

PROPOSED DEVELOPMENT & OLD MINE WORKINGS

PART LOT 141 DP1225076 & LOT 8 DP855275

MOUNT VINCENT ROAD AND WILTON DRIVE

EAST MAITLAND NSW 2323



Prepared for East Maitland Land 62 Pty Ltd
1 Hartley drive
THORNTON NSW 2322

Mine Subsidence and Mining Engineering Pty Ltd
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18 August 2024

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1.0 INTRODUCTION

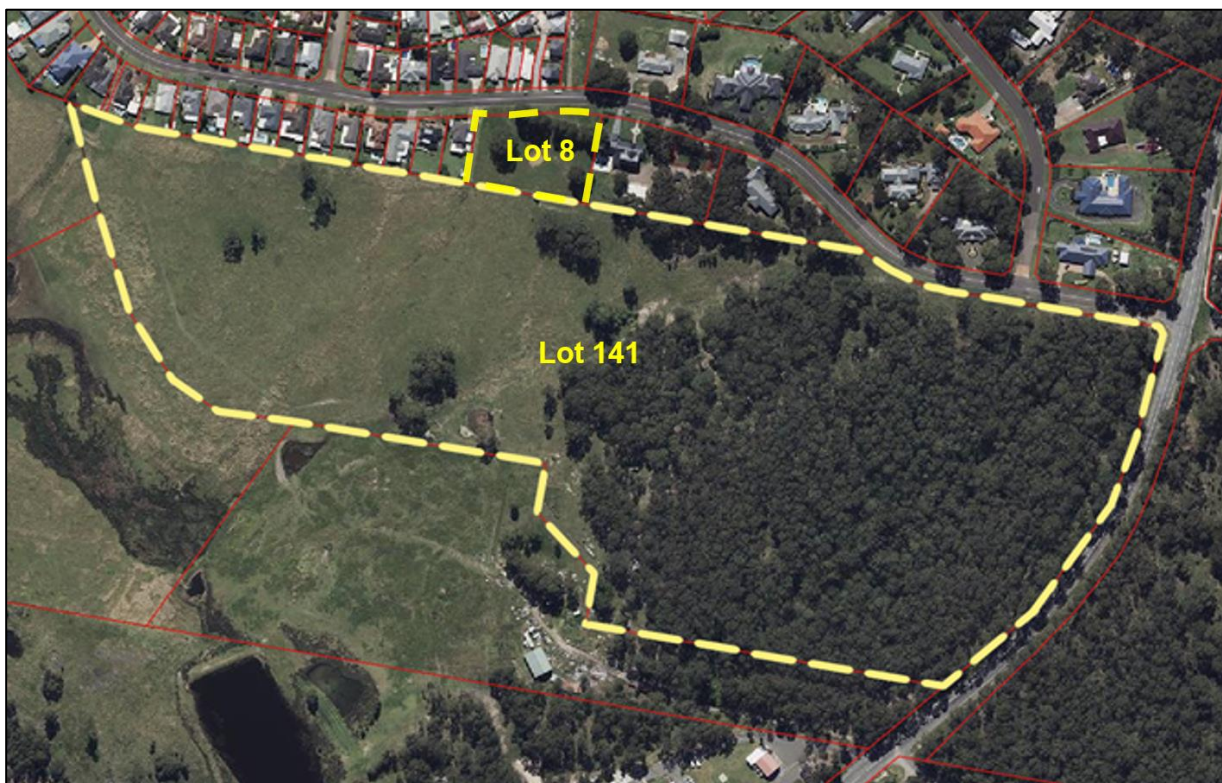
This Mine Subsidence and Mining Engineering Pty Ltd (MS&ME) report presents the outcomes of an assessment of old mine workings and proposed surface development on Lot 8 DP855275 6 Wilton Drive and Lot 141 DP1225076 62 Mount Vincent Road East Maitland 2323. The work was commissioned by East Maitland Land 62 Pty Ltd.

Lot 8 DP855275 and Lot 141 DP1225076 are located within the Maitland City Council Local Government Area. The site is also located within the East Maitland Mine Subsidence District and Subsidence Advisory NSW's (SA NSW) approval is required for subdivision and surface development.

The site is adjacent to an existing residential area and is currently vacant land. It is proposed to subdivide the lots and create a staged residential development. Figure 1 shows the site and existing surface development.

This report is only applicable to surface development of the area identified and is not to be relied upon for any other locations. Matters relating to construction, such as a geotechnical site assessment for footings, are not intended to be covered within the scope of this report.

