Austar Coal Mine Pty Ltd

Proposed Stage 3 Modification
Response to Submissions

November 2011

Umwelt
Environmental Consultants

Proposed Stage 3 Modification Response to Submissions

Prepared by

Umwelt (Australia) Pty Limited

on behalf of

Austar Coal Mine Pty Ltd

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1.0 Introduction

Ten submissions were made following the exhibition of the Environmental Assessment for the Austar Coal Mine Proposed Stage 3 Modification Project. The submissions comprised five agency submissions, one union submission in support of the project and four submissions from landowners on two properties raising objections to the project. The issues raised in each submission are summarised below.

2.0 Agency Submissions

Submissions were received from the following organisations:

- Office of Environment and Heritage (OEH);
- Office of Environment and Heritage NSW National Parks and Wildlife Service (NPWS);
- NSW Office of Water (NOW);
- Division of Resources and Energy (DRE); and
- Cessnock City Council (CCC).

2.1 OEH Submission: Mr Bill George, A/Head Regional Operations Unit – Hunter Region

1. OEH notes the quality of groundwater is generally saline. Should any discharge of mine water and/or groundwater occur, the proponent must ensure that water quality discharged to the environment meets current environment protection licence requirements, or, if no requirements are specified, ensure water discharged is of the same or better quality of the receiving environment

Response

As set out in Appendix 4 of the Environmental Assessment (EA), Austar currently pumps water from the underground workings to the surface to prevent water flowing into the active mine area. This additionally aids in the environmental management of the poor quality water stored in these abandoned mine workings. Two underground pumping stations deliver mine water to the surface – No. 16 C/T Main South Pumping Station and the No. 2 Shaft Pumping Station. Once at the surface, water is delivered to the Pelton CHPP water management system where it is treated and either reused or discharged into Bellbird Creek in accordance with Austar's Environmental Protection Licence (EPL No. 416). Performance against the EPL conditions is reported on an annual basis in Austar's annual return.

2. OEH has not proposed any recommended conditions of approval relating to surface water or groundwater for the Stage 3 modification.

Response

Acknowledged.

3. OEH recommends the [ecological] monitoring program should also include regular monitoring for myrtle rust and development of associated mitigation, management, hygiene and reporting measures be identified, should myrtle rust be detected.

Response

The recommended conditions of approval appear reasonable.

4. OEH has provided recommended conditions of approval in Attachment A relating to threatened species management to be included in the Project Approval for the Stage 3 modification, should approval be granted.

Response

The recommended conditions of approval appear reasonable.

5. OEH acknowledges that the proponent has developed a cultural heritage offset program, has reduced the potential impact on Aboriginal cultural heritage values and is committed to having an ongoing relationship with the registered Aboriginal stakeholders. OEH supports these measures and recommends that existing management plans and programs (including Extraction Plan, Subsidence Monitoring Program and Aboriginal Cultural Heritage Management Plan) are updated to reflect these commitments and current management strategies detailed in the Statement of Commitments.

Response

The recommendation is consistent with the commitments made by Austar in relation to Aboriginal cultural heritage.

6. It is also important that the proponent is familiar with the new requirements of the *National Parks and Wildlife Act 1975*, particularly as they relate to the development and any subsequent assessment process.

Response

Austar is aware of the new requirements of the *National Parks and Wildlife Act 1975*.

7. OEH has provided recommended conditions of approval in Attachment A relating to Aboriginal cultural heritage to be included in the Project Approval for the Stage 3 modification, should approval be granted.

Response

The recommended conditions of approval are consistent with the existing commitments made by Austar and the consent conditions of the current Project Approval 08_0111.

8. Figure 1.6 of the EA indicates sections of the approved surface infrastructure site as well as Longwalls A7 and A8 are located on and under Werakata State Conservation Area which is managed by OEH through the National Parks and Wildlife Service (NPWS). Prior to commencing construction and mining operations in this location, land owners consent will need to be sought from the Minister for the Environment.

Response

As described in **Section 2.5**, Austar entered into discussion with NPWS regarding landowners consent in August 2011 and will continue to work in consultation with NPWS in relation to this matter. It is noted that the Kitchener Surface Infrastructure Site is on Austar owned land and therefore the landowner consent process does not apply at this location.

2.2 NOW Submission: Mr Mark Mignanelli, Manager Major Projects and Assessment

1. The EA presents details on proposed groundwater monitoring to the altered Area 3 longwall configuration. However, little detail is presented as to nominated trigger levels to groundwater response, or mitigation responses should drainage from the alluvium exceed minimal levels.

Response

Section 7.4 of the EA provides an assessment of potential impacts on the alluvial aquifers in proximity to the proposed Stage 3 Modification mining area and concludes that subsidence has negligible potential to adversely impact on groundwater levels in the area. An overview of proposed groundwater monitoring and contingency measures is provided in Section 7.4.4. Further details of the current and proposed future groundwater monitoring program and contingency measures are available in the existing Site Water Management Plan for the Austar Mine Complex, which includes an integrated surface and groundwater monitoring program. This plan was submitted to the Department of Planning (now the Department of Planning and Infrastructure), The Department of Environment and Climate Change (now the OEH) and the Department of Water and Energy (now known as the NSW Office of Water) in March 2009. Austar has not received comments from the NSW Office of Water in relation to this surface and groundwater monitoring program to date.

2. NOW requests a consent condition requiring Austar Coal to develop a groundwater monitoring and contingency response programme in consultation with and to the satisfaction of the NSW Office of Water.

Response

Condition 9 of Schedule 4 of Austar's existing Project Approval 08_0111 requires that a Site Water Management Plan, including a groundwater monitoring program and a surface and ground water response plan, be prepared. The plan is to be prepared in consultation with the Department of Environment, Climate Change and Water (now the OEH and NOW) and DII (now DRE), and be submitted to the Director-General of the Department of Planning and Infrastructure for approval prior to commencement of second workings in Stage 3 and construction of the Surface Infrastructure Site (other than shaft construction). In Sections 7.4 and 8.7 of the EA, Austar committed in the implementation of a monitoring program for the Stage 3 Modification area.

3. Subsidence expression is predicted to reach maximum limits after the extraction pass under Sandy Creek at the inbye end of LW 19. This is predicted to reach 1675 millimetres, with upsidence and closure at predicted levels which would be sufficient in other geomorphic contexts to induce surface fracture and flow drainage. NOW seeks assurance from the Applicant that minimal damage to Sandy and Cony Creeks will occur, and commitment to effective and prompt responses to any subsidence-induced impacts to ensure the maintenance of pre-subsidence flow and erosion potential conditions.

