

Mr Phillip Brown
Environment and Community Manager
Ashton Coal Operations Pty Limited
PO Box 699
SINGLETON NSW 2330

10/03/2021

Dear Mr Brown

**Ashton Coal Project (DA309-11-2001-I)
Extraction Plan for Longwalls LW205 – LW208**

I refer to the Extraction Plan for longwalls LW205 – LW208 dated October 2020 which has been submitted in accordance with condition 32 of Schedule 3 of the consent for the Ashton Coal Project (DA 309-11-2001-I).

The Department has carefully reviewed the Extraction Plan and the supporting sub-plans and is satisfied that it addresses the relevant requirements of the development consent for Extraction Plans (see **Attachment A**).

Accordingly, the Secretary has approved the Extraction Plan for LW205 – LW 208 (dated October 2020). Please ensure that the approved plan is placed on the Ashton Coal's website as soon as possible.

If you wish to discuss the matter further, please contact Nagindar Singh on 8289 6873.

Yours sincerely



Matthew Spratt
Director
Resource Assessments
as nominee of the Secretary

ATTACHMENT A

Reasons for Approval of Extraction Plan for Longwalls LW205 – LW208

1. The Ashton Coal Mine is approved for multi-seam longwall mining under the development consent DA309-11-2001-I. As required by condition 32 of Schedule 3 of the consent, Ashton Coal Operations Pty Ltd (Ashton Coal) has submitted an Extraction Plan (EP) for approval. The approval is required prior to extraction or secondary workings of longwalls LW205 – LW208 commencing in March 2021 and expected to be completed by March 2025.
2. The EP is an overarching document that describes the proposed extraction in the LW205 – LW208 mining domain, their subsidence effects, the resulting impacts to the natural and built features and the environmental consequences.

The EP is supported by management plans that describe monitoring and management controls for impacts to achieve compliance with the subsidence performance measures for natural and built features included in the consent. The EP is also consistent with the rehabilitation objectives of condition 41 of Schedule 3 of the consent. It includes the following components:

- Water Management Plan (MP) Addendum
- Biodiversity MP Addendum
- Land MP Addendum
- Built Features MP, which includes Asset MPs for Ausgrid, Transgrid, Glencore, Transport for NSW, AGL Macquarie, Telstra and Singleton Council's built infrastructure
- Public Safety MP
- Subsidence Monitoring Program
- Trigger Action Response Plan (TARP)
- Coal Resource Recovery Plan
- Mining Operations Plan (MOP).

The EP is supported by specialist assessments for subsidence (SCT Operations Pty Ltd (SCT)), groundwater (Australasian Groundwater and Environmental Consultants Pty Ltd (AGE)), surface water (Hydro Engineering & Consulting Pty Ltd), biodiversity (Ecological Australia Pty Ltd (Eco Logical) and cultural heritage (Insite Heritage Pty Ltd).

The EP was prepared by a team of suitably qualified and experienced persons who were endorsed by the Secretary on 20 May 2020.

3. The amended stacked multi-seam mine layout was approved in Modification 6 to the consent. Mining is approved from four coal seams (in descending order): Pikes Gully (PG), Upper Liddell (ULD), Upper Lower Liddell (ULLD) and Lower Barrett (LB). The panels in the PG and ULLD seams are superimposed. The panels in the ULD and LB seams are also superimposed, however are offset 60 m to the west relative to the PG and ULLD panels.

Mining in the PG and ULD seams have been completed. Mining in the ULLD seam (LW201 – LW204) commenced in July 2017 under an EP approved on 16 May 2017.

4. The mining domain included in the current EP (**Figure 1**) is split into the northern (LW206B, LW207B, LW208) and southern (LW205, LW206A, LW207A) longwall blocks designed to avoid directly mining under Bowmans Creek.
5. The panel lengths range from 957 m (LW206B) to 1,343 m (LW205) and the void width for majority of longwalls would be 215.4 m except for LW208 where the void width would be 124.0 m. The extraction height would be typically in the range 2.5 m to 2.7 m with an average extraction height of 2.6 m for all longwalls. The minimum chain pillar width would be 24.5 m for majority of longwalls except LW208

where it would be 26.6 m. The depth of cover over LW205 – LW208 ranges from 175 m (above the northeast corner of LW206B) to 260 m (above the southwest corner of LW207A).