FIG 1: Existing surface development and Lot 8 DP855275 and Lot 141 DP1225076



Source: ePlanning Spatial Viewer

Boundaries approximate

2.0 SITE DESCRIPTION

The property is located within the Maitland City Council Local Government Area and identified as:

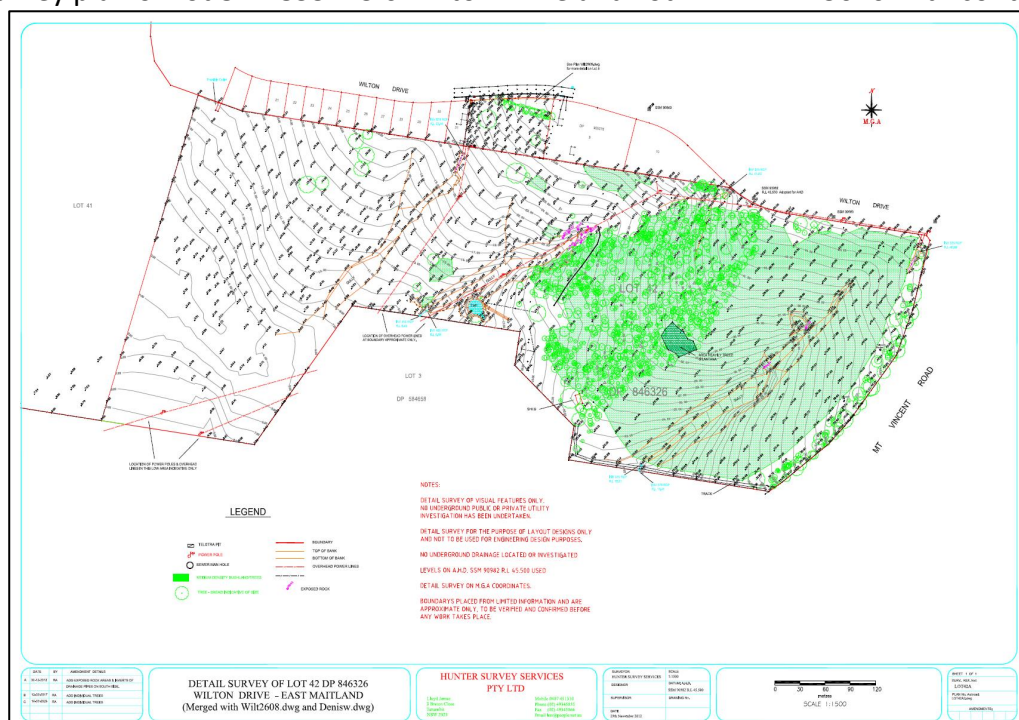
PROPERTY DETAILS	
ADDRESS: 6 Wilton Drive East Maitland 2323	
ALLOTMENT	8
DEPOSITED PLAN	855275
COUNCIL	MAITLAND CITY COUNCIL

PROPERTY DETAILS	
ADDRESS: 62 Mount Vincent Road East Maitland 2323	
ALLOTMENT	141
DEPOSITED PLAN	1225076
COUNCIL	MAITLAND CITY COUNCIL

Lot 8 DP855275 is bounded by Wilton Drive to the north, Lot 141 to the south and residential structures on either side. Lot 8 is around 6157m² in area and slopes around 1 in 100 to the south.

As shown in Figure 1, the larger Lot 141 DP1225076 is located to the south of Lot 8 and bounds Wilton Drive and Mt Vincent Road to the east. The lot has a varied topography due to drainage gullies and in general slopes to a low-lying area along the southern boundary. Figure 2 shows the existing site features and contours. A larger plan is included as Appendix A.

FIG 2: Survey plan of Lot 8 DP855275 6 Wilton Drive and Lot 141 DP1225076 with contours



3.0 SUBSIDENCE ADVISORY NSW AND MAITLAND CITY COUNCIL

The Coal Mine Subsidence Compensation Act 2017 No 37 Part 3 Section 20 provides for the declaration of mine subsidence districts. Within a mine subsidence district, a person must not carry out work, or cause work to be done, in connection with the erection or alteration of an improvement or subdivide land, or cause such land to be subdivided, except in accordance with the approval of the Chief Executive.

Under Part 3 Section 22 the Chief Executive may grant an approval to alter or erect improvements, or to subdivide land either subject to conditions or unconditionally or may refuse to grant the approval. Such conditions may include conditions relating to the class or nature of improvements, the height, weight, type of material, number of storeys and method of construction of any improvements within the district. Such conditions may vary according to the location, class or nature of such improvements. Approvals are valid for 5 years.

Lot 8 DP855275 and Lot 141 DP1225076 are located within the East Maitland Mine Subsidence District proclaimed 20 February 1974 and Subsidence Advisory NSW's approval is required for subdivision and surface development.

Subsidence Advisory NSW has designated Lot 8 DP855275 and Lot 141 DP1225076 as Surface Development Guideline 1 – Historical mine workings – risk of pothole subsidence.

Guideline 1 applies to properties undermined by shallow historical mine workings with a high or moderate risk of a pothole forming on the surface based on the geometry of the workings, thickness of the coal seam, and the nature of the overlying strata.

Guideline 1 Historical mine workings – risk of pothole subsidence

Assessment Authority Subsidence Advisory NSW

Building Type Summary: Up to two residential buildings. Single storey brick veneer or two storey clad frame on engineer designed footings to span a 5m pothole. Slab construction not permitted. Further design requirements apply, please refer to full guideline.

Full Guideline <http://www.subsidenceadvisory.nsw.gov.au/development-guidelines>

Note Development guidelines are subject to change.

