APPENDIX 6

Supplementary Subsidence Impact Assessment for Property A15

Austar Coal Mine Pty Limited

REPORT

on

THE PREDICTION OF SUBSIDENCE PARAMETERS AND THE ASSESSMENT OF MINE SUBSIDENCE IMPACTS FOR THE STRUCTURES ON PROPERTY A15 RESULTING FROM THE EXTRACTION OF THE PROPOSED LONGWALL A5A IN STAGE 2 AT THE AUSTAR COAL MINE

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Associated reports:- MSEC417 (Revision C) – The Prediction of Subsidence Parameters and the Assessment of Mine Subsidence Impacts on the Natural Features and Surface Infrastructure Resulting from the Extraction of the Proposed Longwall A5a in Stage 2 at the Austar Coal Mine (July 2010).

MSEC309 (Revision D) – The Prediction of Subsidence Parameters and the Assessment of Mine Subsidence Impacts on Natural Features and Surface Infrastructure Resulting from the Extraction of Proposed Austar Longwalls A6 to A17 (September 2008)

Background reports available at *www.minesubsidence.com:-*

Introduction to Longwall Mining and Subsidence (Revision A)
General Discussion of Mine Subsidence Ground Movements (Revision A)
Mine Subsidence Damage to Building Structures (Revision A)

CHAPTER 1. PREDICTIONS AND IMPACT ASSESSMENTS FOR THE STRUCTURES ON PROPERTY A15 RESULTING FROM THE EXTRACTION OF THE PROPOSED LONGWALL A5A

1.1. Background

Austar proposes to extract an additional longwall in Stage 2, referred to as Longwall A5a, which is located immediately to the south-east of Longwalls A3 to A5. The locations of these longwalls are shown in Drawing No. MSEC461-01, in Appendix A. The predictions and impact assessments for Longwall A5a were provided in Report No. MSEC417 (Rev. C).

Austar has approval to extract the Stage 3 Longwalls A6 to A17. The location of Longwall A6, which is the longwall closest to the proposed Longwall A5a, is shown in Drawing No. MSEC461-01. The predictions and impact assessments for Longwalls A6 to A17, which also included the effects of the Stage 2 Longwalls A3 to A5, were provided in Report No. MSEC309 (Rev. D).

The building structures on Property A15, which are located above or adjacent to the approved Stage 3 Longwall A6, are shown in Drawing No. MSEC461-01. These structures are located at a minimum distance of 350 metres south-east of the proposed Longwall A5a, at their closest point.

This report provides the predictions and impact assessments for the structures on Property A15, resulting from the extraction of the additional Longwall A5a, including the effects of the Stage 2 Longwalls A3 to A5 and the approved Stage 3 Longwalls A6 to A17.

1.2. Structures on Property A15

The building structures on Property A15 include a single-storey house (A15a), non-residential building structures (A15b to A15e) and two poultry sheds (A15f and A15g). There is also a pool (A15p01) and water tank (A15t01) on this property.

A summary of the maximum predicted incremental subsidence parameters at the structures, resulting from the extraction of the proposed Longwall A5a only, is provided in Table 1.1. A summary of the maximum predicted total subsidence parameters at the structures, resulting from the extraction of all Stage 2 Longwalls A3 to A5a, is provided in Table 1.2.

Table 1.1 Maximum Predicted Conventional Subsidence, Tilt and Curvature for the Structures Resulting from the Extraction of Longwall A5a Only

Structure Ref.	Maximum Predicted Incremental Conventional Subsidence (mm)	Maximum Predicted Incremental Conventional Tilt (mm/m)	Maximum Predicted Incremental Conventional Hogging Curvature (km^{-1})	Maximum Predicted Incremental Conventional Sagging Curvature (km^{-1})
A15a to A15g A15p01 & A15t01	< 20	< 0.5	< 0.01	< 0.01

Table 1.2 Maximum Predicted Conventional Subsidence, Tilt and Curvature for the Structures Resulting from the Extraction of the Stage 2 Longwalls A3 to A5a

Structure Ref.	Maximum Predicted Total Conventional Subsidence (mm)	Maximum Predicted Total Conventional Tilt (mm/m)	Maximum Predicted Total Conventional Hogging Curvature (km^{-1})	Maximum Predicted Total Conventional Sagging Curvature (km^{-1})
A15a to A15g A15p01 & A15t01	< 20	< 0.5	< 0.01	< 0.01

It can be seen from the above tables, that the predicted total subsidence at the structures on Property A15, resulting from the extraction of the Stage 2 Longwalls A3 to A5a, are all less than 20 mm. The maximum predicted tilts and strains at these structures, resulting from the extraction of the Stage 2 Longwalls A3 to A5a, are small and are expected to be in the order of survey tolerance.

The predicted additional movements at the structures on Property A15, resulting from the extraction of the proposed Longwall A5a, are negligible when compared with the predicted movements resulting from the extraction of the approved Stage 3 longwalls, which were provided in Report No. MSEC309 (Rev. D). It is noted, that the predictions provided in that report also included the predicted movements resulting from the extraction of Stage 2 Longwalls A3 to A5.