6. Mining of LW205 – LW208 would recover a total of approximately 8.4 Mt through development and extraction, resulting in a 77% resource recovery.
7. Subsidence is expected to cause additional incremental vertical subsidence of up to 2.8 m, and maximum cumulative subsidence of approximately 5.8 m, the latter due to the reactivation of ground movements from the already mined PG and ULD seams, within the Extraction Plan Area (EP Area). The EP Area would also experience maximum tilt of 219 mm/m and the maximum strain 110 mm/m.
8. The EP Area shown in **Figure 1** represents the area likely to be affected by the mining of LW205 to LW208. It is the surface area enclosed by the predicted limit of vertical subsidence from these longwalls and is based on an angle of draw of 26.5° or 0.5 depth to the ULLD seam from the outermost goaf edge of all panels in all seams at the mine.
9. The predicted subsidence parameters fall within the limits approved in Modification 6. The EP Area falls within the end of mining subsidence contours proposed and approved previously for LW5 to LW8 for each of four seams in Modification 6.
10. Natural and built features shown in **Figure 2** have the potential to be impacted by subsidence from the extraction of LW205 – LW208. These impacts range from a change in the landform, surface cracking, ponding to impacts to built features with the potential to render them unserviceable.
11. Prior to the submission of the EP, Ashton Coal forwarded the draft documents to government agencies (NSW Resources Regulator (NSW RR), Biodiversity Conservation Division (BCD) within the Department of Planning, Industry and Environment (DPIE), DPIE Water, Singleton Council (Council), NSW Heritage, private landholders and Registered Aboriginal Parties in accordance with the consent conditions inviting comment. Only NSW RR provided a response, advising Ashton Coal that it was satisfied the workings (i.e. pillars remaining after extraction) would remain long-term stable and non-subsiding.
12. On 12 November 2019, the Department sought comments from relevant State agencies, including the BCD, DPIE Water, Natural Resources Access Regulator (NRAR), NSW RR, Heritage NSW – Aboriginal Cultural Heritage Regulation (HNSW – ACHR), Heritage NSW – Heritage Council, and Mining, Exploration and Geosciences (MEG) within the Department of Regional NSW.
13. The majority of agencies raised no issues on the EP:
 - MEG advised the extraction of LW205 – LW208 would adequately recover coal resources and would provide an appropriate return to the NSW Government.
 - NSW RR did not identify any concerns regarding mine safety or mine rehabilitation matters in relation to the extraction of the proposed longwalls and advised that subsidence impacts would be appropriately managed.
 - HNSW – ACHR was satisfied the Heritage MP would adequately address the ongoing Aboriginal cultural heritage values of the area. Any impacts would be managed by the Aboriginal Heritage Impact Permit #1130976 held by Ashton Coal.
 - HNSW – Heritage Council was satisfied the one potentially impacted historic site of significance (Shepherd's Hut) would continue to be managed under the Heritage MP and the proposed test excavation investigations for salvage works.
 - BCD declined to comment.

14. DPIE Water and NRAR provided a combined response on 19 February 2021 which requested that:
- the Water MP be updated to re-establish performance targets for the reference piezometers for Bowmans Creek, Glennies Creek and Hunter River alluviums at 80th percentile trigger levels consistent with the ANZECC guideline trigger values for electrical conductivity (EC)
 - the existing monitoring program be expanded to include the 'minimal impact' threshold of the NSW Aquifer Interference Policy (AIP) to apply to the River Red Gums (RRG) open woodlands, a groundwater dependent ecosystem (GDE).
15. Ashton Coal provided a response to the DPIE Water/NRAR comments on 23 February 2021, with the following comments:
- The approved site Water MP, to which the EP's Water MP Addendum is linked to, has EC trigger levels for the alluvial reference piezometers that were established at 95th percentile baseline data and has been approved with those trigger levels (by the Department) on two occasions since 2018. Ashton Coal noted that any changes to re-establish trigger levels to 80th percentile would introduce an inconsistency between the Water MP Addendum and the overarching site Water MP.
 - The RRGs are not identified as a 'high priority GDE' under the relevant *Water Sharing Plan for the Hunter Unregulated and Alluvial Water Sources 2009* and as such the AIP's minimal impact criteria (<2 m drawdowns) does not apply to the RRG GDE. Notwithstanding, the groundwater assessment by AGE has concluded the predicted alluvial groundwater drawdown after completion of LW208 would not extend to the RRG GDE, and that there are four existing groundwater monitoring sites between the longwalls and the RRGs that would detect any drawdowns that exceed the established triggers, including the AIP's minimal impact threshold. Ashton Coal contends the existing monitoring program has adequate capacity to detect >2 m drawdowns in the alluviums in the vicinity of the RRG GDEs, and that a further expansion of the monitoring program is not considered necessary.
16. The Department notes the RRG GDE mapped within the Bowman and Glennies Creek alluviums is outside the EP Area, has not been identified as a 'high priority GDE', has been assessed by AGE as not likely to experience impacts due to direct subsidence, and potential impacts are therefore low risk. The Department is satisfied that the existing groundwater monitoring program and the established trigger levels for investigations included in the site Water MP and the Water MP Addendum for the Bowmans Creek and Glennies Creek provides a sufficiently robust framework for detecting any impacts to this GDE. The Department further notes that the RRG GDE is already managed under the approved Biodiversity MP.
17. In response to the Department's request for additional information on groundwater monitoring and exceedances of trigger levels in the Water MP, on 25 February 2021 Ashton Coal provided the information. This information, as reported in the mine's Annual Reviews from 2017 to 2019, included groundwater monitoring data for the Glennies Creek and Bowmans Creek alluviums, observed exceedances and investigations undertaken as required by the Water MP. Ashton Coal made the following comments:
- Exceedances of the EC trigger levels in the Water MP were recorded in the 2018 and 2019 Annual Review reporting periods for the Bowmans Creek alluvium, however no exceedances attributable to mining were recorded in the 2017 period.