Response

In considering the possible impacts of subsidence on Sandy and Cony Creeks, there are two major factors to be considered which differentiate the response of this system from that of other locations. The first is the depth of mining. As described in Section 7.4.2 of the EA, subsidence modelling undertaken by MSEC (2011) indicates that hydraulically interconnected fracture networks above the longwall goaf is likely to extend to a height of approximately 245 metres to 285 metres. The depth of cover above the coal seam ranges from approximately 455 metres to 760 metres over the proposed Stage 3 Modification longwalls. As a result there is negligible potential for hydraulically interconnected cracking to extend from the shallow alluvial aquifer to the goaf.

The second factor that differentiates the Quorrobolong Valley from other areas is the Branxton Formation. As discussed in the EA, the Branxton Formation, which forms the geological strata above the Greta Coal Seam, is very thick and acts as a beam over the mined areas. As a result the majority of subsidence results from the compression of the chain pillars that are left between successive longwalls and adjacent strata above and below them. The Branxton Formation effectively supports the landform above the longwalls, transferring the resultant load to the chain pillars. As described in Section 7.1, as a consequence of this, upsidence and valley closure impacts are expected to be less than those listed in Table 7.12 of the EA. Minor cracking and fractures may occur in the upper 15 metres of the underlying stratum. This cracking is unlikely to result in drainage or loss of groundwater. If surface cracking occurs as a result of the extraction of the proposed longwalls, any cracks are likely to be filled with alluvial materials during subsequent flow events.

In Section 8.6 of the EA, Austar committed to the remediation of any subsidence impacts on drainage lines where access is granted such that there is no significant impact on downstream water users and environmental flows. Austar also committed to the development of drainage line monitoring and remediation protocols as a part of the Extraction Plan process and in consultation with NOW, to guide the management of subsidence impacts and drainage line remediation works on surface water systems.

4. NOW requests a condition of approval to the modification require the Applicant to develop a stream management plan to address subsidence impacts on Quorrobolong, Sandy and Cony Creeks and connected alluvium, in consultation with and to the satisfaction of NOW. The stream management plan is to provide a monitoring and response framework to address the consequences of mining subsidence on Quorrobolong, Cony and Sandy Creeks and prevent significant channel destabilisation and incision and erosion of bed and banks of the above watercourses.

Response

Acknowledged. Austar has existing monitoring programs in place for its Stage 2 operations for surface water, groundwater and riparian vegetation. Austar is committed to updating these programs for the Stage 3 area in consultation with NOW and OEH prior to commencement of secondary extraction of the Stage 3 Modification longwall panels.

The recommended condition of approval appears reasonable.

5. Monitoring reports, including mine inflows, depressurisation of alluvium and changes in bed profiles on Quorrobolong, Cony and Sandy Creek must be submitted to NOW on completion of each longwall panel. The response plan must be submitted to NOW for review and incorporate timeframes regarding the submission of monitoring reports.

Response

Acknowledged. Austar currently submits end of panel reports to a number of government agencies including NOW for the Stage 2 mining area and will continue to do this for the Stage 3 mining area.

2.3 DRE Submission: Mr David Agnew, A/Director, Minerals Operation

1. Based on the information provided in the EA, DRE considers that the removal of longwall panel A6 and the reorientation of longwall panels A7-A17 does not substantially change the overall subsidence risks of the Stage 3 Project.

Response

No further response required.

2. DRE has no objections to the granting of development consent for this proposed modification and supports approval of the proposed modification with the inclusion of the conditional requirements for a Mining Operations Plan, a Subsidence Management Plan and an Annual Environmental Management Report to the satisfaction of the Director General of NSW Trade & Investment, Regional Infrastructure & Services.

Response

No further response required.

2.4 CCC Submission: Mr Gareth Curtis, Group Leader, Built and Natural Environment

1. Council remains concerned about the potential subsidence impacts of the project on its infrastructure including roads and bridges etc and will look forward to further consultation with the proponent on the new extraction plans (EPs) and Built Features Management Plans (BFMPs) which detail specific management and monitoring activities associates with subsidence affect on built structures.

Response

As discussed in the EA, Austar is committed to working in consultation with Council to develop management strategies for Council's infrastructure, to be documented in the BFMPs for Council's infrastructure.

2. Ellalong Lagoon is a substantial water body with the location area with a high conservation value. Council has a high regard for the lagoon as a conservation area and therefore will be anxious to see that detailed monitoring of subsidence associated with the creek systems feeding into the lagoon and the management of the quality of the surface water within these systems is undertaken and maintained for the life of the development.

Response

As discussed in the EA, Austar has a series of monitoring plans in place for the Stage 2 area, including detailed subsidence monitoring, surface and ground water monitoring and ecological monitoring which are used to monitor subsidence impact. The existing monitoring plans will be updated for the Stage 3 area prior to commencement of secondary extraction of the Stage 3 Modification longwalls and will be implemented for the life of the project. Austar remains committed to the implementation of appropriate environmental management actions to ensure that its operations do not adversely impact the conservation value of Ellalong Lagoon.

3. Council's principal concern is that an extensive and transparent community consultation program is established and continued both during and after the exhibition period involving the Ellalong and Quorrobolong communities so that they may be kept informed of the progress of the project.

Response

As described in Section 6.3 of the EA, Austar has an ongoing community consultation program developed to foster positive relationships with its landholders and ensure an appropriate level of information is available about the activities of the mine, and ample opportunities for feedback are provided.

2.5 NPWS Submission: Mr Tom Bagnat Regional Manager Central Coast Hunter Range - Coastal Branch

1. Austar wrote to the Office of Environment and Heritage on 5 August 2011 seeking to obtain landowners consent for the modification as it relates to Werakata State Conservation Area (SCA), in accordance with clause 8F of the Environmental Planning and Assessment Regulation.

Response

Austar has received correspondence from the NPWS in relation to the requirements for additional information to be provided following the response to submissions phase. Austar will continue to work in consultation with NPWS to provide the required information to enable advice to be given to the Minister for the Environment regarding Austar's request for landowner consent.

2. In addition, you should also be aware that the OEH appears to have no record of receiving a request for landowners consent associated with the existing Stage 3 planning approval.

Response

Austar is currently seeking landowner consent from the Minister for the Environment.