Surface Development Guideline 1 includes design requirements for footings. As SA NSW's approval is required, it is important to reference the full current online guideline in preparing a Development Application for submission to SA NSW.

As the proposed development involves subdivision, and a large number of residential structures, the development will exceed SA NSW's Surface Development Guideline and will need to be assessed under SA NSW's 2023 Subdivision Assessment Policy and Merit Assessment Policy Version number 2.

4.0 MINE WORKINGS AND SITE INVESTIGATION

4.1 MINE WORKINGS

The main contributing factors leading to mine subsidence are;

- Secondary extraction of coal pillars or longwall extraction
- Pillar crush / failure
- Pillar punching into soft floor or roof
- Collapse of the coal seam roof

The degree of mine subsidence varies based on the height of coal seam extracted and the mining method. Higher levels of mine subsidence can cause damage to surface improvements and observable subsidence features include;

- Potholes
- Surface cracks
- Localise surface depressions.
- Plug failure.
- Widespread or trough subsidence

MS&ME sourced the following Record Tracings that detail the known mine workings in the area from NSW Planning and Environment - Resources and Energy, Division of Resources and Geoscience. The Record Tracing is subject to a confidentiality arrangement and an extract only, with relevant disclaimer, is included as Figure 4.

- RT603 – Plan of Abandonment Rathluba No1 & No2 Collieries

Record Tracing RT604 indicates Lot 8 DP855275 and Lot 141 DP1225076 are undermined by old and abandoned shallow mine workings in the Rathluba Seam, which is part of the Tomago Coal Measures. In summary:

- The Record Tracing references the Chief Inspector of Coal Mines Report dated 26.2.64
- The Rathluba Seam was mined by Rathluba Colliery and Rathluba No2 Colliery.
- First workings using the bord and pillar method are shown to exist beneath the site.
- The depth of cover to the Rathluba Seam is expected to range from 8m – 12m beneath Lot 8 to 65m adjacent to Mt Vincent Road.
- The dip of the seam is 1 in 12 South 30° East
- No apparent mine shafts or drifts are shown to be present on the site.

In providing an assessment of old coal mines, information is derived from Record Tracings and historical information. A reasonable level of confidence can be placed on Record Tracings, particularly when combined with site investigation. However, with old mine workings there can be the possibility of unrecorded mine workings or inaccuracy due to the relationship between the underground mine workings and surface cadastre. Drilling provides specific information at the location drilled and may not identify every detail or extent of old mine workings. Plans are georeferenced based on available information; however, the relationship is not survey accurate and should be considered as indicative of the possible location of the mine workings.

Mining information from the eSpatial NSW website indicates that the area beneath Lot 8 DP855275 and Lot 141 DP1225076 is undermined as shown by the blue shaded area in Figure 3.

FIG 3: SA NSW mined area blue in with Lot 141 DP1225076 highlighted.

