

ATTACHMENT A

Consideration of Approval of Miniwall S5 and NPA Extraction Plan

1. As required by condition 7 of Schedule 4 of the consent for Chain Valley Colliery (SSD 5465), the Extraction Plan (EP) for proposed Miniwall S5 and the Northern Pillar Area (NPA) consists of an overarching document that describes the proposed mining operations, supported by a specialist subsidence assessment, and a series of specialist management plans (MPs) including a:
 - Public Safety MP;
 - Built Features MP;
 - Groundwater MP;
 - Rehabilitation MP;
 - Benthic Communities MP;
 - Seagrass MP;
 - Subsidence Monitoring MP; and
 - Subsidence Management Trigger Action Response Plan (TARP).

The EP was submitted by Delta Coal. The EP was prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Secretary. Many of these MPs are little changed from when they were reviewed in March 2020 as part of the EP for Miniwall S4, which was approved in June 2020.

2. In December 2020, Delta Coal forwarded its draft EP to 10 government agencies, two Councils and members of its Community Consultative Committee (CCC), inviting comment on the draft documents. No concerns were raised during this process.
3. The Department sought advice on the draft EP from the Resources Regulator (RR), Mining Exploration and Geoscience (MEG), DPI Fisheries, the Department's Biodiversity Conservation Division (BCD), and Lake Macquarie City Council (LMCC) in February 2021.

The RR did not identify any mine safety or mine rehabilitation issues in relation to the EP.

MEG advised that it was satisfied that the extraction of Miniwall S5 and the NPA, as described in the EP, would adequately recover coal resources and provide an appropriate return to NSW.

DPI Fisheries commented that previous works of a similar nature had not resulted in any measurable harm to benthic communities or seagrass beds and that the existing seagrass protection buffers appeared to be succeeding.

BCD provide a response declining to comment on the EP.

The Department has not received any comments from LMCC to date.

4. Miniwall S5 and the NPA were approved under Modification 3 (Mod 3) to the development consent. Mod 3 was approved by the Independent Planning Commission on 26 June 2020.
5. The proposed extraction of Miniwall S5 and the NPA represents an incremental progression in coal extraction at CVC. The proposed miniwall would recover approximately 460,000 tonnes of coal and take about 6 months to be mined. The NPA extraction area would recover approximately 1.47 million tonnes of coal and take about 26 months to be mined.

6. Miniwall S5 and the NPA would be a continuation of mining beneath Lake Macquarie. It would be located adjacent to, and to the north of Miniwalls S2, S3 and S4. Secondary extraction of Miniwall S4 is nearing completion.
7. Long-term vertical subsidence is predicted to be 500 mm, which is less than the approved limit for subsidence of 780 mm beneath the waters of Lake Macquarie.
8. Monitoring to date has demonstrated that similar predictions of the magnitude of subsidence for Miniwalls S2 and S3 have been accurate and not been exceeded.
9. Miniwall S5 and the NPA would be located so that no more than 20 mm of vertical subsidence would occur in either the:
 - High Water Mark Subsidence Protection Barrier (HWMSB); or
 - Seagrass Protection Barrier (SPB).
10. The parameters of the HWMSB were established in the 1990s, in response to unplanned subsidence of the Lake Macquarie foreshore. A zone was established in which underground mining operations must be designed so that no more than 20 mm of vertical subsidence (the practical limit for measurement of subsidence) would occur between the High Water Mark and the 2.44 m AHD land contour. A line is projected from the High Water Mark at angle of 35 degrees to the vertical. Where this line intersects with the coal seam marks the lakeside edge of the HWMSB, in which secondary extraction is not permitted.
11. The SPB is similar to the HWMSB, only that its purpose is to protect seagrass beds that fringe the foreshore and extend to a depth of two metres within the lake. The line from the lakeside edge of the SPB is projected at an angle of 26.5 degrees to its intersection with the target coal seam. No secondary coal extraction is permitted within this zone. The figure below shows that the 20 mm subsidence contour (in red) skirts the seagrass beds.

At CVC, for the assessment of the EP for Miniwall S5 and the NPA, the SPB lies completely within the HWMSB. That is, if the HWMSB is protected from secondary extraction, the SPB is also protected.

Delta Coal has provided a mine plan for Miniwall S5 and the NPA based on the avoidance of secondary extraction within both the HWMSB and the SPB. Therefore, the proposed mining layout would comply with the requirements for the protection of these sensitive features.