3.0 Other Stakeholder Submissions

Submissions were received from the following parties:

- Construction Forestry Mining and Energy Union (Mining and Energy Division) Northern District Branch (CFMEU);
- Bronwyn O'Dwyer– Property owner in the Stage 3 Modification area;
- Bronwyn O'Dwyer and Glenn Quinn – Property owners in the Stage 3 Modification area;
- Glen Quinn – Property owner in the Stage 3 Modification area; and
- Matthew Wilson – Property owner in the Stage 3 Modification area.

3.1 CFMEU Submission: Mr Grahame Kelly District Secretary

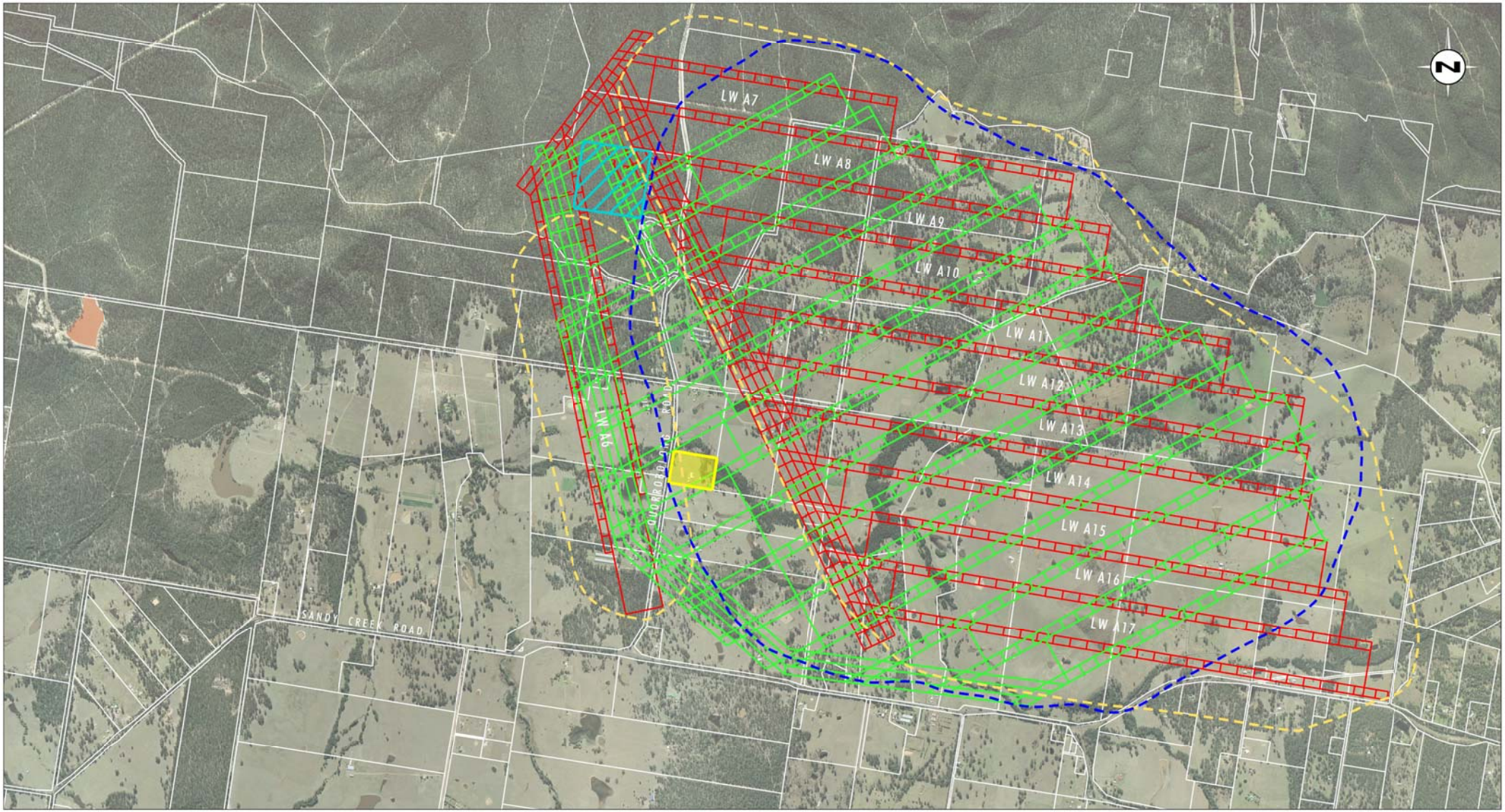
The Union supports the Austar Coal Mine Stage 3 Modification Project.

3.2 Landowner Submission: Bronwyn O'Dwyer

1. The proposal will increase the impact from Stage Three as previously approved, as our entire property, including our home, is now included within the subsidence envelope; whereas previously, the subsidence envelope cut across the front third of our property.

Response

As discussed in the EA, the overall area of surface impact has reduced by 140 hectares, as a result of the proposed Stage 3 Modification mine plan, however the location of surface impact has altered in some areas. Surface impacts are proposed to be decreased in the west of the approved Stage 3 area via the removal of Longwall A6, decreased in the south-east and north-west by reorientation of longwall panels, and increased for a section of land between the approved Longwall A6 and the western extent of approved Longwalls A7 to A17. The O'Dwyer and Quinn property is located within the section of land between the approved Longwall A6 and Longwalls A7 to A17 as shown in **Figure 3.1**. The modelled change in subsidence impact to the O'Dwyer and Quinn residence from the Stage 3 mine plan as approved to the proposed Stage 3 Modification is provided in **Table 3.1**.



Source: Longwall Layout: Austar Coal Mine, Cadastre: LPI NSW, Aerial Photography: AAM Hatch 2006, Subsidence Contours: MSEC

0 0.5 1 1.5km
1:32 000

Legend

- Conceptual Layout for Stage 3 Longwall Panels as Approved
- Proposed Stage 3 Modification Longwall Panels
- 20mm Subsidence Contour for Conceptual Panels as Approved
- 20mm Subsidence Contour for Proposed Stage 3 Modification
- Approved Surface Infrastructure Site
- O'Dwyer and Quinn Property Boundary

FIGURE 3.1

Location of O'Dwyer and Quinn Property

File Name (A4): R75_V1/2274_1025.dgn

2. Our house floor level height was built to Council requirements. During the flooding we experienced here in 2007, we witnessed floodwaters rising to within an inch of the floor level of our house. We believe that should the Stage Three modification proceed, the consequent subsidence will cause our house to be inundated during the next major flood event.

