
 Date: Time: Completed by:

The following checklist shall be completed on site with the approved TCP for the work being undertaken, prior to TCP implementation.

1	Has provision been made for any intersections, on-loading or off-loading ramps within the worksite ?	Yes/No/NA
2	Will vehicles be entering or leaving the worksite from private or commercial driveways ? Has provision been made for those vehicles ?	Yes/No Yes/No/NA
3	Is there adequate sight distance for road users to signs and traffic controllers ?	Yes/No
4	Will control measures be safe for the approach speeds of traffic ?	Yes/No
5	Has consideration been given to traffic volumes expected ?	Yes/No
6	Has provision been made for bus stops (including school) ?	Yes/No/NA
7	Has provision been made for pedestrians including those with impairments ?	Yes/No/NA
8	Has provision been made for cyclists ?	Yes/No/NA
9	Are there any overhead power lines that might be a risk to construction vehicles and plant ?	Yes/No
10	Has the time of day been adequately considered (ie night work, low setting sun) ?	Yes/No

Item No	Action taken.



Drawn By: William Arnold

Date: 17th October 2017

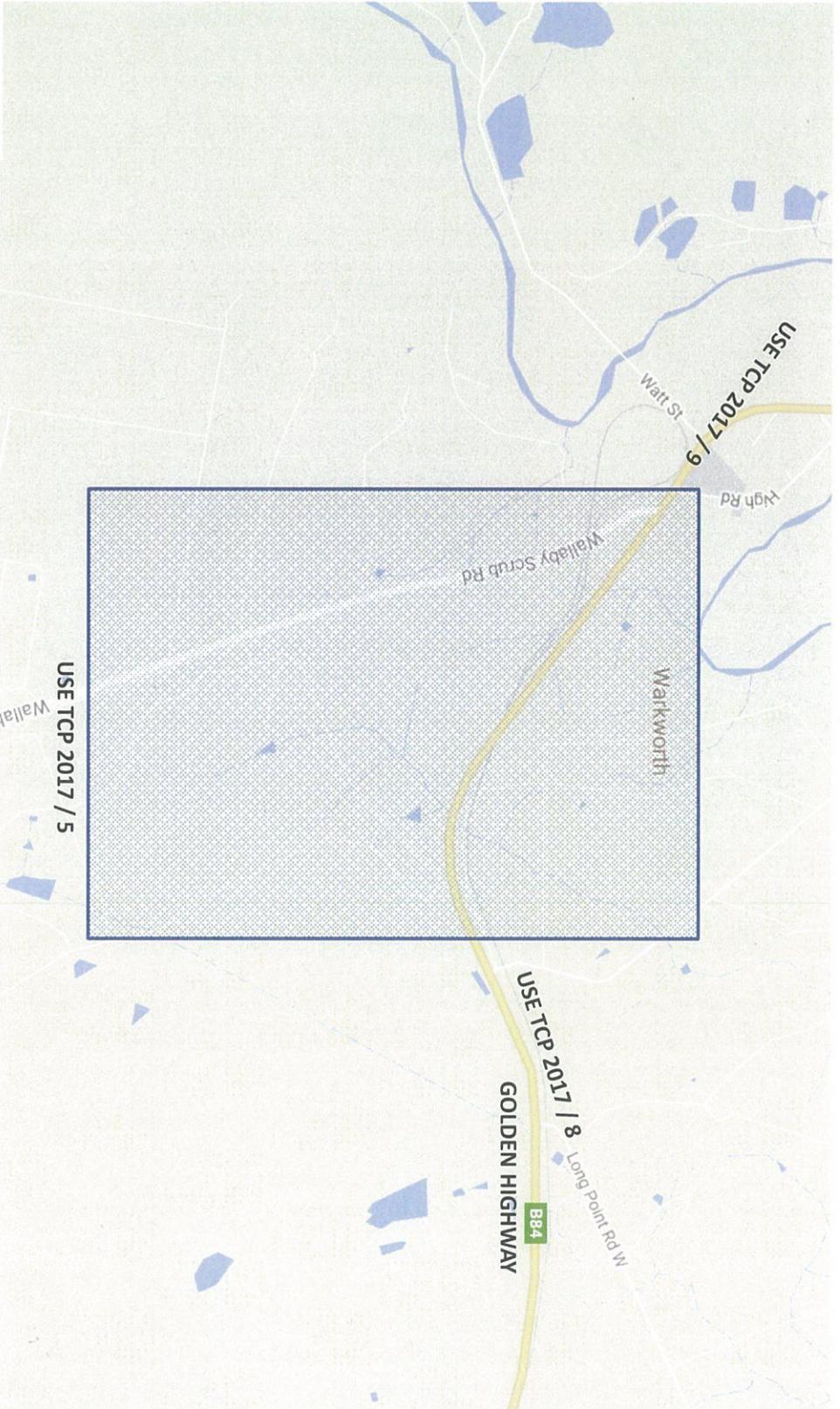
Card Number: 0035577318

Expiry Date: 04th Nov 2019

Signed:

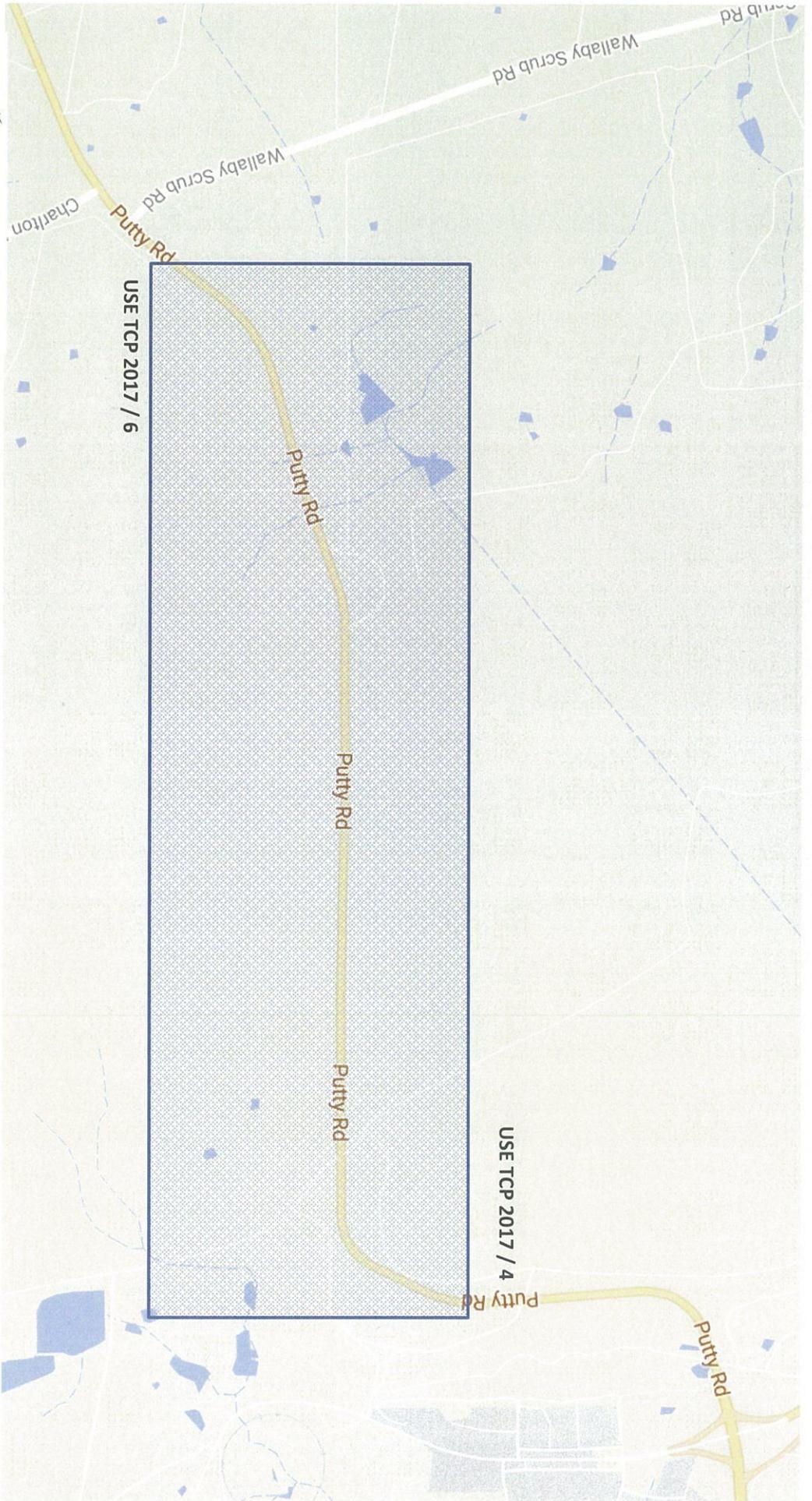


WORKZONE 1
GOLDEN HIGHWAY



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>William Arnold</i>

WORKZONE 2
GOLDEN HIGHWAY EXT

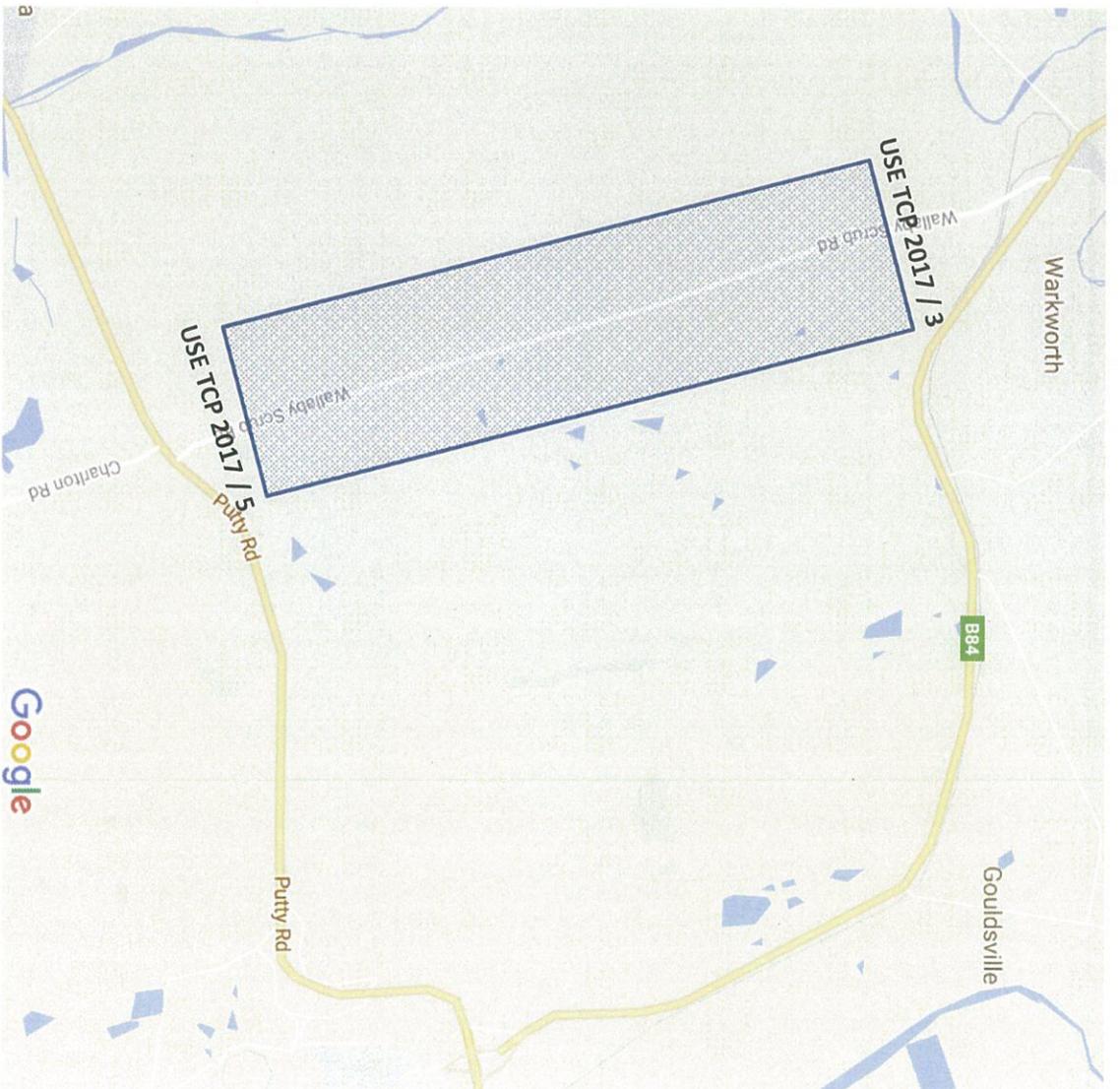


Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>[Signature]</i>

WORKZONE 3
PUTTY ROAD



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>W. Arnold</i>



WORKZONE 4
WALLABY SCRUB ROAD



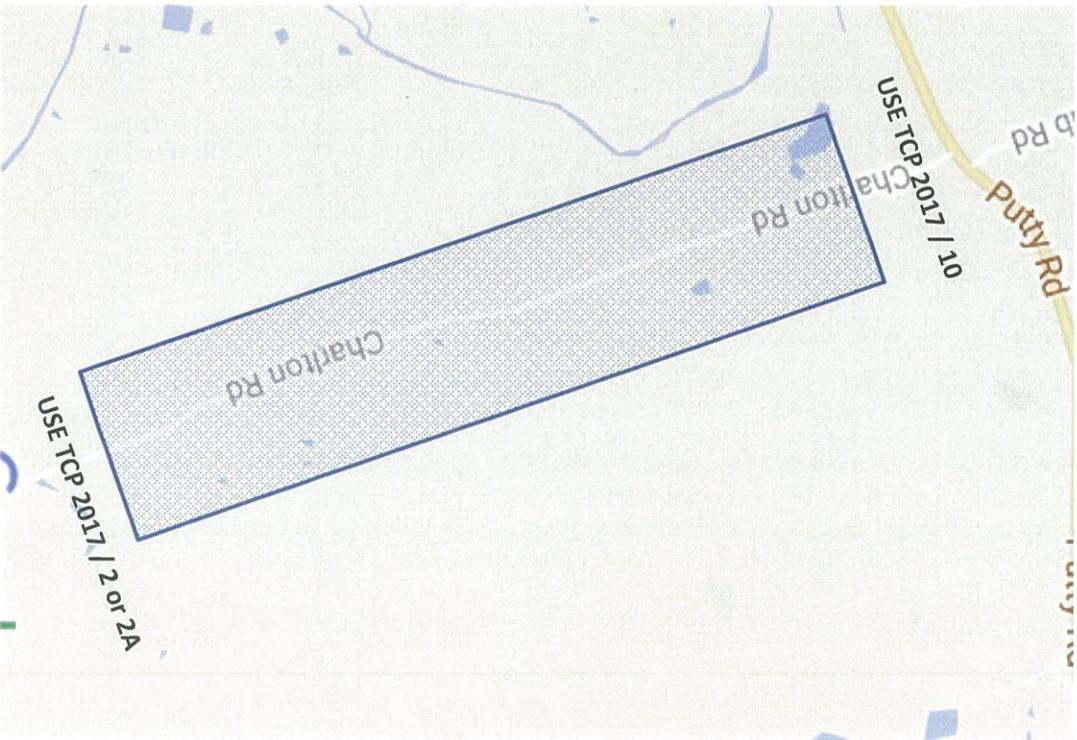
Drawn By:	William Arnold
Date:	19 th May 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	



WORKZONE 5
PUTTY ROAD | CHARLTON ROAD &
WALLABY SCRUB ROAD



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>William Arnold</i>



WORKZONE 6
CHARLTON ROAD

To Warkworth

Wallaby Scrub Road

Putty Road

To Singleton

Charlton Road
To Broke

300m minimum

Additional support vehicle to assist with traffic management at closure point in place of barrier

T1-34 and T1-18 to be covered when traffic controller is absent

100m

100m

100m

100m

100m



T1-34



T1-18



T4-216



T1-15



R4-212



T1-1



T4-216

To Bulga



Drawn By: William Arnold

Date: 17th October 2017

Card Number: 0035577318

Expiry Date: 04th Nov 2019

Signed: *William Arnold*

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone

TCP 2017 / 1
PUTTY ROAD WEST



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>William Arnold</i>

Putty Road
To Bulga

Wallaby Scrub Road

Putty Road
To Singleton

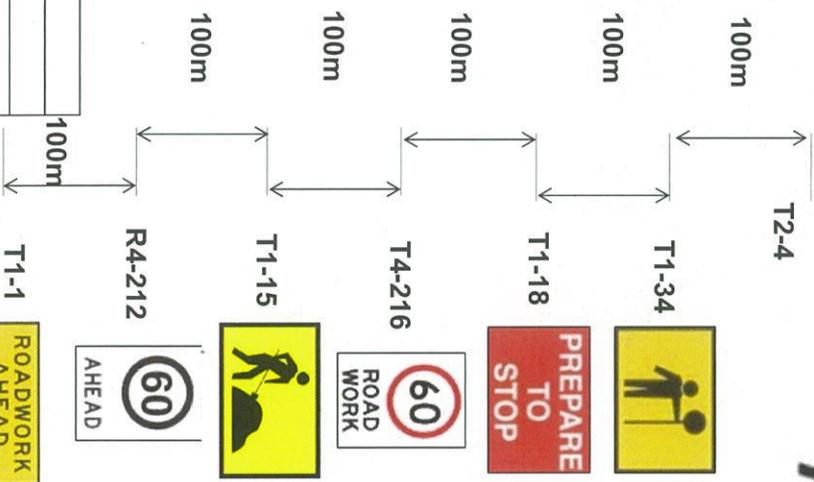
Charlton Road

No less than 2.40km to intersection

Additional support vehicle to assist with traffic management at closure point in place of barrier

USE THIS CONFIGURATION WHEN PORTABLE SIGNS ARE USED - FOR FIXED SIGN CONFIGURATION USE TCP 2017 / 2 A

T1-34 and T1-18 to be covered when traffic controller is absent



Duplicate T4-216 not required due to local constraints on road

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone

T1-1
ROADWORK AHEAD



Wallaby Scrub Road

Putty Road
To Singleton

No less than
2.40km to
intersection

Additional support
vehicle to assist
with traffic
management at
closure point in
place of barrier

**USE THIS
CONFIGURATION
WHEN FIXED SIGNS
ARE USED - FOR
PORTABLE SIGN
CONFIGURATION
USE TCP 2017 / 2**

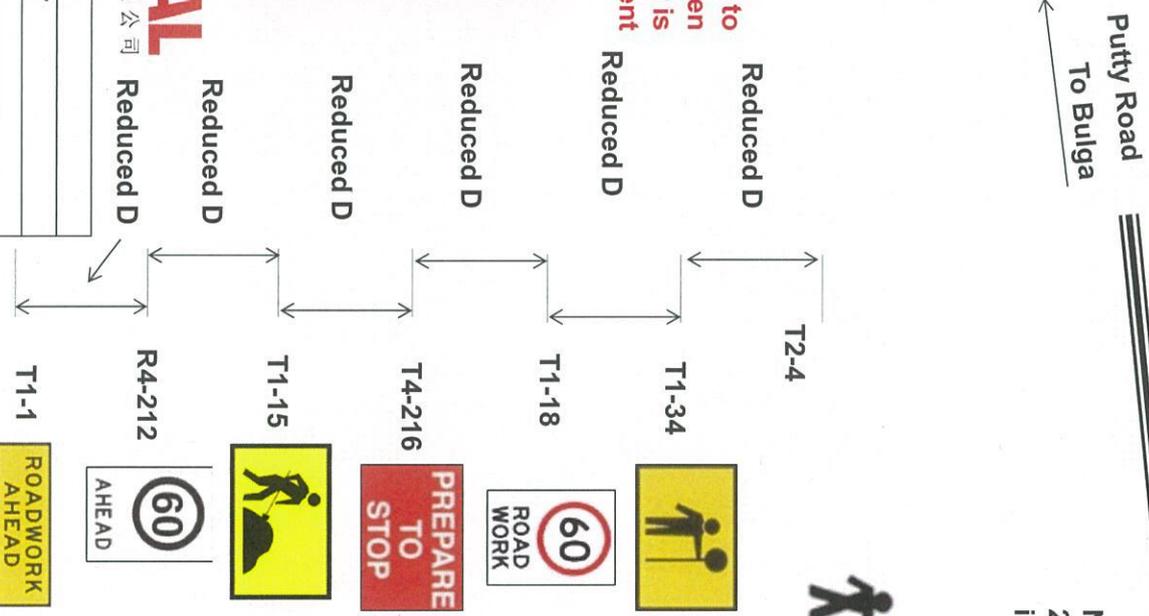
Charlton Road

Duplicate
T4-216 not
required
due to
local
constraints
on road

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
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Local site constraints
restrict the use of
D=100 for this
configuration. Use
fixed signs at
reduced D as
installed

T1-34 and T1-18 to
be covered when
traffic controller is
absent



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>[Signature]</i>



Drawn By: William Arnold

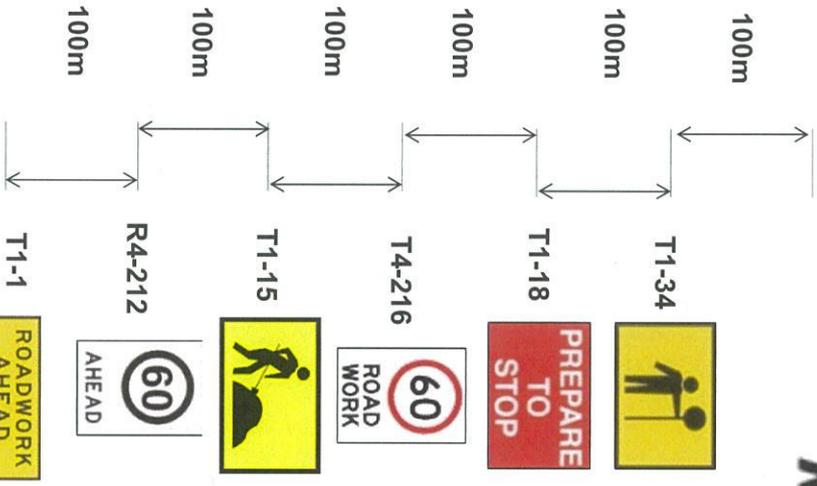
Date: 17th October 2017

Card Number: 0035577318

Expiry Date: 04th Nov 2019

Signed: *William Arnold*

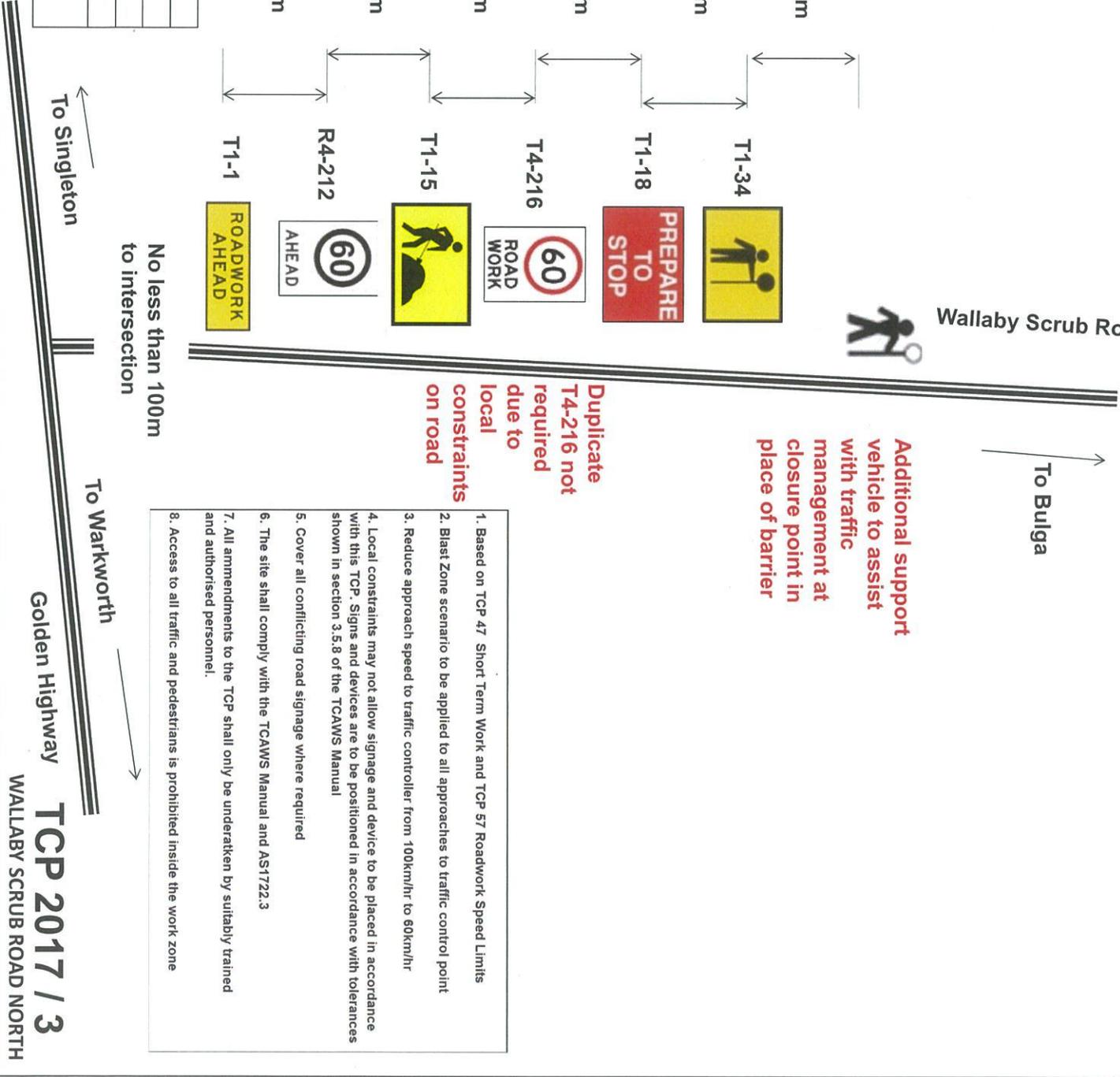
T1-34 and T1-18 to be covered when traffic controller is absent



Additional support vehicle to assist with traffic management at closure point in place of barrier

Duplicate T4-216 not required due to local constraints on road

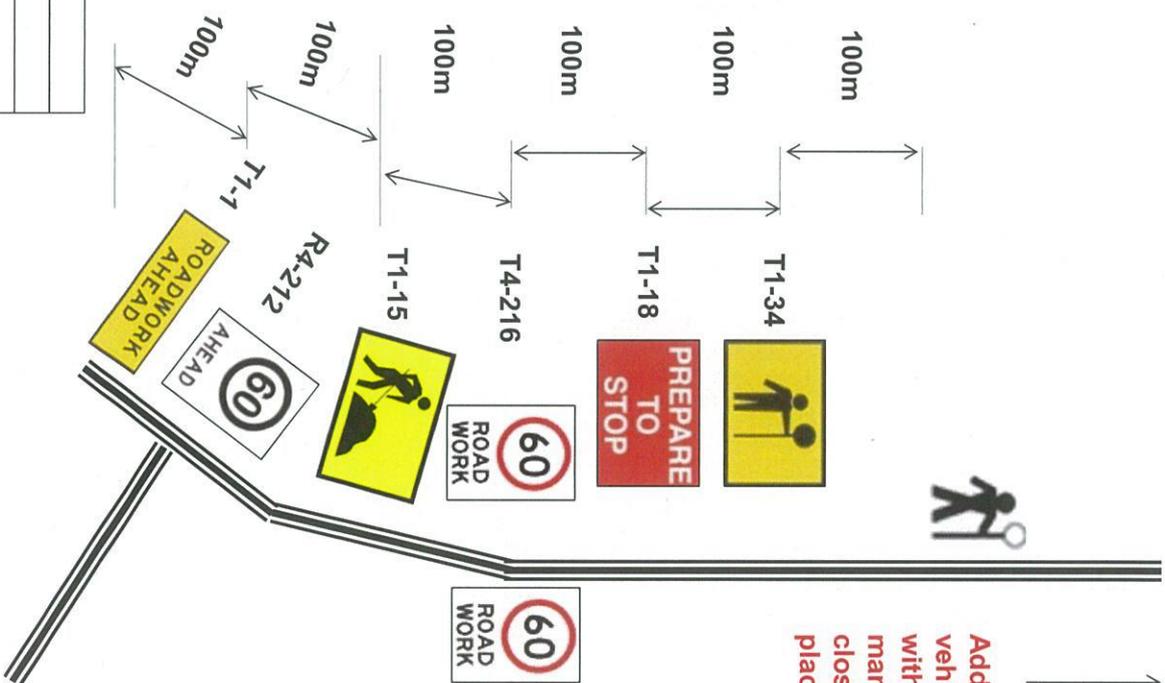
1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
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7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone





Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>William Arnold</i>

T1-34 and T1-18 to be covered when traffic controller is absent



Additional support vehicle to assist with traffic management at closure point in place of barrier

Putty Road To Bulga

T4-216

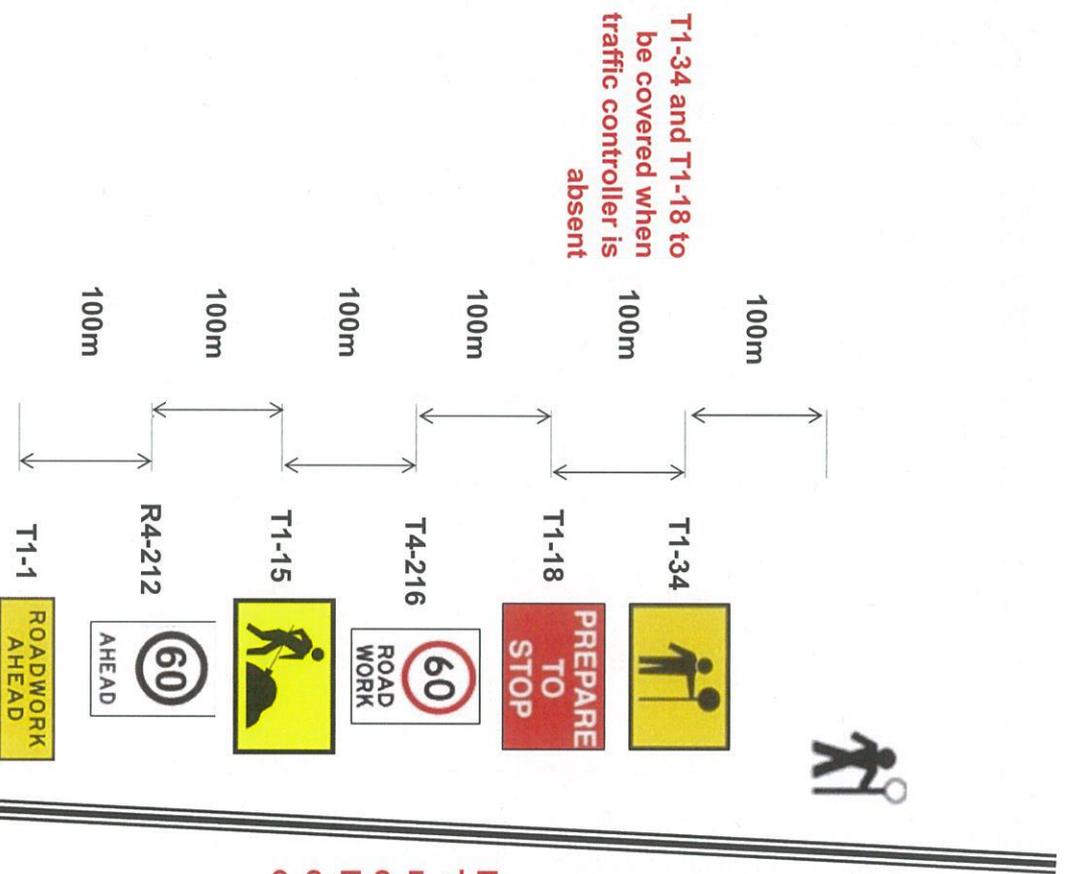
1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
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8. Access to all traffic and pedestrians is prohibited inside the work zone

No less than 50m to intersection with Golden Hwy / Mount Thorley Road interchange

