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13th May 2013

Wambo Coal Pty Ltd
c/-Resource Strategies Pty Ltd
Post Office Box 1842
Milton QLD 4064

For the attention of Mr. Troy Favell

Dear Troy,

RE: Wambo Coal Mine – North Wambo Underground Mine Modification
Predicted Cumulative Subsidence Contours and Maximum Predicted Subsidence Parameters due to Mining in the Whybrow, Wambo, Arrowfield and Bowfield Seams

Mine Subsidence Engineering Consultants Pty Ltd (MSEC) was previously engaged by Wambo Coal Pty Ltd to prepare subsidence predictions and impact assessments for the proposed Wambo Seam Longwalls 9 and 10 (WMLW9 and WMLW10). Report No. MSEC495 (Rev. C) was issued in October 2012, which supported the Modification Application for the North Wambo Underground Mine (the Modification).

It was described in Section 4.2.1 of Report No. MSEC495 that:-

> "The *predicted subsidence parameters and the predicted subsidence contours provided in this report do not include the subsidence which occurred as a result of mining in the Whybrow Seam. That is, the current conditions within the Study Area (i.e. post mining in the Whybrow Seam) have been taken as the baseline for the predictions and impact assessments provided in this report. Whilst the predicted subsidence parameters resulting from the mining in the Whybrow Seam have not been included, the affects of these existing workings on the subsidence resulting from mining in the Wambo, Arrowfield and Bowfield Seams have been considered*".

This letter report provides additional information to support the Modification, as requested by the Department of Planning and Infrastructure, by including the previous subsidence movements due to the existing Homestead/Wollemi workings in the Whybrow Seam in the predicted mine subsidence movements.

The predicted subsidence contours and the maximum predicted subsidence parameters have been provided in this letter report for two cases:-

- The *Approved Layout* which includes the existing workings in the Whybrow Seam, the approved longwalls in the Wambo Seam (i.e. WMLW1 to WMLW8) and the future longwalls in the Arrowfield and Bowfield Seams, and
- The *Modified Layout* which includes the existing workings in the Whybrow Seam, the approved and proposed longwalls in the Wambo Seam (i.e. WMLW1 to WMLW10) and the future longwalls in the Arrowfield and Bowfield Seams.

The predicted mine subsidence movements have been obtained using the Incremental Profile Method, which was been calibrated for multi-seam conditions, as described in Section 3.3 of Report No. MSEC495.

The predicted total conventional subsidence contours, based on the *Approved Layout* and based on the *Modified Layout*, are shown in Drawing Nos. MSEC495-101 and MSEC495-102, respectively, at the end of this letter report.

Summaries of the maximum predicted values of total conventional subsidence, tilt and curvature, based on the *Approved Layout* and based on the *Modified Layout*, are provided in Table 1 and Table 2, respectively. The values provided in these tables are the maxima within the Study Area, which was defined in Section 2.1 of Report MSEC495, being the surface area bounded by the greater of the 26.5 degree angle of draw line from the extents of WMLW9 and WMLW10 and the predicted 20 mm vertical subsidence contour due to the extraction of these proposed longwalls.

Table 1 – Maximum Predicted Total Conventional Subsidence, Tilt and Curvature due to Mining in the Whybrow, Wambo, Arrowfield and Bowfield Seams Based on Approved Layout

Seams	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})
Whybrow Seam	2,000	40	1.5	1.5
Whybrow and Wambo Seams	4,200	60	3.0	3.0
Whybrow, Wambo and Arrowfield Seams	6,600	80	3.5	3.5
Whybrow, Wambo, Arrowfield and Bowfield Seams	9,300	100	4.0	4.0

Table 2 – Maximum Predicted Total Conventional Subsidence, Tilt and Curvature due to Mining in the Whybrow, Wambo, Arrowfield and Bowfield Seams Based on Modified Layout

Seams	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})
Whybrow Seam	2,000	40	1.5	1.5
Whybrow and Wambo Seams	4,600	60	3.0	3.0
Whybrow, Wambo and Arrowfield Seams	7,100	80	3.5	3.5
Whybrow, Wambo, Arrowfield and Bowfield Seams	9,900	100	4.0	4.0

It can be seen from the above tables, that the maximum predicted total vertical subsidence within the Study Area, based on the *Modified Layout*, of 9,900 mm is similar to but slightly greater (i.e. 3 %) than the maximum predicted based on the *Approved Layout* using the calibrated Incremental Profile Method.