Response

A detailed Flooding and Drainage Assessment was undertaken for the proposed Stage 3 Modification Project and was provided as Appendix 7 of the EA. The Flooding and Drainage Assessment included detailed modelling of flood depth, velocity and hazard in Cony, Sandy and Quorrobolong Creeks and the associated floodplain. The results of the flood modelling at the O'Dwyer and Quinn property for the pre-mining, Stage 3 as approved and proposed Stage 3 Modification landforms are shown in **Figures 3.2** to **3.4**.

As shown in **Figures 3.2** to **3.4**, the modelling for the pre-mining landform predicted that the edge of the flood extent would be in close proximity to the O'Dwyer and Quinn residence. Modelling of the Stage 3 maximum predicted subsidence landform predicted no significant change to the flood depth or extent in the immediate vicinity of the O'Dwyer and Quinn residence (**Figures 3.2** and **3.3**). Modelling of the proposed Stage 3 Modification maximum predicted subsidence landform also indicates no significant change to pre-mining flood extent and depth (**Figure 3.4**).

3. We understand that such flooding is not eligible for any compensation or assistance from the Mine Subsidence Board, or indeed, by any home insurance policy as its direct cause will be the activities of Austar Mine. Consequently, we will suffer significant financial hardship when our home is inundated.

Response

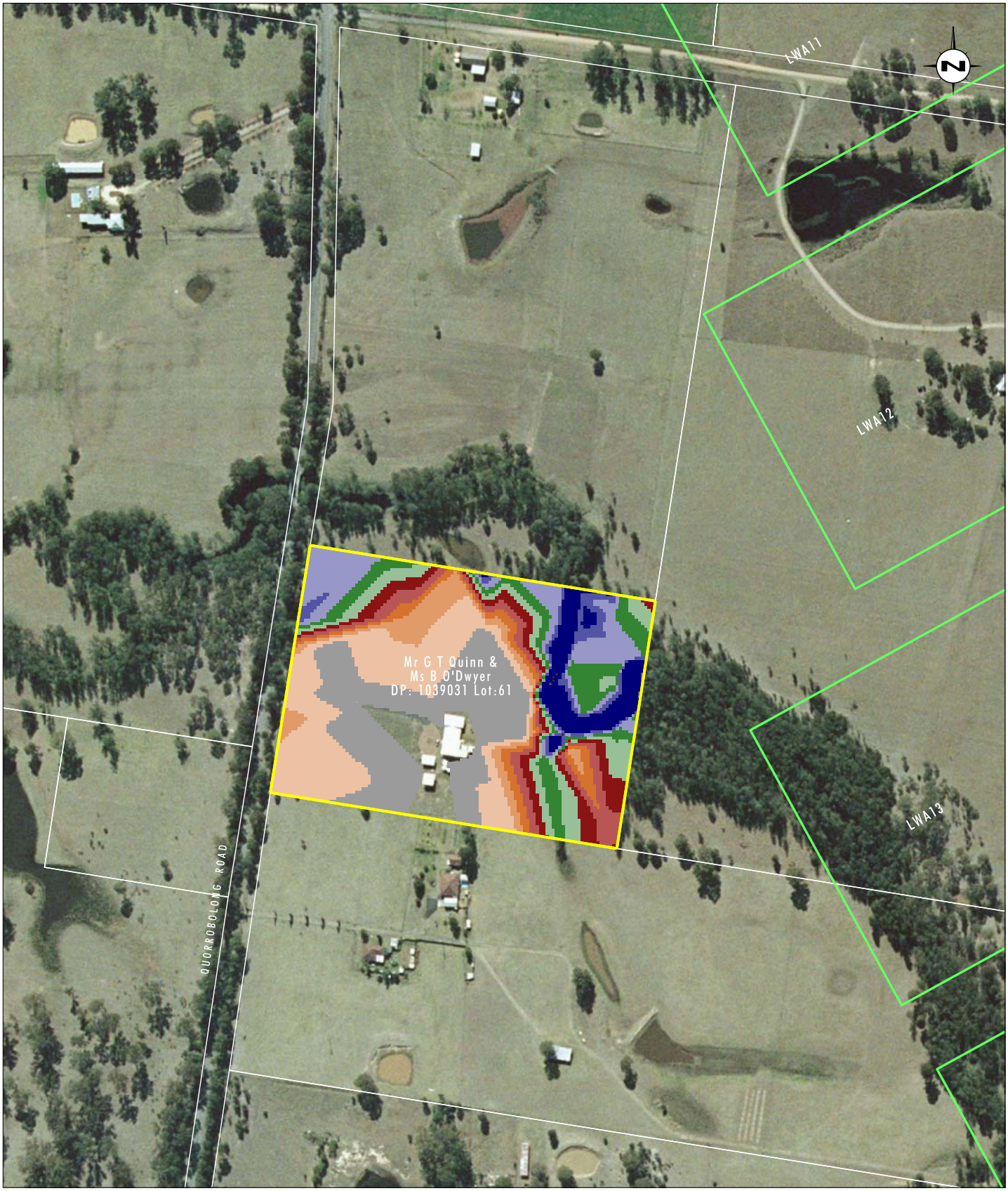
As shown on **Figures 3.2** to **3.4** and described above, the flood extent and depth in the vicinity of the O'Dwyer and Quinn residence for the proposed Stage 3 Modification maximum predicted subsidence is not predicted to change significantly from the pre-mining scenario. Inundation of the house is not predicted for the modelled 100 year average recurrence interval storm event for maximum predicted subsidence.

4. If subsidence is greater than the levels predicted in the Environmental Assessment, the impacts will be of even greater magnitude.

Response

A review of the flood modelling undertaken for the upper bound subsidence case for the proposed Stage 3 Modification indicates that with upper bound subsidence flooding at the O'Dwyer and Quinn residence is not predicted to increase.

5. Longwall extraction by the mine over the past year has caused ground tremors as the strata subsides and settles. These tremors, particularly at night, are disturbing and causing distress to our three young children. Tremors are expected to continue for years to come as the mine extracts coal throughout the Stage Three area. The intensity of the tremors we experience will only increase as extraction approaches our property.