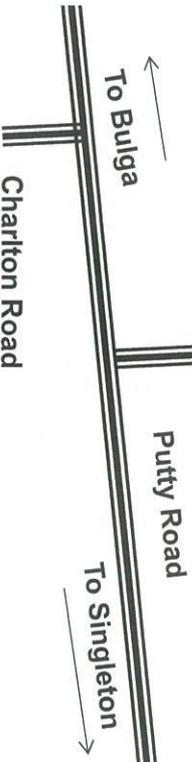
TCP 2017 / 4
PUTTY ROAD EAST



Drawn By: William Arnold
Date: 17th October 2017
Card Number: 0035577318
Expiry Date: 04th Nov 2019
Signed: *W.A. Arnold*



No less than 100m to intersection



To Warkworth
 Additional support vehicle to assist with traffic management at closure point in place of barrier

Duplicate T4-216 not required due to local constraints on road

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 80km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
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6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone



Drawn By: William Arnold

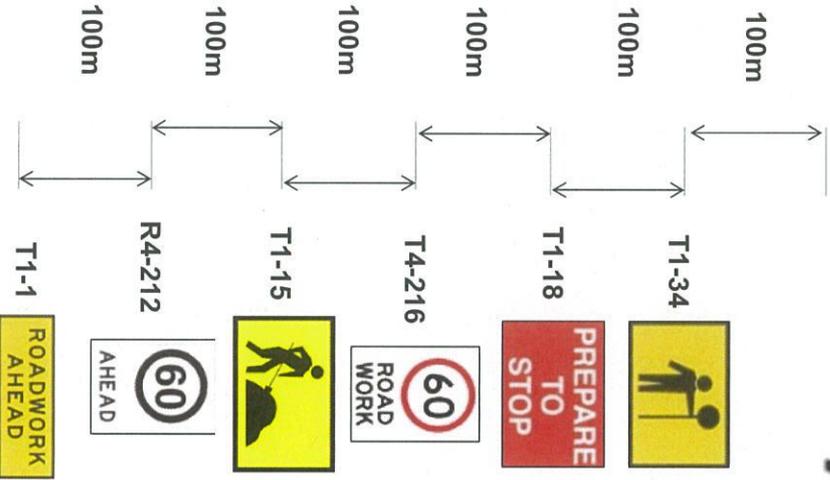
Date: 17th October 2017

Card Number: 0035577318

Expiry Date: 04th Nov 2019

Signed:

T1-34 and T1-18 to be covered when traffic controller is absent



Wallaby Scrub Road
To Warkworth



Additional support vehicle to assist with traffic management at closure point in place of barrier

To Singleton

Putty Road



T4-216

Not less than 100m

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
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6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone

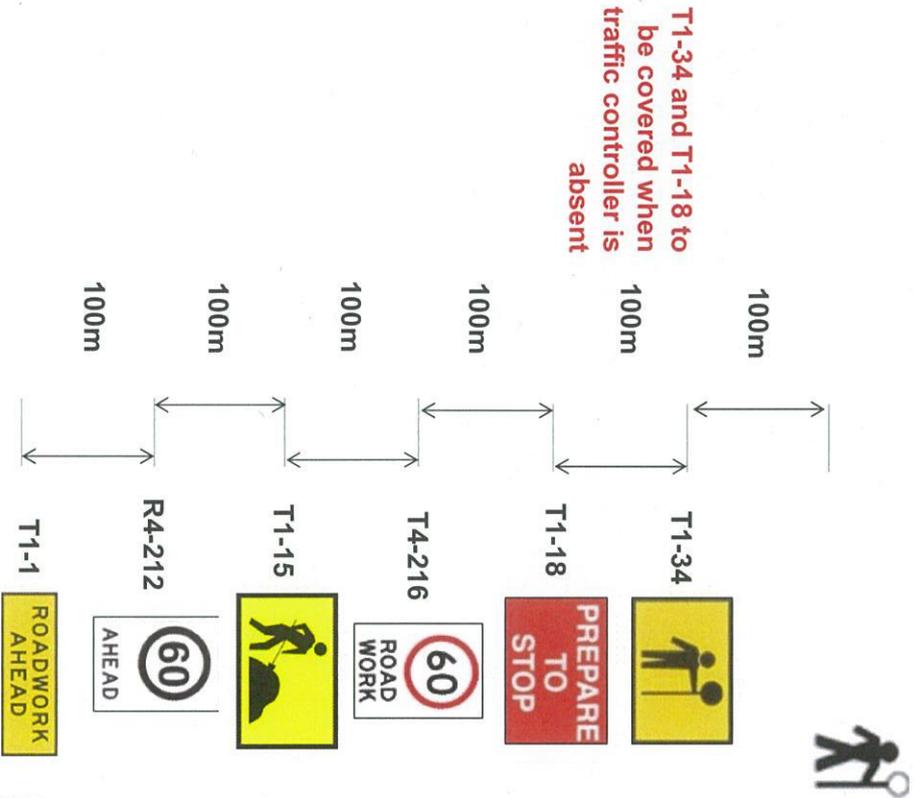
Charlton Road

To Broke

TCP 2017 / 6
PUTTY ROAD WEST (SHORT END)



Drawn By:	William Arnold
Date:	17th October 2017
Card Number:	0035577318
Expiry Date:	04th Nov 2019
Signed:	<i>William Arnold</i>



Golden Highway

To Jerry's Plains

Not less than 100m

Wallaby Scrub Road

To Bulga

Golden Highway

To Singleton

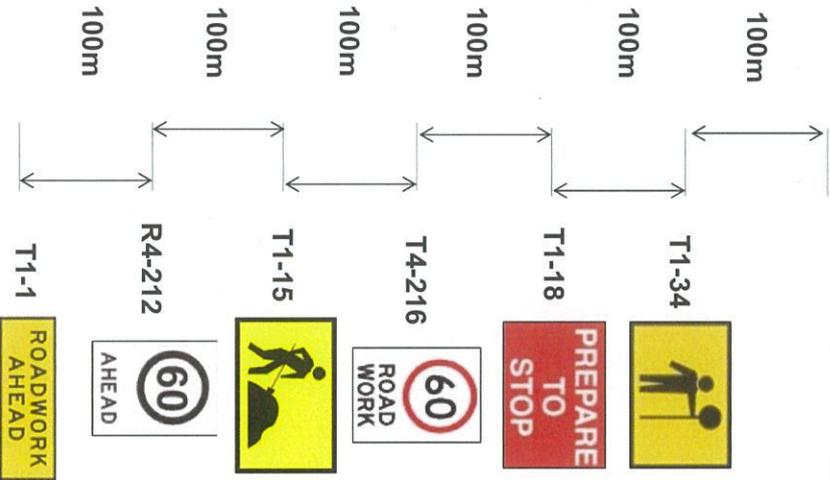
Additional support vehicle to assist with traffic management at closure point in place of barrier



T4-216

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone

T1-34 and T1-18 to be covered when traffic controller is absent



Wallaby Scrub Road

Golden Highway

To Singleton

Golden Highway

To Jerry's Plains
Additional support vehicle to assist with traffic management at closure point in place of barrier
 Private Access Road to Hunter Valley Operations

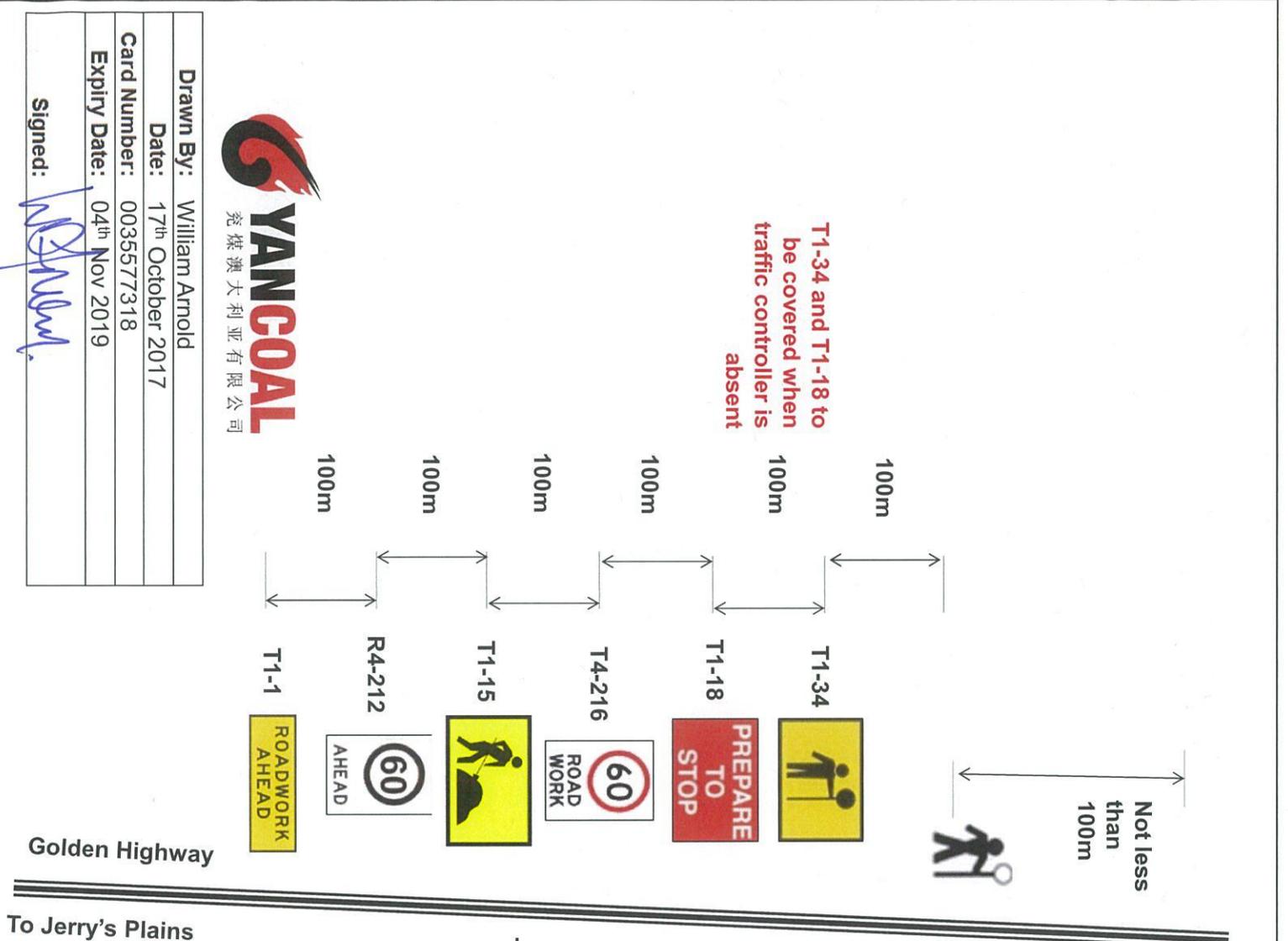
1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>William Arnold</i>

Wallaby Scrub Road
(Closed in this direction)

Additional support
vehicle to assist
with traffic
management at
closure point in
place of barrier



T1-34 and T1-18 to
be covered when
traffic controller is
absent



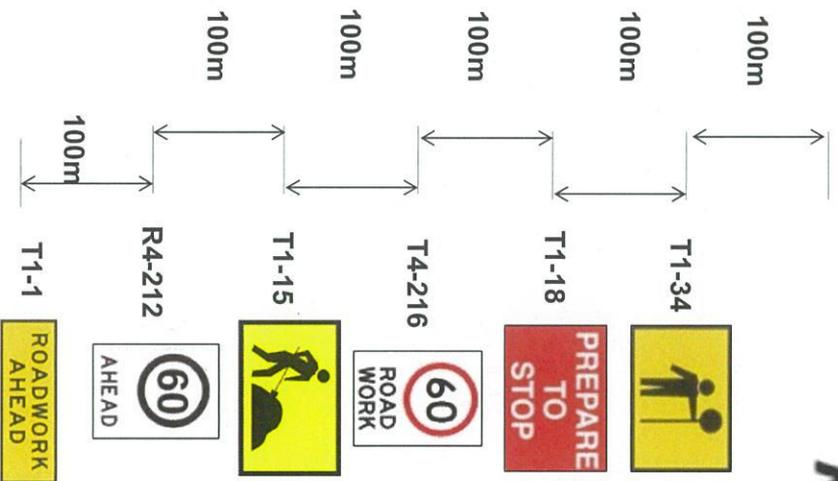
Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	<i>[Signature]</i>

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
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8. Access to all traffic and pedestrians is prohibited inside the work zone



Drawn By: William Arnold
 Date: 17th October 2017
 Card Number: 0035577318
 Expiry Date: 04th Nov 2019
 Signed: *[Signature]*

T1-34 and T1-18 to be covered when traffic controller is absent



Charlton Road
To Broke

Additional support vehicle to assist with traffic management at closure point in place of barrier

Duplicate T4-216 not required due to local constraints on road

Not less than 50m

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 60km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
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7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone

Putty Road
To Singleton

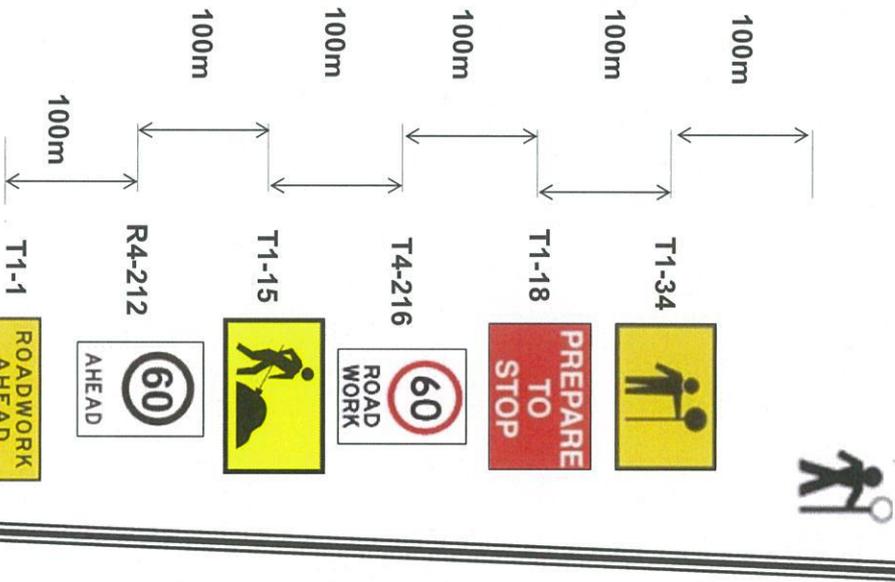
To Bulga

Wallaby Scrub Road



Drawn By:	William Arnold
Date:	17 th October 2017
Card Number:	0035577318
Expiry Date:	04 th Nov 2019
Signed:	

T1-34 and T1-18 to be covered when traffic controller is absent



When setting traffic control signs and devices around a corner, use T1-25 in place of T1-1

Additional support vehicle to assist with traffic management at closure point in place of barrier

60 ROAD WORK
Duplicate T4-216 may not be required due to local constraints on road

1. Based on TCP 47 Short Term Work and TCP 57 Roadwork Speed Limits
2. Blast Zone scenario to be applied to all approaches to traffic control point
3. Reduce approach speed to traffic controller from 100km/hr to 80km/hr
4. Local constraints may not allow signage and device to be placed in accordance with this TCP. Signs and devices are to be positioned in accordance with tolerances shown in section 3.5.8 of the TCAWS Manual
5. Cover all conflicting road signage where required
6. The site shall comply with the TCAWS Manual and AS1722.3
7. All amendments to the TCP shall only be undertaken by suitably trained and authorised personnel.
8. Access to all traffic and pedestrians is prohibited inside the work zone

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

To activate and deactivate your approved work shift(s) on your Road Occupancy Licence, please visit: myrol.transport.nsw.gov.au. This licence is for the occupation of the road space only. If you are unable to access myrol.transport.nsw.gov.au, please call TMC on 1800 679 782. For further assistance, please refer to the proponent's user manual here: myrol.transport.nsw.gov.au/help.pdf

NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

LICENCE CONDITIONS

- 1 YOU MUST USE SHIFT ACTIVATION WEB ADDRESS <https://myrol.transport.nsw.gov.au> TO ACTIVATE AND DEACTIVATE YOUR APPROVED ROAD OCCUPANCY LICENCE(S). (TO ACTIVATE MOU (MATRIX TYPE) OR TO CHANGE TRAFFIC CONTROL SIGNALS TO FLASHING YELLOW OR TO ACTIVATE PERMANENT VARIABLE MESSAGE SIGNS DIAL 1800 679 782)
- 2 THIS LICENCE IS NOT AN APPROVAL OF THE PROPONENT'S TRAFFIC CONTROL PLAN. PLEASE NOTE WORKCOVER REQUIRES THAT TRAFFIC CONTROL PLANS COMPLY WITH AS1742.3
- 3 ALL MATTERS RELATING TO NOISE GENERATION OR OTHER ENVIRONMENTAL FACTORS ON SITE ARE UNDER THE JURISDICTION OF THE LOCAL COUNCIL AND/OR THE ENVIRONMENTAL PROTECTION AUTHORITY.
- 4 SHOULD THE PROPOSED WORKS INVOLVE UNDERBORING OR EXCAVATION OF STATE ROAD ASSETS OR THE REMOVAL OF KERB AND GUTTER, DETAILS OF WORKS MUST BE APPROVED BY THE RMS'S ASSEST MANAGEMENT BRANCH.
- 5 NOTIFICATION TO AFFECTED BUSINESSES, RESIDENTS AND OTHER STAKEHOLDERS MUST BE UNDERTAKEN AT LEAST 5 BUSINESS DAYS PRIOR TO WORKS COMMENCING
- 6 ADEQUATE ADVANCE WARNING MUST BE PROVIDED TO APPROACHING MOTORISTS.
- 7 SHOULD SIGNIFICANT TRAFFIC DELAYS OR QUEUES OCCUR AS A RESULT OF THE WORKSITE TRAFFIC CONTROL, THE TRAFFIC CONTROL SUPERVISOR MUST IMMEDIATELY INFORM THE TMC AND ADDRESS THE ISSUE TAKING ACTION TO ALLEVIATE TRAFFIC DELAY.
- 8 TRAFFIC CONTROL ARRANGEMENTS MUST SPECIFICALLY ADDRESS END OF QUEUE MANAGEMENT TO ENSURE THAT MOTORISTS ARE ADEQUATELY WARNED BEFORE ARRIVAL

APPROVED DATES & TIMES

		From Shift			To Shift			
From	D	M	Time	-	To	D	M	Time
Tue	31	Jul	09:00	-	Tue	31	Jul	17:00
Wed	01	Aug	09:00	-	Wed	01	Aug	17:00
Thu	02	Aug	09:00	-	Thu	02	Aug	17:00
Fri	03	Aug	09:00	-	Fri	03	Aug	17:00
Sat	04	Aug	09:00	-	Sat	04	Aug	17:00
Sun	05	Aug	09:00	-	Sun	05	Aug	17:00
Mon	06	Aug	09:00	-	Mon	06	Aug	17:00
Tue	07	Aug	09:00	-	Tue	07	Aug	17:00
Wed	08	Aug	09:00	-	Wed	08	Aug	17:00
Thu	09	Aug	09:00	-	Thu	09	Aug	17:00
Fri	10	Aug	09:00	-	Fri	10	Aug	17:00
Sat	11	Aug	09:00	-	Sat	11	Aug	17:00
Sun	12	Aug	09:00	-	Sun	12	Aug	17:00
Mon	13	Aug	09:00	-	Mon	13	Aug	17:00
Tue	14	Aug	09:00	-	Tue	14	Aug	17:00
Wed	15	Aug	09:00	-	Wed	15	Aug	17:00
Thu	16	Aug	09:00	-	Thu	16	Aug	17:00
Fri	17	Aug	09:00	-	Fri	17	Aug	17:00
Sat	18	Aug	09:00	-	Sat	18	Aug	17:00
Sun	19	Aug	09:00	-	Sun	19	Aug	17:00
Mon	20	Aug	09:00	-	Mon	20	Aug	17:00
Tue	21	Aug	09:00	-	Tue	21	Aug	17:00
Wed	22	Aug	09:00	-	Wed	22	Aug	17:00
Thu	23	Aug	09:00	-	Thu	23	Aug	17:00
Fri	24	Aug	09:00	-	Fri	24	Aug	17:00
Sat	25	Aug	09:00	-	Sat	25	Aug	17:00
Sun	26	Aug	09:00	-	Sun	26	Aug	17:00
Mon	27	Aug	09:00	-	Mon	27	Aug	17:00
Tue	28	Aug	09:00	-	Tue	28	Aug	17:00
Wed	29	Aug	09:00	-	Wed	29	Aug	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Thu	30	Aug	09:00	-	Thu	30	Aug	17:00
Fri	31	Aug	09:00	-	Fri	31	Aug	17:00
Sat	01	Sep	09:00	-	Sat	01	Sep	17:00
Sun	02	Sep	09:00	-	Sun	02	Sep	17:00
Mon	03	Sep	09:00	-	Mon	03	Sep	17:00
Tue	04	Sep	09:00	-	Tue	04	Sep	17:00
Wed	05	Sep	09:00	-	Wed	05	Sep	17:00
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Sun	09	Sep	09:00	-	Sun	09	Sep	17:00
Mon	10	Sep	09:00	-	Mon	10	Sep	17:00
Tue	11	Sep	09:00	-	Tue	11	Sep	17:00
Wed	12	Sep	09:00	-	Wed	12	Sep	17:00
Thu	13	Sep	09:00	-	Thu	13	Sep	17:00
Fri	14	Sep	09:00	-	Fri	14	Sep	17:00
Sat	15	Sep	09:00	-	Sat	15	Sep	17:00
Sun	16	Sep	09:00	-	Sun	16	Sep	17:00
Mon	17	Sep	09:00	-	Mon	17	Sep	17:00
Tue	18	Sep	09:00	-	Tue	18	Sep	17:00
Wed	19	Sep	09:00	-	Wed	19	Sep	17:00
Thu	20	Sep	09:00	-	Thu	20	Sep	17:00
Fri	21	Sep	09:00	-	Fri	21	Sep	17:00
Sat	22	Sep	09:00	-	Sat	22	Sep	17:00
Sun	23	Sep	09:00	-	Sun	23	Sep	17:00
Mon	24	Sep	09:00	-	Mon	24	Sep	17:00
Tue	25	Sep	09:00	-	Tue	25	Sep	17:00
Wed	26	Sep	09:00	-	Wed	26	Sep	17:00
Thu	27	Sep	09:00	-	Thu	27	Sep	17:00
Fri	28	Sep	09:00	-	Fri	28	Sep	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

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LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Sat	29	Sep	09:00	-	Sat	29	Sep	17:00
Sun	30	Sep	09:00	-	Sun	30	Sep	17:00
Mon	01	Oct	09:00	-	Mon	01	Oct	17:00
Tue	02	Oct	09:00	-	Tue	02	Oct	17:00
Wed	03	Oct	09:00	-	Wed	03	Oct	17:00
Thu	04	Oct	09:00	-	Thu	04	Oct	17:00
Fri	05	Oct	09:00	-	Fri	05	Oct	17:00
Sat	06	Oct	09:00	-	Sat	06	Oct	17:00
Sun	07	Oct	09:00	-	Sun	07	Oct	17:00
Mon	08	Oct	09:00	-	Mon	08	Oct	17:00
Tue	09	Oct	09:00	-	Tue	09	Oct	17:00
Wed	10	Oct	09:00	-	Wed	10	Oct	17:00
Thu	11	Oct	09:00	-	Thu	11	Oct	17:00
Fri	12	Oct	09:00	-	Fri	12	Oct	17:00
Sat	13	Oct	09:00	-	Sat	13	Oct	17:00
Sun	14	Oct	09:00	-	Sun	14	Oct	17:00
Mon	15	Oct	09:00	-	Mon	15	Oct	17:00
Tue	16	Oct	09:00	-	Tue	16	Oct	17:00
Wed	17	Oct	09:00	-	Wed	17	Oct	17:00
Thu	18	Oct	09:00	-	Thu	18	Oct	17:00
Fri	19	Oct	09:00	-	Fri	19	Oct	17:00
Sat	20	Oct	09:00	-	Sat	20	Oct	17:00
Sun	21	Oct	09:00	-	Sun	21	Oct	17:00
Mon	22	Oct	09:00	-	Mon	22	Oct	17:00
Tue	23	Oct	09:00	-	Tue	23	Oct	17:00
Wed	24	Oct	09:00	-	Wed	24	Oct	17:00
Thu	25	Oct	09:00	-	Thu	25	Oct	17:00
Fri	26	Oct	09:00	-	Fri	26	Oct	17:00
Sat	27	Oct	09:00	-	Sat	27	Oct	17:00
Sun	28	Oct	09:00	-	Sun	28	Oct	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

To activate and deactivate your approved work shift(s) on your Road Occupancy Licence, please visit: myrol.transport.nsw.gov.au. This licence is for the occupation of the road space only. If you are unable to access myrol.transport.nsw.gov.au, please call TMC on 1800 679 782. For further assistance, please refer to the proponent's user manual here: myrol.transport.nsw.gov.au/help.pdf

NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Mon	29	Oct	09:00	-	Mon	29	Oct	17:00
Tue	30	Oct	09:00	-	Tue	30	Oct	17:00
Wed	31	Oct	09:00	-	Wed	31	Oct	17:00
Thu	01	Nov	09:00	-	Thu	01	Nov	17:00
Fri	02	Nov	09:00	-	Fri	02	Nov	17:00
Sat	03	Nov	09:00	-	Sat	03	Nov	17:00
Sun	04	Nov	09:00	-	Sun	04	Nov	17:00
Mon	05	Nov	09:00	-	Mon	05	Nov	17:00
Tue	06	Nov	09:00	-	Tue	06	Nov	17:00
Wed	07	Nov	09:00	-	Wed	07	Nov	17:00
Thu	08	Nov	09:00	-	Thu	08	Nov	17:00
Fri	09	Nov	09:00	-	Fri	09	Nov	17:00
Sat	10	Nov	09:00	-	Sat	10	Nov	17:00
Sun	11	Nov	09:00	-	Sun	11	Nov	17:00
Mon	12	Nov	09:00	-	Mon	12	Nov	17:00
Tue	13	Nov	09:00	-	Tue	13	Nov	17:00
Wed	14	Nov	09:00	-	Wed	14	Nov	17:00
Thu	15	Nov	09:00	-	Thu	15	Nov	17:00
Fri	16	Nov	09:00	-	Fri	16	Nov	17:00
Sat	17	Nov	09:00	-	Sat	17	Nov	17:00
Sun	18	Nov	09:00	-	Sun	18	Nov	17:00
Mon	19	Nov	09:00	-	Mon	19	Nov	17:00
Tue	20	Nov	09:00	-	Tue	20	Nov	17:00
Wed	21	Nov	09:00	-	Wed	21	Nov	17:00
Thu	22	Nov	09:00	-	Thu	22	Nov	17:00
Fri	23	Nov	09:00	-	Fri	23	Nov	17:00
Sat	24	Nov	09:00	-	Sat	24	Nov	17:00
Sun	25	Nov	09:00	-	Sun	25	Nov	17:00
Mon	26	Nov	09:00	-	Mon	26	Nov	17:00
Tue	27	Nov	09:00	-	Tue	27	Nov	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Wed	28	Nov	09:00	-	Wed	28	Nov	17:00
Thu	29	Nov	09:00	-	Thu	29	Nov	17:00
Fri	30	Nov	09:00	-	Fri	30	Nov	17:00
Sat	01	Dec	09:00	-	Sat	01	Dec	17:00
Sun	02	Dec	09:00	-	Sun	02	Dec	17:00
Mon	03	Dec	09:00	-	Mon	03	Dec	17:00
Tue	04	Dec	09:00	-	Tue	04	Dec	17:00
Wed	05	Dec	09:00	-	Wed	05	Dec	17:00
Thu	06	Dec	09:00	-	Thu	06	Dec	17:00
Fri	07	Dec	09:00	-	Fri	07	Dec	17:00
Sat	08	Dec	09:00	-	Sat	08	Dec	17:00
Sun	09	Dec	09:00	-	Sun	09	Dec	17:00
Mon	10	Dec	09:00	-	Mon	10	Dec	17:00
Tue	11	Dec	09:00	-	Tue	11	Dec	17:00
Wed	12	Dec	09:00	-	Wed	12	Dec	17:00
Thu	13	Dec	09:00	-	Thu	13	Dec	17:00
Fri	14	Dec	09:00	-	Fri	14	Dec	17:00
Sat	15	Dec	09:00	-	Sat	15	Dec	17:00
Sun	16	Dec	09:00	-	Sun	16	Dec	17:00
Mon	17	Dec	09:00	-	Mon	17	Dec	17:00
Tue	18	Dec	09:00	-	Tue	18	Dec	17:00
Wed	19	Dec	09:00	-	Wed	19	Dec	17:00
Thu	20	Dec	09:00	-	Thu	20	Dec	17:00
Fri	21	Dec	09:00	-	Fri	21	Dec	17:00
Sat	22	Dec	09:00	-	Sat	22	Dec	17:00
Sun	23	Dec	09:00	-	Sun	23	Dec	17:00
Mon	24	Dec	09:00	-	Mon	24	Dec	17:00
Tue	25	Dec	09:00	-	Tue	25	Dec	17:00
Wed	26	Dec	09:00	-	Wed	26	Dec	17:00
Thu	27	Dec	09:00	-	Thu	27	Dec	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Fri	28	Dec	09:00	-	Fri	28	Dec	17:00
Sat	29	Dec	09:00	-	Sat	29	Dec	17:00
Sun	30	Dec	09:00	-	Sun	30	Dec	17:00
Mon	31	Dec	09:00	-	Mon	31	Dec	17:00
Tue	01	Jan	09:00	-	Tue	01	Jan	17:00
Wed	02	Jan	09:00	-	Wed	02	Jan	17:00
Thu	03	Jan	09:00	-	Thu	03	Jan	17:00
Fri	04	Jan	09:00	-	Fri	04	Jan	17:00
Sat	05	Jan	09:00	-	Sat	05	Jan	17:00
Sun	06	Jan	09:00	-	Sun	06	Jan	17:00
Mon	07	Jan	09:00	-	Mon	07	Jan	17:00
Tue	08	Jan	09:00	-	Tue	08	Jan	17:00
Wed	09	Jan	09:00	-	Wed	09	Jan	17:00
Thu	10	Jan	09:00	-	Thu	10	Jan	17:00
Fri	11	Jan	09:00	-	Fri	11	Jan	17:00
Sat	12	Jan	09:00	-	Sat	12	Jan	17:00
Sun	13	Jan	09:00	-	Sun	13	Jan	17:00
Mon	14	Jan	09:00	-	Mon	14	Jan	17:00
Tue	15	Jan	09:00	-	Tue	15	Jan	17:00
Wed	16	Jan	09:00	-	Wed	16	Jan	17:00
Thu	17	Jan	09:00	-	Thu	17	Jan	17:00
Fri	18	Jan	09:00	-	Fri	18	Jan	17:00
Sat	19	Jan	09:00	-	Sat	19	Jan	17:00
Sun	20	Jan	09:00	-	Sun	20	Jan	17:00
Mon	21	Jan	09:00	-	Mon	21	Jan	17:00
Tue	22	Jan	09:00	-	Tue	22	Jan	17:00
Wed	23	Jan	09:00	-	Wed	23	Jan	17:00
Thu	24	Jan	09:00	-	Thu	24	Jan	17:00
Fri	25	Jan	09:00	-	Fri	25	Jan	17:00
Sat	26	Jan	09:00	-	Sat	26	Jan	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 536871

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Stop / Slow Control
Closure Type: All lanes both directions
Closure Lane(s): Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 31-Jul-2018
To: 31-Jan-2019

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Sun	27	Jan	09:00	-	Sun	27	Jan	17:00
Mon	28	Jan	09:00	-	Mon	28	Jan	17:00
Tue	29	Jan	09:00	-	Tue	29	Jan	17:00
Wed	30	Jan	09:00	-	Wed	30	Jan	17:00
Thu	31	Jan	09:00	-	Thu	31	Jan	17:00

SPEED ZONE AUTHORISATION

LIC/SZA NO : 536871/001

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short term road closures for mine blasting - estimated closure approx 20mins. Putty Road closure between Golden Hwy and a point 600m to the west of Charlton Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

This Speed limit is ONLY to be applied during the approved time periods listed. Signs are to be covered or removed outside the approved time periods. The Organisation is to maintain accurate records of when the speed limit signs were installed and removed, including the location of the signs, the date and times. The existing posted speed limit is to be reinstated at the completion of each of the approved time periods as detailed herein.*

LOCATION

Subject Road: Putty Road
From: Golden Highway, MOUNT THORLEY
To: Charlton Road, Singleton
Council:

TRAFFIC MANAGEMENT

Distance(m): 1500
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Tue	31	Jul	09:00	-	Thu	31	Jan	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

LICENCE CONDITIONS

- 1 YOU MUST USE SHIFT ACTIVATION WEB ADDRESS <https://myrol.transport.nsw.gov.au> TO ACTIVATE AND DEACTIVATE YOUR APPROVED ROAD OCCUPANCY LICENCE(S). (TO ACTIVATE MOU (MATRIX TYPE) OR TO CHANGE TRAFFIC CONTROL SIGNALS TO FLASHING YELLOW OR TO ACTIVATE PERMANENT VARIABLE MESSAGE SIGNS DIAL 1800 679 782)
- 2 THIS LICENCE IS NOT AN APPROVAL OF THE PROPONENT'S TRAFFIC CONTROL PLAN. PLEASE NOTE WORKCOVER REQUIRES THAT TRAFFIC CONTROL PLANS COMPLY WITH AS1742.3
- 3 ALL MATTERS RELATING TO NOISE GENERATION OR OTHER ENVIRONMENTAL FACTORS ON SITE ARE UNDER THE JURISDICTION OF THE LOCAL COUNCIL AND/OR THE ENVIRONMENTAL PROTECTION AUTHORITY.
- 4 SHOULD THE PROPOSED WORKS INVOLVE UNDERBORING OR EXCAVATION OF STATE ROAD ASSETS OR THE REMOVAL OF KERB AND GUTTER, DETAILS OF WORKS MUST BE APPROVED BY THE RMS'S ASSEST MANAGEMENT BRANCH.
- 5 NOTIFICATION TO AFFECTED BUSINESSES, RESIDENTS AND OTHER STAKEHOLDERS MUST BE UNDERTAKEN AT LEAST 5 BUSINESS DAYS PRIOR TO WORKS COMMENCING
- 6 LANE/ROAD CLOSURES MAY EXTEND UP TO 20 MINUTES IN BOTH DIRECTION FOR MINE BLASTING.
- 7 ADEQUATE ADVANCE WARNING MUST BE PROVIDED TO APPROACHING MOTORISTS.