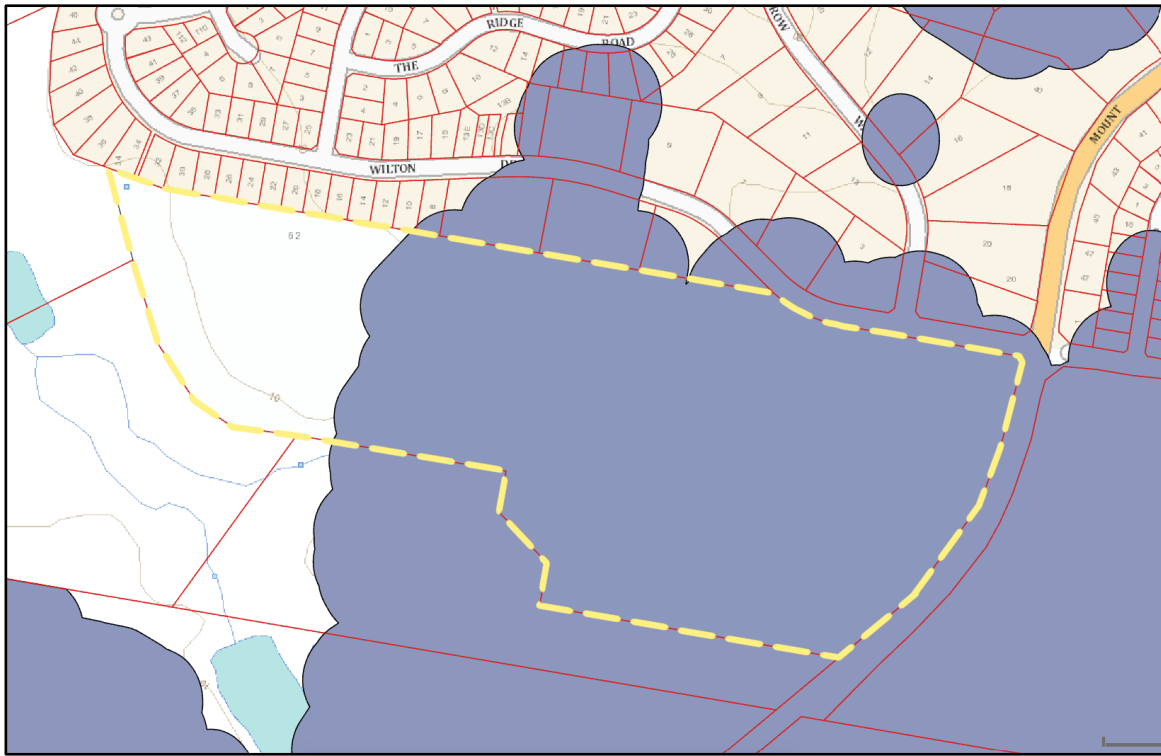
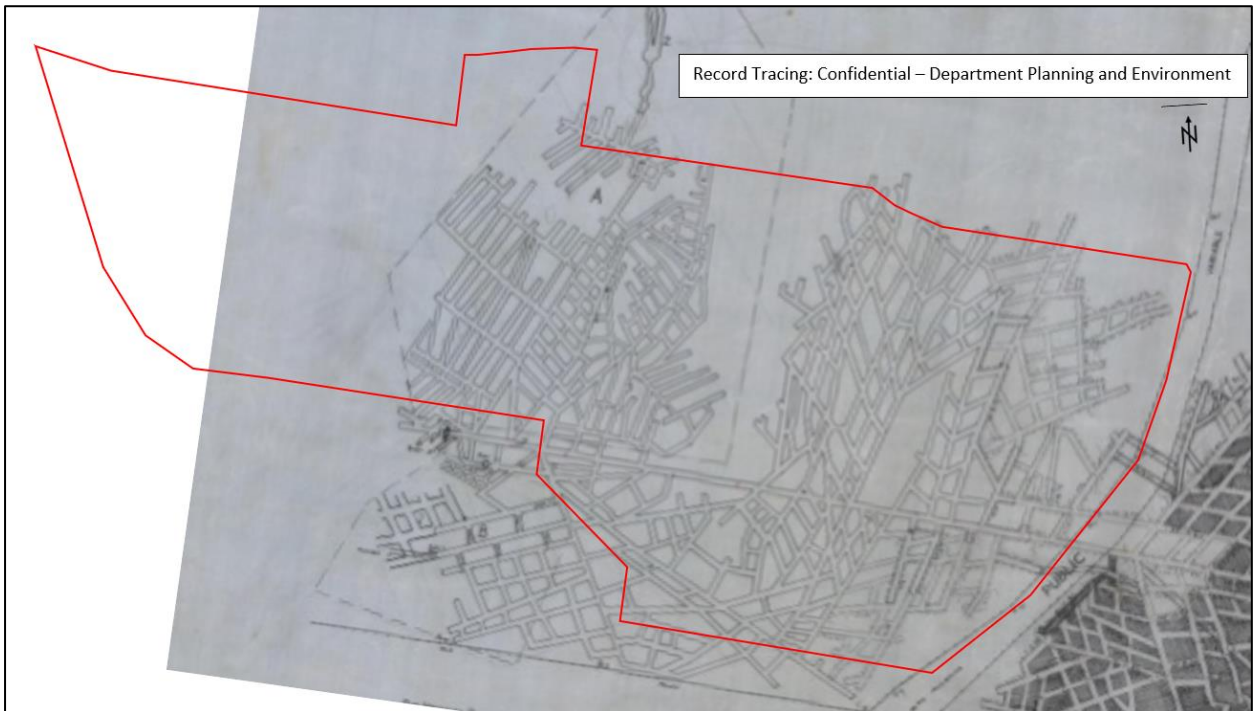


Figure 4 shows the possible location of recorded old mine workings underlying Lot 8 DP855275 and Lot 141 DP1225076 from Record Tracing RT603. The mine plan indicates that the area was worked by the Bord and Pillar method, which involves the development of a series of headings and cut-throughs that usually leave rectangular shaped pillars of coal to support the mine roof during the development of panels. These pillars can then be extracted, in what is referred to as secondary or pillar extraction, leaving small sections of coal intact to control the collapse of roof material. Although secondary extraction is shown to the east of Mount Vincent Road, it is not shown beneath Lot 8 and Lot 141

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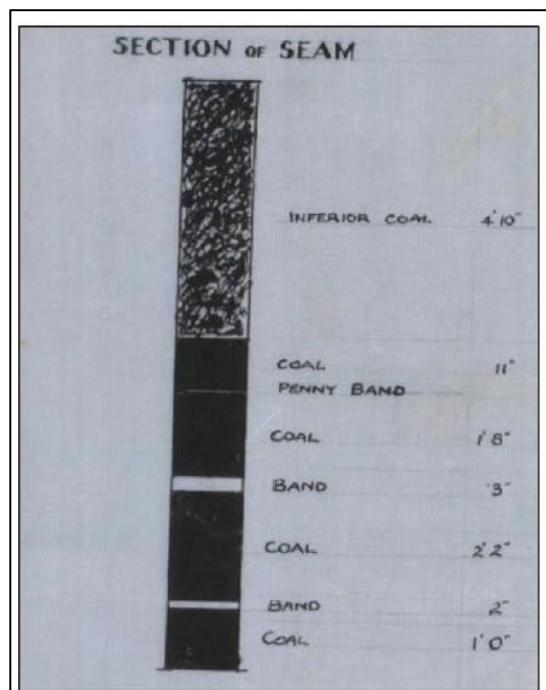
FIG 4: Possible location of Rathluba Seam workings and Lot 8 DP855275 & Lot 141 DP1225076



