Appendix 1 Subsidence Compliance and Obligations Register

The Mandalong Southern Extension Project development application SSD-5144 was originally approved by the Planning Assessment Commission (PAC) on 12 October 2015 pursuant to Section 89E of the Environmental Planning and Assessment Act 1979 subject to conditions in Schedules 2 to 6, and subsequently modified (MOD5 approved 1 August 2017).

Schedule 4 Environmental Conditions – Underground Mining, provides a number of conditions relating specifically to subsidence management including the preparation of this Extraction Plan under Condition 6 of Schedule 4, and are outlined below. Additional conditions relating to the extraction plan are included in ***Schedule 5 – Additional Procedures***.

Development Consent Schedule 4 Condition Requirements

Condition	Condition Requirement		Section Addressed
1	The Applicant must ensure that the development complies with the performance measures in Table 6, to the satisfaction of the Secretary.		This EP Section 3.5
Table 6 Subsidence Impact Performance Measures	***Watercourses***		Key Component Plans
	3^{rd} Order and above streams Groundwater-dependent Ecosystems	• No connective cracking between the surface, or the base of the alluvium, and the underground workings. • No subsidence impact or environmental consequence greater than minor.	
	1^{st} and 2^{nd} Order streams	• No subsidence impact or environmental consequences greater than predicted in the documents listed in condition 2(b) of Schedule 2. • No connective cracking between the surface and the underground workings.	
	Aquatic and riparian ecosystems, including affected sections of Morans Creek, Wyee Creek, Tobins Creek and Mannering Creek	• Maintain or improve baseline channel stability. • Develop site-specific in-stream water quality objectives in accordance with ANZECC 2000 and Using the ANZECC Guidelines and Water Quality Objectives in NSW procedures (DECC 2006), or their latest versions.	
	Land		
	Steep slopes and rock outcrops	• No subsidence impact or environmental consequence greater than predicted in the documents listed in condition 2(b) of Schedule 2.	
	Agriculture	• No loss of agricultural productivity greater than minor.	
	Biodiversity		
	Threatened species, threatened populations and endangered ecological communities	• Negligible environmental consequences.	
	Heritage sites		
	Stone Arrangement RPS TBM 32	• Negligible subsidence impacts or environmental consequences	
	All other Aboriginal Cultural Heritage sites/items at the site	• No subsidence impact or environmental consequence greater than predicted in the documents listed in condition 2(b) of Schedule 2.	

<table>
<tr><th>Condition</th><th>Condition Requirement</th><th>Section Addressed</th></tr>
<tr><td></td><td>Mine workings
First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible subsidence impacts or negligible environmental consequences: To remain long-term stable and non-subsiding.
Second workings: To be carried out only within the approved mine plan, in accordance only with an approved Extraction Plan.</td><td></td></tr>
<tr><td>2</td><td>The Applicant must assess and manage development-related risks to ensure that there are no exceedances of the performance measures in Table 6. Any exceedance of these performance measures constitutes a breach of this consent and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation, notwithstanding actions taken pursuant to condition 3 below. Where any exceedance of these performance measures has occurred, the Applicant must, at the earliest opportunity:
(a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur;
(b) consider all reasonable and feasible options for remediation and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and
(c) implement remediation measures as directed by the Secretary, to the satisfaction of the Secretary</td><td>This EP</td></tr>
<tr><td>3
Offsets</td><td>If the Applicant exceeds the performance measures in Table 6 and the Secretary determines that:
(a) it is not reasonable or feasible to remediate the impact or environmental consequences; or
(b) remediation measures implemented by the Applicant have failed to satisfactorily remediate the impact or environmental consequence, then the Applicant shall provide a suitable offset to compensate for the impact or environmental consequence,
Then the Applicant must provide suitable offset to compensate for the impact or environmental consequence to the satisfaction of the Secretary.
Note: An offset required under this condition must be proportionate with the significance of the impact or environmental consequence.</td><td>Section 4

Section 5.5 (TARPs)</td></tr>
<tr><td>4</td><td>The Applicant must ensure that the development does not cause any exceedances of the performance measures in Table 7, to the satisfaction of the Secretary.</td><td>Section 4

Key Component</td></tr>
<tr><td>Table 7 - Subsidence Impact Performance Measures</td><td>Key Public Infrastructure
M1 Motorway; Main Northern Railway: Always safe and serviceable.
330 kV power supply infrastructure: Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.</td><td></td></tr>
</table>

Condition	Condition Requirement	Section Addressed
	Other Built Infrastructure Power lines and power poles; Telecommunications infrastructure — Always safe. Privately-owned residences; Local Roads; Other built features and improvements, (including access roads, farm dams, swimming pools, tracks and fences) — Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repairable, and must be fully repaired or else replaced or fully compensated. ***Public Safety*** Public Safety — Negligible additional risk.	
5	Any dispute between the Applicant and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 7 is to be settled by the Secretary, following consultation with DRE. Any decision by the Secretary shall be final and not subject to further dispute resolution under this consent.	Noted
6 Extraction Plan	The Applicant must prepare and implement an Extraction Plan for all second workings on site, to the satisfaction of the Secretary. Each Extraction Plan must:	
	(a) be prepared by suitably qualified and experienced persons whose appointment has been approved by the Secretary;	Section 2.3
	(b) be approved by the Secretary before the Applicant carries out any of the second workings covered by the plan;	Noted
	(c) include detailed plans of existing and proposed first and second workings and any associated surface development;	
	(d) include detailed performance indicators for each of the performance measures in Tables 6 and 7	Section 3.5 Key Component Plans
	(e) provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since the commencement date of this consent;	Sections 3.3 and 3.4 (Ditton Geotechnical Services, 2021)
	(f) describe the measures that would be implemented to ensure compliance with the performance measures in Tables 6 and 7, and manage or remediate any impacts and/or environmental consequences;	Sections 4 and 5 Component Plans & TARPs Volume 3
	(g) include a Built Features Management Plan, which has been prepared in consultation with DRE and the owners of affected built features, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings, and which: • addresses in appropriate detail all items of key public infrastructure (with particular consideration to tension/angle/suspension towers on transmission lines), and other public infrastructure; • has been prepared following appropriate consultation	Section 4.7 BFMP