APPROVED DATES & TIMES

From Shift				To Shift			
From	D	M	Time	To	D	M	Time
Thu	17	May	09:00	-	Thu	17	May 17:00
Fri	18	May	09:00	-	Fri	18	May 17:00
Sat	19	May	09:00	-	Sat	19	May 17:00
Sun	20	May	09:00	-	Sun	20	May 17:00
Mon	21	May	09:00	-	Mon	21	May 17:00
Tue	22	May	09:00	-	Tue	22	May 17:00
Wed	23	May	09:00	-	Wed	23	May 17:00
Thu	24	May	09:00	-	Thu	24	May 17:00
Fri	25	May	09:00	-	Fri	25	May 17:00
Sat	26	May	09:00	-	Sat	26	May 17:00
Sun	27	May	09:00	-	Sun	27	May 17:00
Mon	28	May	09:00	-	Mon	28	May 17:00
Tue	29	May	09:00	-	Tue	29	May 17:00
Wed	30	May	09:00	-	Wed	30	May 17:00
Thu	31	May	09:00	-	Thu	31	May 17:00
Fri	01	Jun	09:00	-	Fri	01	Jun 17:00
Sat	02	Jun	09:00	-	Sat	02	Jun 17:00
Sun	03	Jun	09:00	-	Sun	03	Jun 17:00
Mon	04	Jun	09:00	-	Mon	04	Jun 17:00
Tue	05	Jun	09:00	-	Tue	05	Jun 17:00
Wed	06	Jun	09:00	-	Wed	06	Jun 17:00
Thu	07	Jun	09:00	-	Thu	07	Jun 17:00
Fri	08	Jun	09:00	-	Fri	08	Jun 17:00
Sat	09	Jun	09:00	-	Sat	09	Jun 17:00
Sun	10	Jun	09:00	-	Sun	10	Jun 17:00
Mon	11	Jun	09:00	-	Mon	11	Jun 17:00
Tue	12	Jun	09:00	-	Tue	12	Jun 17:00
Wed	13	Jun	09:00	-	Wed	13	Jun 17:00
Thu	14	Jun	09:00	-	Thu	14	Jun 17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Fri	15	Jun	09:00	-	Fri	15	Jun	17:00
Sat	16	Jun	09:00	-	Sat	16	Jun	17:00
Sun	17	Jun	09:00	-	Sun	17	Jun	17:00
Mon	18	Jun	09:00	-	Mon	18	Jun	17:00
Tue	19	Jun	09:00	-	Tue	19	Jun	17:00
Wed	20	Jun	09:00	-	Wed	20	Jun	17:00
Thu	21	Jun	09:00	-	Thu	21	Jun	17:00
Fri	22	Jun	09:00	-	Fri	22	Jun	17:00
Sat	23	Jun	09:00	-	Sat	23	Jun	17:00
Sun	24	Jun	09:00	-	Sun	24	Jun	17:00
Mon	25	Jun	09:00	-	Mon	25	Jun	17:00
Tue	26	Jun	09:00	-	Tue	26	Jun	17:00
Wed	27	Jun	09:00	-	Wed	27	Jun	17:00
Thu	28	Jun	09:00	-	Thu	28	Jun	17:00
Fri	29	Jun	09:00	-	Fri	29	Jun	17:00
Sat	30	Jun	09:00	-	Sat	30	Jun	17:00
Sun	01	Jul	09:00	-	Sun	01	Jul	17:00
Mon	02	Jul	09:00	-	Mon	02	Jul	17:00
Tue	03	Jul	09:00	-	Tue	03	Jul	17:00
Wed	04	Jul	09:00	-	Wed	04	Jul	17:00
Thu	05	Jul	09:00	-	Thu	05	Jul	17:00
Fri	06	Jul	09:00	-	Fri	06	Jul	17:00
Sat	07	Jul	09:00	-	Sat	07	Jul	17:00
Sun	08	Jul	09:00	-	Sun	08	Jul	17:00
Mon	09	Jul	09:00	-	Mon	09	Jul	17:00
Tue	10	Jul	09:00	-	Tue	10	Jul	17:00
Wed	11	Jul	09:00	-	Wed	11	Jul	17:00
Thu	12	Jul	09:00	-	Thu	12	Jul	17:00
Fri	13	Jul	09:00	-	Fri	13	Jul	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Sat	14	Jul	09:00	-	Sat	14	Jul	17:00
Sun	15	Jul	09:00	-	Sun	15	Jul	17:00
Mon	16	Jul	09:00	-	Mon	16	Jul	17:00
Tue	17	Jul	09:00	-	Tue	17	Jul	17:00
Wed	18	Jul	09:00	-	Wed	18	Jul	17:00
Thu	19	Jul	09:00	-	Thu	19	Jul	17:00
Fri	20	Jul	09:00	-	Fri	20	Jul	17:00
Sat	21	Jul	09:00	-	Sat	21	Jul	17:00
Sun	22	Jul	09:00	-	Sun	22	Jul	17:00
Mon	23	Jul	09:00	-	Mon	23	Jul	17:00
Tue	24	Jul	09:00	-	Tue	24	Jul	17:00
Wed	25	Jul	09:00	-	Wed	25	Jul	17:00
Thu	26	Jul	09:00	-	Thu	26	Jul	17:00
Fri	27	Jul	09:00	-	Fri	27	Jul	17:00
Sat	28	Jul	09:00	-	Sat	28	Jul	17:00
Sun	29	Jul	09:00	-	Sun	29	Jul	17:00
Mon	30	Jul	09:00	-	Mon	30	Jul	17:00
Tue	31	Jul	09:00	-	Tue	31	Jul	17:00
Wed	01	Aug	09:00	-	Wed	01	Aug	17:00
Thu	02	Aug	09:00	-	Thu	02	Aug	17:00
Fri	03	Aug	09:00	-	Fri	03	Aug	17:00
Sat	04	Aug	09:00	-	Sat	04	Aug	17:00
Sun	05	Aug	09:00	-	Sun	05	Aug	17:00
Mon	06	Aug	09:00	-	Mon	06	Aug	17:00
Tue	07	Aug	09:00	-	Tue	07	Aug	17:00
Wed	08	Aug	09:00	-	Wed	08	Aug	17:00
Thu	09	Aug	09:00	-	Thu	09	Aug	17:00
Fri	10	Aug	09:00	-	Fri	10	Aug	17:00
Sat	11	Aug	09:00	-	Sat	11	Aug	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Sun	12	Aug	09:00	-	Sun	12	Aug	17:00
Mon	13	Aug	09:00	-	Mon	13	Aug	17:00
Tue	14	Aug	09:00	-	Tue	14	Aug	17:00
Wed	15	Aug	09:00	-	Wed	15	Aug	17:00
Thu	16	Aug	09:00	-	Thu	16	Aug	17:00
Fri	17	Aug	09:00	-	Fri	17	Aug	17:00
Sat	18	Aug	09:00	-	Sat	18	Aug	17:00
Sun	19	Aug	09:00	-	Sun	19	Aug	17:00
Mon	20	Aug	09:00	-	Mon	20	Aug	17:00
Tue	21	Aug	09:00	-	Tue	21	Aug	17:00
Wed	22	Aug	09:00	-	Wed	22	Aug	17:00
Thu	23	Aug	09:00	-	Thu	23	Aug	17:00
Fri	24	Aug	09:00	-	Fri	24	Aug	17:00
Sat	25	Aug	09:00	-	Sat	25	Aug	17:00
Sun	26	Aug	09:00	-	Sun	26	Aug	17:00
Mon	27	Aug	09:00	-	Mon	27	Aug	17:00
Tue	28	Aug	09:00	-	Tue	28	Aug	17:00
Wed	29	Aug	09:00	-	Wed	29	Aug	17:00
Thu	30	Aug	09:00	-	Thu	30	Aug	17:00
Fri	31	Aug	09:00	-	Fri	31	Aug	17:00
Sat	01	Sep	09:00	-	Sat	01	Sep	17:00
Sun	02	Sep	09:00	-	Sun	02	Sep	17:00
Mon	03	Sep	09:00	-	Mon	03	Sep	17:00
Tue	04	Sep	09:00	-	Tue	04	Sep	17:00
Wed	05	Sep	09:00	-	Wed	05	Sep	17:00
Thu	06	Sep	09:00	-	Thu	06	Sep	17:00
Fri	07	Sep	09:00	-	Fri	07	Sep	17:00
Sat	08	Sep	09:00	-	Sat	08	Sep	17:00
Sun	09	Sep	09:00	-	Sun	09	Sep	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Mon	10	Sep	09:00	-	Mon	10	Sep	17:00
Tue	11	Sep	09:00	-	Tue	11	Sep	17:00
Wed	12	Sep	09:00	-	Wed	12	Sep	17:00
Thu	13	Sep	09:00	-	Thu	13	Sep	17:00
Fri	14	Sep	09:00	-	Fri	14	Sep	17:00
Sat	15	Sep	09:00	-	Sat	15	Sep	17:00
Sun	16	Sep	09:00	-	Sun	16	Sep	17:00
Mon	17	Sep	09:00	-	Mon	17	Sep	17:00
Tue	18	Sep	09:00	-	Tue	18	Sep	17:00
Wed	19	Sep	09:00	-	Wed	19	Sep	17:00
Thu	20	Sep	09:00	-	Thu	20	Sep	17:00
Fri	21	Sep	09:00	-	Fri	21	Sep	17:00
Sat	22	Sep	09:00	-	Sat	22	Sep	17:00
Sun	23	Sep	09:00	-	Sun	23	Sep	17:00
Mon	24	Sep	09:00	-	Mon	24	Sep	17:00
Tue	25	Sep	09:00	-	Tue	25	Sep	17:00
Wed	26	Sep	09:00	-	Wed	26	Sep	17:00
Thu	27	Sep	09:00	-	Thu	27	Sep	17:00
Fri	28	Sep	09:00	-	Fri	28	Sep	17:00
Sat	29	Sep	09:00	-	Sat	29	Sep	17:00
Sun	30	Sep	09:00	-	Sun	30	Sep	17:00
Mon	01	Oct	09:00	-	Mon	01	Oct	17:00
Tue	02	Oct	09:00	-	Tue	02	Oct	17:00
Wed	03	Oct	09:00	-	Wed	03	Oct	17:00
Thu	04	Oct	09:00	-	Thu	04	Oct	17:00
Fri	05	Oct	09:00	-	Fri	05	Oct	17:00
Sat	06	Oct	09:00	-	Sat	06	Oct	17:00
Sun	07	Oct	09:00	-	Sun	07	Oct	17:00
Mon	08	Oct	09:00	-	Mon	08	Oct	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Tue	09	Oct	09:00	-	Tue	09	Oct	17:00
Wed	10	Oct	09:00	-	Wed	10	Oct	17:00
Thu	11	Oct	09:00	-	Thu	11	Oct	17:00
Fri	12	Oct	09:00	-	Fri	12	Oct	17:00
Sat	13	Oct	09:00	-	Sat	13	Oct	17:00
Sun	14	Oct	09:00	-	Sun	14	Oct	17:00
Mon	15	Oct	09:00	-	Mon	15	Oct	17:00
Tue	16	Oct	09:00	-	Tue	16	Oct	17:00
Wed	17	Oct	09:00	-	Wed	17	Oct	17:00
Thu	18	Oct	09:00	-	Thu	18	Oct	17:00
Fri	19	Oct	09:00	-	Fri	19	Oct	17:00
Sat	20	Oct	09:00	-	Sat	20	Oct	17:00
Sun	21	Oct	09:00	-	Sun	21	Oct	17:00
Mon	22	Oct	09:00	-	Mon	22	Oct	17:00
Tue	23	Oct	09:00	-	Tue	23	Oct	17:00
Wed	24	Oct	09:00	-	Wed	24	Oct	17:00
Thu	25	Oct	09:00	-	Thu	25	Oct	17:00
Fri	26	Oct	09:00	-	Fri	26	Oct	17:00
Sat	27	Oct	09:00	-	Sat	27	Oct	17:00
Sun	28	Oct	09:00	-	Sun	28	Oct	17:00
Mon	29	Oct	09:00	-	Mon	29	Oct	17:00
Tue	30	Oct	09:00	-	Tue	30	Oct	17:00
Wed	31	Oct	09:00	-	Wed	31	Oct	17:00
Thu	01	Nov	09:00	-	Thu	01	Nov	17:00
Fri	02	Nov	09:00	-	Fri	02	Nov	17:00
Sat	03	Nov	09:00	-	Sat	03	Nov	17:00
Sun	04	Nov	09:00	-	Sun	04	Nov	17:00
Mon	05	Nov	09:00	-	Mon	05	Nov	17:00
Tue	06	Nov	09:00	-	Tue	06	Nov	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Wed	07	Nov	09:00	-	Wed	07	Nov	17:00
Thu	08	Nov	09:00	-	Thu	08	Nov	17:00
Fri	09	Nov	09:00	-	Fri	09	Nov	17:00
Sat	10	Nov	09:00	-	Sat	10	Nov	17:00
Sun	11	Nov	09:00	-	Sun	11	Nov	17:00
Mon	12	Nov	09:00	-	Mon	12	Nov	17:00
Tue	13	Nov	09:00	-	Tue	13	Nov	17:00
Wed	14	Nov	09:00	-	Wed	14	Nov	17:00
Thu	15	Nov	09:00	-	Thu	15	Nov	17:00
Fri	16	Nov	09:00	-	Fri	16	Nov	17:00
Sat	17	Nov	09:00	-	Sat	17	Nov	17:00
Sun	18	Nov	09:00	-	Sun	18	Nov	17:00
Mon	19	Nov	09:00	-	Mon	19	Nov	17:00
Tue	20	Nov	09:00	-	Tue	20	Nov	17:00
Wed	21	Nov	09:00	-	Wed	21	Nov	17:00
Thu	22	Nov	09:00	-	Thu	22	Nov	17:00
Fri	23	Nov	09:00	-	Fri	23	Nov	17:00
Sat	24	Nov	09:00	-	Sat	24	Nov	17:00
Sun	25	Nov	09:00	-	Sun	25	Nov	17:00
Mon	26	Nov	09:00	-	Mon	26	Nov	17:00
Tue	27	Nov	09:00	-	Tue	27	Nov	17:00
Wed	28	Nov	09:00	-	Wed	28	Nov	17:00
Thu	29	Nov	09:00	-	Thu	29	Nov	17:00
Fri	30	Nov	09:00	-	Fri	30	Nov	17:00
Sat	01	Dec	09:00	-	Sat	01	Dec	17:00
Sun	02	Dec	09:00	-	Sun	02	Dec	17:00
Mon	03	Dec	09:00	-	Mon	03	Dec	17:00
Tue	04	Dec	09:00	-	Tue	04	Dec	17:00
Wed	05	Dec	09:00	-	Wed	05	Dec	17:00

ROAD OCCUPANCY LICENCE

LICENCE NO : 535473

ROADS & MARITIME SERVICES (RMS)

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council: SINGLETON

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

TRAFFIC MANAGEMENT

Flow Management: Short Term / Intermittent Works; Stop / Slow Control
Closure Type: 1 lane of 1
Closure Lane(s): Lane 1 (kerb lane/s); Shoulder; Median Shoulder
Direction(s): Eastbound and Westbound

LICENCE DURATION

From: 17-May-2018
To: 31-Dec-2018

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Thu	06	Dec	09:00	-	Thu	06	Dec	17:00
Fri	07	Dec	09:00	-	Fri	07	Dec	17:00
Sat	08	Dec	09:00	-	Sat	08	Dec	17:00
Sun	09	Dec	09:00	-	Sun	09	Dec	17:00
Mon	10	Dec	09:00	-	Mon	10	Dec	17:00
Tue	11	Dec	09:00	-	Tue	11	Dec	17:00
Wed	12	Dec	09:00	-	Wed	12	Dec	17:00
Thu	13	Dec	09:00	-	Thu	13	Dec	17:00
Fri	14	Dec	09:00	-	Fri	14	Dec	17:00
Sat	15	Dec	09:00	-	Sat	15	Dec	17:00
Sun	16	Dec	09:00	-	Sun	16	Dec	17:00
Mon	17	Dec	09:00	-	Mon	17	Dec	17:00
Tue	18	Dec	09:00	-	Tue	18	Dec	17:00
Wed	19	Dec	09:00	-	Wed	19	Dec	17:00
Thu	20	Dec	09:00	-	Thu	20	Dec	17:00
Fri	21	Dec	09:00	-	Fri	21	Dec	17:00
Sat	22	Dec	09:00	-	Sat	22	Dec	17:00
Sun	23	Dec	09:00	-	Sun	23	Dec	17:00
Mon	24	Dec	09:00	-	Mon	24	Dec	17:00
Tue	25	Dec	09:00	-	Tue	25	Dec	17:00
Wed	26	Dec	09:00	-	Wed	26	Dec	17:00
Thu	27	Dec	09:00	-	Thu	27	Dec	17:00
Fri	28	Dec	09:00	-	Fri	28	Dec	17:00
Sat	29	Dec	09:00	-	Sat	29	Dec	17:00
Sun	30	Dec	09:00	-	Sun	30	Dec	17:00
Mon	31	Dec	09:00	-	Mon	31	Dec	17:00

SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

This Speed limit is ONLY to be applied during the approved time periods listed. Signs are to be covered or removed outside the approved time periods. The Organisation is to maintain accurate records of when the speed limit signs were installed and removed, including the location of the signs, the date and times. The existing posted speed limit* is to be reinstated at the completion of each of the approved time periods as detailed herein.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From Shift				To Shift				
From	D	M	Time	-	To	D	M	Time
Thu	17	May	09:00	-	Thu	17	May	17:00
Fri	18	May	09:00	-	Fri	18	May	17:00
Sat	19	May	09:00	-	Sat	19	May	17:00
Sun	20	May	09:00	-	Sun	20	May	17:00
Mon	21	May	09:00	-	Mon	21	May	17:00
Tue	22	May	09:00	-	Tue	22	May	17:00
Wed	23	May	09:00	-	Wed	23	May	17:00
Thu	24	May	09:00	-	Thu	24	May	17:00
Fri	25	May	09:00	-	Fri	25	May	17:00
Sat	26	May	09:00	-	Sat	26	May	17:00
Sun	27	May	09:00	-	Sun	27	May	17:00
Mon	28	May	09:00	-	Mon	28	May	17:00
Tue	29	May	09:00	-	Tue	29	May	17:00
Wed	30	May	09:00	-	Wed	30	May	17:00
Thu	31	May	09:00	-	Thu	31	May	17:00
Fri	01	Jun	09:00	-	Fri	01	Jun	17:00
Sat	02	Jun	09:00	-	Sat	02	Jun	17:00
Sun	03	Jun	09:00	-	Sun	03	Jun	17:00
Mon	04	Jun	09:00	-	Mon	04	Jun	17:00
Tue	05	Jun	09:00	-	Tue	05	Jun	17:00
Wed	06	Jun	09:00	-	Wed	06	Jun	17:00
Thu	07	Jun	09:00	-	Thu	07	Jun	17:00
Fri	08	Jun	09:00	-	Fri	08	Jun	17:00
Sat	09	Jun	09:00	-	Sat	09	Jun	17:00

SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

This Speed limit is ONLY to be applied during the approved time periods listed. Signs are to be covered or removed outside the approved time periods. The Organisation is to maintain accurate records of when the speed limit signs were installed and removed, including the location of the signs, the date and times. The existing posted speed limit* is to be reinstated at the completion of each of the approved time periods as detailed herein.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From	From Shift			-	To	To Shift		
	D	M	Time			D	M	Time
Sun	10	Jun	09:00	-	Sun	10	Jun	17:00
Mon	11	Jun	09:00	-	Mon	11	Jun	17:00
Tue	12	Jun	09:00	-	Tue	12	Jun	17:00
Wed	13	Jun	09:00	-	Wed	13	Jun	17:00
Thu	14	Jun	09:00	-	Thu	14	Jun	17:00
Fri	15	Jun	09:00	-	Fri	15	Jun	17:00
Sat	16	Jun	09:00	-	Sat	16	Jun	17:00
Sun	17	Jun	09:00	-	Sun	17	Jun	17:00
Mon	18	Jun	09:00	-	Mon	18	Jun	17:00
Tue	19	Jun	09:00	-	Tue	19	Jun	17:00
Wed	20	Jun	09:00	-	Wed	20	Jun	17:00
Thu	21	Jun	09:00	-	Thu	21	Jun	17:00
Fri	22	Jun	09:00	-	Fri	22	Jun	17:00
Sat	23	Jun	09:00	-	Sat	23	Jun	17:00
Sun	24	Jun	09:00	-	Sun	24	Jun	17:00
Mon	25	Jun	09:00	-	Mon	25	Jun	17:00
Tue	26	Jun	09:00	-	Tue	26	Jun	17:00
Wed	27	Jun	09:00	-	Wed	27	Jun	17:00
Thu	28	Jun	09:00	-	Thu	28	Jun	17:00
Fri	29	Jun	09:00	-	Fri	29	Jun	17:00
Sat	30	Jun	09:00	-	Sat	30	Jun	17:00
Sun	01	Jul	09:00	-	Sun	01	Jul	17:00
Mon	02	Jul	09:00	-	Mon	02	Jul	17:00
Tue	03	Jul	09:00	-	Tue	03	Jul	17:00

SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

This Speed limit is ONLY to be applied during the approved time periods listed. Signs are to be covered or removed outside the approved time periods. The Organisation is to maintain accurate records of when the speed limit signs were installed and removed, including the location of the signs, the date and times. The existing posted speed limit* is to be reinstated at the completion of each of the approved time periods as detailed herein.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

	From Shift				To Shift			
From	D	M	Time	-	To	D	M	Time
Wed	04	Jul	09:00	-	Wed	04	Jul	17:00
Thu	05	Jul	09:00	-	Thu	05	Jul	17:00
Fri	06	Jul	09:00	-	Fri	06	Jul	17:00
Sat	07	Jul	09:00	-	Sat	07	Jul	17:00
Sun	08	Jul	09:00	-	Sun	08	Jul	17:00
Mon	09	Jul	09:00	-	Mon	09	Jul	17:00
Tue	10	Jul	09:00	-	Tue	10	Jul	17:00
Wed	11	Jul	09:00	-	Wed	11	Jul	17:00
Thu	12	Jul	09:00	-	Thu	12	Jul	17:00
Fri	13	Jul	09:00	-	Fri	13	Jul	17:00
Sat	14	Jul	09:00	-	Sat	14	Jul	17:00
Sun	15	Jul	09:00	-	Sun	15	Jul	17:00
Mon	16	Jul	09:00	-	Mon	16	Jul	17:00
Tue	17	Jul	09:00	-	Tue	17	Jul	17:00
Wed	18	Jul	09:00	-	Wed	18	Jul	17:00
Thu	19	Jul	09:00	-	Thu	19	Jul	17:00
Fri	20	Jul	09:00	-	Fri	20	Jul	17:00
Sat	21	Jul	09:00	-	Sat	21	Jul	17:00
Sun	22	Jul	09:00	-	Sun	22	Jul	17:00
Mon	23	Jul	09:00	-	Mon	23	Jul	17:00
Tue	24	Jul	09:00	-	Tue	24	Jul	17:00
Wed	25	Jul	09:00	-	Wed	25	Jul	17:00
Thu	26	Jul	09:00	-	Thu	26	Jul	17:00
Fri	27	Jul	09:00	-	Fri	27	Jul	17:00

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SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

This Speed limit is ONLY to be applied during the approved time periods listed. Signs are to be covered or removed outside the approved time periods. The Organisation is to maintain accurate records of when the speed limit signs were installed and removed, including the location of the signs, the date and times. The existing posted speed limit* is to be reinstated at the completion of each of the approved time periods as detailed herein.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From	From Shift			-	To Shift			
	D	M	Time		D	M	Time	
Sat	28	Jul	09:00	-	Sat	28	Jul	17:00
Sun	29	Jul	09:00	-	Sun	29	Jul	17:00
Mon	30	Jul	09:00	-	Mon	30	Jul	17:00
Tue	31	Jul	09:00	-	Tue	31	Jul	17:00
Wed	01	Aug	09:00	-	Wed	01	Aug	17:00
Thu	02	Aug	09:00	-	Thu	02	Aug	17:00
Fri	03	Aug	09:00	-	Fri	03	Aug	17:00
Sat	04	Aug	09:00	-	Sat	04	Aug	17:00
Sun	05	Aug	09:00	-	Sun	05	Aug	17:00
Mon	06	Aug	09:00	-	Mon	06	Aug	17:00
Tue	07	Aug	09:00	-	Tue	07	Aug	17:00
Wed	08	Aug	09:00	-	Wed	08	Aug	17:00
Thu	09	Aug	09:00	-	Thu	09	Aug	17:00
Fri	10	Aug	09:00	-	Fri	10	Aug	17:00
Sat	11	Aug	09:00	-	Sat	11	Aug	17:00
Sun	12	Aug	09:00	-	Sun	12	Aug	17:00
Mon	13	Aug	09:00	-	Mon	13	Aug	17:00
Tue	14	Aug	09:00	-	Tue	14	Aug	17:00
Wed	15	Aug	09:00	-	Wed	15	Aug	17:00
Thu	16	Aug	09:00	-	Thu	16	Aug	17:00
Fri	17	Aug	09:00	-	Fri	17	Aug	17:00
Sat	18	Aug	09:00	-	Sat	18	Aug	17:00
Sun	19	Aug	09:00	-	Sun	19	Aug	17:00
Mon	20	Aug	09:00	-	Mon	20	Aug	17:00

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SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

This Speed limit is ONLY to be applied during the approved time periods listed. Signs are to be covered or removed outside the approved time periods. The Organisation is to maintain accurate records of when the speed limit signs were installed and removed, including the location of the signs, the date and times. The existing posted speed limit* is to be reinstated at the completion of each of the approved time periods as detailed herein.

LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

	From Shift				To Shift			
From	D	M	Time	-	To	D	M	Time
Tue	21	Aug	09:00	-	Tue	21	Aug	17:00
Wed	22	Aug	09:00	-	Wed	22	Aug	17:00
Thu	23	Aug	09:00	-	Thu	23	Aug	17:00
Fri	24	Aug	09:00	-	Fri	24	Aug	17:00
Sat	25	Aug	09:00	-	Sat	25	Aug	17:00
Sun	26	Aug	09:00	-	Sun	26	Aug	17:00
Mon	27	Aug	09:00	-	Mon	27	Aug	17:00
Tue	28	Aug	09:00	-	Tue	28	Aug	17:00
Wed	29	Aug	09:00	-	Wed	29	Aug	17:00
Thu	30	Aug	09:00	-	Thu	30	Aug	17:00
Fri	31	Aug	09:00	-	Fri	31	Aug	17:00
Sat	01	Sep	09:00	-	Sat	01	Sep	17:00
Sun	02	Sep	09:00	-	Sun	02	Sep	17:00
Mon	03	Sep	09:00	-	Mon	03	Sep	17:00
Tue	04	Sep	09:00	-	Tue	04	Sep	17:00
Wed	05	Sep	09:00	-	Wed	05	Sep	17:00
Thu	06	Sep	09:00	-	Thu	06	Sep	17:00
Fri	07	Sep	09:00	-	Fri	07	Sep	17:00
Sat	08	Sep	09:00	-	Sat	08	Sep	17:00
Sun	09	Sep	09:00	-	Sun	09	Sep	17:00
Mon	10	Sep	09:00	-	Mon	10	Sep	17:00
Tue	11	Sep	09:00	-	Tue	11	Sep	17:00
Wed	12	Sep	09:00	-	Wed	12	Sep	17:00
Thu	13	Sep	09:00	-	Thu	13	Sep	17:00

SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
Reduced To : 60 Km/h

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LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

	From Shift				To Shift			
From	D	M	Time	-	To	D	M	Time
Fri	14	Sep	09:00	-	Fri	14	Sep	17:00
Sat	15	Sep	09:00	-	Sat	15	Sep	17:00
Sun	16	Sep	09:00	-	Sun	16	Sep	17:00
Mon	17	Sep	09:00	-	Mon	17	Sep	17:00
Tue	18	Sep	09:00	-	Tue	18	Sep	17:00
Wed	19	Sep	09:00	-	Wed	19	Sep	17:00
Thu	20	Sep	09:00	-	Thu	20	Sep	17:00
Fri	21	Sep	09:00	-	Fri	21	Sep	17:00
Sat	22	Sep	09:00	-	Sat	22	Sep	17:00
Sun	23	Sep	09:00	-	Sun	23	Sep	17:00
Mon	24	Sep	09:00	-	Mon	24	Sep	17:00
Tue	25	Sep	09:00	-	Tue	25	Sep	17:00
Wed	26	Sep	09:00	-	Wed	26	Sep	17:00
Thu	27	Sep	09:00	-	Thu	27	Sep	17:00
Fri	28	Sep	09:00	-	Fri	28	Sep	17:00
Sat	29	Sep	09:00	-	Sat	29	Sep	17:00
Sun	30	Sep	09:00	-	Sun	30	Sep	17:00
Mon	01	Oct	09:00	-	Mon	01	Oct	17:00
Tue	02	Oct	09:00	-	Tue	02	Oct	17:00
Wed	03	Oct	09:00	-	Wed	03	Oct	17:00
Thu	04	Oct	09:00	-	Thu	04	Oct	17:00
Fri	05	Oct	09:00	-	Fri	05	Oct	17:00
Sat	06	Oct	09:00	-	Sat	06	Oct	17:00
Sun	07	Oct	09:00	-	Sun	07	Oct	17:00

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SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

Phone: 0288746806 Monday To Friday 8.30 AM - 4.30 PM

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
This Activity : Short Term/ Intermittent works. Road closure for mine blasting. North and South bound traffic on Golden Highway from Long Point Road to Wallaby Scrub Road.