The maximum predicted total tilt, hogging curvature and sagging curvature within the Study Area, based on the *Modified Layout*, are similar to the maxima predicted based on the *Approved Layout* using the calibrated Incremental Profile Method.

The predicted profiles of conventional subsidence, tilt and curvature along Prediction Lines 1 and 2 have also been illustrated in Fig. 1 and Fig. 2, respectively, at the end of this letter report. The locations of these prediction lines are shown in Drawing Nos. MSEC495-101 and MSEC495-102.

The predicted profiles resulting from the extraction of the existing longwalls in the Whybrow Seam are shown as the solid grey lines in these figures. The predicted profiles resulting from the extraction of the approved WMLW1 to WMLW8 in the Wambo Seam are shown as the solid cyan lines. The predicted profiles after the completion of the proposed WMLW9 and WMLW10 in the Wambo Seam are shown as the solid blue lines.

The predicted profiles after the completion of the future longwalls in the Arrowfield Seam are shown as the dashed green lines (*Approved Layout*) and solid green lines (*Modified Layout*) in these figures. The predicted profiles after the completion of the future longwalls in the Bowfield Seam are shown as the dashed red lines (*Approved Layout*) and solid red lines (*Modified Layout*).

I trust that this provides the necessary additional information to support the Modification.

Yours sincerely

James Barbato

James Barbato
Mine Subsidence Engineering Consultants

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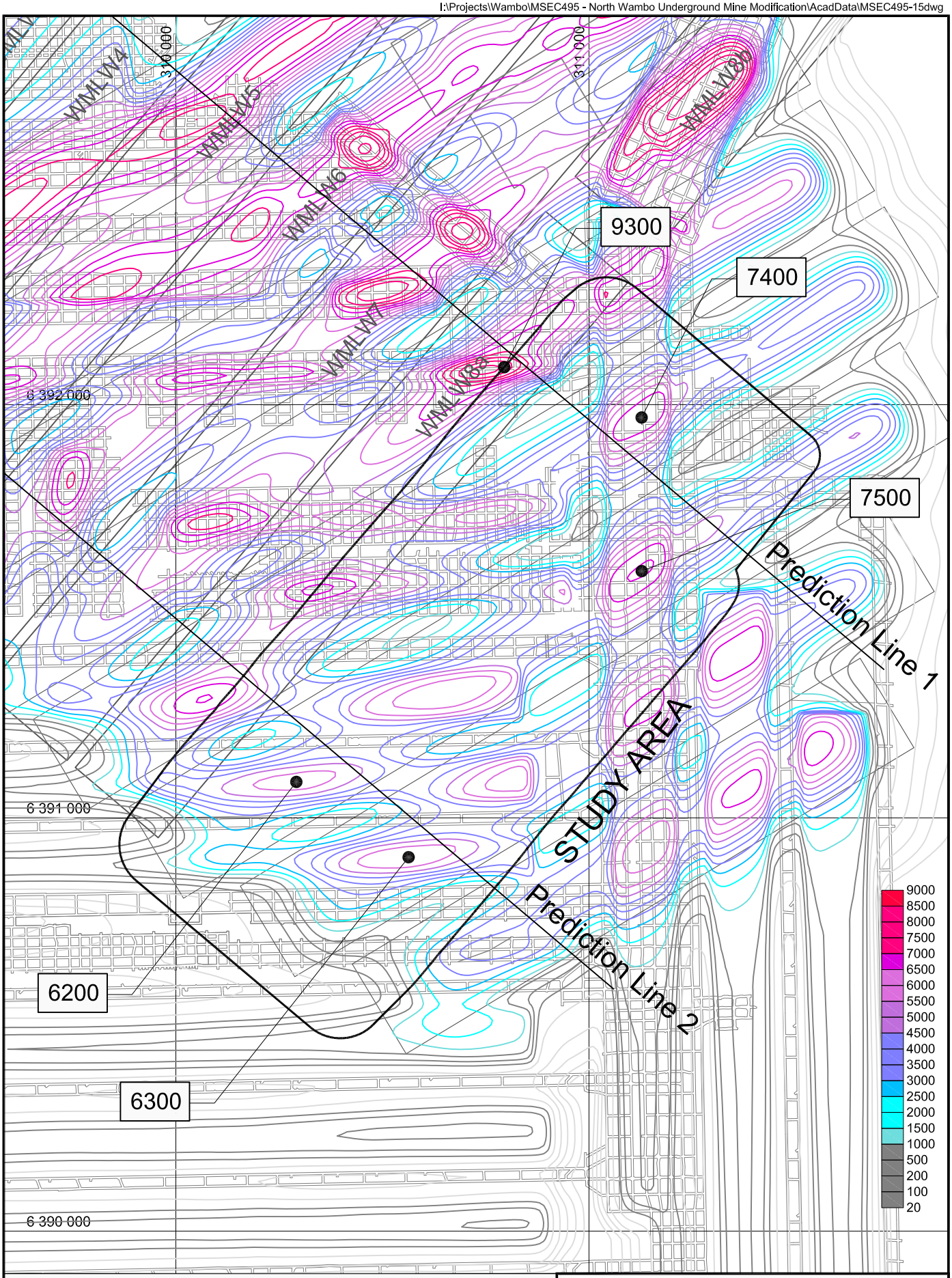