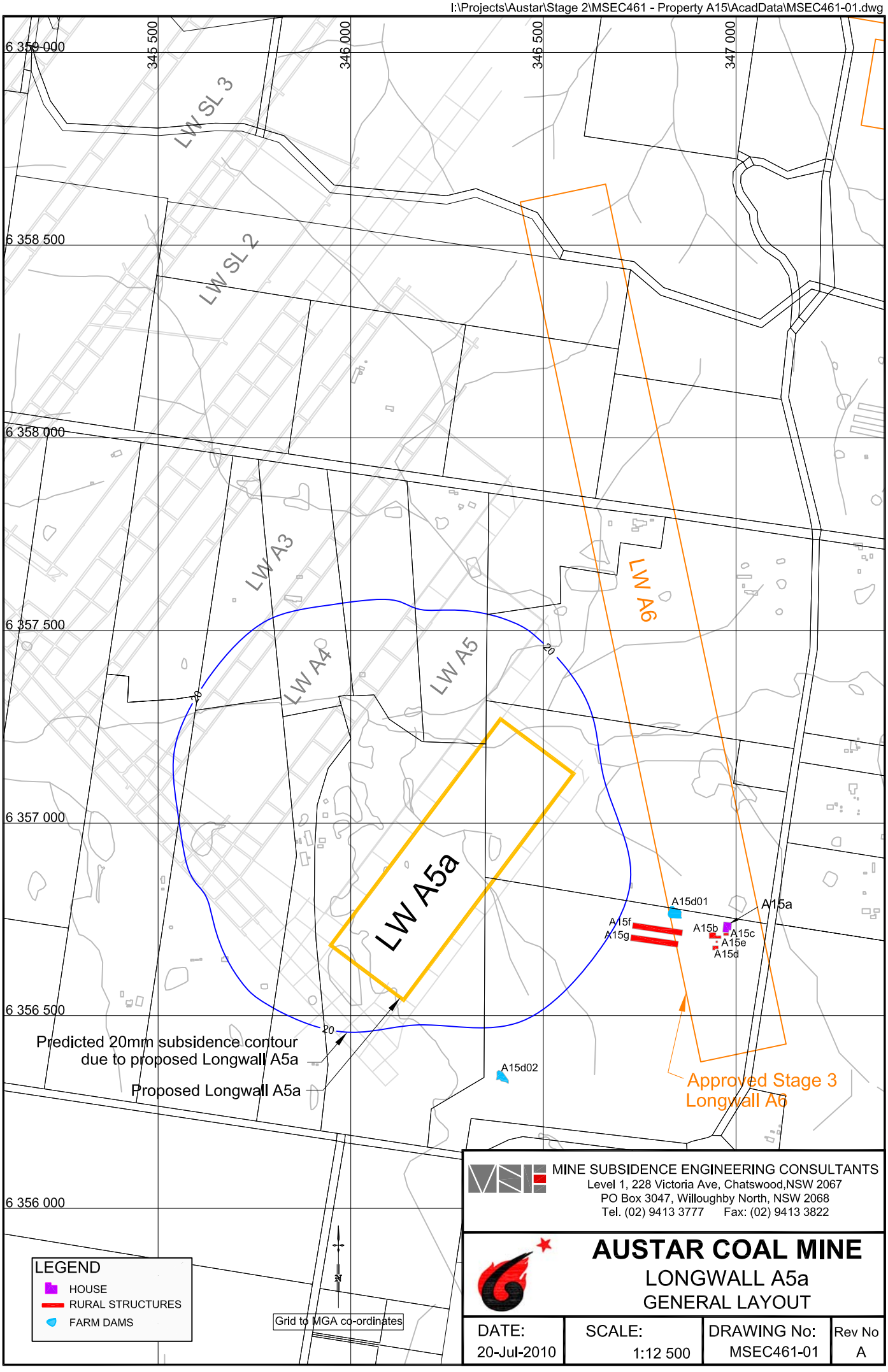
The impact assessments for the structures on Property A15, which were provided in Report No. MSEC309 for the approved Stage 3 longwalls, do no change as the result of the extraction of the proposed Longwall A5a.

In Report No. MSEC309, the house (Ref. A15a) was assessed to experience Category 0 impacts. Whilst it is possible that the house could experience greater impacts, as the result of non-systematic anomalous movements, the likelihood of this occurring is considered very low, less than 1 %, based on the extensive experience of mining beneath and adjacent to building structures in the NSW Coalfields.

In Report No. MSEC309, the rural building structures (Refs. A15b to A15e) were assessed to experience Category 0 impacts and the poultry sheds (Refs. A15f and A15g) were assessed to experience Category 2 (i.e. slight) impacts. As stated in that report, it would be expected, that any impacts on these structures could be remediated using well established building techniques.

APPENDIX A. DRAWINGS

I:\Projects\Austar\Stage 2\MSEC461 - Property A15\AcadData\MSEC461-01.dwg



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AUSTAR COAL MINE

LONGWALL A5a
GENERAL LAYOUT

DATE:	SCALE:	DRAWING No:	Rev No
20-Jul-2010	1:12 500	MSEC461-01	A