Disclaimer: any excerpts of original mine survey plans or record tracings and any data derived from such original mine survey plans or record tracings must not be relied upon in any way by any person, including (without limitation) for the accuracy or completeness of mine workings, and are intended for indicative purposes only. The Department of Planning and Environment is not responsible or liable to any person for any loss or liability arising out of or in connection with use of any such excerpts or derived data.

Records indicate the Rathluba Seam had working sections ranging from 5' (1.52m) to around 8' 6" (2.61m) due to varying bands of dirty coal that affected coal quality. Based on references the total seam thickness is around 3.3m.

Fig 5: Mine workings and a Rathluba Seam section from Record Tracing



4.2 SITE INVESTIGATION

Site investigation initially commenced in 2012 to determine the status of mine workings underlying Lot 8 DP855275 and Lot 141 DP1225076. There have been a number of previous reports completed, which provide useful information and regarding the mine workings.

MS&ME reviewed information and considered previous advice when undertaking a detailed site investigation between 6 February and 13 August 2017.

A total of 215 boreholes have been drilled across lot 8 and lot 141 since 2012 to investigate the old mine workings. Boreholes were monitored during drilling to record conditions encountered, the depth to the coal seam floor and whether any 'drill drop' occurred. The latter indicates the presence of a void. Drillers bore logs were recorded and analysed.

The location of all boreholes drilled by Mine Subsidence and Mining Engineering Pty Ltd, as well as existing boreholes that were able to be identified, were surveyed.

Based on the information referenced, and the site investigation of lot 141, it is unlikely there are mine workings to the west of the blue line on Figure 8. The line provides a tolerance of around 10m from the predicted mine workings. Drilling appeared to identify the northern extent of the mine workings on lot 141, however, the demarkation became somewhat blurred by the mine workings that were not shown on the record tracing and extend south from Lot 8. Consideration may need to be given to drilling additional north-south boreholes across Lot 141.

5.0 SURFACE DEVELOPMENT

East Maitland Land 62 Pty Ltd proposes developing a residential subdivision on Lot 8 DP855275 and Lot 141 DP122507 as shown in Figure 6(a) and the development will be staged as shown in Figure 6(b).

It is proposed to develop an engineer designed Detention Basin on Lot 142, as shown on Figure 6(a). Based on the Record Mine Tracing, this location is not undermined.

Lot 8 DP855275 and Lot 141 DP122507 are located in the East Maitland mine subsidence district and SA NSW's approval is required for subdivision and surface development. The proposed development will exceed the Surface Development Guideline 1 applied by SA NSW and will need to be assessed under SA NSW's 2023 Subdivision Assessment Policy and Merit Assessment Policy.

SINKHOLE (Pothole) RISK – Where shallow mine workings exist, it is necessary to assess the area for the risk of pothole subsidence. There are several factors that contribute to the potential for a mine subsidence pothole to occur over old mine workings. These include:

- the height of coal extracted

- depth of cover
- competency of overlying strata.

Historical information indicates the likelihood of a pothole crowning at the surface significantly diminishes where the depth of cover is greater than 5 times the mined height and is highly unlikely where the depth is greater than 10 times the seam height

The depth of cover to the Rathluba Seam increases to the east. The yellow zone in Figure 7 shows the likely area where the depth of cover is <30 metres. There are locations in the eastern portion of this zone where the Record Tracing does not suggest undermining has occurred, or larger mine pillars remain. Further analysis of the mine workings in the eastern area is recommended to achieve a cut-off depth for grouting that is acceptable to SA NSW. SA NSW has designated the whole of Lot 141 DP122507 as Surface Development Guideline 1 – Historical mine workings – risk of pothole subsidence.

Following submission of the MS&ME Report [1] dated 28 August 2017, Subsidence Advisory NSW issued a Notice of Determination (dated 3 November 2017 Reference TBA17-43767N1) for a Seniors Living Development with 134 dwellings and a community facility on Lot 141. Schedule 2 Condition 3 required the submission of a proposal to eliminate the risk of mine subsidence for Subsidence Advisory NSW's acceptance by a suitable means such as grouting prior to commencement of construction. It is anticipated a similar condition would be placed upon any future surface development.

Grouting of mine workings enables mine subsidence to be managed such that structures will remain safe, serviceable and readily repairable. Engineering design can be incorporated into structures should a small amount of residual mine subsidence need to be provided for following grouting. Structural Engineering advice would indicate whether these are within design parameters of AS2870 and the Building Code of Australia.