PREDICTED SUBSIDENCE CONTOURS
ARE IN MILLIMETRES (mm)

Grid to MGA co-ordinates

NOTE:
The value of the Subsidence Contours, from the outside to the inside of the panels, are 20mm, 50mm, 100mm, 200mm, 500mm and so forth, in 500mm increments.
The maximum subsidence over each longwall is shown in brackets - ie. (9000)

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Peabody ENERGY

NORTH WAMBO UNDERGROUND MINE

PREDICTED TOTAL SUBSIDENCE CONTOURS DUE TO WHYBROW, WAMBO, ARROWFIELD & BOWFIELD SEAMS BASED ON THE APPROVED LAYOUT

DATE:	SCALE:	DRAWING No:	Rev No
13-May-2013	1:12500	MSEC495-101	A

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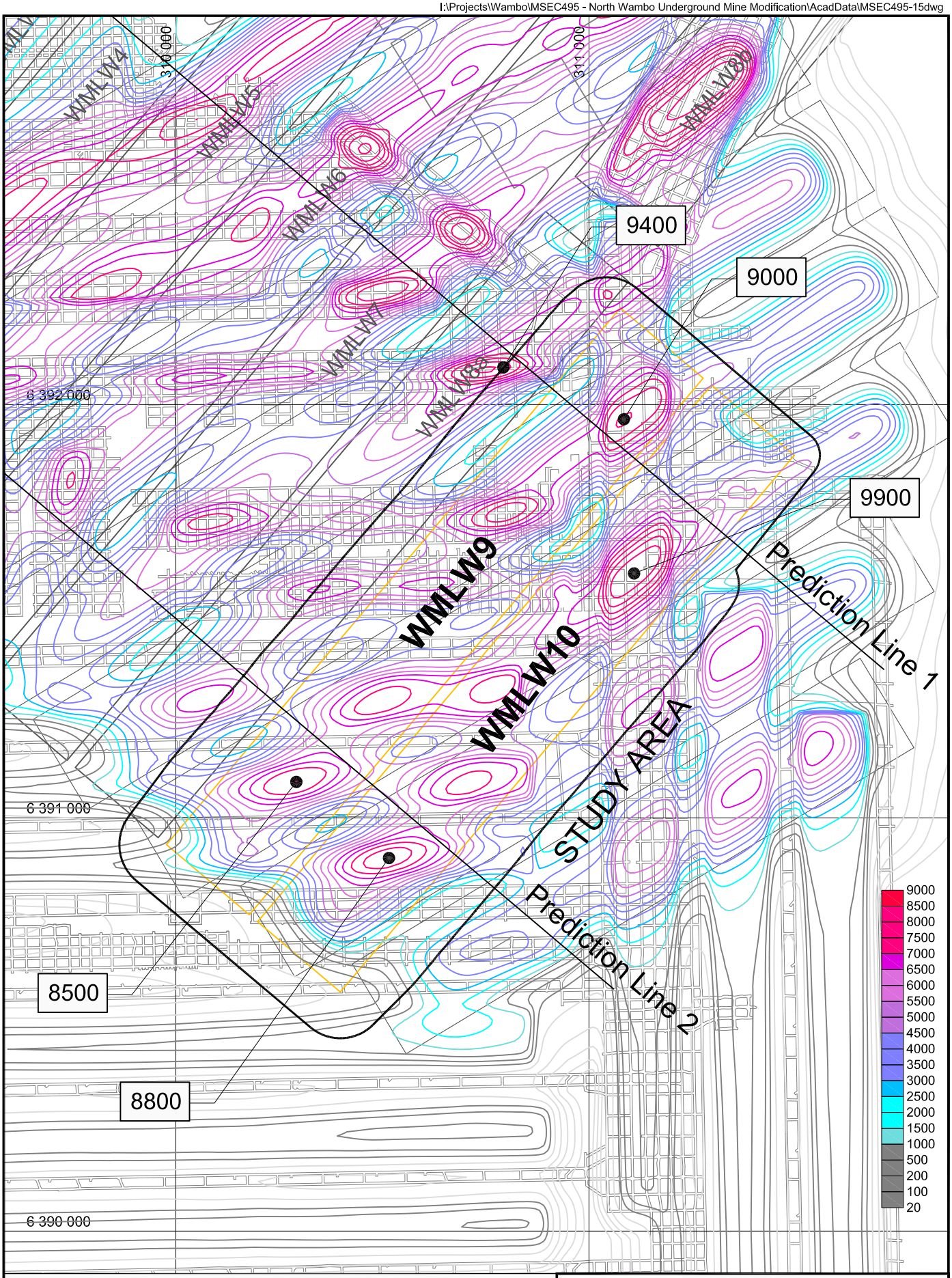

PREDICTED SUBSIDENCE CONTOURS
ARE IN MILLIMETRES (mm)

Grid to MGA co-ordinates

NOTE:
The value of the Subsidence Contours, from the outside to the inside of the panels, are 20mm, 50mm, 100mm, 200mm, 500mm and so forth, in 500mm increments.
The maximum subsidence over each longwall is shown in brackets - ie. (9000)

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NORTH WAMBO UNDERGROUND MINE

PREDICTED TOTAL SUBSIDENCE CONTOURS DUE TO WHYBROW, WAMBO, ARROWFIELD & BOWFIELD SEAMS BASED ON THE MODIFIED LAYOUT

DATE:	SCALE:	DRAWING No:	Rev No
13-May-2013	1:12500	MSEC495-102	A

Predicted Profiles of Conventional Subsidence, Tilt and Curvature along Prediction Line 1 due to Mining in the Whybrow, Wambo, Arrowfield and Bowfield Seams