Source: Longwall Layout: Austar Coal Mine, Aerial Photography: AAM Hatch 2006
Note: Dwellings only shown for flood model extent

0 50 100 200m
1:4000

Legend

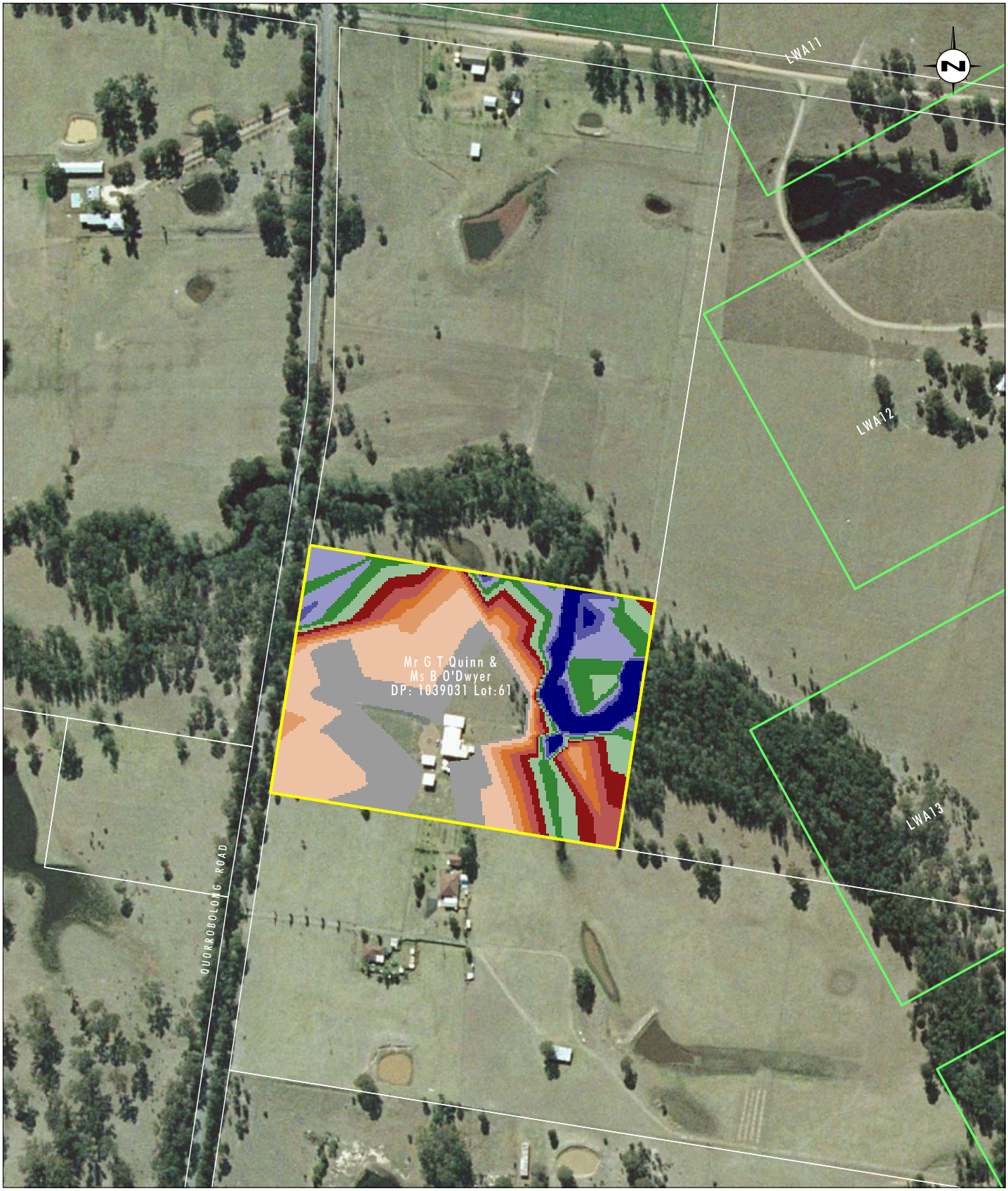
- Layout for Proposed Stage 3 Modification Longwall Panels
- O'Dwyer and Quinn Property Boundary

Water Depth (m)

- Range [0.001 : 0.100]
- Range [0.100 : 0.300]
- Range [0.300 : 0.500]
- Range [0.500 : 0.700]
- Range [0.700 : 0.900]
- Range [0.900 : 1.100]
- Range [1.100 : 1.300]
- Range [1.300 : 1.500]
- Range [1.500 : 1.700]
- Range [1.700 : 1.900]
- Range [>1.900]

FIGURE 3.2

100 year ARI Storm: Maximum Water Depths Pre Stage 2 Mining Landform at O'Dwyer and Quinn Property



Source: Longwall Layout: Austar Coal Mine, Aerial Photography: AAM Hatch 2006
Note: Dwellings only shown for flood model extent