FIG 6(a): Proposed residential subdivision Lot 8 DP855275 and Lot 141 DP122507

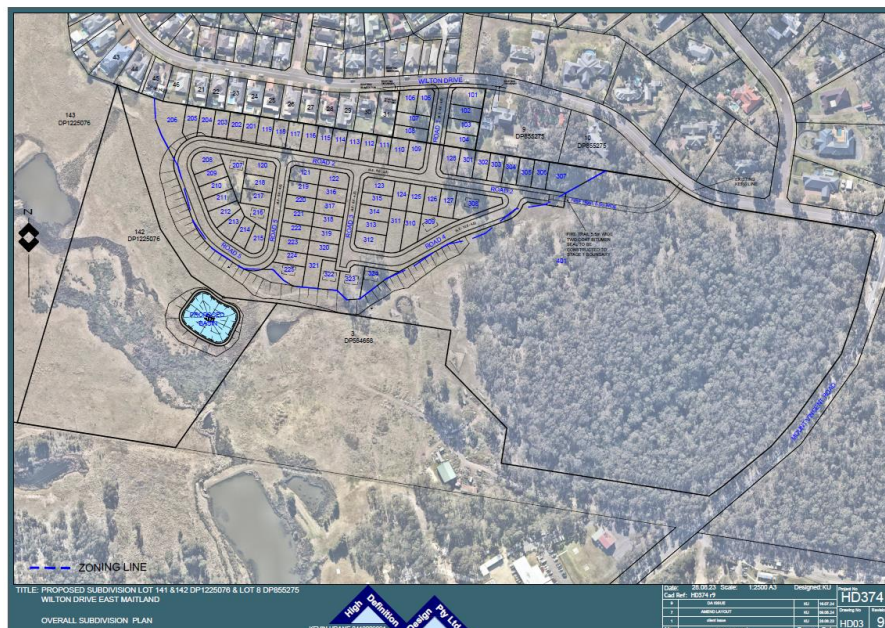
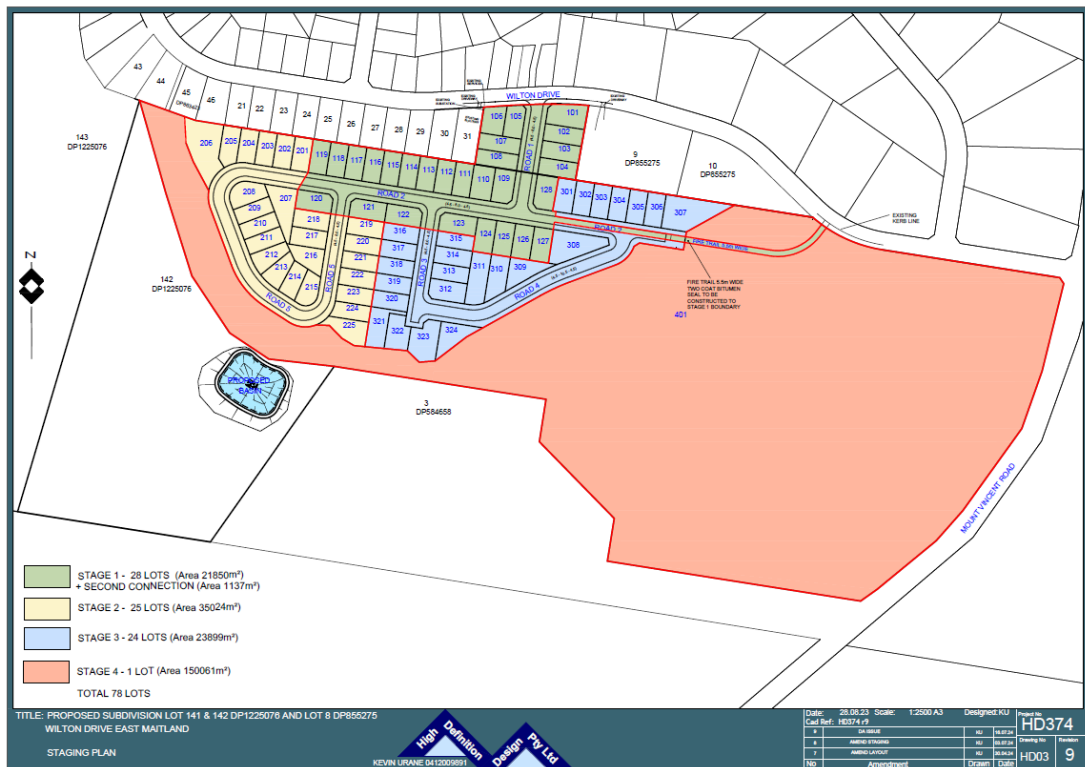


FIG 6(b): Staging of proposed residential subdivision



Plans courtesy High Definition Design Pty Ltd

Table 1 summaries the proposed development stages and possible mining conditions.