SPEED LIMIT REDUCTION

Existing: 100 Km/h
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LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From	From Shift			-	To	To Shift		
	D	M	Time			D	M	Time
Mon	08	Oct	09:00	-	Mon	08	Oct	17:00
Tue	09	Oct	09:00	-	Tue	09	Oct	17:00
Wed	10	Oct	09:00	-	Wed	10	Oct	17:00
Thu	11	Oct	09:00	-	Thu	11	Oct	17:00
Fri	12	Oct	09:00	-	Fri	12	Oct	17:00
Sat	13	Oct	09:00	-	Sat	13	Oct	17:00
Sun	14	Oct	09:00	-	Sun	14	Oct	17:00
Mon	15	Oct	09:00	-	Mon	15	Oct	17:00
Tue	16	Oct	09:00	-	Tue	16	Oct	17:00
Wed	17	Oct	09:00	-	Wed	17	Oct	17:00
Thu	18	Oct	09:00	-	Thu	18	Oct	17:00
Fri	19	Oct	09:00	-	Fri	19	Oct	17:00
Sat	20	Oct	09:00	-	Sat	20	Oct	17:00
Sun	21	Oct	09:00	-	Sun	21	Oct	17:00
Mon	22	Oct	09:00	-	Mon	22	Oct	17:00
Tue	23	Oct	09:00	-	Tue	23	Oct	17:00
Wed	24	Oct	09:00	-	Wed	24	Oct	17:00
Thu	25	Oct	09:00	-	Thu	25	Oct	17:00
Fri	26	Oct	09:00	-	Fri	26	Oct	17:00
Sat	27	Oct	09:00	-	Sat	27	Oct	17:00
Sun	28	Oct	09:00	-	Sun	28	Oct	17:00
Mon	29	Oct	09:00	-	Mon	29	Oct	17:00
Tue	30	Oct	09:00	-	Tue	30	Oct	17:00
Wed	31	Oct	09:00	-	Wed	31	Oct	17:00

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SPEED ZONE AUTHORISATION

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
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SPEED LIMIT REDUCTION

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LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From	From Shift			-	To	To Shift		
	D	M	Time			D	M	Time
Thu	01	Nov	09:00	-	Thu	01	Nov	17:00
Fri	02	Nov	09:00	-	Fri	02	Nov	17:00
Sat	03	Nov	09:00	-	Sat	03	Nov	17:00
Sun	04	Nov	09:00	-	Sun	04	Nov	17:00
Mon	05	Nov	09:00	-	Mon	05	Nov	17:00
Tue	06	Nov	09:00	-	Tue	06	Nov	17:00
Wed	07	Nov	09:00	-	Wed	07	Nov	17:00
Thu	08	Nov	09:00	-	Thu	08	Nov	17:00
Fri	09	Nov	09:00	-	Fri	09	Nov	17:00
Sat	10	Nov	09:00	-	Sat	10	Nov	17:00
Sun	11	Nov	09:00	-	Sun	11	Nov	17:00
Mon	12	Nov	09:00	-	Mon	12	Nov	17:00
Tue	13	Nov	09:00	-	Tue	13	Nov	17:00
Wed	14	Nov	09:00	-	Wed	14	Nov	17:00
Thu	15	Nov	09:00	-	Thu	15	Nov	17:00
Fri	16	Nov	09:00	-	Fri	16	Nov	17:00
Sat	17	Nov	09:00	-	Sat	17	Nov	17:00
Sun	18	Nov	09:00	-	Sun	18	Nov	17:00
Mon	19	Nov	09:00	-	Mon	19	Nov	17:00
Tue	20	Nov	09:00	-	Tue	20	Nov	17:00
Wed	21	Nov	09:00	-	Wed	21	Nov	17:00
Thu	22	Nov	09:00	-	Thu	22	Nov	17:00
Fri	23	Nov	09:00	-	Fri	23	Nov	17:00
Sat	24	Nov	09:00	-	Sat	24	Nov	17:00

SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

ROADS & MARITIME SERVICES (RMS)

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
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SPEED LIMIT REDUCTION

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LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From	From Shift			-	To	To Shift		
	D	M	Time			D	M	Time
Sun	25	Nov	09:00	-	Sun	25	Nov	17:00
Mon	26	Nov	09:00	-	Mon	26	Nov	17:00
Tue	27	Nov	09:00	-	Tue	27	Nov	17:00
Wed	28	Nov	09:00	-	Wed	28	Nov	17:00
Thu	29	Nov	09:00	-	Thu	29	Nov	17:00
Fri	30	Nov	09:00	-	Fri	30	Nov	17:00
Sat	01	Dec	09:00	-	Sat	01	Dec	17:00
Sun	02	Dec	09:00	-	Sun	02	Dec	17:00
Mon	03	Dec	09:00	-	Mon	03	Dec	17:00
Tue	04	Dec	09:00	-	Tue	04	Dec	17:00
Wed	05	Dec	09:00	-	Wed	05	Dec	17:00
Thu	06	Dec	09:00	-	Thu	06	Dec	17:00
Fri	07	Dec	09:00	-	Fri	07	Dec	17:00
Sat	08	Dec	09:00	-	Sat	08	Dec	17:00
Sun	09	Dec	09:00	-	Sun	09	Dec	17:00
Mon	10	Dec	09:00	-	Mon	10	Dec	17:00
Tue	11	Dec	09:00	-	Tue	11	Dec	17:00
Wed	12	Dec	09:00	-	Wed	12	Dec	17:00
Thu	13	Dec	09:00	-	Thu	13	Dec	17:00
Fri	14	Dec	09:00	-	Fri	14	Dec	17:00
Sat	15	Dec	09:00	-	Sat	15	Dec	17:00
Sun	16	Dec	09:00	-	Sun	16	Dec	17:00
Mon	17	Dec	09:00	-	Mon	17	Dec	17:00
Tue	18	Dec	09:00	-	Tue	18	Dec	17:00

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SPEED ZONE AUTHORISATION

LIC/SZA NO : 535473/001

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NON DEVELOPMENT - BUILDING WORK ZONE

Project: Not Applicable
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LOCATION

Subject Road: GOLDEN HWY
From: LONG POINT RD, WARKWORTH
To: WALLABY SCRUB RD, WARKWORTH
Council:

TRAFFIC MANAGEMENT

Distance(m): 3741
Direction: Eastbound and Westbound

LICENSEE

Organisation: Warkworth Mining Limited
Ref No:
Name: Shannon Lineham
Phone: 0437575623

ONSITE CONTACT

Name: Shannon Lineham
Phone: 0437575623

APPROVED DATES & TIMES

From	From Shift			-	To Shift			
	D	M	Time		D	M	Time	
Wed	19	Dec	09:00	-	Wed	19	Dec	17:00
Thu	20	Dec	09:00	-	Thu	20	Dec	17:00
Fri	21	Dec	09:00	-	Fri	21	Dec	17:00
Sat	22	Dec	09:00	-	Sat	22	Dec	17:00
Sun	23	Dec	09:00	-	Sun	23	Dec	17:00
Mon	24	Dec	09:00	-	Mon	24	Dec	17:00
Tue	25	Dec	09:00	-	Tue	25	Dec	17:00
Wed	26	Dec	09:00	-	Wed	26	Dec	17:00
Thu	27	Dec	09:00	-	Thu	27	Dec	17:00
Fri	28	Dec	09:00	-	Fri	28	Dec	17:00
Sat	29	Dec	09:00	-	Sat	29	Dec	17:00
Sun	30	Dec	09:00	-	Sun	30	Dec	17:00
Mon	31	Dec	09:00	-	Mon	31	Dec	17:00

Enquiries: David Griffin
02 6578 7271

Our Ref: 11487/2018, 18/41237, AD18/7401

22 June 2018

Yancoal Australia Ltd
LEVEL 26 357-363 George Street
SYDNEY NSW 2000

Subject: Application for the use of a Council Road
Applicant: Yancoal Australia Ltd
Application No: 11487/2018
Benefiting Property: Wallaby Scrub Road WARKWORTH 2330

Reference is made to your application received 20/06/2018 for works within the road reserve of Wallaby Scrub Road for the sole purpose of the temporary road closure due to mine blasting as described in your application.

Wallaby Scrub Road is a classified local road and Singleton Council is the Roads Authority. Consent from Singleton Council is required within the provision of the Roads Act.

Consent is granted in accordance with the attached terms and conditions. A copy of the attached agreement should be signed by an authorised person and returned to Council for processing.

If you require any further information or wish to discuss the details contained within the approval please contact David Griffin on the above number.

Yours faithfully



Peter McMurray
Manager Infrastructure Strategy, Planning and Programming

This Document provides consent

This document provides, and sets out the terms and conditions of, the consent (the **Consent**) granted by Singleton Council (**Council**) as the appropriate roads authority under Division 3 of Part 9 of the *Roads Act 1993* (the **Roads Act**) in response to the application for consent filed by the applicant listed in Item 1 (the **Applicant**).

Consent granted is subject to the terms and conditions of the Consent, and any Annexure and Schedules to the Consent.

Who has consent?

The Consent is granted to the Applicant. The Consent cannot be assigned or transferred to any other person.

What does the Consent enable?

The Consent enables the Applicant to:

- (a) Erect the Structure in, on or over the Public Road;
- (b) Carry out the Works in, on or over the Public Road; and
- (c) Use the Structure in accordance with the Permitted Use and the terms and conditions of the Consent.

The Structure is described in Item 2.

The Benefiting Property is described in Item 3.

The Public Road is described in Item 4.

The Works are described in Item 5.

The Permitted Use is described in Item 6.

When will the Consent commence?

The Consent commences on the date in Item 7.

When will the Consent end?

The Consent will end on the date in Item 8.

If there is no date in Item 8, the Consent will end on the earlier of the following occasions:

- (a) when Council decides to revoke the Consent; or
- (b) when the Applicant requests that Council revoke the Consent.

In which circumstances can Council revoke the Consent?

Council can revoke the Consent at any time and for any reason under section 140 of the Roads Act.

If section 140 of the Roads Act is repealed, the Consent is revoked when that repeal takes effect.

Without limiting the circumstances in which Council may revoke the Consent, Council may revoke or suspend the Consent in accordance with clauses 7-10.

Warning Notice

If, in Council's opinion, the Applicant is not complying with any of the terms and conditions of the Consent, Council may issue a written warning notice to the Applicant (the **Warning Notice**).

The Applicant must reply in writing to the Warning Notice (the **Applicant's Reply**), and the Applicant's Reply must be received by Council within 7 days of the date of the Warning Notice.

The Applicant's Reply must contain the following information:

- (a) steps
- (b) Council will respond to the Applicant's reply within 7 days of receipt of the Applicant's Reply (**Council's Response**).

Once the Applicant has received Council's Response, the Applicant must ensure all requirements in Council's Response are complied with immediately.

Suspension and revocation - events

Council may revoke or suspend the Consent, with or without issuing a Warning Notice, if any of the following events occurs:

- (a) the Applicant does not comply with the requirements of the Consent;
- (b) the Applicant's application for consent contains information that is untrue, incomplete or misleading;
- (c) the Applicant does not reply to a Warning Notice in the manner required by clause 7;
- (d) the Applicant's Reply does not set out the steps the Applicant will take to comply with the requirements of the Warning Notice;
- (e) the Applicant does not comply with the requirements of Council's Response;
- (f) the Applicant prevents or hinders, or attempts to prevent or hinder, Council from carrying out any inspections in relation to the Consent;
- (g) any fees associated with the Consent are not paid by the due date;

- (h) any approvals required to be obtained by the Applicant in clause 15 lapse, are not granted or are revoked; or
- (i) the Applicant becomes insolvent and cannot fulfil its obligations under the Consent.

Suspension and revocation – the Structure

Council may suspend or revoke the Consent immediately, with or without a Warning Notice, if, in Council's opinion, the Structure:

- (a) becomes unsafe; or
- (b) is likely to cause environmental damage; or
- (c) could harm any person or property.

Notice if the Consent is revoked or suspended

The Applicant may request Council to revoke the Consent, with such revocation to take effect 30 days after the date of the request.

Any request by the Applicant for Council to revoke the Consent is subject to the following conditions:

- (a) the Applicant cannot request Council to revoke the Consent if the Applicant is in breach of any of the conditions of the Consent;
- (b) while Council will consider any request to revoke the Consent, Council will not be bound to agree to revoke the Consent; and
- (c) Council may agree to any request to revoke the Consent subject to conditions imposed by Council.

Notice if the Consent is revoked or suspended

If Council revokes or suspends the Consent, Council will inform the Applicant by way of written notice.

Effect of revocation or suspension of the Consent

If the Applicant receives a notice that Council is revoking or suspending the Consent, the Applicant must, in accordance with the notice:

In the case of suspension of the Consent:

- (a) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately.

In the case of revocation of the Consent:

- (b) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately in the case of revocation; and either

- (c) remove the Structure immediately (where the removal of the Structure does not require the consent of any authority); or
- (d) immediately apply to the relevant authority for consent to remove the Structure.

If the Applicant does not comply with the terms of the notice, and remove or cease use of the Structure (as the case may be), Council may remove the Structure.

Removal of the Structure by Council does not prevent Council from taking legal action against the Applicant, including recovering any costs incurred by Council to remove the Structure.

No compensation if the Consent is revoked or suspended

Nothing in the Consent renders Council liable to pay any compensation to the Applicant in circumstances where Council suspends or revokes the Consent.

Statutory restrictions

The Consent is limited in its operation by the provisions of the Roads Act and any Regulations made under the Roads Act, and is granted subject to the provisions of the Roads Act.

Prior to carrying out the Works

The Applicant must, prior to carrying out the Works, obtain any necessary approvals from Council for the Works, the Structure and the Permitted Use under the *Environmental Planning and Assessment Act 1979* and the *Local Government Act 1993*;

The Applicant must comply with all conditions imposed by any approvals of Council, the RMS, the Minister administering the Roads Act or any other authority.

The Applicant is required to give at least 7 days notice to the occupiers of properties adjoining any part of the Public Road in which the Works are to be carried out, of the intention to carry out those Works.

The Applicant must give at least 48 hours written notice to Council's Representative listed at Item 9 at the address listed at Item 10 prior to commencing the Works.

The Applicant is required to deliver to Council's Representative the insurance policy referred to in clause 22 and the bank guarantee referred to in clause 23 prior to commencing the Works, as well as copies of any approvals that the Applicant is required to obtain in respect of the Works, the Structure or the Permitted Use.

Condition of Site

Council gives no warranty (either present or future) as to the suitability of the Public Road or the use to which the Public Road may be put. The Applicant is deemed to have sought the Consent with full knowledge of and subject to any prohibitions or restrictions on the use of the Public Road from time to time under or in pursuance of any law.

Carrying out the Works

The Applicant must carry out the Works:

- (a) in conformity with the description of the Works at Item 5;
- (b) in accordance with the approvals listed in clause 15;
- (c) to the reasonable satisfaction of Council's Representative;
- (d) as expeditiously as practicable in a proper and workmanlike manner;
- (e) proceed continuously with the Works until completion of the Works;
- (f) with due regard to the safety and rights of the public and for that purpose comply with the requirements of:
 - (1) Council's Representative;
 - (2) the WorkCover Authority of New South Wales;
 - (3) the Department of Industrial Relations and Employment;
 - (4) the Police Service of New South Wales; and
 - (5) any other authority;
- (g) in a manner that does not unreasonably interfere with the use of the Public Road or any other land by other persons while carrying out the Works;
- (h) in a manner that complies with Council's policies and procedures; and
- (i) between the hours of 7.00am and 6.00pm on Mondays to Fridays, between 8.00am and 4.00pm on Saturdays and at other times only if previously approved by Council's Representative in writing.

Following completion of the Works

Following completion of the Works, the Applicant must:

- (a) deliver, no later than 2 weeks before commencement of the Permitted Use of the Structure, to Council's Representative the Works as executed plans which must:
 - (1) show the location of the Structure as erected in relation to property boundaries; and
 - (2) show the road alignment; and
 - (3) contain such other information as Council may require from time to time;
- (b) restore the surface of the Public Road to its former condition immediately after carrying out the Works;
- (c) repair any subsidence or other deterioration of the Public Road which occurs within 6 months after carrying out the Works;
- (d) maintain the Structure in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;
- (e) maintain the surface of the Public Road in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;

- (f) promptly repair any damage caused to Council's property or to the property of any other person in the course of carrying out the Works and the Permitted Use;
- (g) keep the Structure clean and well lit for safety purposes; and
- (h) carry out all maintenance and repair work as expeditiously as practicable and in conformity with any reasonable requirement of Council's Representative and of any statute, regulation or direction by any authority.

Should the Applicant be required to undertake any maintenance, renewal, replacement or alteration of or to the Structure, the Applicant is required to obtain written consent from Council's Representative prior to carrying out such work.

A penalty may be imposed on the Applicant pursuant to section 142 of the Roads Act if the Applicant fails to undertake any maintenance, renewal, replacement or alteration of or to the Structure.

Amendments to the Works

If, in Council's opinion, it becomes necessary:

- (a) to relocate or remove any portion of the Structure due to:
 - (1) any work in, on or over the Public Road; or
 - (2) widening or reconstruction of the Public Road which Council or any other authority wishes to carry out; or
- (b) to carry out additional works to the Public Road or the Structure for the safety and protection of the public,

the Applicant must, at its own cost:

- (c) relocate, carry out the removal or carry out any additional work; and
- (d) pay to Council any additional cost or expenditure incurred by Council by reason of the existence, relocation or removal of the Structure.

If no representative of the Applicant is present at the Works site, or if Council's Representative determines an event of emergency has occurred, Council's Representative can take any action to prevent loss of or damage to the whole or any part of the Structure, the Public Road or property adjacent to the Structure, or to prevent personal injury to any person.

In such circumstances, where Council's Representative reasonably determines that the Applicant would have been liable to take such action, the cost of Council's action must be paid by the Applicant to Council as a debt due to Council. Any such action taken by Council's Representative will not relieve the Applicant of any liability or obligation under the Consent.

Council's inspection

Council reserves the right to inspect the Public Road, the Structure and the Works at any time with reasonable notice and at any time in an emergency.

Charges

The Applicant is required to pay to Council an annual charge for the Consent in accordance with section 611 of the *Local Government Act 1993* which is set out at Item 11 (the **Annual Charge**).

The Annual Charge must be paid prior to use of the Structure being commenced. The Annual Charge is to be paid in the manner advised by Council's Representative, as amended from time to time.

Council may amend the amount of the Annual Charge at any time.

Insurance and Indemnities

The Applicant indemnifies Council and keeps Council indemnified from and against all actions, claims and demands if any arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent or any damage to the Applicant's property in accordance with the Consent.

Council can pay, satisfy, defend, compromise or settle any claim arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent and any amount paid by Council in doing so is a debt due to Council by the Applicant and must be repaid on demand.

The Applicant indemnifies Council against any liability to pay taxes or charges payable now or in the future in respect of the Works, the Structure or the Consent.

The Applicant must obtain and keep current an insurance policy:

- (a) noting Council's interest as the appropriate roads authority of the Public Road and listing Council as co-insured; and
- (b) covering liability to the public for not less than the amount in Item 12 for each accident or event.

The insurance policy of the Applicant must be produced to Council's Representative prior to commencing the Works along with the receipt for the last premium. The Applicant must provide certificates of currency to Council on an annual basis while the Consent remains in force.

The Applicant must not void, reduce or cancel any insurance policy in respect of the Public Road, the Structure or the Works.

Bank Guarantee

Before commencing the Works, the Applicant must deliver to Council's Representative a bank guarantee to secure the satisfaction of the Applicant's obligations under the Consent (the **Bank Guarantee**).

The Bank Guarantee must:

- (a) be in a form acceptable to Council and for an amount not less than the amount specified in Item 13; and

(b) be payable to Council at any time while the Consent is in force.

If the Applicant fails to satisfy any of its obligations under the Consent, or if Council incurs any expense under any term of the Consent, Council may call on the Bank Guarantee and remedy the Applicant's failure or reimburse Council for that expense without prejudice to any other right Council may have against the Applicant.

Council will return the Bank Guarantee, or any remainder, to the Applicant when the Applicant's obligations under the Consent have been complied with to the reasonable satisfaction of Council's Representative.

End of the Consent

When the Consent ends or is revoked, any part of the Structure remaining within the Public Road will be deemed to be an obstruction or encroachment under section 107 of the Roads Act.

The Applicant or any other person using or capable of using the Structure after the Consent ends will be deemed to be a person who causes an obstruction or encroachment on a public road for the purposes of section 107(1)(a) of the Roads Act.

When the Consent ends the Applicant must, in any manner directed by Council and as quickly as practicable, remove the Structure and make good any damage caused by the removal. The Applicant must also pay any outstanding fees and charges due to Council under the Consent.

If the Applicant does not remove the Structure or make good any damage caused by the removal at the expiration of the Consent, Council may undertake such actions on behalf of the Applicant and the costs incurred by Council in doing so will be a debt due from the Applicant to Council, payable on demand.

Resolution of disputes

Council will endeavour to resolve any disputes with the Applicant by discussing them with the Applicant. However, in the absence of agreement, Council's decision will be final. Nothing in this clause precludes the Applicant from taking legal action against Council in respect of Council's decision.

Notices

Any notice given under or in accordance with the Consent can be given in the manner provided in sections 254 and 255 of the Roads Act.

General

Nothing contained in the Consent:

- (a) prejudices or affects the rights of the public to pass along the Public Road;
- (b) authorises any nuisance or permanent obstruction of the Public Road;

- (c) confers on the Applicant any exclusive right or title to that part of the Structure within the boundaries of the Public Road; or
- (d) in any way restricts or limits the powers of Council in respect of the Public Road.

A certificate signed by Council's Representative as to the cost of any work carried out by Council or on Council's behalf will be final and conclusive evidence of that cost.

The Applicant must pay all reasonable legal costs incurred by Council in connection with the preparation of the Consent and with remedying any breach of the requirements of the Consent.

The Applicant must comply with all laws relating to the Works, the Structure and the Public Road.

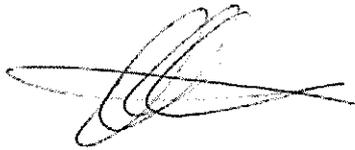
Commencement of the Works constitutes acceptance of all conditions of the Consent.

A waiver or indulgence granted by Council in respect of any non-compliance by the Applicant with the terms of the Consent does not constitute a future or past waiver of similar non-compliance. A failure to act by Council in response to any non-compliance does not constitute a waiver of such conduct.

A reference to the Item is attached as **Schedule 1**.

Signed for and on behalf of

SINGLETON COUNCIL



1 July 2018

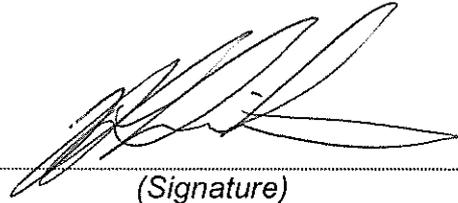
Date

Peter McMurray

Manager Infrastructure Strategy
Planning and Programming

Signed for and on behalf of

THE APPLICANT



(Signature)

28 June 2018

Date

SHANNON KINGHAM
(Name)

D.O.B. SUPERINTENDENT
(Position Held – if applicable)

SCHEDULE 1

Item 1 – The Applicant

Yancoal Australia Ltd

Item 2 – The Structure

Other

Item 3 – The Benefiting Organisation

Wallaby Scrub Road WARKWORTH 2330

Item 4 – The Public Road

Wallaby Scrub Road

Item 5 – The Works

Installation of the structures identified in Item 2 above and in accordance with the special conditions shown on Appendix 1.

Item 6– Permitted Use

As identified in Item 2.

Item 7– The Commencement Date

01 July 2018

Item 8– The End Date

30 June 2019

Item 9– Council’s Representative

David Griffin – Asset Commissioning Officer.

Item 10 - Council’s Representative’s Address

Civic Avenue
SINGLETON NSW 2330.

Item 11 – Annual Charge

To be advised

Item 12 – Insurance amount

Public Risk Insurance Policy to cover the Council. Policy cover of at least \$20,000,000 evidence of such policy is to be provided to Council prior to commencement.

Insurance Underwriter: AON

Policy Number: 37 2193296

Insurance Policy Expiry Date: 30/11/2018

Item 13 – Bond/Bank Guarantee

Not Applicable.

APPENDIX 1

1. The Applicant shall be responsible for investigating and locating the position and depth of any public utility service in particular Telstra cables, gas, electricity, water, sewer and stormwater and other private services such as irrigation pump lines before any works commence on site and ensure that no damage or conflict shall result.
2. No work shall be carried out during periods of adverse weather conditions or any other prevailing circumstances that make the work or traffic control hazardous.
3. Council shall be reimbursed by the Applicant when requested, for any expenses incurred in restoring the road pavement, or other sections of the site, within the road reservation.
4. The site shall be left in a safe condition cleared of debris when the works are completed.
5. The agreement cannot be assigned or transferred to another person. Council reserves the right to revoke this consent at any time.
6. This approval does not extend to the use of any other machinery or works within the road reserve.
7. Council is indemnified against any claims that may arise in regards to the works you will be undertaking.
8. Any Construction works are to be completed in accordance with Singleton Council's Development Construction Specification CQC Rev 3 – Quality Control Requirements available on Council's website www.singleton.nsw.gov.au
9. Traffic control is to be set out as per the plans supplied to council and installed by an appropriately qualified person.
10. Traffic stoppage to be limited to a maximum of 15 minutes.
11. Please advise council officer David Griffin on 02 6578 7271 or email dgriffin@singleton.nsw.gov.au once works have been completed.

Enquiries: David Griffin
02 6578 7271

Our Ref: 11486/2018, 18/41237, AD18/7397

22 June 2018

Yancoal
CARE Ashton Coal
PO Box 699
Singleton NSW 2330

Subject: Application for the use of a Council Road
Applicant: Yancoal
Application No: 11486/2018
Benefiting Property: Putty Road BULGA 2330

Reference is made to your application received 20/06/2018 for works within the road reserve of Putty Road Bulga for the sole purpose of the temporary road closure due to mine blasting as described in your application.

Putty Road Bulga is a classified local road and Singleton Council is the Roads Authority. Consent from Singleton Council is required within the provision of the Roads Act.

Consent is granted in accordance with the attached terms and conditions. A copy of the attached agreement should be signed by an authorised person and returned to Council for processing.

If you require any further information or wish to discuss the details contained within the approval please contact David Griffin on the above number.

Yours faithfully



Peter McMurray
Manager Infrastructure Strategy, Planning and Programming

This Document provides consent

This document provides, and sets out the terms and conditions of, the consent (the **Consent**) granted by Singleton Council (**Council**) as the appropriate roads authority under Division 3 of Part 9 of the *Roads Act 1993* (the **Roads Act**) in response to the application for consent filed by the applicant listed in Item 1 (the **Applicant**).

Consent granted is subject to the terms and conditions of the Consent, and any Annexure and Schedules to the Consent.

Who has consent?

The Consent is granted to the Applicant. The Consent cannot be assigned or transferred to any other person.

What does the Consent enable?

The Consent enables the Applicant to:

- (a) Erect the Structure in, on or over the Public Road;
- (b) Carry out the Works in, on or over the Public Road; and
- (c) Use the Structure in accordance with the Permitted Use and the terms and conditions of the Consent.

The Structure is described in Item 2.

The Benefiting Property is described in Item 3.

The Public Road is described in Item 4.

The Works are described in Item 5.

The Permitted Use is described in Item 6.

When will the Consent commence?

The Consent commences on the date in Item 7.

When will the Consent end?

The Consent will end on the date in Item 8.

If there is no date in Item 8, the Consent will end on the earlier of the following occasions:

- (a) when Council decides to revoke the Consent; or
- (b) when the Applicant requests that Council revoke the Consent.

In which circumstances can Council revoke the Consent?

Council can revoke the Consent at any time and for any reason under section 140 of the Roads Act.

If section 140 of the Roads Act is repealed, the Consent is revoked when that repeal takes effect.

Without limiting the circumstances in which Council may revoke the Consent, Council may revoke or suspend the Consent in accordance with clauses 7-10.

Warning Notice

If, in Council's opinion, the Applicant is not complying with any of the terms and conditions of the Consent, Council may issue a written warning notice to the Applicant (the **Warning Notice**).

The Applicant must reply in writing to the Warning Notice (the **Applicant's Reply**), and the Applicant's Reply must be received by Council within 7 days of the date of the Warning Notice.

The Applicant's Reply must contain the following information:

- (a) steps
- (b) Council will respond to the Applicant's reply within 7 days of receipt of the Applicant's Reply (**Council's Response**).

Once the Applicant has received Council's Response, the Applicant must ensure all requirements in Council's Response are complied with immediately.

Suspension and revocation - events

Council may revoke or suspend the Consent, with or without issuing a Warning Notice, if any of the following events occurs:

- (a) the Applicant does not comply with the requirements of the Consent;
- (b) the Applicant's application for consent contains information that is untrue, incomplete or misleading;
- (c) the Applicant does not reply to a Warning Notice in the manner required by clause 7;
- (d) the Applicant's Reply does not set out the steps the Applicant will take to comply with the requirements of the Warning Notice;
- (e) the Applicant does not comply with the requirements of Council's Response;
- (f) the Applicant prevents or hinders, or attempts to prevent or hinder, Council from carrying out any inspections in relation to the Consent;
- (g) any fees associated with the Consent are not paid by the due date;

- (h) any approvals required to be obtained by the Applicant in clause 15 lapse, are not granted or are revoked; or
- (i) the Applicant becomes insolvent and cannot fulfil its obligations under the Consent.

Suspension and revocation – the Structure

Council may suspend or revoke the Consent immediately, with or without a Warning Notice, if, in Council's opinion, the Structure:

- (a) becomes unsafe; or
- (b) is likely to cause environmental damage; or
- (c) could harm any person or property.

Notice if the Consent is revoked or suspended

The Applicant may request Council to revoke the Consent, with such revocation to take effect 30 days after the date of the request.

Any request by the Applicant for Council to revoke the Consent is subject to the following conditions:

- (a) the Applicant cannot request Council to revoke the Consent if the Applicant is in breach of any of the conditions of the Consent;
- (b) while Council will consider any request to revoke the Consent, Council will not be bound to agree to revoke the Consent; and
- (c) Council may agree to any request to revoke the Consent subject to conditions imposed by Council.

Notice if the Consent is revoked or suspended

If Council revokes or suspends the Consent, Council will inform the Applicant by way of written notice.

Effect of revocation or suspension of the Consent

If the Applicant receives a notice that Council is revoking or suspending the Consent, the Applicant must, in accordance with the notice:

In the case of suspension of the Consent:

- (a) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately.

In the case of revocation of the Consent:

- (b) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately in the case of revocation; and either

- (c) remove the Structure immediately (where the removal of the Structure does not require the consent of any authority); or
- (d) immediately apply to the relevant authority for consent to remove the Structure.

If the Applicant does not comply with the terms of the notice, and remove or cease use of the Structure (as the case may be), Council may remove the Structure.

Removal of the Structure by Council does not prevent Council from taking legal action against the Applicant, including recovering any costs incurred by Council to remove the Structure.

No compensation if the Consent is revoked or suspended

Nothing in the Consent renders Council liable to pay any compensation to the Applicant in circumstances where Council suspends or revokes the Consent.

Statutory restrictions

The Consent is limited in its operation by the provisions of the Roads Act and any Regulations made under the Roads Act, and is granted subject to the provisions of the Roads Act.

Prior to carrying out the Works

The Applicant must, prior to carrying out the Works, obtain any necessary approvals from Council for the Works, the Structure and the Permitted Use under the *Environmental Planning and Assessment Act 1979* and the *Local Government Act 1993*;

The Applicant must comply with all conditions imposed by any approvals of Council, the RMS, the Minister administering the Roads Act or any other authority.

The Applicant is required to give at least 7 days notice to the occupiers of properties adjoining any part of the Public Road in which the Works are to be carried out, of the intention to carry out those Works.

The Applicant must give at least 48 hours written notice to Council's Representative listed at Item 9 at the address listed at Item 10 prior to commencing the Works.

The Applicant is required to deliver to Council's Representative the insurance policy referred to in clause 22 and the bank guarantee referred to in clause 23 prior to commencing the Works, as well as copies of any approvals that the Applicant is required to obtain in respect of the Works, the Structure or the Permitted Use.

Condition of Site

Council gives no warranty (either present or future) as to the suitability of the Public Road or the use to which the Public Road may be put. The Applicant is deemed to have sought the Consent with full knowledge of and subject to any prohibitions or restrictions on the use of the Public Road from time to time under or in pursuance of any law.

Carrying out the Works

The Applicant must carry out the Works:

- (a) in conformity with the description of the Works at Item 5;
- (b) in accordance with the approvals listed in clause 15;
- (c) to the reasonable satisfaction of Council's Representative;
- (d) as expeditiously as practicable in a proper and workmanlike manner;
- (e) proceed continuously with the Works until completion of the Works;
- (f) with due regard to the safety and rights of the public and for that purpose comply with the requirements of:
 - (1) Council's Representative;
 - (2) the WorkCover Authority of New South Wales;
 - (3) the Department of Industrial Relations and Employment;
 - (4) the Police Service of New South Wales; and
 - (5) any other authority;
- (g) in a manner that does not unreasonably interfere with the use of the Public Road or any other land by other persons while carrying out the Works;
- (h) in a manner that complies with Council's policies and procedures; and
- (i) between the hours of 7.00am and 6.00pm on Mondays to Fridays, between 8.00am and 4.00pm on Saturdays and at other times only if previously approved by Council's Representative in writing.