- Investigations of the observed exceedances concluded that in 2018 and 2019 the northern sections of Bowmans Creek alluviums received low levels of recharge from the creek due to the prevailing below average rainfall (drought) conditions, and are unlikely to be attributable to mining impacts.
18. The Department has carefully reviewed the additional information from Ashton Coal. It also notes that AGE predicts a low risk of adverse impacts on the water quality in the Bowmans Creek and Glennies Creek alluviums. The Department considers that the low risk of water quality degradation in the alluviums due to mining, the comprehensive monitoring required by the approved Water MP and the two-tiered trigger levels in the proposed TARP, would be sufficient to monitor impacts against the existing trigger levels, initiate investigations and implement appropriate and additional management controls or remedial actions. Accordingly, the Department is satisfied the re-establishment of trigger levels for the alluviums in the Water MP would not be necessary. The Department would continue to review reportable exceedances of trigger levels included in the future Annual Reviews.
19. The Department's assessment of the subsidence impacts and environmental consequences of the extraction of LW205 – LW208, with due regard of advice from agencies, has concluded the following:
- Magnitudes of subsidence parameters predicted in the revised subsidence impact assessment have been consistent with or generally less than the maximum predictions in Modification 6 and that included in the EP for LW201 – LW204 in the ULLD seam. Monitored subsidence parameters to date at the mine have also been consistent with the predictions. Monitoring of subsidence parameters would continue in accordance with the Subsidence Monitoring Program developed for the EP.
 - Surface water impacts predicted for Bowmans Creek and Glennies Creek fall within the approved limits. The predicted baseflow reductions would not have a significant impact on streamflow of the creeks, and any change in flow rates would be small and imperceptible compared to natural variability in catchment conditions, including under low flow conditions.
 - The drawdown in the Bowman Creek, Glennies Creek and Hunter River alluvium is predicted to be minimal and within the approved impacts. In this regard, maximum drawdown in the Bowmans Creek and Glennies Creek alluvium would be around 1 metre (with some very localised areas at the margins of the Bownmans Creek alluvium up to 5m), and drawdown in the Hunter River alluvium would be less than 1 metre. The drawdown area would expand, however this is mainly the result of previously approved mining operations rather than the mining of LW205 - LW208, and is not predicted to exceed minimal harm considerations.
 - No impacts to registered bore or downstream surface water users are predicted.
 - The revised predicted mine inflows at 417 ML/year is less than the mine inflows previously predicted and approved (510 ML/year) and reflects a better environmental outcome for the mine. Predicted changes to stream baseflow are also significantly less than the approved impacts.
 - Monitoring of surface and groundwater impacts would be managed by the site Water MP and the Water MP Addendum.
 - Ashton Coal holds adequate entitlements of surface and groundwater in its water access licences under the relevant Water Sharing Plans to account for the water loss impacts during operations and post-mine closure.
 - Significant impacts to threatened species or endangered ecological communities are not expected. The biodiversity values of the area would be managed by the site Biodiversity MP and the Biodiversity MP Addendum.