0 50 100 200m
1:4000

Legend

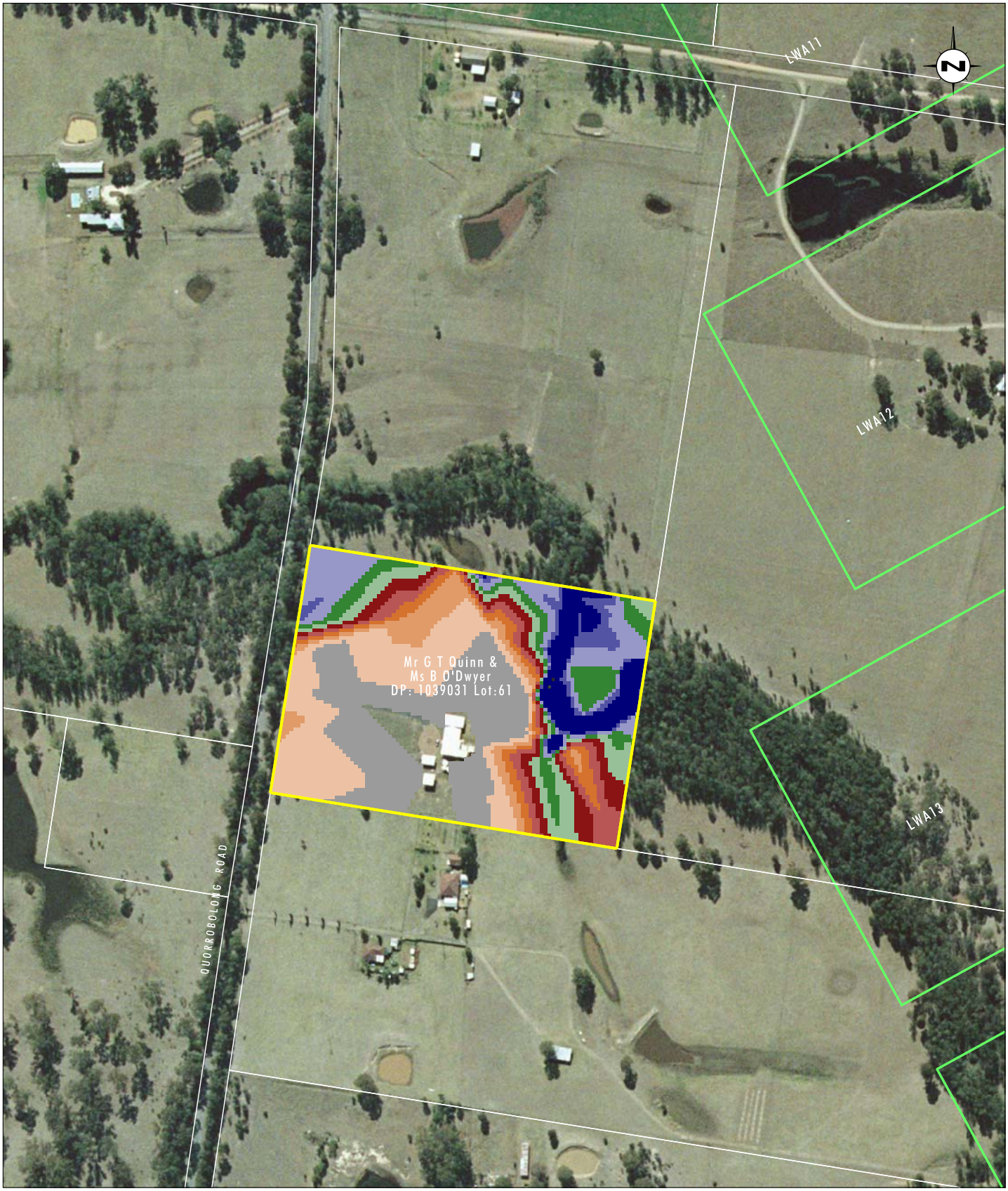
- Layout for Proposed Stage 3 Modification Longwall Panels
- O'Dwyer and Quinn Property Boundary

Water Depth (m)

- Range [0.001 : 0.100]
- Range [0.100 : 0.300]
- Range [0.300 : 0.500]
- Range [0.500 : 0.700]
- Range [0.700 : 0.900]
- Range [0.900 : 1.100]
- Range [1.100 : 1.300]
- Range [1.300 : 1.500]
- Range [1.500 : 1.700]
- Range [1.700 : 1.900]
- Range [>1.900]

FIGURE 3.3

100 year ARI Storm: Maximum Modelled Water Depths for Maximum Predicted Subsidence (Approved Stage 3) at O'Dwyer and Quinn Property



Source: Longwall Layout: Austar Coal Mine, Aerial Photography: AAM Hatch 2006
Note: Dwellings only shown for flood model extent

0 50 100 200m
1:4000

Legend

- Layout for Proposed Stage 3 Modification Longwall Panels
- O'Dwyer and Quinn Property Boundary

Water Depth (m)

- Range [0.001 : 0.100]
- Range [0.100 : 0.300]
- Range [0.300 : 0.500]
- Range [0.500 : 0.700]
- Range [0.700 : 0.900]
- Range [0.900 : 1.100]
- Range [1.100 : 1.300]
- Range [1.300 : 1.500]
- Range [1.500 : 1.700]
- Range [1.700 : 1.900]
- Range [>1.900]

FIGURE 3.4

100 year ARI Storm: Maximum Modelled Water Depths for Maximum Predicted Subsidence (Stage 3 Modification) at O'Dwyer and Quinn Property

Response

A discussion of potential vibration impacts from the proposed Stage 3 Modification Project is provided in Section 7.2 of the EA. As set out in the EA, vibration events have been recorded in the Stage 2 area up to ten times per month between August 2009 and March 2011, with all but one event remaining below the minimal risk of cosmetic damage criteria of 15 mm/s. The majority of vibration events have remained below DECC (2006) daytime preferred criteria of 8.6 mm/s. As described in the EA, the vibration experienced within the Stage 2 mining area is within the range of likely vibration levels that are expected as a result of mining in the Stage 3 Modification area.

3.3 Landowner Submission: Bronwyn O'Dwyer and Glenn Quinn

1. The proposal will increase the impact from Stage Three as previously approved, as our entire property, including our home, is now included within the subsidence envelope; whereas previously, the subsidence envelope cut across the front third of our property.

Response

As discussed in the EA, the overall area of surface impact has reduced by 140 ha, as a result of the proposed Stage 3 Modification mine plan, however the location of surface impact has altered in some areas. Surface impacts are proposed to be decreased in the west of the approved Stage 3 area via the removal of Longwall A6, decreased in the south-east and north-west by reorientation of longwall panels, and increased for a section of land between the approved Longwall A6 and the western extent of approved Longwalls A7 to A17. The O'Dwyer and Quinn property is located within the section of land between the approved Longwall A6 and Longwalls A7 to A17 as shown in **Figure 3.1**. The modelled change in subsidence impact to the O'Dwyer and Quinn residence from the Stage 3 mine plan as approved to the proposed Stage 3 Modification is provided in **Table 3.1**.

Table 3.1 – Maximum Predicted Subsidence Parameters for the O'Dwyer and Quinn Residence

Parameter	Value
Maximum Predicted Subsidence after all Longwalls (mm)	80
Maximum Predicted Tilt after Any Longwall (mm/m)	0.6
Maximum Predicted Hogging Curvature at any Time (1/km)	<0.01
Maximum Predicted Sagging Curvature at any Time (1/km)	<0.01

2. Our house floor level height was built to Council requirements. During the flooding we experienced here in 2007, we witnessed floodwaters rising to within an inch of the floor level of our house. We believe that should the Stage Three modification proceed, the consequent subsidence will cause our house to be inundated during the next major flood event.

Response

A detailed Flooding and Drainage Assessment was undertaken for the proposed Stage 3 Modification Project and was provided as Appendix 7 of the EA. The Flooding and Drainage Assessment included detailed modelling of flood depth, velocity and hazard in Cony, Sandy and Quorrobolong Creeks and the associated floodplain. The results of the flood modelling at the O'Dwyer and Quinn property for the pre-mining, Stage 3 as approved and proposed Stage 3 Modification landforms are shown in **Figures 3.2** to **3.4**.