Table 1: Summary of lots and mining

STAGE	NUMBER OF LOTS	MINE WORKINGS - TBC
Stage 1	28 + Second connection	Lot 8 and eastern lots on Lot 141 undermined
Stage 2	25	Record Mine Tracing indicates not undermined
Stage 3	24	Staged across unmined and shallow mine zone
Stage 4	1	Partially undermined. Shallower mining to west.
TOTAL	78	

Figure 8 shows the proposed staged development and the blue lines for the possible extent of mine workings, and >30m depth of cover line, from Figure 7. Stage 1 of the proposed development includes Lot 8 and an area along the northern boundary of Lot 141. An entry road enters Lot 8 from Wilton Drive and passes through the lot before turning west to link with Stage 2, which will occur on Lot 141. The Stage 1 area includes shallow mine workings that can be remediated by grouting to enable surface development. The grouting of Stage 1 will remediate the access road leading into Stage 2, which the Record Tracing does not show to be undermined. Stage 3 is partially undermined by shallow mined workings that will require grouting prior to surface development of this stage.

Subject to SA NSW’s Notice of Determination, a Grout Plan will be prepared and submitted to SA NSW for their acceptance for development of Stages 1 - 3. Stage 4 will be addressed with SA NSW at a future date.

FIG 7: MS&ME plan showing zones based on estimated depth of cover

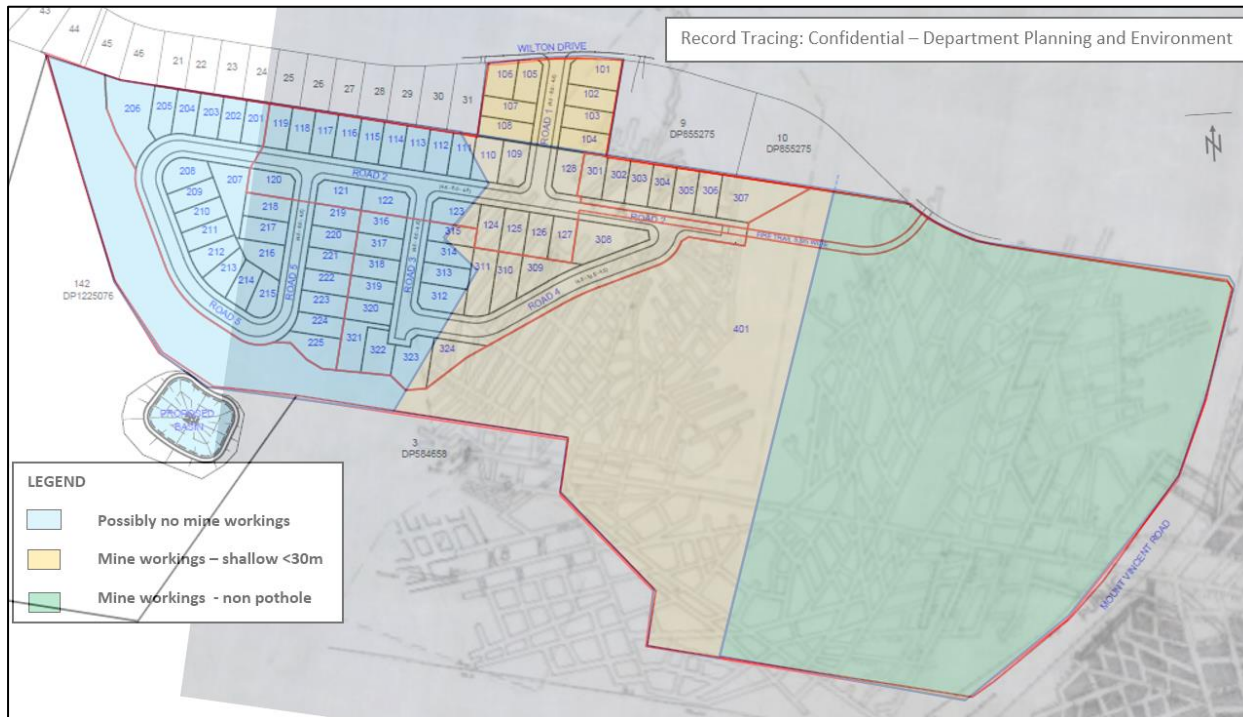
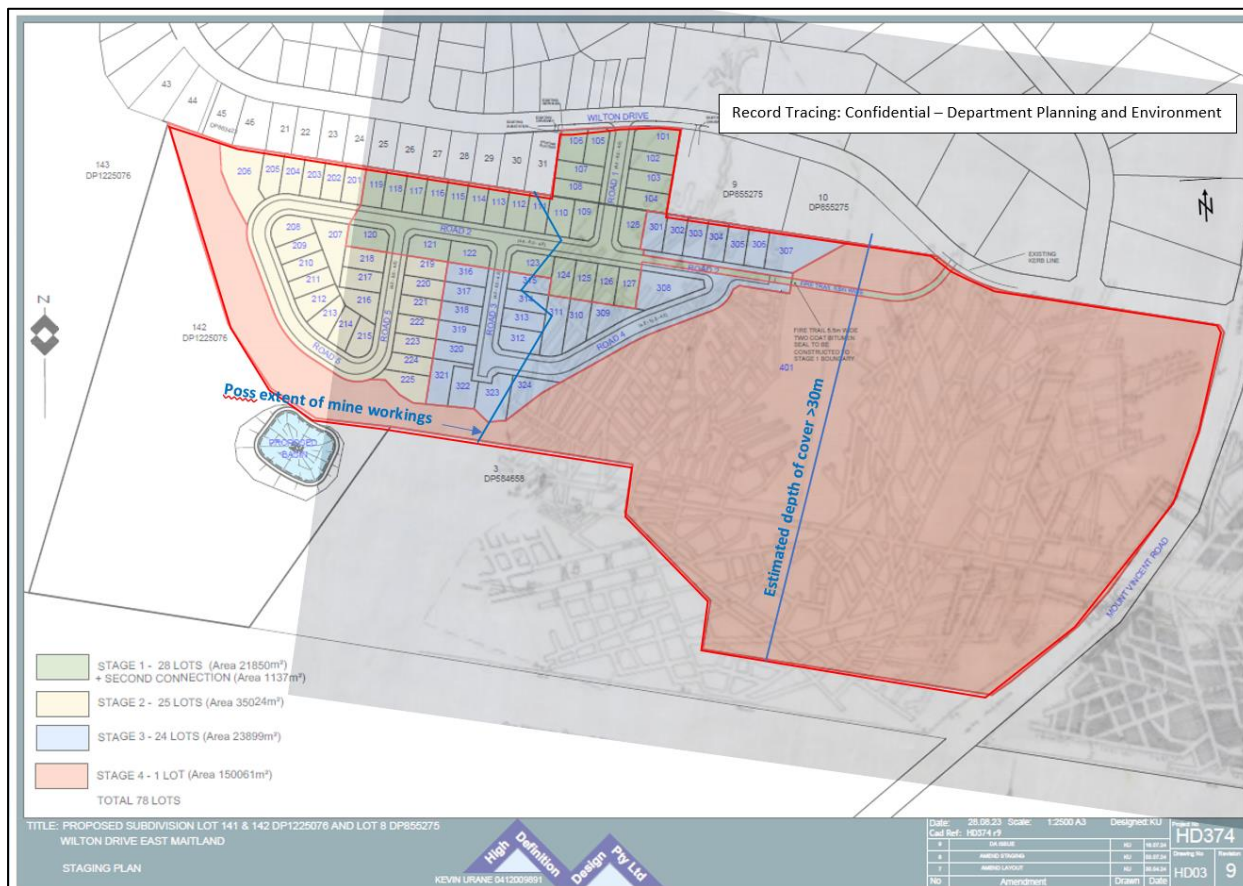