- Impacts to the Aboriginal cultural heritage and historic heritage are approved and would be adequately managed in accordance with the site Heritage MP and the Heritage MP Addendum.
 - Subsidence-induced impacts to built infrastructure within the EP Area would either be imperceptible, minor or would fall within the approved impact limits. These impacts would be managed in accordance with the Built Features MP and the associated Asset MPs in consultation with asset owners and managers, to ensure the serviceability of the infrastructure is maintained.
 - Impacts to land in general would be managed in accordance with the Land MP and the all safety aspects by the Public Safety MP to ensure that no additional risks due to mining occurs.
 - Lemington Road, a Council road and previously impacted by mining, would again experience impacts (change in grade, surface cracking) and would be repaired under a 2013 deed made between Ashton Coal, Glencore (Ravensworth Operations) and Council to maintain it in a serviceable and safe condition.
 - The TARP, with its two-tiered trigger level actions and responses, has been designed to capture both adaptive and contingency management measures on subsidence monitoring results. It allows the initiation of investigations and the implementation of additional management controls or remedial actions for when monitoring shows greater than predicted impacts.
 - Subsidence-induced ground movements resulting in cracking and other landform changes would be remediated / rehabilitated in accordance with the MOP approved by the NSW RR.
20. The Department notes the NSW RR is the authority ensuring compliance with the rehabilitation obligations under the *Mining Act 1992*. NSW RR advised it was satisfied that the requirements relating to mine safety and rehabilitation have been met in the EP.
 21. Based on its assessment of the subsidence impacts and proposed management and remediation of impacts and the government agency advice, the Department considers the EP for the LW205 – LW208 mining domain at Ashton Coal Mine is approvable.
 22. If the EP for LW205 – LW208 is approved by the Secretary, Ashton Coal would be required to meet its obligations under it and the consent conditions in DA309-11-2001-I.