Following completion of the Works

Following completion of the Works, the Applicant must:

- (a) deliver, no later than 2 weeks before commencement of the Permitted Use of the Structure, to Council's Representative the Works as executed plans which must:
 - (1) show the location of the Structure as erected in relation to property boundaries; and
 - (2) show the road alignment; and
 - (3) contain such other information as Council may require from time to time;
- (b) restore the surface of the Public Road to its former condition immediately after carrying out the Works;
- (c) repair any subsidence or other deterioration of the Public Road which occurs within 6 months after carrying out the Works;
- (d) maintain the Structure in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;
- (e) maintain the surface of the Public Road in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;

- (f) promptly repair any damage caused to Council's property or to the property of any other person in the course of carrying out the Works and the Permitted Use;
- (g) keep the Structure clean and well lit for safety purposes; and
- (h) carry out all maintenance and repair work as expeditiously as practicable and in conformity with any reasonable requirement of Council's Representative and of any statute, regulation or direction by any authority.

Should the Applicant be required to undertake any maintenance, renewal, replacement or alteration of or to the Structure, the Applicant is required to obtain written consent from Council's Representative prior to carrying out such work.

A penalty may be imposed on the Applicant pursuant to section 142 of the Roads Act if the Applicant fails to undertake any maintenance, renewal, replacement or alteration of or to the Structure.

Amendments to the Works

If, in Council's opinion, it becomes necessary:

- (a) to relocate or remove any portion of the Structure due to:
 - (1) any work in, on or over the Public Road; or
 - (2) widening or reconstruction of the Public Road which Council or any other authority wishes to carry out; or
- (b) to carry out additional works to the Public Road or the Structure for the safety and protection of the public,

the Applicant must, at its own cost:

- (c) relocate, carry out the removal or carry out any additional work; and
- (d) pay to Council any additional cost or expenditure incurred by Council by reason of the existence, relocation or removal of the Structure.

If no representative of the Applicant is present at the Works site, or if Council's Representative determines an event of emergency has occurred, Council's Representative can take any action to prevent loss of or damage to the whole or any part of the Structure, the Public Road or property adjacent to the Structure, or to prevent personal injury to any person.

In such circumstances, where Council's Representative reasonably determines that the Applicant would have been liable to take such action, the cost of Council's action must be paid by the Applicant to Council as a debt due to Council. Any such action taken by Council's Representative will not relieve the Applicant of any liability or obligation under the Consent.

Council's inspection

Council reserves the right to inspect the Public Road, the Structure and the Works at any time with reasonable notice and at any time in an emergency.

Charges

The Applicant is required to pay to Council an annual charge for the Consent in accordance with section 611 of the *Local Government Act 1993* which is set out at Item 11 (the **Annual Charge**).

The Annual Charge must be paid prior to use of the Structure being commenced. The Annual Charge is to be paid in the manner advised by Council's Representative, as amended from time to time.

Council may amend the amount of the Annual Charge at any time.

Insurance and Indemnities

The Applicant indemnifies Council and keeps Council indemnified from and against all actions, claims and demands if any arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent or any damage to the Applicant's property in accordance with the Consent.

Council can pay, satisfy, defend, compromise or settle any claim arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent and any amount paid by Council in doing so is a debt due to Council by the Applicant and must be repaid on demand.

The Applicant indemnifies Council against any liability to pay taxes or charges payable now or in the future in respect of the Works, the Structure or the Consent.

The Applicant must obtain and keep current an insurance policy:

- (a) noting Council's interest as the appropriate roads authority of the Public Road and listing Council as co-insured; and
- (b) covering liability to the public for not less than the amount in Item 12 for each accident or event.

The insurance policy of the Applicant must be produced to Council's Representative prior to commencing the Works along with the receipt for the last premium. The Applicant must provide certificates of currency to Council on an annual basis while the Consent remains in force.

The Applicant must not void, reduce or cancel any insurance policy in respect of the Public Road, the Structure or the Works.

Bank Guarantee

Before commencing the Works, the Applicant must deliver to Council's Representative a bank guarantee to secure the satisfaction of the Applicant's obligations under the Consent (the **Bank Guarantee**).

The Bank Guarantee must:

- (a) be in a form acceptable to Council and for an amount not less than the amount specified in Item 13; and

(b) be payable to Council at any time while the Consent is in force.

If the Applicant fails to satisfy any of its obligations under the Consent, or if Council incurs any expense under any term of the Consent, Council may call on the Bank Guarantee and remedy the Applicant's failure or reimburse Council for that expense without prejudice to any other right Council may have against the Applicant.

Council will return the Bank Guarantee, or any remainder, to the Applicant when the Applicant's obligations under the Consent have been complied with to the reasonable satisfaction of Council's Representative.

End of the Consent

When the Consent ends or is revoked, any part of the Structure remaining within the Public Road will be deemed to be an obstruction or encroachment under section 107 of the Roads Act.

The Applicant or any other person using or capable of using the Structure after the Consent ends will be deemed to be a person who causes an obstruction or encroachment on a public road for the purposes of section 107(1)(a) of the Roads Act.

When the Consent ends the Applicant must, in any manner directed by Council and as quickly as practicable, remove the Structure and make good any damage caused by the removal. The Applicant must also pay any outstanding fees and charges due to Council under the Consent.

If the Applicant does not remove the Structure or make good any damage caused by the removal at the expiration of the Consent, Council may undertake such actions on behalf of the Applicant and the costs incurred by Council in doing so will be a debt due from the Applicant to Council, payable on demand.

Resolution of disputes

Council will endeavour to resolve any disputes with the Applicant by discussing them with the Applicant. However, in the absence of agreement, Council's decision will be final. Nothing in this clause precludes the Applicant from taking legal action against Council in respect of Council's decision.

Notices

Any notice given under or in accordance with the Consent can be given in the manner provided in sections 254 and 255 of the Roads Act.

General

Nothing contained in the Consent:

- (a) prejudices or affects the rights of the public to pass along the Public Road;
- (b) authorises any nuisance or permanent obstruction of the Public Road;

- (c) confers on the Applicant any exclusive right or title to that part of the Structure within the boundaries of the Public Road; or
- (d) in any way restricts or limits the powers of Council in respect of the Public Road.

A certificate signed by Council's Representative as to the cost of any work carried out by Council or on Council's behalf will be final and conclusive evidence of that cost.

The Applicant must pay all reasonable legal costs incurred by Council in connection with the preparation of the Consent and with remedying any breach of the requirements of the Consent.

The Applicant must comply with all laws relating to the Works, the Structure and the Public Road.

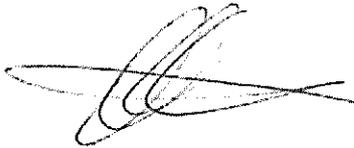
Commencement of the Works constitutes acceptance of all conditions of the Consent.

A waiver or indulgence granted by Council in respect of any non-compliance by the Applicant with the terms of the Consent does not constitute a future or past waiver of similar non-compliance. A failure to act by Council in response to any non-compliance does not constitute a waiver of such conduct.

A reference to the Item is attached as **Schedule 1**.

Signed for and on behalf of

SINGLETON COUNCIL



1 July 2018

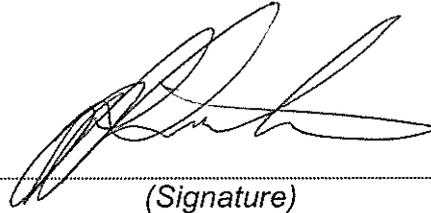
Date

Peter McMurray

Manager Infrastructure Strategy
Planning and Programming

Signed for and on behalf of

THE APPLICANT



(Signature)

28/6/2018

Date

SHANNON LINETHAM

(Name)

D, DEB SUPERINTENDENT.

(Position Held – if applicable)

SCHEDULE 1

Item 1 – The Applicant

Yancoal

Item 2 – The Structure

Other

Item 3 – The Benefiting Organisation

Putty Road BULGA 2330

Item 4 – The Public Road

Putty Road Bulga

Item 5 – The Works

Installation of the structures identified in Item 2 above and in accordance with the special conditions shown on Appendix 1.

Item 6– Permitted Use

As identified in Item 2.

Item 7– The Commencement Date

01/07/2018

Item 8– The End Date

30 June 2019

Item 9– Council’s Representative

David Griffin – Asset Commissioning Officer.

Item 10 - Council’s Representative’s Address

Civic Avenue
SINGLETON NSW 2330.

Item 11 – Annual Charge

To be advised

Item 12 – Insurance amount

Public Risk Insurance Policy to cover the Council. Policy cover of at least \$20,000,000 evidence of such policy is to be provided to Council prior to commencement.

Insurance Underwriter: AON

Policy Number: 37 2193296

Insurance Policy Expiry Date: 30/11/2018

Item 13 – Bond/Bank Guarantee

Not Applicable.

APPENDIX 1

1. The Applicant shall be responsible for investigating and locating the position and depth of any public utility service in particular Telstra cables, gas, electricity, water, sewer and stormwater and other private services such as irrigation pump lines before any works commence on site and ensure that no damage or conflict shall result.
2. No work shall be carried out during periods of adverse weather conditions or any other prevailing circumstances that make the work or traffic control hazardous.
3. Council shall be reimbursed by the Applicant when requested, for any expenses incurred in restoring the road pavement, or other sections of the site, within the road reservation.
4. The site shall be left in a safe condition cleared of debris when the works are completed.
5. The agreement cannot be assigned or transferred to another person. Council reserves the right to revoke this consent at any time.
6. This approval does not extend to the use of any other machinery or works within the road reserve.
7. Council is indemnified against any claims that may arise in regards to the works you will be undertaking.
8. Any Construction works are to be completed in accordance with Singleton Council's Development Construction Specification CQC Rev 3 – Quality Control Requirements available on Council's website www.singleton.nsw.gov.au
9. Traffic control is to be set out as per the plans supplied to council and installed by an appropriately qualified person.
10. Traffic stoppage to be limited to a maximum of 15 minutes.
11. Please advise council officer David Griffin on 02 6578 7271 or email dgriffin@singleton.nsw.gov.au once works have been completed.



SINGLETON COUNCIL

Enquiries: David Griffin
02 6578 7271

Our Ref: 11488/2018, 18/41237, AD18/7402

25 June 2018

Yancoal Australia Ltd
LEVEL 26 357-363 George Street
SYDNEY NSW 2000

Subject: Application for the use of a Council Road
Applicant: Yancoal Australia Ltd
Application No: 11488/2018
Benefiting Property: Jerrys Plains Road GOULDSVILLE 2330

Reference is made to your application received 20/06/2018 for works within the road reserve of Jerrys Plains Road for the sole purpose of the temporary road closure due to mine blasting as described in your application.

Jerrys Plains Road is a classified local road and Singleton Council is the Roads Authority. Consent from Singleton Council is required within the provision of the Roads Act.

Consent is granted in accordance with the attached terms and conditions. A copy of the attached agreement should be signed by an authorised person and returned to Council for processing.

If you require any further information or wish to discuss the details contained within the approval please contact David Griffin on the above number.

Yours faithfully

Peter McMurray
Manager Infrastructure Strategy, Planning and Programming

This Document provides consent

This document provides, and sets out the terms and conditions of, the consent (the **Consent**) granted by Singleton Council (**Council**) as the appropriate roads authority under Division 3 of Part 9 of the *Roads Act 1993* (the **Roads Act**) in response to the application for consent filed by the applicant listed in Item 1 (the **Applicant**).

Consent granted is subject to the terms and conditions of the Consent, and any Annexure and Schedules to the Consent.

Who has consent?

The Consent is granted to the Applicant. The Consent cannot be assigned or transferred to any other person.

What does the Consent enable?

The Consent enables the Applicant to:

- (a) Erect the Structure in, on or over the Public Road;
- (b) Carry out the Works in, on or over the Public Road; and
- (c) Use the Structure in accordance with the Permitted Use and the terms and conditions of the Consent.

The Structure is described in Item 2.

The Benefiting Property is described in Item 3.

The Public Road is described in Item 4.

The Works are described in Item 5.

The Permitted Use is described in Item 6.

When will the Consent commence?

The Consent commences on the date in Item 7.

When will the Consent end?

The Consent will end on the date in Item 8.

If there is no date in Item 8, the Consent will end on the earlier of the following occasions:

- (a) when Council decides to revoke the Consent; or
- (b) when the Applicant requests that Council revoke the Consent.

In which circumstances can Council revoke the Consent?

Council can revoke the Consent at any time and for any reason under section 140 of the Roads Act.

If section 140 of the Roads Act is repealed, the Consent is revoked when that repeal takes effect.

Without limiting the circumstances in which Council may revoke the Consent, Council may revoke or suspend the Consent in accordance with clauses 7-10.

Warning Notice

If, in Council's opinion, the Applicant is not complying with any of the terms and conditions of the Consent, Council may issue a written warning notice to the Applicant (the **Warning Notice**).

The Applicant must reply in writing to the Warning Notice (the **Applicant's Reply**), and the Applicant's Reply must be received by Council within 7 days of the date of the Warning Notice.

The Applicant's Reply must contain the following information:

- (a) steps
- (b) Council will respond to the Applicant's reply within 7 days of receipt of the Applicant's Reply (**Council's Response**).

Once the Applicant has received Council's Response, the Applicant must ensure all requirements in Council's Response are complied with immediately.

Suspension and revocation - events

Council may revoke or suspend the Consent, with or without issuing a Warning Notice, if any of the following events occurs:

- (a) the Applicant does not comply with the requirements of the Consent;
- (b) the Applicant's application for consent contains information that is untrue, incomplete or misleading;
- (c) the Applicant does not reply to a Warning Notice in the manner required by clause 7;
- (d) the Applicant's Reply does not set out the steps the Applicant will take to comply with the requirements of the Warning Notice;
- (e) the Applicant does not comply with the requirements of Council's Response;
- (f) the Applicant prevents or hinders, or attempts to prevent or hinder, Council from carrying out any inspections in relation to the Consent;
- (g) any fees associated with the Consent are not paid by the due date;

- (h) any approvals required to be obtained by the Applicant in clause 15 lapse, are not granted or are revoked; or
- (i) the Applicant becomes insolvent and cannot fulfil its obligations under the Consent.

Suspension and revocation – the Structure

Council may suspend or revoke the Consent immediately, with or without a Warning Notice, if, in Council's opinion, the Structure:

- (a) becomes unsafe; or
- (b) is likely to cause environmental damage; or
- (c) could harm any person or property.

Notice if the Consent is revoked or suspended

The Applicant may request Council to revoke the Consent, with such revocation to take effect 30 days after the date of the request.

Any request by the Applicant for Council to revoke the Consent is subject to the following conditions:

- (a) the Applicant cannot request Council to revoke the Consent if the Applicant is in breach of any of the conditions of the Consent;
- (b) while Council will consider any request to revoke the Consent, Council will not be bound to agree to revoke the Consent; and
- (c) Council may agree to any request to revoke the Consent subject to conditions imposed by Council.

Notice if the Consent is revoked or suspended

If Council revokes or suspends the Consent, Council will inform the Applicant by way of written notice.

Effect of revocation or suspension of the Consent

If the Applicant receives a notice that Council is revoking or suspending the Consent, the Applicant must, in accordance with the notice:

In the case of suspension of the Consent:

- (a) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately.

In the case of revocation of the Consent:

- (b) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately in the case of revocation; and either

(c) remove the Structure immediately (where the removal of the Structure does not require the consent of any authority); or

(d) immediately apply to the relevant authority for consent to remove the Structure.

If the Applicant does not comply with the terms of the notice, and remove or cease use of the Structure (as the case may be), Council may remove the Structure.

Removal of the Structure by Council does not prevent Council from taking legal action against the Applicant, including recovering any costs incurred by Council to remove the Structure.

No compensation if the Consent is revoked or suspended

Nothing in the Consent renders Council liable to pay any compensation to the Applicant in circumstances where Council suspends or revokes the Consent.

Statutory restrictions

The Consent is limited in its operation by the provisions of the Roads Act and any Regulations made under the Roads Act, and is granted subject to the provisions of the Roads Act.

Prior to carrying out the Works

The Applicant must, prior to carrying out the Works, obtain any necessary approvals from Council for the Works, the Structure and the Permitted Use under the *Environmental Planning and Assessment Act 1979* and the *Local Government Act 1993*;

The Applicant must comply with all conditions imposed by any approvals of Council, the RMS, the Minister administering the Roads Act or any other authority.

The Applicant is required to give at least 7 days notice to the occupiers of properties adjoining any part of the Public Road in which the Works are to be carried out, of the intention to carry out those Works.

The Applicant must give at least 48 hours written notice to Council's Representative listed at Item 9 at the address listed at Item 10 prior to commencing the Works.

The Applicant is required to deliver to Council's Representative the insurance policy referred to in clause 22 and the bank guarantee referred to in clause 23 prior to commencing the Works, as well as copies of any approvals that the Applicant is required to obtain in respect of the Works, the Structure or the Permitted Use.

Condition of Site

Council gives no warranty (either present or future) as to the suitability of the Public Road or the use to which the Public Road may be put. The Applicant is deemed to have sought the Consent with full knowledge of and subject to any prohibitions or restrictions on the use of the Public Road from time to time under or in pursuance of any law.

Carrying out the Works

The Applicant must carry out the Works:

- (a) in conformity with the description of the Works at Item 5;
- (b) in accordance with the approvals listed in clause 15;
- (c) to the reasonable satisfaction of Council's Representative;
- (d) as expeditiously as practicable in a proper and workmanlike manner;
- (e) proceed continuously with the Works until completion of the Works;
- (f) with due regard to the safety and rights of the public and for that purpose comply with the requirements of:
 - (1) Council's Representative;
 - (2) the WorkCover Authority of New South Wales;
 - (3) the Department of Industrial Relations and Employment;
 - (4) the Police Service of New South Wales; and
 - (5) any other authority;
- (g) in a manner that does not unreasonably interfere with the use of the Public Road or any other land by other persons while carrying out the Works;
- (h) in a manner that complies with Council's policies and procedures; and
- (i) between the hours of 7.00am and 6.00pm on Mondays to Fridays, between 8.00am and 4.00pm on Saturdays and at other times only if previously approved by Council's Representative in writing.

Following completion of the Works

Following completion of the Works, the Applicant must:

- (a) deliver, no later than 2 weeks before commencement of the Permitted Use of the Structure, to Council's Representative the Works as executed plans which must:
 - (1) show the location of the Structure as erected in relation to property boundaries; and
 - (2) show the road alignment; and
 - (3) contain such other information as Council may require from time to time;
- (b) restore the surface of the Public Road to its former condition immediately after carrying out the Works;
- (c) repair any subsidence or other deterioration of the Public Road which occurs within 6 months after carrying out the Works;
- (d) maintain the Structure in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;
- (e) maintain the surface of the Public Road in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;

- (f) promptly repair any damage caused to Council's property or to the property of any other person in the course of carrying out the Works and the Permitted Use;
- (g) keep the Structure clean and well lit for safety purposes; and
- (h) carry out all maintenance and repair work as expeditiously as practicable and in conformity with any reasonable requirement of Council's Representative and of any statute, regulation or direction by any authority.

Should the Applicant be required to undertake any maintenance, renewal, replacement or alteration of or to the Structure, the Applicant is required to obtain written consent from Council's Representative prior to carrying out such work.

A penalty may be imposed on the Applicant pursuant to section 142 of the Roads Act if the Applicant fails to undertake any maintenance, renewal, replacement or alteration of or to the Structure.

Amendments to the Works

If, in Council's opinion, it becomes necessary:

- (a) to relocate or remove any portion of the Structure due to:
 - (1) any work in, on or over the Public Road; or
 - (2) widening or reconstruction of the Public Road which Council or any other authority wishes to carry out; or
- (b) to carry out additional works to the Public Road or the Structure for the safety and protection of the public,

the Applicant must, at its own cost:

- (c) relocate, carry out the removal or carry out any additional work; and
- (d) pay to Council any additional cost or expenditure incurred by Council by reason of the existence, relocation or removal of the Structure.

If no representative of the Applicant is present at the Works site, or if Council's Representative determines an event of emergency has occurred, Council's Representative can take any action to prevent loss of or damage to the whole or any part of the Structure, the Public Road or property adjacent to the Structure, or to prevent personal injury to any person.

In such circumstances, where Council's Representative reasonably determines that the Applicant would have been liable to take such action, the cost of Council's action must be paid by the Applicant to Council as a debt due to Council. Any such action taken by Council's Representative will not relieve the Applicant of any liability or obligation under the Consent.

Council's inspection

Council reserves the right to inspect the Public Road, the Structure and the Works at any time with reasonable notice and at any time in an emergency.

Charges

The Applicant is required to pay to Council an annual charge for the Consent in accordance with section 611 of the *Local Government Act 1993* which is set out at Item 11 (the **Annual Charge**).

The Annual Charge must be paid prior to use of the Structure being commenced. The Annual Charge is to be paid in the manner advised by Council's Representative, as amended from time to time.

Council may amend the amount of the Annual Charge at any time.

Insurance and Indemnities

The Applicant indemnifies Council and keeps Council indemnified from and against all actions, claims and demands if any arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent or any damage to the Applicant's property in accordance with the Consent.

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- (a) noting Council's interest as the appropriate roads authority of the Public Road and listing Council as co-insured; and
- (b) covering liability to the public for not less than the amount in Item 12 for each accident or event.

The insurance policy of the Applicant must be produced to Council's Representative prior to commencing the Works along with the receipt for the last premium. The Applicant must provide certificates of currency to Council on an annual basis while the Consent remains in force.

The Applicant must not void, reduce or cancel any insurance policy in respect of the Public Road, the Structure or the Works.

Bank Guarantee

Before commencing the Works, the Applicant must deliver to Council's Representative a bank guarantee to secure the satisfaction of the Applicant's obligations under the Consent (the **Bank Guarantee**).

The Bank Guarantee must:

- (a) be in a form acceptable to Council and for an amount not less than the amount specified in Item 13; and

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If the Applicant fails to satisfy any of its obligations under the Consent, or if Council incurs any expense under any term of the Consent, Council may call on the Bank Guarantee and remedy the Applicant's failure or reimburse Council for that expense without prejudice to any other right Council may have against the Applicant.

Council will return the Bank Guarantee, or any remainder, to the Applicant when the Applicant's obligations under the Consent have been complied with to the reasonable satisfaction of Council's Representative.

End of the Consent

When the Consent ends or is revoked, any part of the Structure remaining within the Public Road will be deemed to be an obstruction or encroachment under section 107 of the Roads Act.

The Applicant or any other person using or capable of using the Structure after the Consent ends will be deemed to be a person who causes an obstruction or encroachment on a public road for the purposes of section 107(1)(a) of the Roads Act.

When the Consent ends the Applicant must, in any manner directed by Council and as quickly as practicable, remove the Structure and make good any damage caused by the removal. The Applicant must also pay any outstanding fees and charges due to Council under the Consent.

If the Applicant does not remove the Structure or make good any damage caused by the removal at the expiration of the Consent, Council may undertake such actions on behalf of the Applicant and the costs incurred by Council in doing so will be a debt due from the Applicant to Council, payable on demand.

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Council will endeavour to resolve any disputes with the Applicant by discussing them with the Applicant. However, in the absence of agreement, Council's decision will be final. Nothing in this clause precludes the Applicant from taking legal action against Council in respect of Council's decision.

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General

Nothing contained in the Consent:

- (a) prejudices or affects the rights of the public to pass along the Public Road;
- (b) authorises any nuisance or permanent obstruction of the Public Road;

- (c) confers on the Applicant any exclusive right or title to that part of the Structure within the boundaries of the Public Road; or
- (d) in any way restricts or limits the powers of Council in respect of the Public Road.

A certificate signed by Council's Representative as to the cost of any work carried out by Council or on Council's behalf will be final and conclusive evidence of that cost.

The Applicant must pay all reasonable legal costs incurred by Council in connection with the preparation of the Consent and with remedying any breach of the requirements of the Consent.

The Applicant must comply with all laws relating to the Works, the Structure and the Public Road.

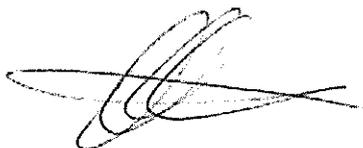
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A reference to the Item is attached as **Schedule 1**.

Signed for and on behalf of

SINGLETON COUNCIL



1 July 2018

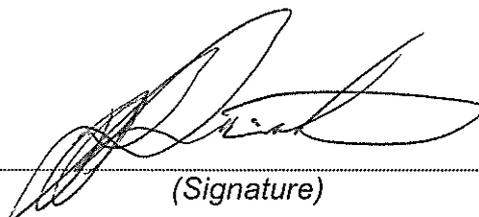
Date

Peter McMurray

Manager Infrastructure Strategy
Planning and Programming

Signed for and on behalf of

THE APPLICANT



(Signature)

27/06/2018

Date

SHANNON LINEHAM
(Name)

DRAGLINE SUPERINTENDENT.
(Position Held – if applicable)

SCHEDULE 1

Item 1 – The Applicant

Yancoal Australia Ltd

Item 2 – The Structure

Other

Item 3 – The Benefiting Organisation

Jerrys Plains Road GOULDSVILLE 2330

Item 4 – The Public Road

Jerrys Plains Road

Item 5 – The Works

Installation of the structures identified in Item 2 above and in accordance with the special conditions shown on Appendix 1.

Item 6– Permitted Use

As identified in Item 2.

Item 7– The Commencement Date

1 July 2018

Item 8– The End Date

30 June 2019

Item 9– Council’s Representative

David Griffin – Asset Commissioning Officer.

Item 10 - Council’s Representative’s Address

Civic Avenue
SINGLETON NSW 2330.

Item 11 – Annual Charge

To be advised

Item 12 – Insurance amount

Public Risk Insurance Policy to cover the Council. Policy cover of at least \$20,000,000 evidence of such policy is to be provided to Council prior to commencement.

Insurance Underwriter: AON

Policy Number: 372193296

Insurance Policy Expiry Date: 30/11/2018

Item 13 – Bond/Bank Guarantee

Not Applicable.

APPENDIX 1

1. The Applicant shall be responsible for investigating and locating the position and depth of any public utility service in particular Telstra cables, gas, electricity, water, sewer and stormwater and other private services such as irrigation pump lines before any works commence on site and ensure that no damage or conflict shall result.
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7. Council is indemnified against any claims that may arise in regards to the works you will be undertaking.
8. Any Construction works are to be completed in accordance with Singleton Council's Development Construction Specification CQC Rev 3 – Quality Control Requirements available on Council's website www.singleton.nsw.gov.au
9. Traffic control is to be set out as per the plans supplied to council and installed by an appropriately qualified person.
10. Traffic stoppage to be limited to a maximum of 15 minutes.
11. Please advise council officer David Griffin on 02 6578 7271 or email dgriffin@singleton.nsw.gov.au once works have been completed.



SINGLETON COUNCIL

Enquiries: David Griffin
02 6578 7271

Our Ref: 11477/2018, 18/41237, AD18/7395

22 June 2018

Yangcoal Australia Ltd
PO Box 267
SINGLETON NSW 2330

Subject: Application for the use of a Council Road
Applicant: Yangcoal Australia Ltd
Application No: 11477/2018
Benefiting Property: Charlton Road BROKE 2330

Reference is made to your application received on 20/06/2018 for works within the road reserve of Charlton Road for the sole purpose of the temporary road closure due to mine blasting as described in your application.

Charlton Road is a classified local road and Singleton Council is the Roads Authority. Consent from Singleton Council is required within the provision of the Roads Act.

Consent is granted in accordance with the attached terms and conditions. A copy of the attached agreement should be signed by an authorised person and returned to Council for processing.

If you require any further information or wish to discuss the details contained within the approval please contact David Griffin on the above number.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Peter McMurray'.

Peter McMurray
Manager Infrastructure Strategy, Planning and Programming

This Document provides consent

This document provides, and sets out the terms and conditions of, the consent (the **Consent**) granted by Singleton Council (**Council**) as the appropriate roads authority under Division 3 of Part 9 of the *Roads Act 1993* (the **Roads Act**) in response to the application for consent filed by the applicant listed in Item 1 (the **Applicant**).

Consent granted is subject to the terms and conditions of the Consent, and any Annexure and Schedules to the Consent.

Who has consent?

The Consent is granted to the Applicant. The Consent cannot be assigned or transferred to any other person.

What does the Consent enable?

The Consent enables the Applicant to:

- (a) Erect the Structure in, on or over the Public Road;
- (b) Carry out the Works in, on or over the Public Road; and
- (c) Use the Structure in accordance with the Permitted Use and the terms and conditions of the Consent.

The Structure is described in Item 2.

The Benefiting Property is described in Item 3.

The Public Road is described in Item 4.

The Works are described in Item 5.

The Permitted Use is described in Item 6.

When will the Consent commence?

The Consent commences on the date in Item 7.

When will the Consent end?

The Consent will end on the date in Item 8.

If there is no date in Item 8, the Consent will end on the earlier of the following occasions:

- (a) when Council decides to revoke the Consent; or
- (b) when the Applicant requests that Council revoke the Consent.

In which circumstances can Council revoke the Consent?

Council can revoke the Consent at any time and for any reason under section 140 of the Roads Act.

If section 140 of the Roads Act is repealed, the Consent is revoked when that repeal takes effect.

Without limiting the circumstances in which Council may revoke the Consent, Council may revoke or suspend the Consent in accordance with clauses 7-10.

Warning Notice

If, in Council's opinion, the Applicant is not complying with any of the terms and conditions of the Consent, Council may issue a written warning notice to the Applicant (the **Warning Notice**).

The Applicant must reply in writing to the Warning Notice (the **Applicant's Reply**), and the Applicant's Reply must be received by Council within 7 days of the date of the Warning Notice.

The Applicant's Reply must contain the following information:

- (a) steps
- (b) Council will respond to the Applicant's reply within 7 days of receipt of the Applicant's Reply (**Council's Response**).

Once the Applicant has received Council's Response, the Applicant must ensure all requirements in Council's Response are complied with immediately.

Suspension and revocation - events

Council may revoke or suspend the Consent, with or without issuing a Warning Notice, if any of the following events occurs:

- (a) the Applicant does not comply with the requirements of the Consent;
- (b) the Applicant's application for consent contains information that is untrue, incomplete or misleading;
- (c) the Applicant does not reply to a Warning Notice in the manner required by clause 7;
- (d) the Applicant's Reply does not set out the steps the Applicant will take to comply with the requirements of the Warning Notice;
- (e) the Applicant does not comply with the requirements of Council's Response;
- (f) the Applicant prevents or hinders, or attempts to prevent or hinder, Council from carrying out any inspections in relation to the Consent;
- (g) any fees associated with the Consent are not paid by the due date;

- (h) any approvals required to be obtained by the Applicant in clause 15 lapse, are not granted or are revoked; or
- (i) the Applicant becomes insolvent and cannot fulfil its obligations under the Consent.

Suspension and revocation – the Structure

Council may suspend or revoke the Consent immediately, with or without a Warning Notice, if, in Council's opinion, the Structure:

- (a) becomes unsafe; or
- (b) is likely to cause environmental damage; or
- (c) could harm any person or property.

Notice if the Consent is revoked or suspended

The Applicant may request Council to revoke the Consent, with such revocation to take effect 30 days after the date of the request.

Any request by the Applicant for Council to revoke the Consent is subject to the following conditions:

- (a) the Applicant cannot request Council to revoke the Consent if the Applicant is in breach of any of the conditions of the Consent;
- (b) while Council will consider any request to revoke the Consent, Council will not be bound to agree to revoke the Consent; and
- (c) Council may agree to any request to revoke the Consent subject to conditions imposed by Council.

Notice if the Consent is revoked or suspended

If Council revokes or suspends the Consent, Council will inform the Applicant by way of written notice.

Effect of revocation or suspension of the Consent

If the Applicant receives a notice that Council is revoking or suspending the Consent, the Applicant must, in accordance with the notice:

In the case of suspension of the Consent:

- (a) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately.

In the case of revocation of the Consent:

- (b) cease the Works (if the Works are still being carried out) and the Permitted Use of the Structure immediately in the case of revocation; and either

- (c) remove the Structure immediately (where the removal of the Structure does not require the consent of any authority); or
- (d) immediately apply to the relevant authority for consent to remove the Structure.