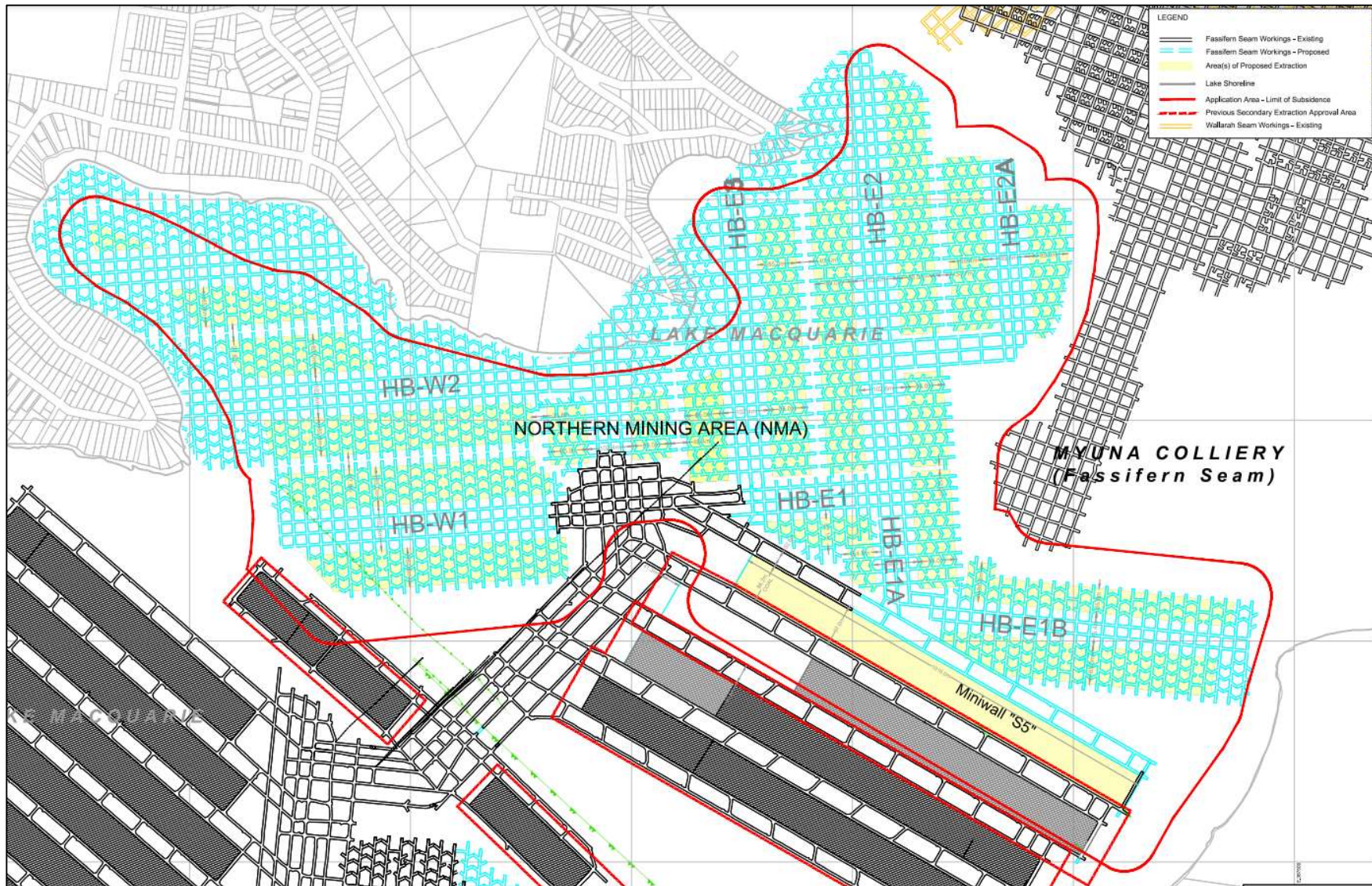


Figure 1 –Miniwall S5 and Northern Pillar Area (Northern Mining Area)



Figure 2 – Seagrass protection barrier and 20 mm vertical subsidence contour

12. Miniwall S5 and the NPA would be located within the Fassifern Seam, which is overlain by the Great Northern and Wallarah Seams.
13. One of the potential risks faced by mining in the CVC is that of reactivation of mine subsidence in areas where coal has previously been extracted from overlying coal seams. In such circumstances, a potential risk is that large-scale subsidence events could occur that could impact areas such as the lake foreshore. This risk was recognised at the time the consent was granted for the current operations at CVC. Conditions of consent require that secondary extraction of coal from beneath Chain Valley Bay is not to be considered unless a Multi-Seam Mining Feasibility Investigation report has been prepared to the satisfaction of the Planning Secretary. The proposed Miniwall S5 and NPA is not located beneath Chain Valley Bay. The seams overlying Miniwall S5 and the NPA have not been mined.
14. The nearest existing mine workings are in the uppermost Wallarah Seam, 80 m above and 360 m to the south of proposed Miniwall S5. There are Myuna Colliery workings adjacent to the NPA in the Wallarah, Great Northern and Fassifern seams. No interactions with these existing mine workings are predicted.
15. The proposed Miniwall S5 and NPA would be located 118 m to 166 m to the solid bed of Lake Macquarie and no connective cracking is predicted.
16. The only built feature predicted to be impacted by Miniwall S5 is the Pelican Rock Navigational Marker within Lake Macquarie. It is located adjacent to Miniwall S2 and may only be marginally affected by subsidence from Miniwall S5, if at all. The Navigational Marker was predicted to experience a maximum of 150 mm of subsidence, a level which Transport for NSW – Maritime Division considered would not affect its functionality, nor reduce the safety of boat traffic. This marker has been regularly monitored from prior to the commencement of Miniwall S2.
17. The EP is supported by a Subsidence Monitoring Program consisting of land-based surveys of the lake foreshore and regular bathymetric surveys of the lakebed. The collected subsidence monitoring data feeds into the Subsidence Monitoring TARP so that if greater than predicted subsidence were to be recorded, appropriate actions would be taken.
18. As predicted subsidence impacts for Miniwall S5 and the NPA fall well below the limit imposed under the development consent, it is unlikely that the TARP would need to be enacted. The Department considers that the proposed extraction of Miniwall S5 and the NPA has been designed conservatively to comply with the conditions of consent.
19. Considering the above matters, the Department considers that the EP for Miniwall S5 and the NPA should be approved.