As shown in **Figures 3.2** to **3.4**, the modelling for the pre-mining landform predicted that the edge of the flood extent would be in close proximity to the O'Dwyer and Quinn residence. Modelling of the Stage 3 maximum predicted subsidence landform predicted no significant change to the flood depth or extent in the immediate vicinity of the O'Dwyer and Quinn residence (**Figures 3.2** and **3.3**). Modelling of the proposed Stage 3 Modification maximum predicted subsidence landform also indicates no significant change to pre-mining flood extent and depth (**Figure 3.4**).

3. We understand that such flooding is not eligible for any compensation or assistance from the Mine Subsidence Board, or indeed, by any home insurance policy as its direct cause will be the activities of Austar Mine. Consequently, we will suffer significant financial hardship when our home is inundated.

Response

As shown on **Figures 3.2** to **3.4** and described above, the flood extent and depth in the vicinity of the O'Dwyer and Quinn residence for the proposed Stage 3 Modification maximum predicted subsidence is not predicted to change significantly from the pre-mining scenario. Inundation of the house is not predicted for the modelled 100 year average recurrence interval storm event for maximum predicted subsidence.

4. If subsidence is greater than the levels predicted in the Environmental Assessment, the impacts will be of even greater magnitude.

Response

A review of the flood modelling undertaken for the upper bound subsidence case for the proposed Stage 3 Modification indicates that with upper bound subsidence flooding at the O'Dwyer and Quinn residence is not predicted to increase.

5. Longwall extraction by the mine over the past year has caused ground tremors as the strata subsides and settles. These tremors, particularly at night, are disturbing and causing distress to our three young children. Tremors are expected to continue for years to come as the mine extracts coal throughout the Stage Three area. The intensity of the tremors we experience will only increase as extraction approaches our property.

Response

A discussion of potential vibration impacts from the proposed Stage 3 Modification Project is provided in Section 7.2 of the EA. As set out in the EA, vibration events have been recorded in the Stage 2 area up to ten times per month between August 2009 and March 2011, with all but one event remaining below the minimal risk of cosmetic damage criteria of 15 mm/s. The majority of vibration events have remained below DECC (2006) daytime preferred criteria of 8.6 mm/s. As described in the EA, the vibration experienced within the Stage 2 mining area is within the range of likely vibration levels that are expected as a result of mining in the Stage 3 Modification area.

3.4 Landowner Submission: Glenn Quinn

1. During the flooding we experienced in 2007, we witnessed floodwaters rising to within an inch of the floor level of our house. We believe that should the Stage Three modification proceed, the consequent subsidence will cause our house to be inundated during the next major flood event.

Response

A detailed Flooding and Drainage Assessment was undertaken for the proposed Stage 3 Modification Project and was provided as Appendix 7 of the EA. The Flooding and Drainage Assessment included detailed modelling of flood depth, velocity and hazard in Cony, Sandy and Quorrobolong Creeks and the associated floodplain. The results of the flood modelling at the O'Dwyer and Quinn property for the pre-mining, Stage 3 as approved and proposed Stage 3 Modification landforms are shown in **Figures 3.2** to **3.4**.

As shown in **Figures 3.2** to **3.4**, the modelling for the pre-mining landform predicted that the edge of the flood extent would be in close proximity to the O'Dwyer and Quinn residence. Modelling of the Stage 3 maximum predicted subsidence landform predicted no significant change to the flood depth or extent in the immediate vicinity of the O'Dwyer and Quinn residence (**Figures 3.2** and **3.3**). Modelling of the proposed Stage 3 Modification maximum predicted subsidence landform also indicates no significant change to pre-mining flood extent and depth (**Figure 3.4**).

3.5 Landowner Submission: Matthew Wilson

1. We bought the vacant land in November 2005 and at the time we obtained from the Mine Subsidence Board a certificate stating that, 'the property is not within a proclaimed Mine Subsidence District' on the strength of this partial information presented by the mine subsidence board, we made an educated decision to build our family home.

Response

The information provided by the Mine Subsidence Board was correct as the area was not a proclaimed mine subsidence district. In order to determine whether mining or exploration titles and/or mining or exploration applications affect a parcel of land, conveyancing searches may be undertaken by members of the public or solicitors acting on behalf of clients who are purchasing a parcel of land (Primary Industries Minerals and Petroleum, 2011). Further information on title searches is available from the NSW Department of Trade and Investment, Regional Infrastructure and Services, Division of Resources and Energy.

2. Property values and even overall non-salability of our home if desired or required are affected now and will continually be affected moving forward. The reason for my confidence is I am a Licensed Real Estate Agent who has worked for the last 20 years in the township of Morisset and have first hand seen the impact of the Mandalong Mine and its result in negative buyer sentiment. Even putting my experience to one side, no reasonable person would purchase acreage for market value knowing that a mine is going under the property or has already done so. All the reports under the sun will not convince a buyer to pay correct market value with this major appendage attached, that we as owners never asked for.

Response

Concern that mining in the area will impact on property values is a common reaction to any proposed development, including mining. These concerns are based on a perception that mining in the Stage 3 area will have an adverse impact on land and water resources and built features, and hence will result in reduced property value. Detailed assessment as set out in the EA has indicated that the proposed Stage 3 Modification project will not have a significant adverse impact on the amenity and natural values of the area, including visual attributes, ecology, stream flow, usable groundwater resources or agricultural productivity. In addition, subsidence modelling indicates that residences will remain safe, serviceable and repairable during subsidence.

Maximum predicted subsidence parameters for the Wilson residence are provided in **Table 3.2**. Any impacts on the house or other property improvements are expected to be minor, which could be repaired by the Mine Subsidence Board in consultation with the landholder using normal building maintenance techniques. Austar has committed to the preparation of Built Features Management Plans for all properties within the 20 millimetres subsidence contour in consultation with the relevant landholder to ensure that the impacts of subsidence are appropriately managed. Consequently, it is considered that long term significant adverse impact on property value is unlikely.

Table 3.2 – Maximum Predicted Subsidence Parameters for the Wilson Residence

Parameter	Value
Maximum Predicted Subsidence after all Longwalls (mm)	1475
Maximum Predicted Tilt after Any Longwall (mm/m)	2.5
Maximum Predicted Hogging Curvature at any Time (1/km)	0.04
Maximum Predicted Sagging Curvature at any Time (1/km)	0.02

Property values are impacted by a wide range of factors including:

- the state of economy;
- availability of credit;
- location to employment and services;
- aesthetic features such as rural amenity;
- agricultural productivity; and
- public perception.