If the Applicant does not comply with the terms of the notice, and remove or cease use of the Structure (as the case may be), Council may remove the Structure.

Removal of the Structure by Council does not prevent Council from taking legal action against the Applicant, including recovering any costs incurred by Council to remove the Structure.

No compensation if the Consent is revoked or suspended

Nothing in the Consent renders Council liable to pay any compensation to the Applicant in circumstances where Council suspends or revokes the Consent.

Statutory restrictions

The Consent is limited in its operation by the provisions of the Roads Act and any Regulations made under the Roads Act, and is granted subject to the provisions of the Roads Act.

Prior to carrying out the Works

The Applicant must, prior to carrying out the Works, obtain any necessary approvals from Council for the Works, the Structure and the Permitted Use under the *Environmental Planning and Assessment Act 1979* and the *Local Government Act 1993*;

The Applicant must comply with all conditions imposed by any approvals of Council, the RMS, the Minister administering the Roads Act or any other authority.

The Applicant is required to give at least 7 days notice to the occupiers of properties adjoining any part of the Public Road in which the Works are to be carried out, of the intention to carry out those Works.

The Applicant must give at least 48 hours written notice to Council's Representative listed at Item 9 at the address listed at Item 10 prior to commencing the Works.

The Applicant is required to deliver to Council's Representative the insurance policy referred to in clause 22 and the bank guarantee referred to in clause 23 prior to commencing the Works, as well as copies of any approvals that the Applicant is required to obtain in respect of the Works, the Structure or the Permitted Use.

Condition of Site

Council gives no warranty (either present or future) as to the suitability of the Public Road or the use to which the Public Road may be put. The Applicant is deemed to have sought the Consent with full knowledge of and subject to any prohibitions or restrictions on the use of the Public Road from time to time under or in pursuance of any law.

Carrying out the Works

The Applicant must carry out the Works:

- (a) in conformity with the description of the Works at Item 5;
- (b) in accordance with the approvals listed in clause 15;
- (c) to the reasonable satisfaction of Council's Representative;
- (d) as expeditiously as practicable in a proper and workmanlike manner;
- (e) proceed continuously with the Works until completion of the Works;
- (f) with due regard to the safety and rights of the public and for that purpose comply with the requirements of:
 - (1) Council's Representative;
 - (2) the WorkCover Authority of New South Wales;
 - (3) the Department of Industrial Relations and Employment;
 - (4) the Police Service of New South Wales; and
 - (5) any other authority;
- (g) in a manner that does not unreasonably interfere with the use of the Public Road or any other land by other persons while carrying out the Works;
- (h) in a manner that complies with Council's policies and procedures; and
- (i) between the hours of 7.00am and 6.00pm on Mondays to Fridays, between 8.00am and 4.00pm on Saturdays and at other times only if previously approved by Council's Representative in writing.

Following completion of the Works

Following completion of the Works, the Applicant must:

- (a) deliver, no later than 2 weeks before commencement of the Permitted Use of the Structure, to Council's Representative the Works as executed plans which must:
 - (1) show the location of the Structure as erected in relation to property boundaries; and
 - (2) show the road alignment; and
 - (3) contain such other information as Council may require from time to time;
- (b) restore the surface of the Public Road to its former condition immediately after carrying out the Works;
- (c) repair any subsidence or other deterioration of the Public Road which occurs within 6 months after carrying out the Works;
- (d) maintain the Structure in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;
- (e) maintain the surface of the Public Road in a satisfactory state of repair at all times to the reasonable satisfaction of Council's Representative;

- (f) promptly repair any damage caused to Council's property or to the property of any other person in the course of carrying out the Works and the Permitted Use;
- (g) keep the Structure clean and well lit for safety purposes; and
- (h) carry out all maintenance and repair work as expeditiously as practicable and in conformity with any reasonable requirement of Council's Representative and of any statute, regulation or direction by any authority.

Should the Applicant be required to undertake any maintenance, renewal, replacement or alteration of or to the Structure, the Applicant is required to obtain written consent from Council's Representative prior to carrying out such work.

A penalty may be imposed on the Applicant pursuant to section 142 of the Roads Act if the Applicant fails to undertake any maintenance, renewal, replacement or alteration of or to the Structure.

Amendments to the Works

If, in Council's opinion, it becomes necessary:

- (a) to relocate or remove any portion of the Structure due to:
 - (1) any work in, on or over the Public Road; or
 - (2) widening or reconstruction of the Public Road which Council or any other authority wishes to carry out; or
- (b) to carry out additional works to the Public Road or the Structure for the safety and protection of the public,

the Applicant must, at its own cost:

- (c) relocate, carry out the removal or carry out any additional work; and
- (d) pay to Council any additional cost or expenditure incurred by Council by reason of the existence, relocation or removal of the Structure.

If no representative of the Applicant is present at the Works site, or if Council's Representative determines an event of emergency has occurred, Council's Representative can take any action to prevent loss of or damage to the whole or any part of the Structure, the Public Road or property adjacent to the Structure, or to prevent personal injury to any person.

In such circumstances, where Council's Representative reasonably determines that the Applicant would have been liable to take such action, the cost of Council's action must be paid by the Applicant to Council as a debt due to Council. Any such action taken by Council's Representative will not relieve the Applicant of any liability or obligation under the Consent.

Council's inspection

Council reserves the right to inspect the Public Road, the Structure and the Works at any time with reasonable notice and at any time in an emergency.

Charges

The Applicant is required to pay to Council an annual charge for the Consent in accordance with section 611 of the *Local Government Act 1993* which is set out at Item 11 (the **Annual Charge**).

The Annual Charge must be paid prior to use of the Structure being commenced. The Annual Charge is to be paid in the manner advised by Council's Representative, as amended from time to time.

Council may amend the amount of the Annual Charge at any time.

Insurance and Indemnities

The Applicant indemnifies Council and keeps Council indemnified from and against all actions, claims and demands if any arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent or any damage to the Applicant's property in accordance with the Consent.

Council can pay, satisfy, defend, compromise or settle any claim arising out of the granting of the Consent or anything done or purported to be done by the Applicant under the Consent and any amount paid by Council in doing so is a debt due to Council by the Applicant and must be repaid on demand.

The Applicant indemnifies Council against any liability to pay taxes or charges payable now or in the future in respect of the Works, the Structure or the Consent.

The Applicant must obtain and keep current an insurance policy:

- (a) noting Council's interest as the appropriate roads authority of the Public Road and listing Council as co-insured; and
- (b) covering liability to the public for not less than the amount in Item 12 for each accident or event.

The insurance policy of the Applicant must be produced to Council's Representative prior to commencing the Works along with the receipt for the last premium. The Applicant must provide certificates of currency to Council on an annual basis while the Consent remains in force.

The Applicant must not void, reduce or cancel any insurance policy in respect of the Public Road, the Structure or the Works.

Bank Guarantee

Before commencing the Works, the Applicant must deliver to Council's Representative a bank guarantee to secure the satisfaction of the Applicant's obligations under the Consent (the **Bank Guarantee**).

The Bank Guarantee must:

- (a) be in a form acceptable to Council and for an amount not less than the amount specified in Item 13; and

(b) be payable to Council at any time while the Consent is in force.

If the Applicant fails to satisfy any of its obligations under the Consent, or if Council incurs any expense under any term of the Consent, Council may call on the Bank Guarantee and remedy the Applicant's failure or reimburse Council for that expense without prejudice to any other right Council may have against the Applicant.

Council will return the Bank Guarantee, or any remainder, to the Applicant when the Applicant's obligations under the Consent have been complied with to the reasonable satisfaction of Council's Representative.

End of the Consent

When the Consent ends or is revoked, any part of the Structure remaining within the Public Road will be deemed to be an obstruction or encroachment under section 107 of the Roads Act.

The Applicant or any other person using or capable of using the Structure after the Consent ends will be deemed to be a person who causes an obstruction or encroachment on a public road for the purposes of section 107(1)(a) of the Roads Act.

When the Consent ends the Applicant must, in any manner directed by Council and as quickly as practicable, remove the Structure and make good any damage caused by the removal. The Applicant must also pay any outstanding fees and charges due to Council under the Consent.

If the Applicant does not remove the Structure or make good any damage caused by the removal at the expiration of the Consent, Council may undertake such actions on behalf of the Applicant and the costs incurred by Council in doing so will be a debt due from the Applicant to Council, payable on demand.

Resolution of disputes

Council will endeavour to resolve any disputes with the Applicant by discussing them with the Applicant. However, in the absence of agreement, Council's decision will be final. Nothing in this clause precludes the Applicant from taking legal action against Council in respect of Council's decision.

Notices

Any notice given under or in accordance with the Consent can be given in the manner provided in sections 254 and 255 of the Roads Act.

General

Nothing contained in the Consent:

- (a) prejudices or affects the rights of the public to pass along the Public Road;
- (b) authorises any nuisance or permanent obstruction of the Public Road;

- (c) confers on the Applicant any exclusive right or title to that part of the Structure within the boundaries of the Public Road; or
- (d) in any way restricts or limits the powers of Council in respect of the Public Road.

A certificate signed by Council's Representative as to the cost of any work carried out by Council or on Council's behalf will be final and conclusive evidence of that cost.

The Applicant must pay all reasonable legal costs incurred by Council in connection with the preparation of the Consent and with remedying any breach of the requirements of the Consent.

The Applicant must comply with all laws relating to the Works, the Structure and the Public Road.

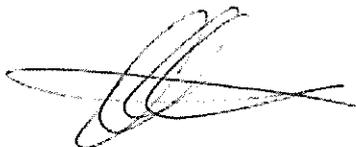
Commencement of the Works constitutes acceptance of all conditions of the Consent.

A waiver or indulgence granted by Council in respect of any non-compliance by the Applicant with the terms of the Consent does not constitute a future or past waiver of similar non-compliance. A failure to act by Council in response to any non-compliance does not constitute a waiver of such conduct.

A reference to the Item is attached as **Schedule 1**.

Signed for and on behalf of

SINGLETON COUNCIL



22 June 2018

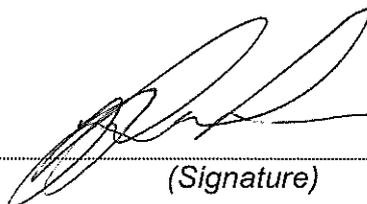
Date

Peter McMurray

Manager Infrastructure Strategy
Planning and Programming

Signed for and on behalf of

THE APPLICANT



(Signature)

28/6/2018

Date

SHANNON LINNEMAN

(Name)

O,DEB SUPERINTENDENT.

(Position Held – if applicable)

SCHEDULE 1

Item 1 – The Applicant

Yangcoal Australia Ltd

Item 2 – The Structure

Other

Item 3 – The Benefiting Organisation

Charlton Road BROKE 2330

Item 4 – The Public Road

Charlton Road

Item 5 – The Works

Installation of the structures identified in Item 2 above and in accordance with the special conditions shown on Appendix 1.

Item 6– Permitted Use

As identified in Item 2.

Item 7– The Commencement Date

1 July 2018

Item 8– The End Date

30 June 2019

Item 9– Council’s Representative

David Griffin – Asset Commissioning Officer.

Item 10 - Council’s Representative’s Address

Civic Avenue
SINGLETON NSW 2330.

Item 11 – Annual Charge

To be advised

Item 12 – Insurance amount

Public Risk Insurance Policy to cover the Council. Policy cover of at least \$20,000,000 evidence of such policy is to be provided to Council prior to commencement.

Insurance Underwriter: AON
Policy Number: 372193296 LIA
Insurance Policy Expiry Date: 30/11/2018

Item 13 – Bond/Bank Guarantee

Not Applicable.

APPENDIX 1

1. The Applicant shall be responsible for investigating and locating the position and depth of any public utility service in particular Telstra cables, gas, electricity, water, sewer and stormwater and other private services such as irrigation pump lines before any works commence on site and ensure that no damage or conflict shall result.
2. No work shall be carried out during periods of adverse weather conditions or any other prevailing circumstances that make the work or traffic control hazardous.
3. Council shall be reimbursed by the Applicant when requested, for any expenses incurred in restoring the road pavement, or other sections of the site, within the road reservation.
4. The site shall be left in a safe condition cleared of debris when the works are completed.
5. The agreement cannot be assigned or transferred to another person. Council reserves the right to revoke this consent at any time.
6. This approval does not extend to the use of any other machinery or works within the road reserve.
7. Council is indemnified against any claims that may arise in regards to the works you will be undertaking.
8. Any Construction works are to be completed in accordance with Singleton Council's Development Construction Specification CQC Rev 3 – Quality Control Requirements available on Council's website www.singleton.nsw.gov.au
9. Traffic control is to be set out as per the plans supplied to council and installed by an appropriately qualified person.
10. Traffic stoppage to be limited to a maximum of 15 minutes.
11. Please advise council officer David Griffin on 02 6578 7271 or email dgriffin@singleton.nsw.gov.au once works have been completed.



GPO BOX 4189 Sydney NSW 2001
Level 33, Aon Tower
201 Kent Street, SYDNEY NSW 2000
DX 10206, Sydney Stock Exchange
Telephone 61 (2) 9253 7000

1 September 2017

To Whom It May Concern

Certificate of Currency

In our capacity as Insurance Brokers to **Yancoal Australia Limited**, we hereby certify that the undermentioned insurance policy is current.

This certificate is a summary of cover only. Please refer to the Policy Wording and Schedule for its full terms and conditions. Aon does not guarantee that the insurance outlined in this Certificate will continue to remain in force for the period referred to as the Policy may be cancelled or altered by either party to the contract, at any time, in accordance with the terms of the Policy and the *Insurance Contracts Act 1984 (Cth)*.

Aon accepts no responsibility or liability to advise any party who may be relying on this Certificate of such alteration to or cancellation of the Policy. This certificate does not:

- represent an insurance contract or confer rights to the recipient; or
- amend, extend or alter the Policy.

Policy Type	General & Products Liability
Insured	Yancoal Australia Limited (ABN 82 111 859 119) and/or subsidiary and/or related corporations as defined in the Corporations Law of Australia.
Insurer	Zurich Australian Insurance Limited QBE Insurance (Australia) Limited
Policy Number	37 2193296 LIA 99 0005658 CGR
Period of Insurance	From: 4.00 PM on 31 st August 2017 Local Standard Time To: 4.00 PM on 30 November 2018 Local Standard Time
Interest Insured	Insured's legal liability to pay compensation in respect of: (a) Personal Injury; (b) Property Damage; or (c) Advertising Liability happening during the Period of Insurance and caused by an Occurrence within the geographical limits in connection with the Business.
Limit of Liability	AUD \$50,000,000 any one occurrence, and in the annual aggregate in respect of Products Liability
Geographical Limits	Worldwide, excluding USA / Canada where this Policy will only apply in respect to Products exported into those countries and / or travelling directors or employees who are non-resident in such countries.
Interested Parties	The Singleton Shire Council is noted as an interested party in respect of the closure of the Putty Road, Charlton Road, Wallaby Scrub Road and Jerrys Plains Road in connection with blasting operations.

Signed for and on behalf of **Aon Risks Services Australia Limited**,

Scott Simpson
Client Executive

Appendix E – Blast Monitoring Programme

Mt Thorley Warkworth Blast Monitoring Programme

1 PURPOSE

This document provides a summary of the blast monitoring programme for Mount Thorley Warkworth, the monitoring locations are subject to change and will be updated periodically to align with management and compliance needs and to accommodate progression of mining and changes to local landholdings.

2 PROGRAMME

MTW maintains a network of Kaboom blast monitors located at offsite locations representative of privately-owned land (detailed below).

Parameter	Frequency	Monitor Location	Limit/Guideline	Sampling Method
Airblast Overpressure	All blasts	Abbey Green Bulga Village Putty Road - MTIE Warkworth Wambo Road Wollemi Peak Road	>115 dB (Lin Peak) (5% of blasts over 12 months) >120 dB (Lin Peak) (no allowable exceedance at any time)	Blast Monitor AS2187.2-2006
Ground Vibration	All blasts	Abbey Green Bulga Village Putty Road - MTIE Warkworth Wambo Road Wollemi Peak Road	>5 mm/s (ppv) (5% of blasts over 12 months) >10 mm/s (ppv) (no allowable exceedance at any time)	Blast Monitor AS2187.2-2006

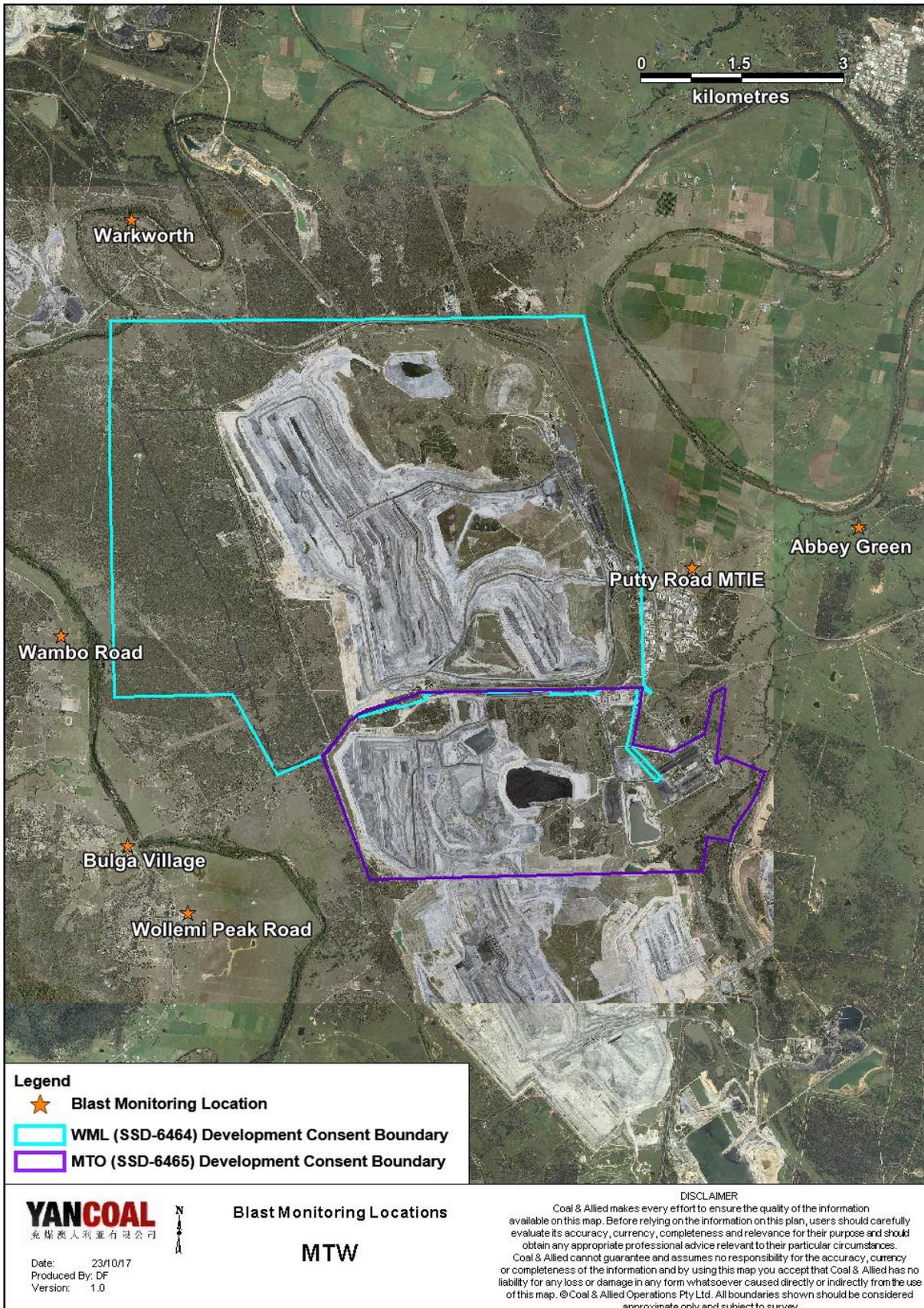


Figure 2: Blast Monitoring Location Plan

Protocol for Evaluating Compliance

1 PURPOSE

The following sections of this monitoring programme outlines the key considerations in evaluating compliance with the blasting impact assessment criteria.

Measures to reduce fume emissions from the site are detailed in the Post Fume Generation Mitigation and Management Plan, Appendix C of the MTW Blast Management Plan

2 BLAST DESCRIPTORS & MEASUREMENT

Ground Vibration

When an explosive detonates, it creates a compression wave that spherically radiates out into the rock mass. When used in a mining context, the compression wave, in conjunction with several other factors, fragments the rock mass while the high pressure gases fluidize and heave the rock mass to its final resting place ready for excavation by mining equipment.

The ground vibration resulting from the blast has components in 3 planes – longitudinal (L), transverse (T) and vertical (V). The vibration waves in these planes are termed the Compression wave, Horizontal Shear wave and Vertical Shear wave respectively

The velocities in each plane are combined mathematically to produce a single term that represents the total ground velocity. This term is known as the 'Peak Particle Velocity' 'PPV' or 'Resultant'. PPV is measured in millimetres per second.

The PPV measure of blast induced ground vibration is universally used in the context of measurement, reporting, and compliance. The Resultant measure is expressed in millimetres per second.

Airblast

Airblast is an airborne shock wave resulting from the detonation of explosives. It may be caused by burden movement or the release of expanding gas into the air. Airblast may or may not be audible. Airblast can contain frequencies from below 2Hz to beyond 20KHz. Frequencies above approximately 20Hz are audible whilst those below 20 Hz are sub-audible. Generally, it is the sub-audible component of the airblast that causes effects such as rattling of windows, and shaking of ornaments on shelves.

Air Overpressure

Air overpressure is the pressure in excess (either above or below) of ambient atmospheric pressure that occurs when an air blast wave passes a given position. The maximum excess pressure is known as the peak overpressure.

Noise and air overpressure results are both measured in decibels (dB). However there is no frequency weighting applied to air overpressure measurements, which allows for assessment of the response of structures to air overpressure. Air overpressure is therefore measured in the linear weighting expressed as dB(L).

When air overpressure is presented graphically as a function of time, it is usual to present it in terms of absolute pressure or Pascals (Pa) rather than dB(L) because the physical dynamics of the air overpressure is more readily apparent when presented on a linear (Pa) rather than a logarithmic (dB) scale.

3 MONITORING

Blast monitoring is conducted at 6 locations around MTW as shown in Figure 1 – Blast Monitoring Locations. Monitoring is undertaken in accordance with Australian Standard AS2187.2:2006. Real-time meteorological data will be collected in relation to blast monitoring data. This information shall include wind speed, direction and temperature inversion conditions (where applicable at the site).

Air overpressure and vibration associated with blasting shall be recorded for each blast. Monitoring data shall be reviewed by the Drill and Blast Engineer as soon as practicable after each blast to confirm correct data capture and verify compliance with airblast overpressure and ground vibration criteria.

Any blast exceeding the impact assessment criteria shall be referred for additional analysis and interpretation by an external specialist in blast consulting where the reason for the levels cannot be established by the Drill & Blast Engineer. An external report shall be issued as soon as practicable. This investigation will review blast monitoring results, blast parameters, location and prevailing weather conditions. The investigation analysis is specific to each individual exceedance but may include wavetrace inspection, wavefront pattern analysis, regression analysis, meteorological effect analysis etc. The results of any blast exceeding the impact assessment criteria (0% Criteria) will be reported to the Secretary as soon as practicable following confirmation of exceedance.

Where an investigation determines a measured result to be incorrect (wind affected, or not related to the blast event), an estimated result will be reported in place of the incorrect measurement.

4 REPORTING

Outcomes of Blast Monitoring will be reported as follows:

- Regular updates (monthly) in accordance with the reporting requirements of the POEO Act;
 - By the end of March each year, in the Annual Review;
 - To relevant residents, by exception, in the event of exceedance; and
 - To the Secretary and EPA, by exception, in the event of exceedance.
-

Appendix F – Detailed Baseline Data

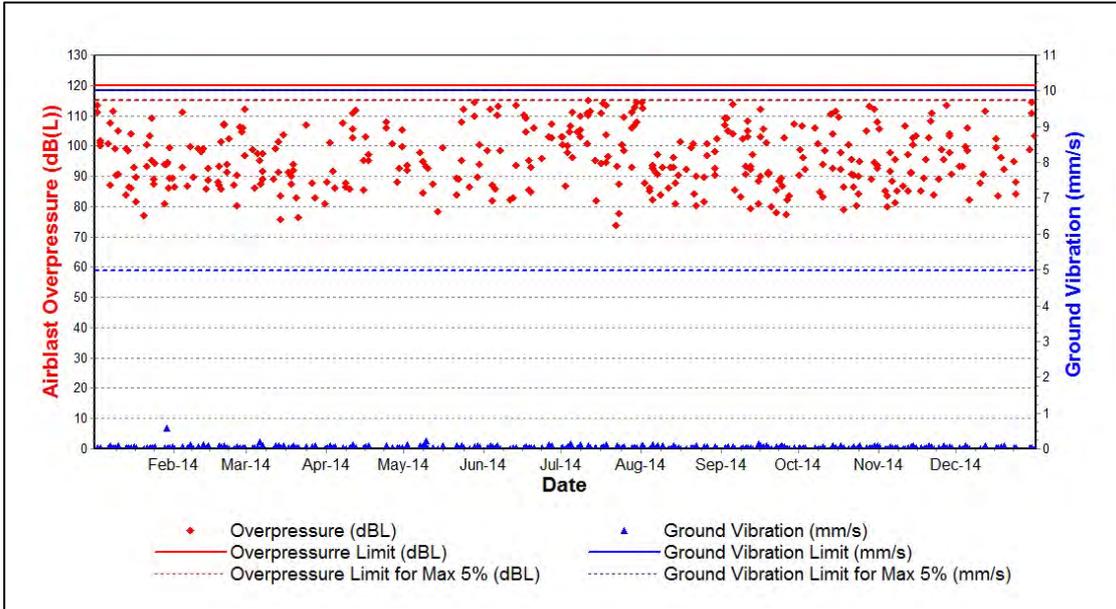


Figure 1 – 2014 MTW Blast monitoring results - Abbey Green

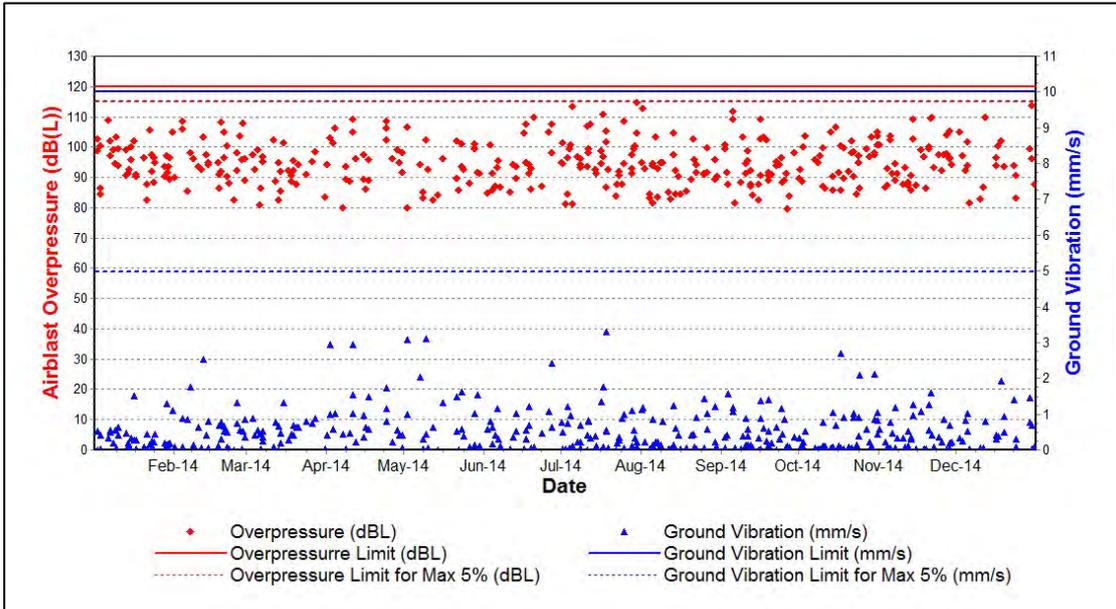


Figure 2 – 2014 MTW Blast monitoring results - Bulga Village

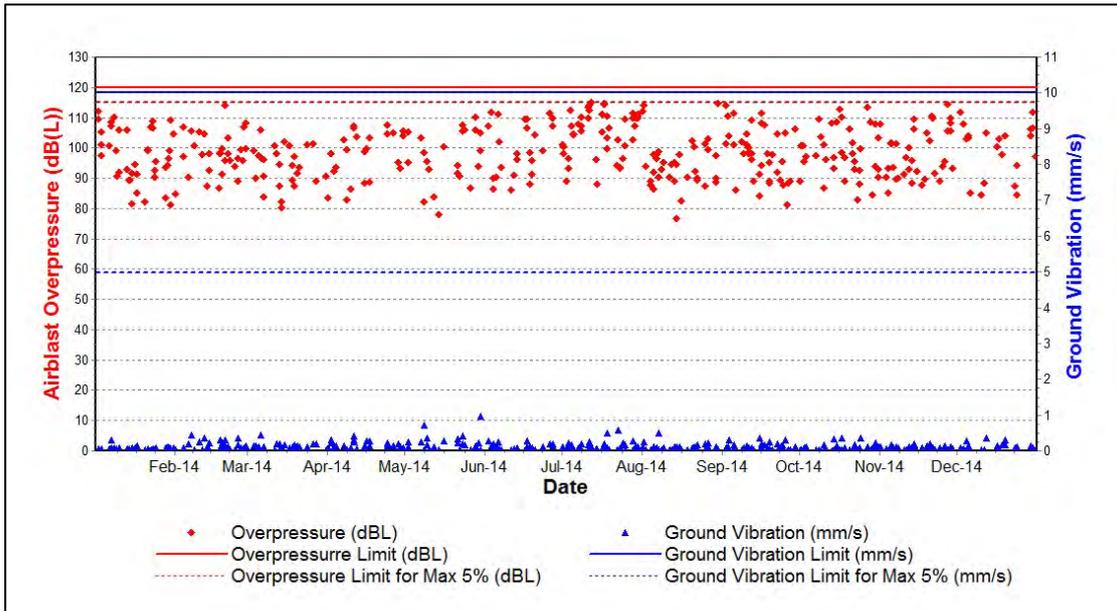


Figure 3 – 2014 MTW Blast monitoring results - MTIE

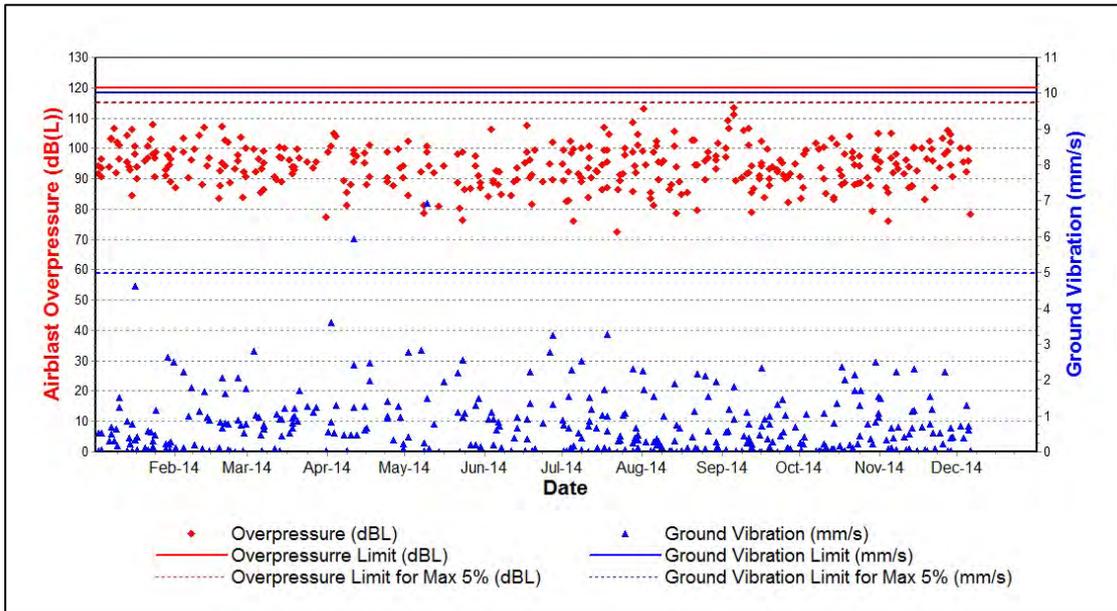


Figure 4 – 2014 MTW Blast monitoring results - Police Station (decommissioned December 2014)