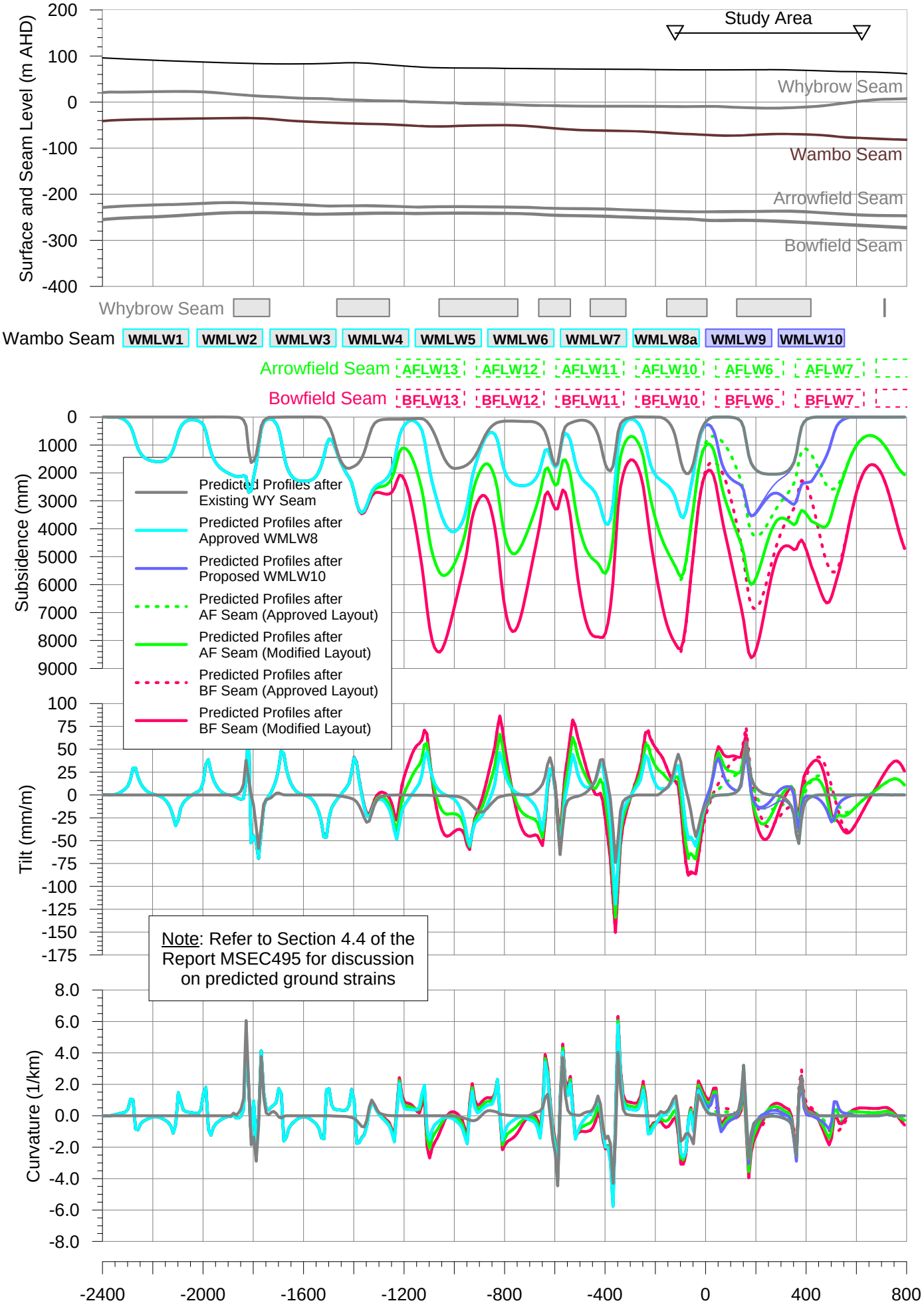

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Fig. 1

Predicted Profiles of Conventional Subsidence, Tilt and Curvature along Prediction Line 2 due to Mining in the Whybrow, Wambo, Arrowfield and Bowfield Seams