FIG 8: Proposed staged development with mining zones



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Note: Surface layout of plans courtesy High Definition Design Pty Ltd

6.0 SUMMARY

This Mine Subsidence and Mining Engineering Pty Ltd (MS&ME) report presents an assessment of old mine workings for the proposed surface development for Lot 8 DP855275 6 Wilton Drive and Lot 141 DP1225076 62 Mount Vincent Road East Maitland 2323.

Lot 8 DP855275 and Lot 141 DP1225076 are located within the East Maitland Mine Subsidence and Subsidence Advisory NSW's approval is required for subdivision and surface development.

Site investigation of old and abandoned mine workings beneath the site has been previously undertaken and a good level of mining information is now available.

A report detailing the site investigation completed by SA NSW, and others, was submitted to SA NSW in 2017. SA NSW subsequently issue a Notice of Determination for Seniors Living Development with 134 dwellings and a community facility on Lot 141. Schedule 2 Condition 3 required the submission of a proposal to eliminate the risk of mine subsidence for Subsidence Advisory NSW's acceptance by a suitable means such as grouting prior to commencement of construction.

The current proposed development will be assessed by SA NSW under their 2023 Subdivision Assessment Policy and Merit Assessment Policy. SA NSW will issue a Notice of Determination following assessment of a Development Application, and it is expected a condition for grouting of shallow mined workings will be required.

Stage 1 of the proposed development includes Lot 8 and an area along the northern boundary of Lot 141. The Stage 1 area includes shallow mine workings that can be remediated by grouting to enable surface development. The grouting of Stage 1 will remediate the access road leading into Stage 2, which the Record Tracing does not show to be undermined. Stage 3 is partially undermined and the area where shallow mined workings are present will require grouting prior to surface development of this stage.

East Maitland Land 62 Pty Ltd will liaise with Subsidence Advisory SA NSW regarding their conditions of development approval, including site remediation for Stages 1 – 3. Stage 4 will be addressed with SA NSW at a future date.

REFERENCES

- [1] *Site investigation of Old Mine Workings Part Lot 141 DP1225076 and Lot 8 DP855275 Mount Vincent Road and Wilton Drive East Maitland NSW 2323 by COLE-CLARK Mine Subsidence and Mining Engineering Pty Ltd Report dated 28 August 2017*

REPORT VERSION

- This version 1.0: MS&ME Report *Old Mine Workings & Proposed Development Part Lot 141 DP1225076 & Lot 8 DP855275 Mount Vincent Road and Wilton Drive East Maitland NSW 2323* Version 1.0 dated 18 August 2024

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APPENDICES

APPENDIX A– Surface contours and lot features