As discussed, approval of the proposed Stage 3 Modification will not affect agricultural productivity, rural amenity and locational attributes of properties within the development area. There is anecdotal information such as raised in the Wilson submission that public perception may have a short term psychological impact on potential buyers making comparative assessments of properties. Typically this perception changes once approval to mine is granted and mining commences. Austar has indicated that it encourages any potential buyers or real estate agents to contact them so the perceived effects of mining can be explained in the context of this mining operation being a low impact one.

It is noted that Mr Wilson has observed land price fluctuations in the Mandalong Valley as a result of the Mandalong Mine. The Mandalong Mine is an underground coal mine with mining occurring at depths of between 140 metres to 270 metres below ground surface, compared to mining depths of 455 metres to 760 metres at Austar Coal Mine. Geological conditions in the Mandalong Valley are also significantly different to those of the Quorrobolong Valley, the most significant of which is the absence of the Branxton Formation acting as a beam to reduce the differential subsidence impact on the surface (refer to **Section 2.2** for further details of the effect of the Branxton Formation). The combination of mining depth and geological conditions in the Mandalong Valley mean that the surface expression of subsidence in that location is significantly different to the predicted subsidence impact in the Quorrobolong Valley as a result of Austar Coal Mine. It is further noted that at the time of approval of Mandalong Mine, subsidence of up to 3 metres was predicted as a result of longwall extraction, compared to 1675 millimetres in the Austar Coal Mine proposed Stage 3 Modification Project. As a result of these differences, it is not appropriate to directly relate short term changes in the price of property in the Mandalong Valley with potential future changes in property value in the Quorrobolong Valley. The area directly to the south of the Stage 3 mining area has been previously mined by the colliery known as Ellalong. In this area there has been consistent sales and property value growth over the past decade with landholders having no ongoing impact of the previous mining operations.

3. Austar are happy to offer a sharing in the benefits agreement. I have had the opportunity to read a draft example of this agreement and can say first hand it reflects more a major commercial agreement which understandable would be relevant between Austar and a property owner who is on 50, 100 or 200 acres not my wife and I who own 5 acres. With my wife and I only being on five acres, this avenue of 'Sharing the Benefits' is not viable, when weighing up $70,000 against rights lost by us and secured by Austar with the most concerning being a Caveat placed on our title as well as us losing the right given to us in the 2009 Project Approval by the then state government re requiring Austar to purchase our property if the home is damaged beyond safe, serviceable and repairable.

Response

Austar offers the Access and Compensation Agreement known as the 'Sharing The Benefits Agreement' to all landholders within the Stage 2 and Stage 3 mining area on an opt in basis. Austar recognises that the agreement may not suit all individual circumstances and recommends that the agreement is assessed by individual landholders on its merits. Austar offers assistance to enable landholders to seek legal or financial advice in relation to the terms of the agreement. Compensation for those that do not choose to be party to the agreement remains available under existing provisions in the *Mining Act 1992* and the *Mine Subsidence Compensation Act 1961*.

Based on subsidence predictions in the EA (**Section 7.1**), all houses within the Stage 3 Modification Area are expected to remain safe, serviceable and repairable throughout the mining period. Subsidence monitoring has confirmed that subsidence from the current mining of the Stage 2 area is within maximum predicted conventional subsidence levels. In addition, all houses within the Stage 3 Modification Area are predicted to remain within safe conditions even if upperbound tilt or curvatures were to occur.

4. We could try to sell the property now, but as discussed above this would not be successful with us legally and ethically having to disclose to a buyer of the intention to do longwall mining under the home in the next several years.

Response

Austar has informed Umwelt of one property successfully being sold within the Stage 2/Stage 3 mining area in 2009 and is not aware of any other properties being offered to the market in this time.

5. Either way we have a long and sometimes depressing process moving forward with our main asset being a four year old home being ultimately damaged resulting in our lives being disrupted during repairs.

Response

The subsidence modelling undertaken by MSEC indicates that the Wilson residence will remain safe, serviceable and repairable throughout the life of mining in the Stage 3 area and in fact impacts are reduced by the proposed Modification over that of the already approved Project. Damage to the residence is likely to be minor in nature and readily repaired using standard building techniques. Austar will work with the landholder to prepare a Built Features Management Plan for the property, ensuring that identified management measures are implemented in a way that minimises disruption to the landholder.

6. All we ask is that Austar look differently at our predicament of being the only five acre parcel with Top Wall Caving going under our home, and not pigeon hole us with all the larger rural holdings in the valley, I believe that Austar have come up with a win win plan of attack in dealing with other 99 per cent of landholders but again being the only five acre parcel in Stage 3, I believe they can not suggest that this offering of 'Sharing the Benefits' at $1 per ton is fair or relevant to us considering our land size.

   In light of this we would ask that Austar consider acquiring our property if we so desire, as per Schedule 5 Land Sect 5 Land Acquisition in the 2009 Approval, effectively giving us Acquisition Rights. I have concern with our ability to negotiate with a large mining company moving forward hence if no agreement can be reached under the 'Sharing the Benefits' offering then we could fall back on Austar acquiring the property.

Response

Based on subsidence predictions in the EA, all houses within the Stage 3 Modification Area are expected to remain safe, serviceable and repairable throughout the mining period. Subsidence monitoring has confirmed that subsidence from the current mining of Stage 2 area is within maximum predicted conventional subsidence levels. In addition, all houses within the Stage 3 Modification Area are predicted to remain within safe, serviceable and repairable conditions even if upperbound tilt or curvatures were to occur. This means that acquisition triggered by subsidence impacts is highly unlikely.

Austar has indicated that it considers the conditions within the 2009 Stage 3 approval remain appropriate to manage impacts across all landholders.

The Access and Compensation Agreement known as the 'Sharing The Benefits Agreement' is a matter for individual landholders to consider, and Austar has acknowledged that each landholder's circumstances are different. Compensation for those that do not choose to be party to the agreement remains available under the compensable loss provisions in the *Mining Act 1992*, and also under the current acquisition conditions in the 2009 Approval.

4.0 References

MSEC 2011. Austar Coal Mine: Stage 3 Longwalls A7 to A19. Subsidence Predictions and Impact Assessments for Natural Features and Surface Infrastructure in Support of a Modification to the Development Consent. Report prepared for Austar Coal Mine Pty Limited.

Primary Industries Minerals and Petroleum, 2011, Minerals & Petroleum Titles Conveyancing Searches http://www.dpi.nsw.gov.au/minerals/titles/title_searches/conveyancing

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