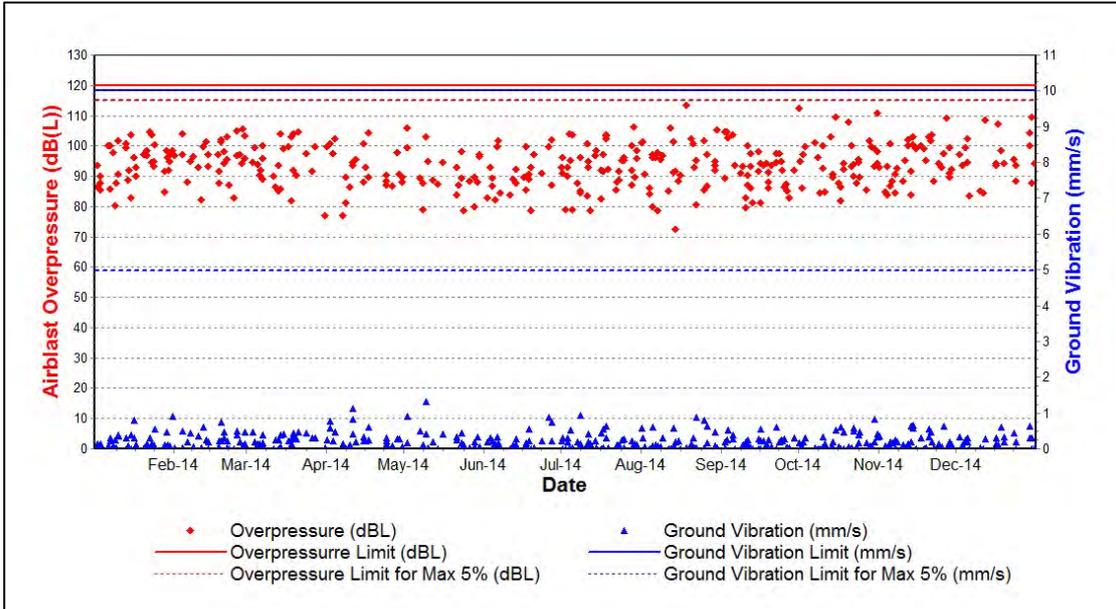


Figure 5 – 2014 MTW Blast monitoring results - South Barga

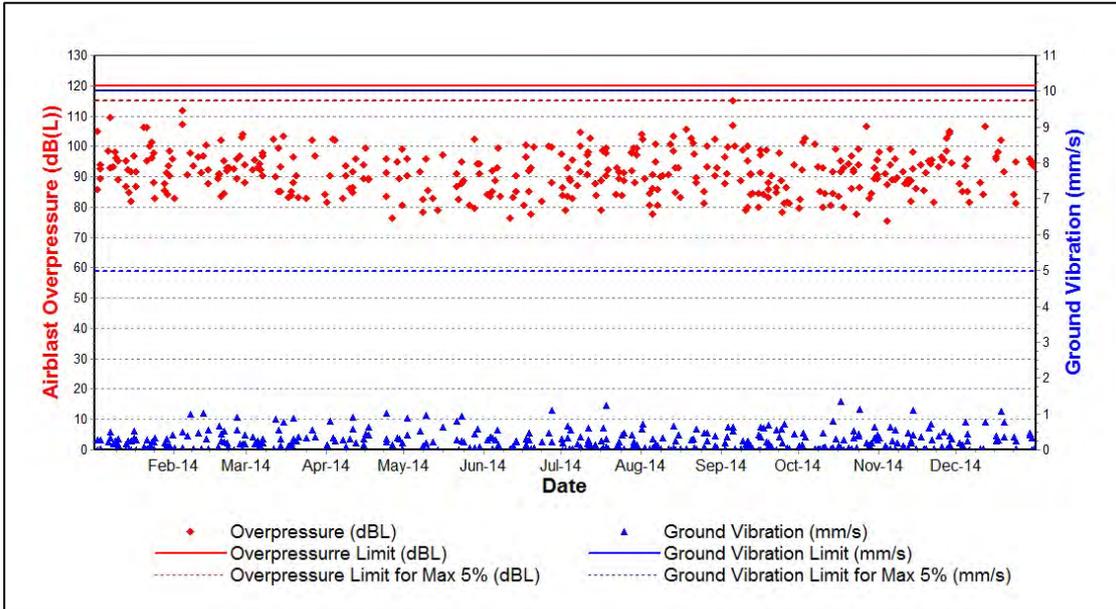


Figure 6 – 2014 MTW Blast monitoring results - Wambo Road

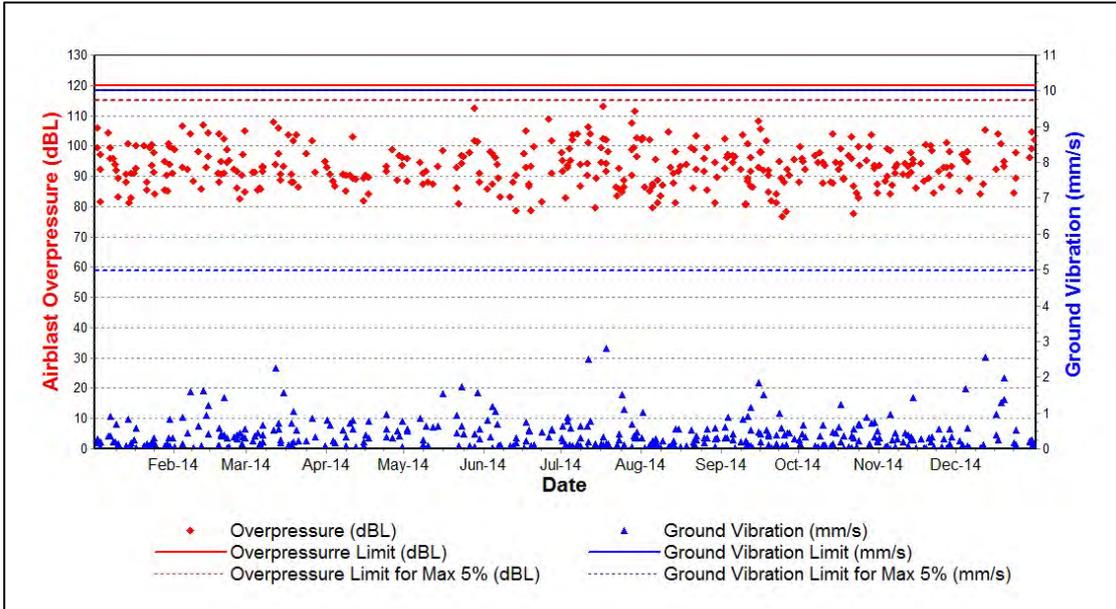


Figure 7 – 2014 MTW Blast monitoring results - Warkworth

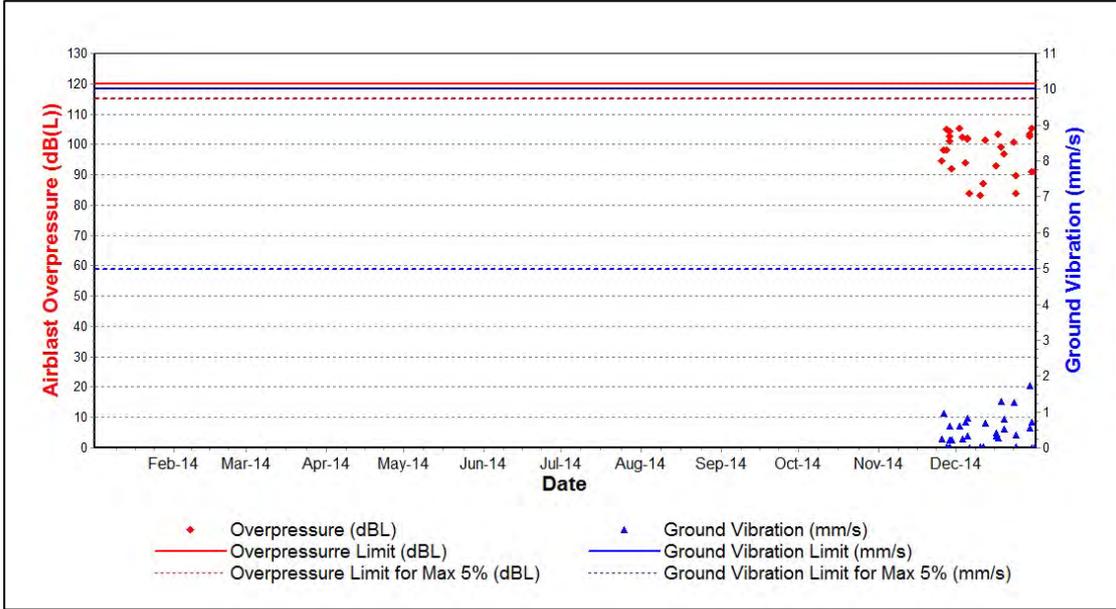


Figure 8 – 2014 MTW Blast monitoring results - Wollemi Peak Road (commissioned December 2014)

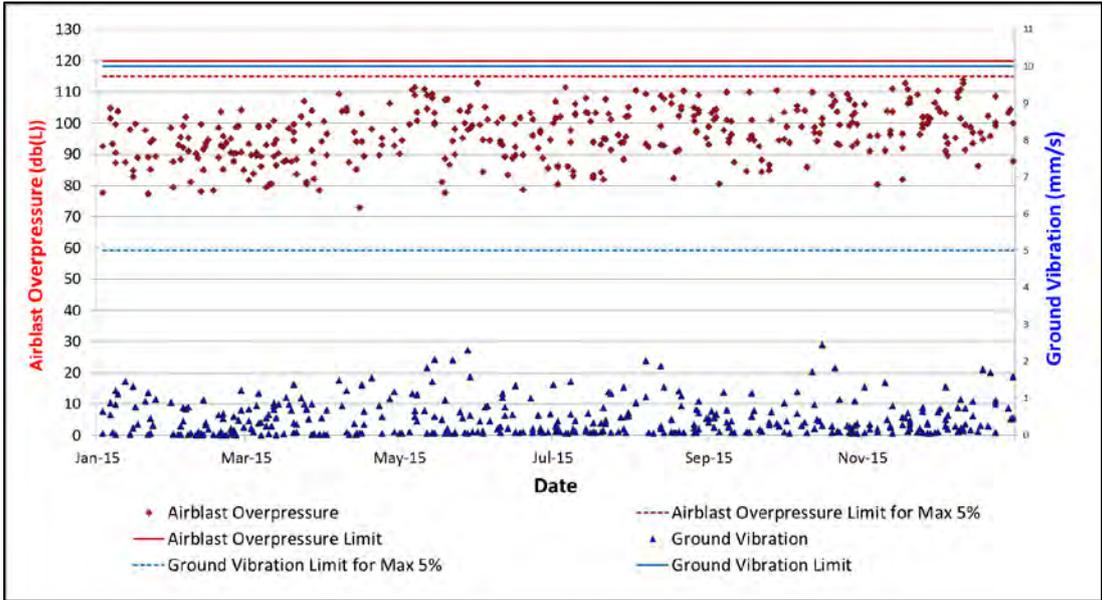


Figure 9 - 2015 MTW Blast monitoring results - Wollemi Peak Road

Appendix G - Blast Impact Assessment of the Warkworth Extension Project on Wambo Homestead, St Phillips Church and Bulga Bridge - Enviro Strata Consulting Report (2012)

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MOUNT THORLEY / WARKWORTH

**BLAST IMPACT ASSESSMENT OF THE WARKWORTH
EXTENSION PROJECT ON WAMBO HOMESTEAD, ST.
PHILLIPS CHURCH AND BULGA BRIDGE**

REPORT NO. MT-1247-270612

**Thomas Lewandowski
27th June 2012**

MOUNT THORLEY / WARKWORTH

BLAST IMPACT ASSESSMENT OF THE WARKWORTH EXTENSION PROJECT ON WAMBO HOMESTEAD, ST. PHILLIPS CHURCH AND BULGA BRIDGE

REPORT NO. MT-1247-270612

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MOUNT THORLEY / WARKWORTH

BLAST IMPACT ASSESSMENT OF THE WARKWORTH EXTENSION PROJECT ON WAMBO HOMESTEAD, ST. PHILLIPS CHURCH AND BULGA BRIDGE

REPORT NO. MT-1247-270612

1. INTRODUCTION

Enviro Strata Consulting (ESC) was requested by Mount Thorley Warkworth (MTW) to undertake an independent assessment of the Warkworth Extension Project and its impact on the Wambo Homestead, St Phillips Church and Bulga Bridge (the Historical Structures). The purpose of this assessment is to support the monitoring program required to be implemented in accordance with Schedule 3, condition 20(e) of the Project Approval PA 09_0202 granted for the Warkworth Extension Project (the Project) on 3 February 2012 (the Project Approval) to ensure these Historical Structures are not damaged by blasting on the MTW mine site.

The Project will mine west of the current MTW operations. The distance between the open cut blasting of the Project and location of the Historical Structures will be reduced.

This report addresses the following issues:

- Estimation of potential vibration exposure for the Historical Structures;
- Risks to the Historical Structures associated with blast exposure from the Project; and
- Recommendations for risk mitigation (if risks are identified).

The report is based on information provided by MTW including blasting plans, blasting details and related consultants' reports on blasting, and a site visit undertaken on 22 May 2012 by the author.

2. PROJECT METHODOLOGY

MTW has been granted the Project Approval which permits, among other things, the extension of current mining operations at Warkworth Mining Limited to the west (see **Figures 1A-B** which show MTW's expected progression for years 9 and 21). As part of the Project Approval Schedule 3, condition 12(a) requires MTW to ensure that blasting on site does not damage the Historical Structures.

In considering the blasting risks the assessment undertaken takes into account:

- existing vibration limits, specific to each piece of infrastructure;
- the Project boundary; and
- blast design parameters which will be used during the Project's lifetime.

The vibration modelling presented below numerically quantifies the possible impact of vibrations on each of the Historical Structures in years 9 and 21 of the Project.

3. SITE DESCRIPTIONS AND VIBRATION LIMITS

3.1 Site Descriptions

A visit to the three sites on which the Historical Structures are located was undertaken by ESC's principal consultant on 22 May 2012 and included a visual overview of each of the Historical Structures supported by a photographic record.

The locations of the Historical Structures visited are shown in **Figures 1A-B** with the current and future (years 9 and 21) mining operations of MTW overlaid.

Presented below is a short description of each of the Historical Structures. The descriptions are based on the information gained from the internet search, see References section for details.

WAMBO HOMESTEAD

Wambo Homestead consists of eight buildings which were constructed between 1833 and 1900 (refer to **Appendix 1** for images of the Wambo Homestead). Since 1969 the homestead has been owned by local mining companies. Due to substantial mining in the area the homestead has become isolated and public access to it is limited.

Wambo Coal Mine, which is the closest mine to the Wambo Homestead has approval to operate until 2025. Due to weather and termites the conditions of the buildings have deteriorated. The buildings have been vacant for over a decade.

In July 1996 the Wambo Homestead and outbuildings were classified as heritage items of State significance under the *Singleton Local Environment Plan 1996* (NSW). In

April 1999 the Wambo Homestead was also listed on the State Heritage Register (established under the *Heritage Act 1977* (NSW)). This listing means that any works to the buildings or within the curtilage of the Wambo Homestead will require the approval of the NSW Heritage Council.

An inspection of the Wambo Homestead was carried out by Godden Mackay Logan Heritage Consultants in July 2010. The findings of that inspection are set out in the report titled 'Wambo Homestead Complex; Heritage Strategy' and dated September 2010. A summary of the description of the Wambo Homestead, as per that report, is set out below.

Slab Horse Boxes ('The Stallions' Box') -

- *Age* – built between 1900 and 1906.
- *Structure* – pole framed with timber slab walls and corrugated iron roof over timber shingles. The building relies only on its frame and the fixing and bolting for its structure.
- *Condition* – this building stands in good condition considering its age. No damage to the structure or slab is evident. Damage to the roof shingles indicates possible termite presence (in the roof shingles only). Some deterioration is expected in the post bases and wall slabs due to the posts being buried in damp earth. Due to Corrosion, the water tank is fragile with the base having collapsed. The concrete slab on which the water tank sits is broken and cracked.

Carriage House with Stables and Granary -

- *Age* – established in 1840.
- *Structure* – a one and a half story building. The building stands pole framed with a timber slab and weatherboard walls. There is no bracing to the corrugated iron roof over timber shingles. The structure relies on the frame and rigid fixings.
- *Condition* – this building has suffered from tree and weed growths along with severe termite activity which has damaged the building and caused structural movement.

Butcher's Hut -

- *Age* – built in 1901.
- *Structure* – a pole framed, double timber slab with walls. Rammed earth insulation in the walls and ceiling. Ventilated, with open gables in the corrugated iron roof.
- *Condition* – there is no evidence of termite or structural damage and the building stands in good-fair condition. Due to vegetation growth there has been some break down to fixings and with no diagonal bracing, the building is separating.

The Servants' Wing -

- *Age* – built in 1844.
- *Structure* – a brick, one and a half storey structure with a corrugated iron roof over timber shingles. Log joists are in the attic and ground floor.

- *Condition* – the Servants’ Wing is in poor condition. Due to the disintegration of both verandas there is no shelter to walls and adjacent ground. Roofing has collapsed into the attic rooms, leaving the north gable without support. There is no stair access to the attic. The rendering to walls stands one metre above ground level. The mortar has dissipated and brick erosion is intermittent. Brickwork has collapsed due to the loss of soft lime/mud mortar. Walls are in danger of collapse as they have been weakened by cracks and deformation of the building’s foundation. The internal walls have upheld damage to half their thickness. Collapsed brickwork to timber joinery is evident in the West facing windows.

The Kitchen Wing (former House) –

- *Age* – built in the years 1830, 1837 and 1906.
- *Structure* – stands two storeys, is made from sandstone brick and a corrugated iron roof over timber shingles and includes a part basement.
- *Condition* – the flooring is unsafe and there is major deterioration due to termites.

The New House –

- *Age* – built in 1847
- *Structure* – single storey rendered brick with a corrugated iron roof over timber shingles.
- *Condition* – due to termite activity there is increasing deterioration combined with moisture impediment.

The Stud Master’s Cottage –

- *Age* – built in 1837.
- *Structure* – single storey brick with a corrugated iron roof on timber shingles.
- *Condition* – overall this structure is in very poor condition with no roof. The top of the building is currently covered in tarpaulins. Debris and slabs surround the area and all windows are boarded. Old render repairs have increased the deterioration to the brickwork.

Mounting Yard, Horse Boxes and Stock Yards –

- *Age* – established in 1906
- *Structure* – a pole framed building with splayed weatherboard walls and a corrugated iron roof.
- *Condition* – this building faces extensive fabric loss with a large unbraced section of the roof facing collapse.

In summary the Wambo Homestead represents a historic structure in the area of the Project. As it will be explained later in this report the Project will be a substantial distance away, in excess of 3000 metres, from the Wambo Homestead.

The adjacent Wambo Coal Mine operates on the basis of a 5 mm/s vibration limit with some blasts undertaken within 550 metres of the Wambo homestead (using a 15 metre bench). A comparison of the distances from the Wambo homestead to the Project and to the Wambo Coal Mine shows a considerable difference. Therefore accounting for the distance difference and the vibration limit, it can be expected that the blast impacts will be relatively low and limited. More detail in regards to the possible blasting impacts will be further discussed in the vibration modelling section.

St PHILLIPS CHURCH, WARKWORTH

The St Phillips Anglican Church was consecrated in 1856. The building is not on the State Heritage Register but is a heritage item classified as being of regional significance under the *Singleton Local Environment Plan 1996* (NSW).

The two most elevated parts of the structure include a bell tower and cross. Adjacent to the church there is an old cemetery (see **Appendix 2**).

Over the years the building has been refurbished. For example,

- the original shingle roof was replaced by a galvanized iron roof about 40 years after its construction,
- in 1955, the original brick work was covered with a cement coating fashioned to resemble stone blocks after the church and graveyard experienced extensive damage due to floodwaters with repair work being carried out by local parishioners,
- in 1980 the church was painted and renovated by the local coal mines
- between 1998 and 2002 the church was furnished with new carpet, sanctuary windows depicting a native bush theme were installed and native trees and bushes were planted, and
- in 2005 the United Collieries' donation was used to replace the roof and guttering.

St Phillips Church, with the original locally cut cedar pews, is still in use today.

In summary, St Phillips Church is a 150 year old building classified as a historic item being of regional significance. The main building materials are bricks and colorbond roofing. The building will be approximately 2190 metres from the final stage of the Project.

BULGA BRIDGE OVER WOLLOMBI BROOK

The Bulga Bridge, completed in 1912, is listed on the NSW State Heritage Register.

The bridge is a Dare type timber truss bridge and spans an overall length of 129.2m. The structure comprises two timber truss spans, each of 32.0 m, and three timber approach spans at one end and two at the opposite. Sheeted timber trestles support the super structure with a carriage way, with a minimum width of 5.5 m. A timber post and

rail guard extends the full length of the bridge. The bridge, in particular the large supporting trestles, is representative of the technical developments that were made in timber truss design by the Public Works Department. The trussed cross girders are a rare feature. In the context of its landscape it is visually attractive. As such, the bridge has moderate aesthetic significance.

The bridge has undergone some structural changes in recent years including the addition of steel tension ties in the underside of the bridge deck (see **Appendix 3** showing additional bridge reinforcements) but it remains on the State Heritage Register because of its age and method of construction.

3.2 Vibration Limits for the Historical Structures

The vibration limits currently used by other open cut mining operations, applicable to each of the Historical Structures are as follows:

- **Wambo Homestead** – Wambo Mine, immediately adjacent to the Wambo Homestead operates using a 5 mm/s vibration limit. The vibration limit of 5 mm/s is considered appropriate for the Project.
- **St Phillips Church** – Hunter Valley Operations (HVO) is one of the closest open cut coal operations to St Phillips Church. HVO operates using a 5 mm/s vibration limit (see **Appendix 4**). The same vibration limit of 5 mm/s (for St Phillips Church) is appropriate for the Project.
- **Bulga Bridge** – Bulga Bridge is defined as public infrastructure as per the Warkworth Mining Limited’s Project Approval 09_0202, Schedule 1, which is defined as “*Linear and related infrastructure that provides services to the general public such as roads, railways, water supply, drainage, sewerage, gas supply, electricity, telephone, telecommunications, etc*” meaning the criteria of 50mm/s from Schedule 3 of the Project Approval would protect the Bulga Bridge.

Immediately adjacent to Bulga Bridge is the community of Bulga village. The relevant vibration limits for residences on privately owned land in the village of Bulga are 5 mm/s (applicable to 95% of blasts over a period of 12 months) and 10 mm/s (not to be exceeded). As some of the residences are within a few hundred metres of the bridge structure it is unlikely that the level of 50 mm/s for the Bulga Bridge will ever be reached

The vibration limits and estimated minimum distances from the Project’s proposed final pit wall (for years 9 and 21 of the operation) for each of the Historical Structures are presented in **Table 1** below.

Table 1: Vibration Limits and Minimum Distance Estimations from Critical Points

Location	Easting (m)	Northing (m)	Vibration Limit (mm/s)	Year 9 Min. Distance (m)	Year 21 Min. Distance (m)	Direction from Warkworth Extension
Wambo Homestead	311622	6393138	5	4393	3082	North-West
St Philips Church	314870	6394214	5	2390	2190	North
Bulga Bridge	314409	6385656	50	3645	2485	South-West

4. VIBRATION MODELLING

The aim of this section is to provide an indication of the vibration impact of the proposed mining activities of the Project on the Historical Structures.

The vibration predictive model used in this report is based on the previously compiled model generated for MTW. The model is based on the vibration monitoring stations located in the vicinity of Bulga village. The model is considered to be representative for the location of the Historical Structures. It should be noted that the model does not account for a possibility of the wavefront reinforcement occurring.

The site law formula is specified as follows:

$$V = k \left(\frac{D}{\sqrt{m}} \right)^a$$

Where:

- V** = Peak Particle Velocity (mm/s)
- D** = Distance from blast (m)
- m** = Charge mass per delay (kg)
- a** = Site exponent
- k** = Site constant

The model is based on the actual surface vibration measurements from various Mt Thorley blasts, and details were presented in the internal report (Terrock's Report 2000), see **Appendices 5A** and **B**. The parameters summarising the site law analysis (governing ground vibration behaviour) are specified as follows:

$$V = 1720 \left(\frac{D}{\sqrt{m}} \right)^{-1.6}$$

Where:

- a** = -1.6 (Site exponent)
- k** = 1720 (Site constant)

It should be noted that the model is based on the outer data envelope, representing the “worst case scenario” (that is, based on the highest measured value).

The long term plans for the Project which were provided include snapshots of the mine extension as predicted for years 9 and 21 and show the final pit boundaries. The proposed bench sizes were reviewed to provide an indication of the thickness of the material to be blasted. The data is presented in **Table 3**. There is substantial variability in the bench heights. Three bench heights were selected to represent the range. 15, 40 and 62 metre benches were considered - 62 metres represents the maximum bench height.

Table 3: Maximum Overburden / Interburden Thickness for the North Pit

Seam	Overburden / Interburden Thickness (m)			
	STRIPS (40 – 70)			
	40	50	60	70
WYC				12
WYD				14
WYE	25	16	-	
WYF	28	24	23	45
WYG	3	4	3*	3
RCA	30	25	5	8
RCB			12	21
RCC	17	5	5	41
RCD	15		3	2
RCE	12	16	13	12
RCD	15		3	
RCE	12	16	13	
RCF	2	-	2	2
WBA	31	26	21	20
WBB	1	1	2	3
WBC	1.8	-	-	
WNA	26	-	-	
WNB	-	27	30	30
WNC	-	1	3	4
WND	3	4	4	4
BLA	3	3	2	2
BLC	0	1	1	2
BLE	16	26	29	28
BLF				1
BLG				1
BLH	4	3	2	3
GMB	41	40	39	42
GMC	15	13	32	10
GMD	6	4	2	2
WHA	6	7	8	10
WHE	-	3	2	
WHF	29	31	26	20

Seam	Overburden / Interburden Thickness (m)			
	STRIPS (40 – 70)			
	40	50	60	70
WHG	-	1	1	
WHH	3	2	2	2
WHJ	-	-	1	1
BFB	58	62	59	58
BFJ	-	-	1	1
WWA	6	6	6	6
WWE	39	32	18	21
WWF	2	1	1	2
WWG	1	1	1	2

MTW uses various blasting products. For the purpose of this report two products, one for dry (ANFO) and one for wet (Heavy ANFO) conditions, have been analysed. Six different options have therefore been considered.

The results of the modelling are presented as a series of overlying contour lines on the mining plans. Up to 9 main contours of interest were drawn for each case, including the following vibration values 0.8, 1, 1.5, 2, 3, 4, 5, 6 and 10 mm/s.

The vibration modelling for Year 21 mine expansion plans (using Heavy ANFO and worst case scenario) are shown in **Figures 2A-C**. The vibration modelling undertaken indicates the potential vibration exposure for the sites of the Historical Structures which are marked in these modelling diagrams.

The contour lines represent the extreme cases, that is, initiation of the maximum charge mass (three different cases) from the edge of the pit shell in each case (i.e. for the final pit shell for Year 21). In this instance, each contour is drawn from the edge of the proposed final pit shell.

The results of the vibration modelling for the Historical Structures are summarised in **Table 4**. Table 4 shows the maximum predicted vibration for each of the Historical Structures, depending on the bench size and blasting product used. Table 4 also highlights the blast impacts according to the Project's mine expansion plans provided for years 9 and 22.

It should be noted that below is an approximation and the results given as per the output of the modelling. Due to low vibration levels estimated, the values are presented in a one decimal place format.

Table 4: Maximum Ground Vibration Estimates for Each Place of Concern

Infrastructure	Min. Distance (m)	Estimated Max Ground Vibration (mm/s)					
		15 m Bench		40 m Bench		62 m Bench	
		ANFO 481 kg	Heavy ANFO 722 kg	ANFO 1626 kg	Heavy ANFO 2439 kg	ANFO 2565 kg	Heavy ANFO 3848 kg
<u>Year 9</u>							
Wambo Homestead	4393	0.4	0.5	1.0	1.3	1.4	1.9
St Philips Church	2390	1.0	1.3	2.5	3.5	3.6	5.0
Bulga Bridge	3645	0.5	0.7	1.3	1.8	1.8	2.5
<u>Year 21</u>							
Wambo Homestead	3082	0.6	0.9	1.7	2.3	2.4	3.3
St Philips Church	2190	1.1	1.5	2.9	4.0	4.2	5.7
Bulga Bridge	2485	0.9	1.2	2.4	4.1	3.4	4.7

The results of the vibration modelling are summarised as follows:

- for the 15 metre bench size
 - using Year 9 pit contours the predicted vibrations are in the order of 0.4 – 1.3 mm/s
 - using Year 21 pit contours the predicted vibrations are in the order of 0.6 – 1.5 mm/s
- for the 40 metre bench size
 - using Year 9 pit contours the predicted vibrations are in the order of 1.0 – 3.5 mm/s
 - using Year 21 pit contours the predicted vibrations are in the order of 1.7 – 4.1 mm/s
- for the 62 metre bench size
 - using Year 9 pit contours the predicted vibrations are in the order of 1.4 – 5.0 mm/s
 - using Year 21 pit contours the predicted vibrations are in the order of 2.4 – 5.7 mm/s

These results show that low vibration levels are expected for all three sites of Historical Structures when using 15 or 40 metre bench size. Such vibration exposure is within the imposed limits and is too low to produce damage to any of the Historical Structures.

The maximum 62 metre bench simulation generates higher vibration levels; borderline or exceeding the 5 mm/s limit. Therefore, to comply with the vibration limits to ensure

safety of the Historical Structures, in particular St Phillips Church, some control measures, such as deck charges or smaller bench heights will be required.

The modelling undertaken is conservative and provides the worst case scenario. As the MTW mine progresses to the West, smaller explosive charges (i.e. deck charges) or smaller bench sizes will be required to reduce the charge mass to ensure the 5 mm/s vibration limit imposed for the Bulga and Warkworth village residences are not exceeded.

5. CONCLUSIONS AND RECOMMENDATIONS

At the request of MTW an assessment of the impact of blasting from the Project on the Historical Structures was undertaken. The assessment was requested as part of the requirement under the Project Approval to include a Blast Management Plan which incorporates a monitoring program for evaluating the performance of the Project, including any blasting impacts on the Historical Structures (see Schedule 3, Condition 20 (e) of the Project Approval). The three Historical Structures, Wambo Homestead, St Phillips Church and Bulga Bridge, were assessed in terms of potential vibration impact.

The study has been supported by a review of relevant documentation, including existing vibration limits, proposed extraction plans, blast design details and a site visit undertaken on 22 May 2012 by ESC's principal consultant.

Based on the results of this assessment the following conclusions were reached:

- The vibration limits were identified as 5 mm/s for the Wambo Homestead and St Phillips Church and 50 mm/s for the Bulga Bridge
- The major risk identified is vibration exposure and related damage. The risk is dependent upon the charge mass and distance from the blasting area. The assessment included detailed blast impact analyses and vibration modelling using various blasting scenarios.
- The minimum distances from each of the Historical Structures to the final pit wall (Year 21) were estimated as follows:
 - Warkworth Homestead – 3082 metres,
 - St. Phillips Church – 2190 metres, and
 - Bulga Bridge – 2485 metres.
- The 15 metre bench vibration simulation predicted vibration levels in the order of 0.4 – 1.3 mm/s for Year 9 and 0.6 - 1.5 mm/s for the Year 21 pit boundaries. Lower vibration levels are expected if smaller than 15 metre benches are used. There would be no risk of damage related to such vibration exposure for any of the Historical Structures.