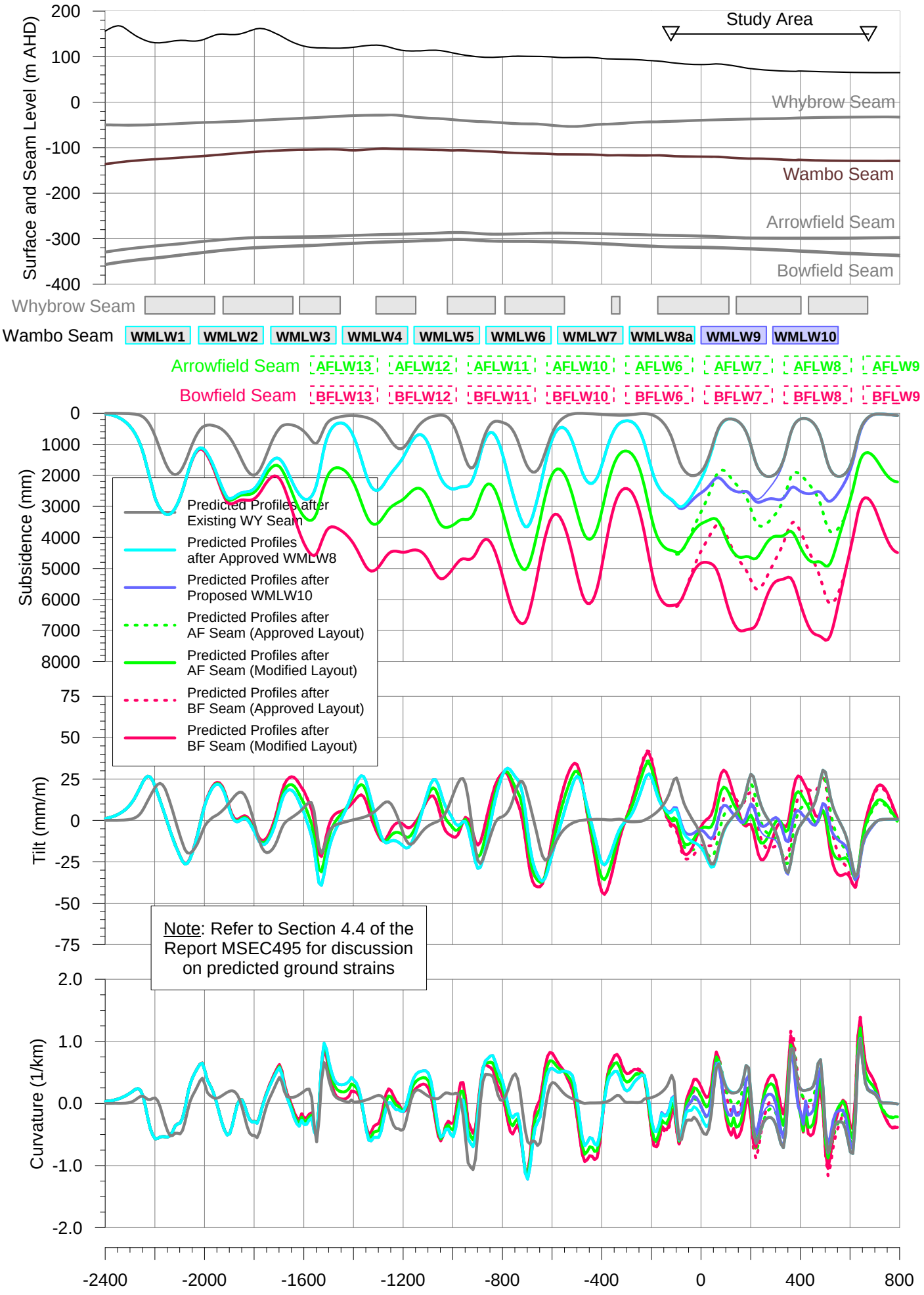

Fig. 2