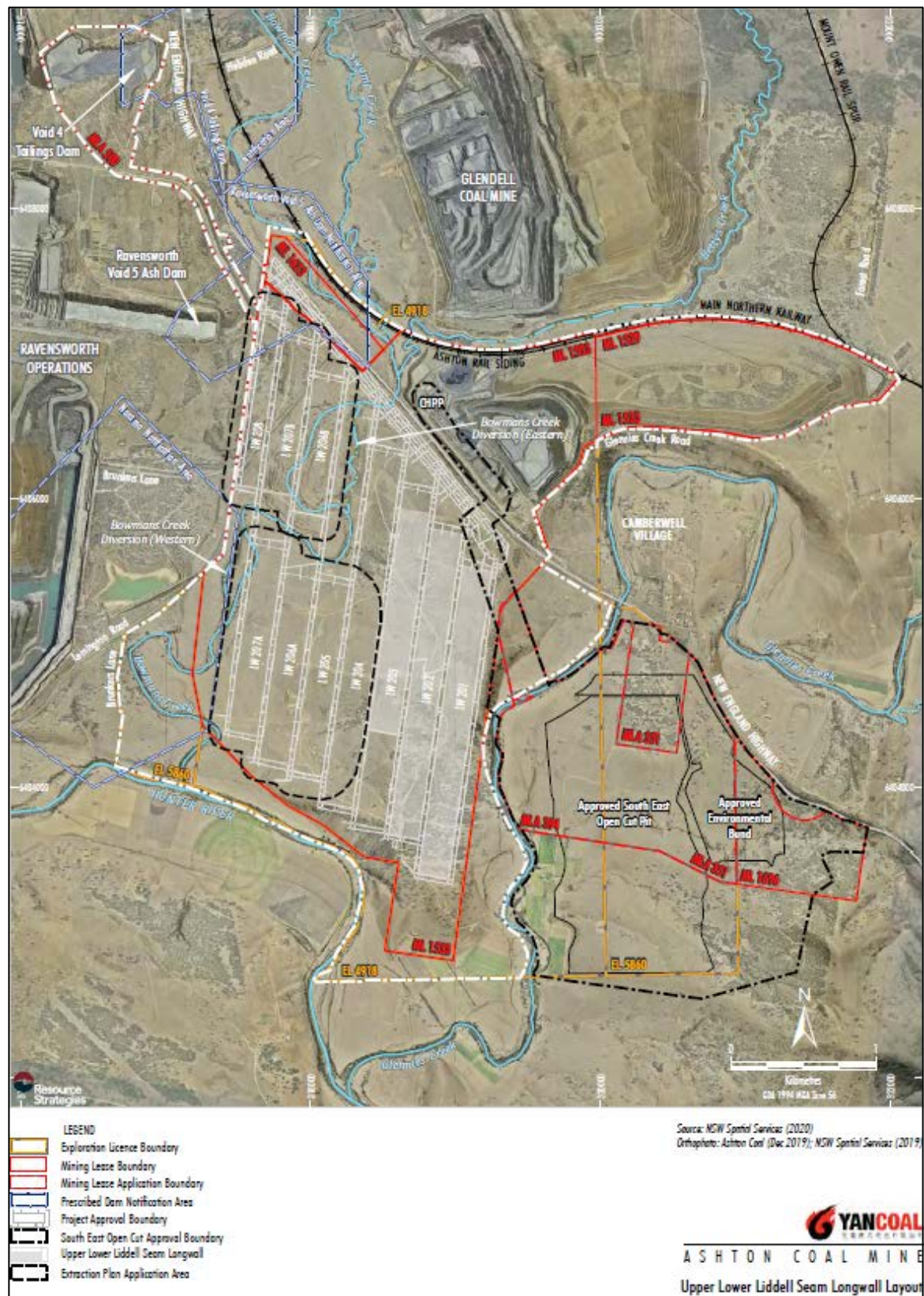


Figure 1: Longwall Layout in Upper Lower Liddell Seam

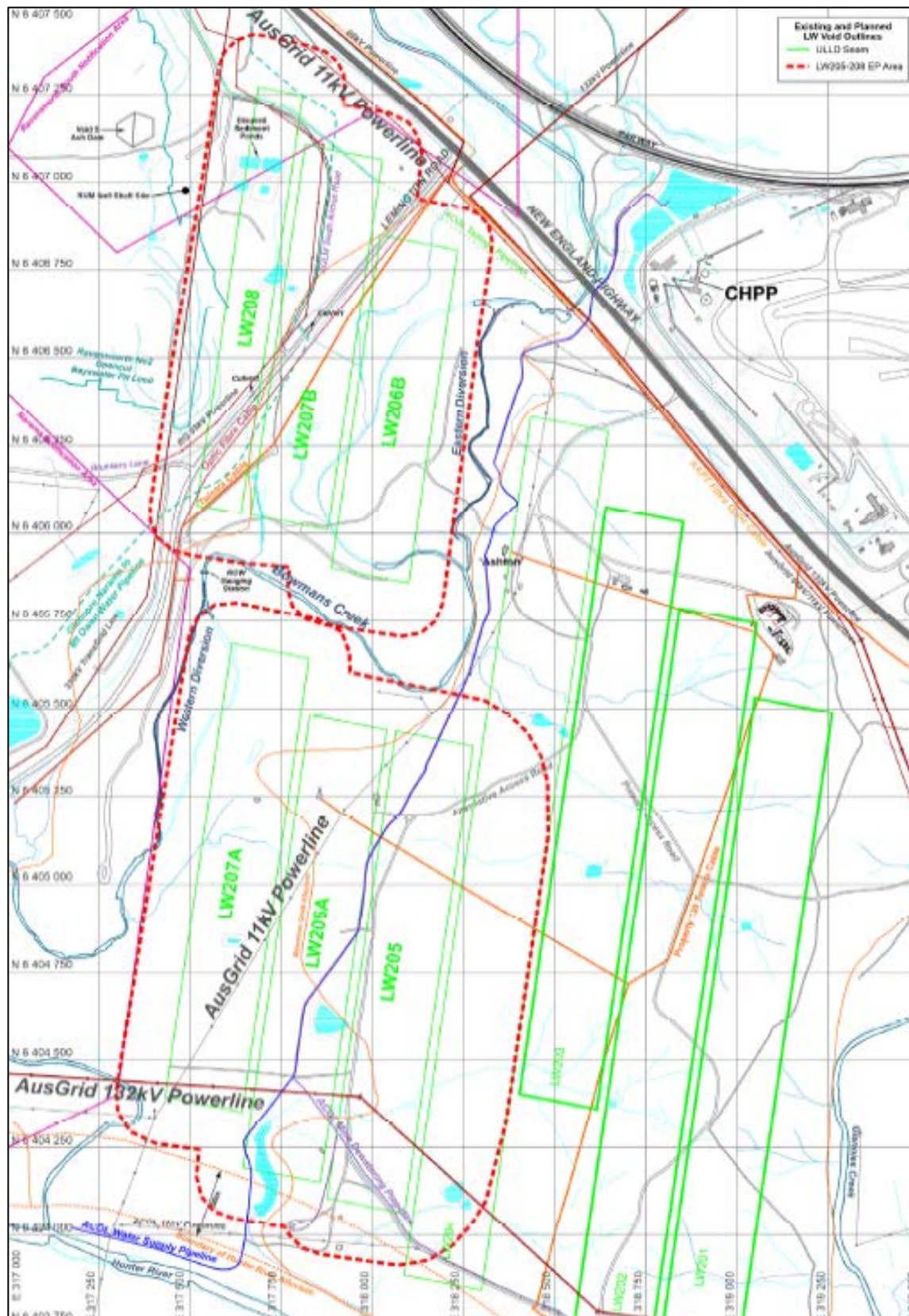


Figure 2: Built Features within the Extraction Plan Area