- The 40 metre bench vibration modelling indicated the maximum estimated vibration impact for the Historical Structures is in the order of 1.0 – 3.5 mm/s and 1.7 – 4.1 mm/s for year 9 and 21 pit boundaries respectively. Similar to the 15 metre bench, the vibration simulations for blasting with a 40 metre bench height revealed that there are no risks related to such vibration exposure for any of the Historical Structures.
- The maximum 62 metre bench simulation (potentially to be used as part of the Project) revealed that the maximum estimated vibration levels for the Historical Structures are in the order of 1.4 – 5.0 mm/s and 2.4 – 5.7 mm/s for the Year 9 and Year 21 pit boundaries respectively. To ensure the vibration limit (i.e. 5 mm/s) is not exceeded (particularly for St Phillips Church) the introduction of some control measures, such as deck charges or smaller bench heights, will be required.
- The study did not identify any major risks from blast vibration exposure, with the exception of the use of high bench sizes (i.e. 62 metres benches). The author acknowledges however that this point will be sufficiently covered by other limits, such as the 5 mm/s vibration limit imposed on private residences. The easiest and most practical solution is to introduce the internal (target) vibration limit set below the 5 mm/s vibration level which should minimise the risk of exceedance.
- Based on the modelling undertaken there is no risk of damage due to vibration exposure for any of the Historical Structures, for bench sizes up to 40 metres high (see Table 4 for the corresponding charge masses).
- To ensure that the mine complies with the vibration limits it is recommended that an ongoing vibration monitoring program is implemented. Permanent vibration monitoring stations should be installed at the three Historical Structures. This monitoring program should involve monitoring stations which represent vibration levels at the heritage structures. In addition, it is recommended that MTW undertakes monitoring of the structural conditions by completing a baseline dilapidation survey of St Phillip’s Church and additional survey if the representative monitor records ground vibration significantly higher than 5 mm/s.
- When blasting within 3000 metres of the Historical Structures it is recommended that MTW undertakes detailed vibration modelling for critical blasts to ensure vibration limits are not exceeded. The vibration modelling is to include vibration predictions and other factors such as wavefront reinforcement impact. In case of vibration limit exceedance a structural damage assessment of the structure is recommended, followed by appropriate reporting.

Thomas Lewandowski
27th June 2012

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FIGURES

FIGURE 1A – Proposed Mine Plans – Year 9

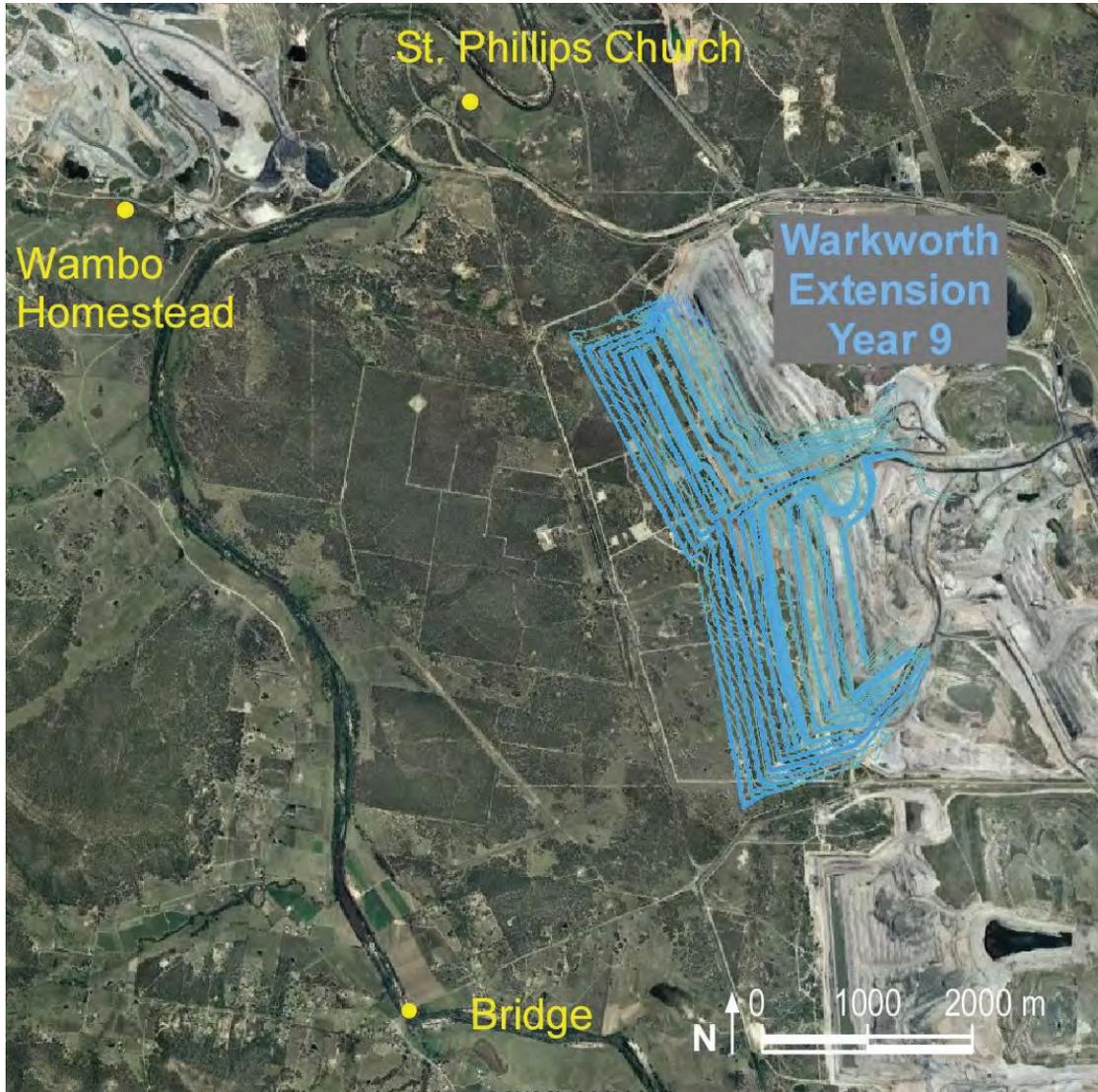


FIGURE 1B – Proposed Mine Plans – Year 21

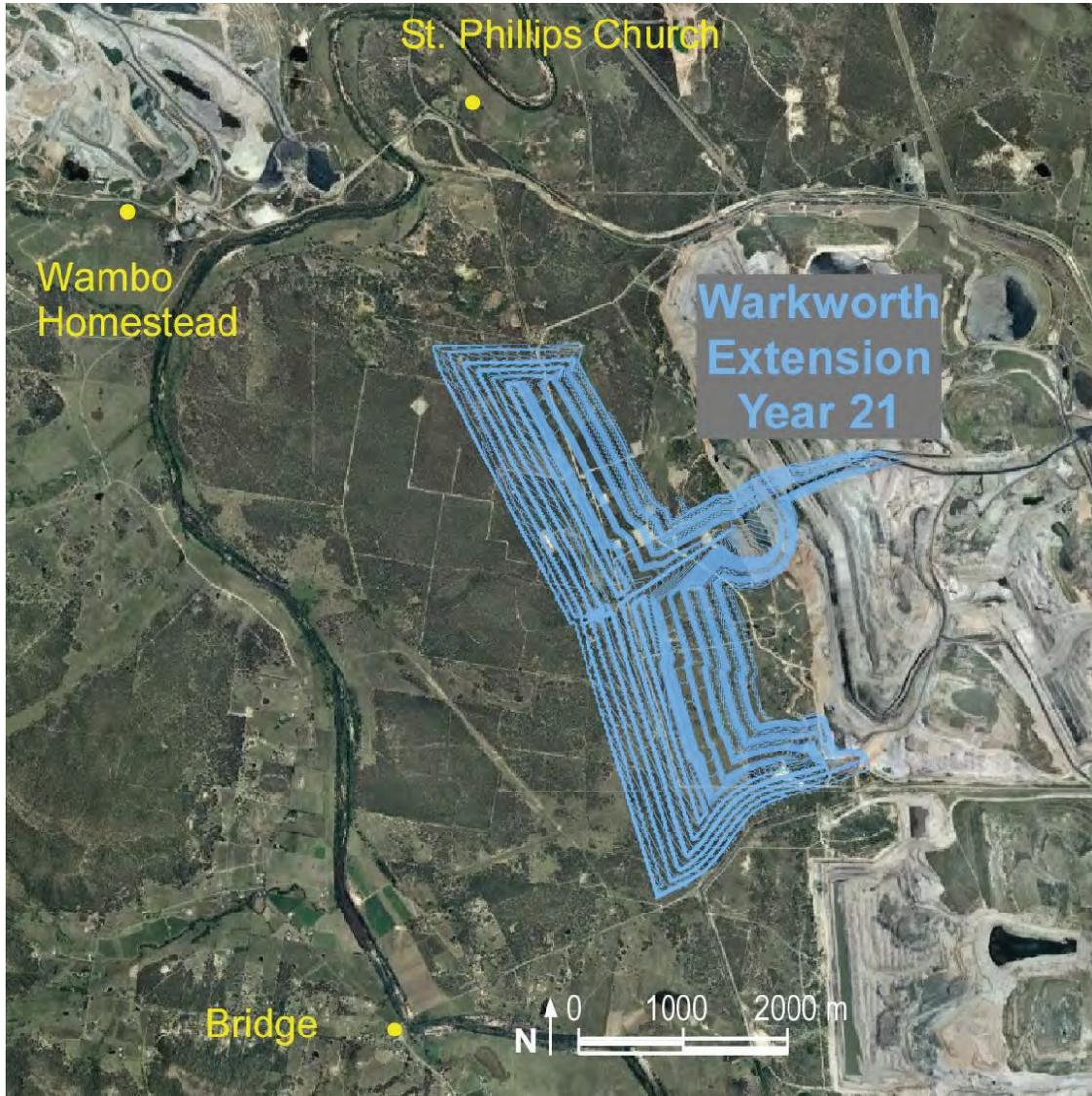


FIGURE 2A – Ground vibration Modelling – Year 21; 15m Bench, MIC 722 kg, Heavy ANFO

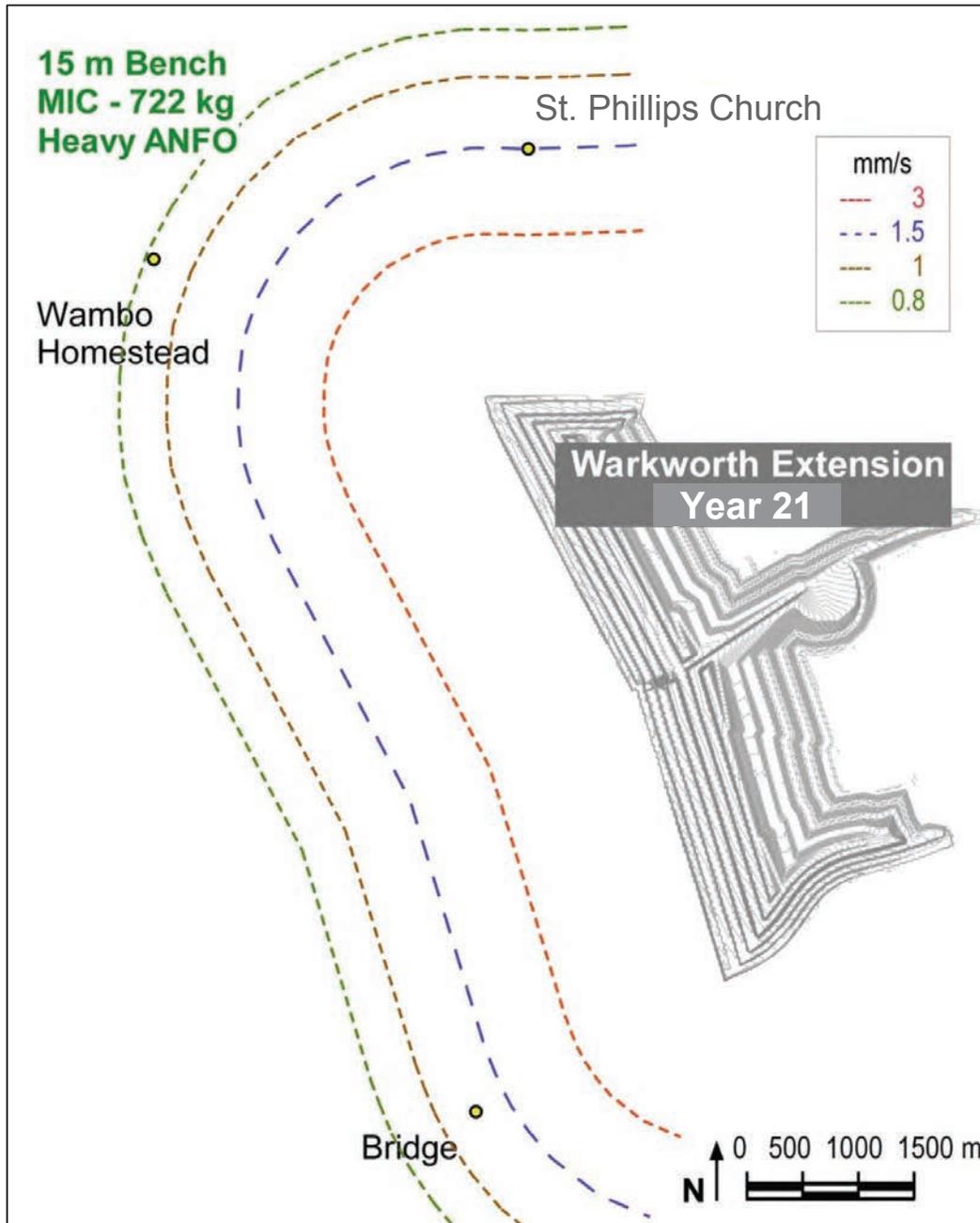


FIGURE 2B – Ground vibration Modelling – Year 21; 40m Bench, MIC 2439 kg, Heavy ANFO

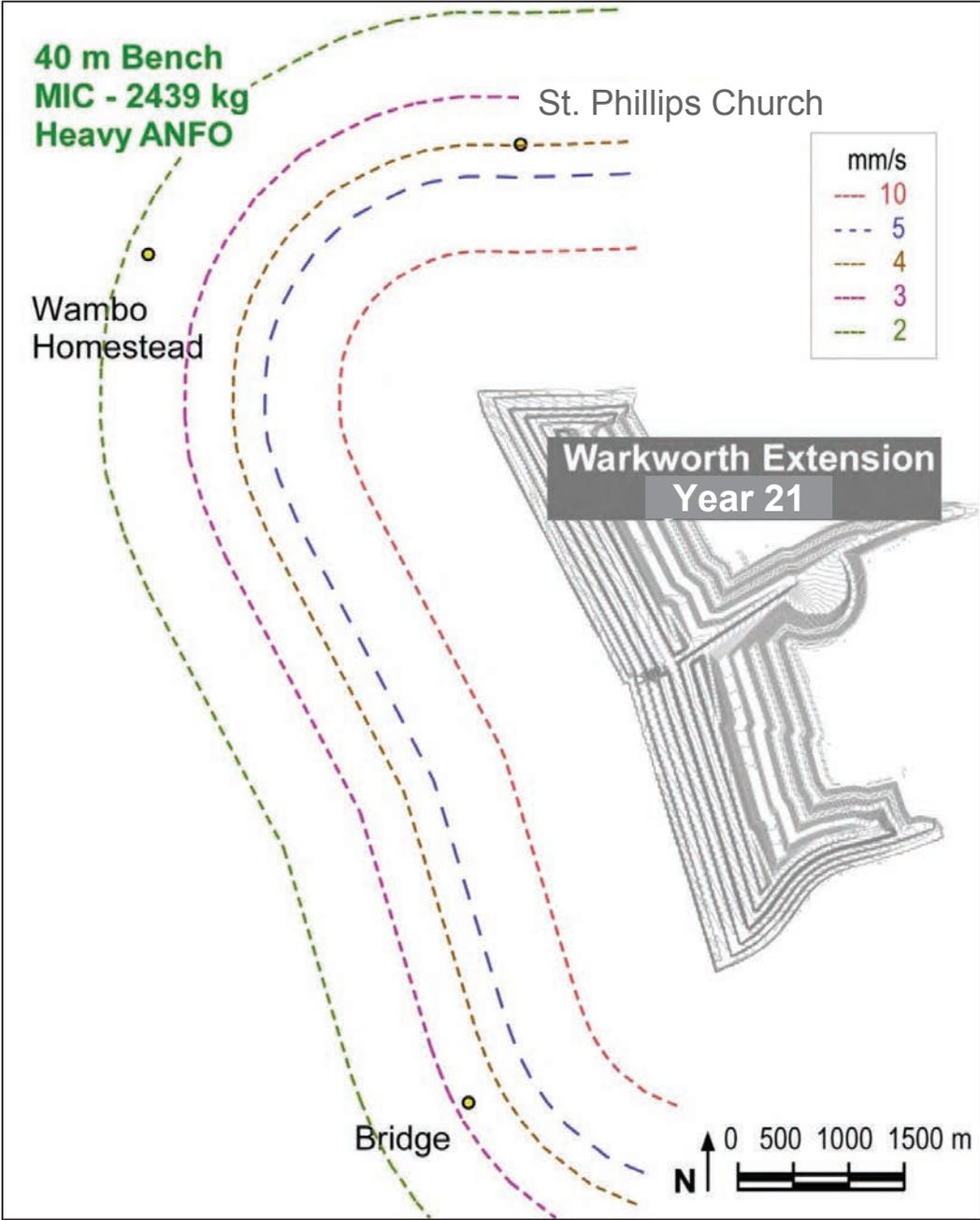
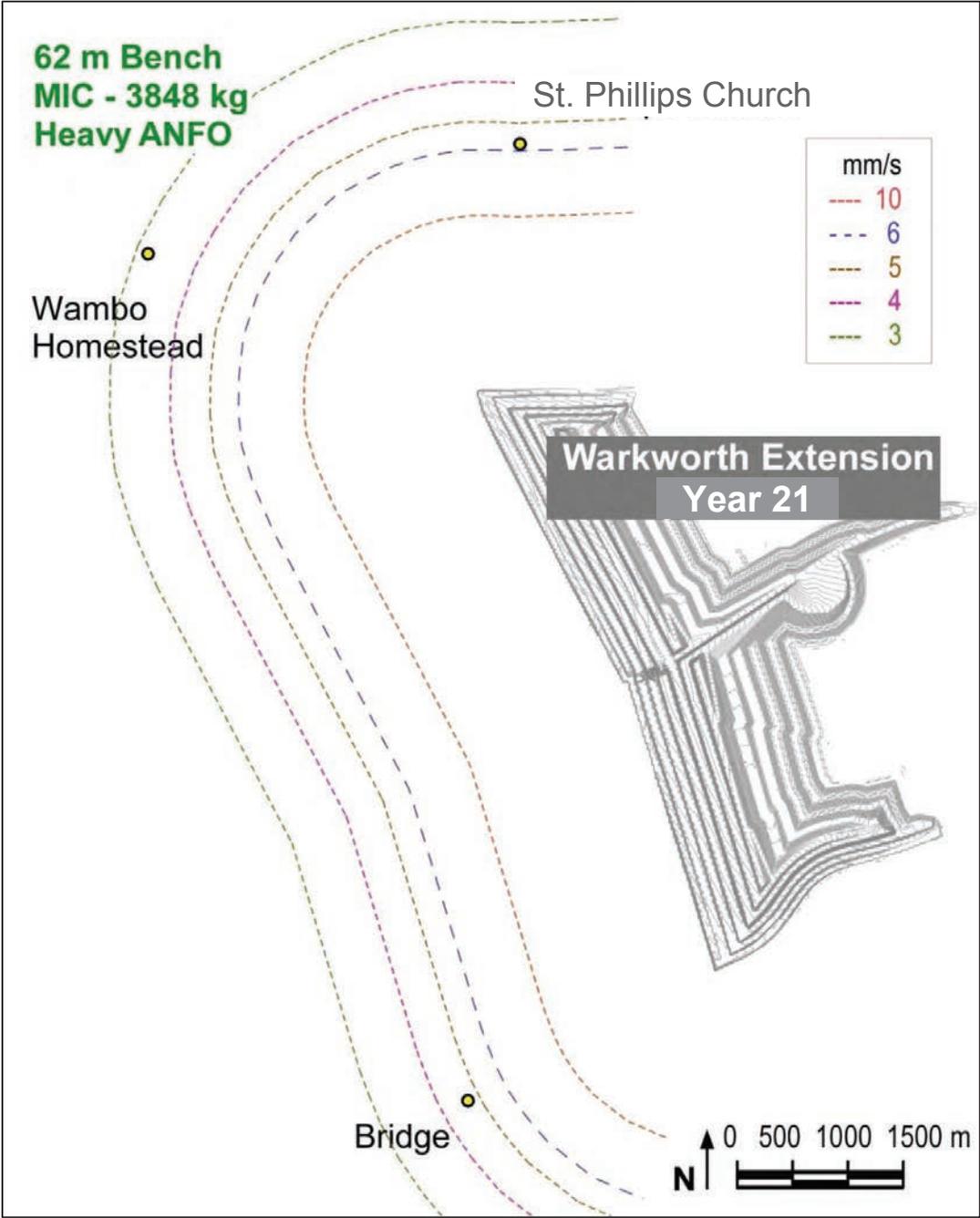


FIGURE 2C – Ground vibration Modelling – Year 21; 62m Bench, MIC 3848 kg, Heavy ANFO



APPENDICES

APPENDIX 1 – St Phillips Church



APPENDIX 1 – St Phillips Church (continued)



APPENDIX 1 – St Phillips Church (continued)



APPENDIX 2 – Wambo Homestead



APPENDIX 2 – Wambo Homestead (continued)



APPENDIX 3 – Bulga Bridge



APPENDIX 3 – Bulga Bridge (continued)



APPENDIX 4A – Protocol for Evaluating Blast and Vibration Compliance (after Coal and Allied HVO Environmental Monitoring Programme Document)



3 MONITORING

Blasts are monitored with the Datamasters V6 Blast Monitoring System. This system consists of blast monitoring stations in the field that are connected by wireless technology to an automated management system based at Datamasters office.

Blast results are automatically retrieved from the field stations, collated, reviewed and published to Datamasters web site where they are accessed by Coal & Allied users.

The monitoring stations are designed, operated, maintained and calibrated by Datamasters in accordance with the manufacturer's requirements and the requirements of AS 2187.2- 2006 'Storage and Use of Explosives'.

Blast monitoring is conducted at 7 locations around HVO as detailed in the HVO Blast Monitoring Programme. Monitoring will be undertaken in accordance with Australian Standard AS 2187.2- 2006 and Coal & Allied's environment procedures EP9.2 Blasting and EP1.10 Monitoring and Measurement.

Real-time meteorological data will be collected in relation to blast monitoring data. This information shall include wind speed, direction and temperature inversions (where applicable at the site).

Air overpressure and vibration associated with blasting shall be recorded for each blast. Monitoring data shall be reviewed by the Drill and Blast Engineer as soon as practicable after each blast.

Any blast exceeding the impact assessment criteria (Tables 2 & 3) shall be referred for additional analysis and interpretation by an external specialist in blast consulting where the reason for the levels cannot be established by the Drill & Blast Engineer. An external report shall be issued within 7 days. This investigation will review blast monitoring results, blast parameters, location and prevailing weather conditions. The investigation analysis is specific to each individual exceedance but may include wavetrace inspection, wavefront pattern analysis, regression analysis, meteorological effect analysis etc. The results of any blast exceeding the impact assessment criteria will be reported to the Department of Environment, Climate Change and Water (DECCW) within 24 hours of the blast occurring.

4 APPROVAL & CRITERIA

5.1 Current Approvals

HVO is the combined operations of the West Pit, Mitchell Pit and Carrington Pit situated to the north of the Hunter River, and Cheshunt Pit, Riverview Pit, Hunter Valley South Pit and South Lemington Pits situated south of the Hunter River. Air quality impacts around HVO are addressed in the following two most recent project approvals details in Table 1.

Table 1 APPLICABLE CONSENTS FOR HVO

Consent Area	Consent	Applicable Pits
South Pit Area	Hunter Valley Operations South Coal Project, Project Application 06_0261	Riverview Pit (South Pit) Cheshunt Pit South Lemington Pits
West Pit Area	HVO West Pit Extension Development Applications 450-10-2003 (including 2006 modification)	West Pit Carrington Pit North Pit

Title	version number	revision status	date released	date approved by authority	page
Document No. PRG-11-00-HVO Appendix F HVO Blast and Vibration Monitoring Programme	1.1	FINAL	24/03/2009		3 of 4

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APPENDIX 4B – Protocol for Evaluating Blast and Vibration Compliance (Continuation)



Blasting impacts must be assessed against each of the project approvals. Accordingly, the limits and conditions specified in these documents will be used to assess the performance of HVO with regard to blasting.

5.2 Impact Assessment Criteria

Impact assessment criteria for blasting are provided in Table 2 and Table 3 below. These criteria apply to all blast monitoring locations at HVO.

Table 2 AIRBLAST OVERPRESSURE IMPACT ASSESSMENT CRITERIA

Airblast overpressure level (dB (L _r Peak))	Allowable exceedance
115	5% of the total number of blasts in a 12 month period
120	0%

Table 3 GROUND VIBRATION IMPACT ASSESSMENT CRITERIA

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts in a 12 month period
10	0%

An additional ground vibration impact assessment criterion applies to the HVO South Project: *"For St Phillip's Church and the outbuildings at Archerfield, the Proponent shall ensure that ground vibration peak particle velocity generated by the project does not exceed 5mm/s, or as otherwise approved by the Director General"*.

5 REPORTING

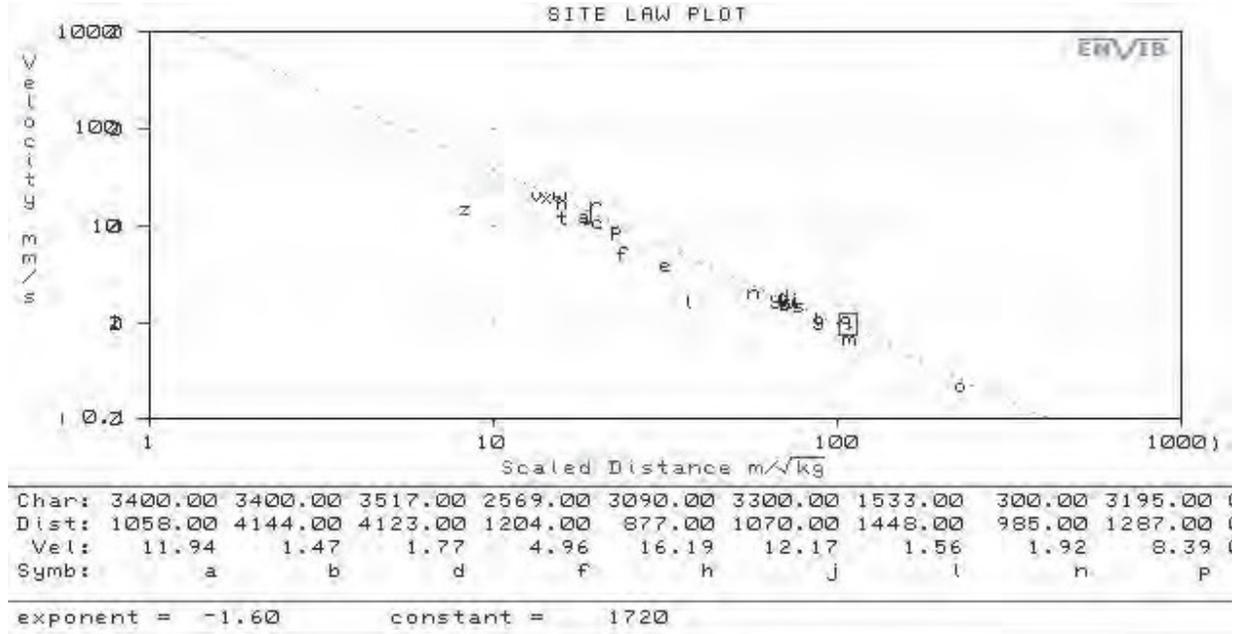
A summary of blast monitoring results will be reported quarterly on Coal & Allied's web site www.coalandallied.com.au

An analysis and summary of blast monitoring results will be reported in the Annual Environmental Management Report.

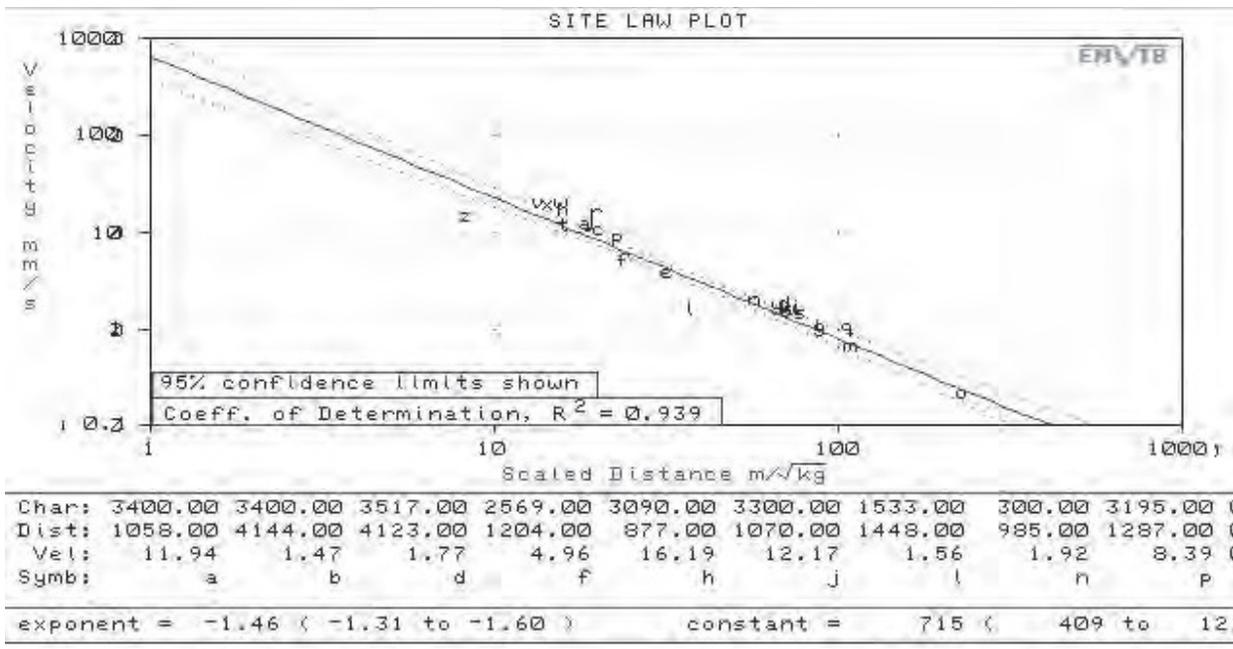
file	version number	revision status	date released	date approved by authority	page
Document No: PRG-11-00-HVO Appendix 4 HVO Blast and Vibration Monitoring Programme	1.4	FINAL	24/03/2009		4 of 4

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APPENDIX 5A – Site Law Analysis using Outer Data Envelope (after Terrock 2000)



APPENDIX 5B – Site Law Analysis for 95% confidence Line (after Terrock 2000)



Appendix H – Approval of Management Plan



Mr Gary Mulhearn
Environment and Community Manager
Yancoal Australia Ltd
PO Box 267
Singleton NSW 2330

Email: Gary.Mulhearn@yancoal.com.au

Dear Mr Mulhearn,

**Mt Thorley Warkworth Complex (SSD-6465 and SSD-6464)
Environmental Management Plans**

I refer to your email dated 20 September 2018, submitting the revised environmental management plans for the Mt Thorley Warkworth Complex (SSD-6465 and SSD-6464). The Department has reviewed the following documents:

- Air Quality Management Plan dated September 2018 (condition 18, Schedule 3 of SSD 6465 and condition 20, Schedule 3 of SSD 6464);
- Biodiversity Management Plan dated September 2018 (condition 36, Schedule 3 of SSD 6464);
- Blast Management Plan dated September 2018 (condition 14, Schedule 3 of SSD 6465 and condition 16, Schedule 3 of SSD 6464);
- Noise Management Plan dated September 2018 (condition 5, Schedule 3 of SSD 6465 and condition 7, Schedule 3 of SSD 6464); and
- Water Management Plan dated September 2018 (condition 25, Schedule 3 of SSD 6465 and condition 27, Schedule 3 of SSD 6464).

The Secretary has approved the above documents. Please ensure finalised copies of these documents are made available on the company's website.

Should you have any enquiries in relation to this matter, please contact Jack Murphy at the details above.

Yours sincerely,

MgB Dawson 20/9/18

Megan Dawson
A/Director
Resource Assessments
As nominee of the Secretary