<table>
<tr><th>Condition</th><th>Condition Requirement</th><th>Section Addressed</th></tr>
<tr><td></td><td>with the owner/s of potentially affected feature/s;
• recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate all predicted impacts on potentially affected built features in a timely manner; and
• in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or alternative standard agreed with the infrastructure owner), and provides for annual auditing of compliance and effectiveness during extraction which may impact the infrastructure;</td><td></td></tr>
<tr><td></td><td>(h) include a Property Subsidence Management Plan for each privately-owned property affected by the proposed second workings, prepared in consultation with the landowner, which includes:
• a detailed structural inspection of residences and all other structures on the property;
• a detailed subsidence impact assessment for the property, including (where relevant):
o a flood impact assessment, including a prediction of the minimum freeboard of the residence in a 1 in 100 year ARI flood event, and, where this prediction shows the minimum freeboard at the residence to be less than 0.5 m in a 1 in 100 year ARI flood event:
▫ recommends such works to raise, remediate or relocate the residence and/or provide suitable access to the property, prior to undermining the residence; or
▫ where these works are unable to be undertaken, offers to acquire the whole of the property, or such part of the property requested by the landowner where subdivision is approved, in accordance with conditions 3 and 4 of Schedule 5;
o slope stability assessments at the properties shown in Figure 2 of Appendix 5, or at any other property as nominated by the Secretary, which must:
▫ be undertaken at least 12 months prior to undermining the property;
▫ be undertaken in consultation with DRE, by a suitably qualified geotechnical expert;
▫ recommend measures to manage and/or mitigate the risks and impacts associated with slope instability and rock roll-out at the residence, and the risk to the safety of
▫ persons; and
▫ include a timeframe for the implementation of the recommended measures;
o soil erosion assessment, which recommends measures to avoid, mitigate and otherwise respond to increased soil erosion (including tunnel erosion) impacts; and</td><td>Section 4.7.4

PSMPs</td></tr>
</table>

Condition	Condition Requirement	Section Addressed
	• appropriate measures, commitments and timeframes to mitigate, repair, replace or otherwise compensate the impacts to the property;	
	(i) include a Water Management Plan, which has been prepared in consultation with EPA and DPI Water, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on watercourses and aquifers, including: • detailed baseline data on groundwater levels, yield and quality in the region, and in privately- owned groundwater bores that could be affected by the second workings; • surface water and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality; • a program to monitor and report on stream morphology and stream flows, and assessment of any changes resulting from subsidence impacts, including scouring and ponding; • a program to monitor flooding (including updated flood modelling); with recommendations to minimise, manage and mitigate (whether prospectively or retrospectively) flood impacts on residences, private properties, roads, other infrastructure and other built features; • a groundwater monitoring program which: o includes a comprehensive monitoring bore network, ensuring all bore casings are above ground level and are purged before sampling; o samples on a monthly basis for the first two years of the development, and quarterly thereafter, unless directed by the Secretary; o monitors and reports on: ▫ groundwater inflows to the mine; ▫ background changes in groundwater yield/quality against mine-induced changes; and ▫ impacts to: - regional and local (including alluvial) aquifers; - groundwater supply to private bores; and - groundwater dependent ecosystems and riparian vegetation; • a program to validate the groundwater model for the development, and compare monitoring results with modelled predictions; and • a plan to respond to any exceedances of the groundwater assessment criteria;	Section 4.3 WMP
	(j) include a Biodiversity Management Plan, which has been prepared in consultation with OEH, which establishes baseline data for existing habitat, including water table depth, vegetation condition, stream morphology and threatened species habitat, and provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on aquatic and terrestrial flora and	Section 4.5 BMP

Condition		Condition Requirement	Section Addressed
		fauna, with a specific focus on threatened species, populations and their habitats; endangered ecological communities; and water dependent ecosystems;	
	(k)	include a Land Management Plan, which has been prepared in consultation with any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed second workings on land in general;	Section 4.4 Land MP
	(l)	include a Heritage Management Plan, which has been prepared in consultation with OEH and Registered Aboriginal Parties, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and reflects the requirements of condition 22 of Schedule 3;	Section 4.6 Heritage MP
	(m)	include a Public Safety Management Plan, which has been prepared in consultation with DRE, to ensure that the proposed second workings do not impact on public safety;	Section 4.8 Public Safety MP
	(n)	include a Subsidence Monitoring Program, which has been prepared in consultation with DRE; to: • provide data to assist with the management of the risks associated with conventional and non-conventional subsidence; • validate the subsidence predictions; • analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and • inform the Contingency Plan and adaptive management process;	Section 4.9 SM Program
	(o)	Trigger Action Response Plans addressing all features in Tables 6 and 7, which contain: • appropriate triggers to warn of the development of an increasing risk of exceedance of any performance measure; • specific actions to respond to high risk exceedance of any performance measure to ensure that the measure is not exceeded; and • an assessment of remediation measures that may be required if exceedances occur and the capacity to implement the measures;	Section 5.5 Key Component Plans
	(p)	include a Contingency Plan that expressly provides for; • adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 6 and 7, or where any such exceedance appears likely; and • an assessment of the remediation measures that may be required if exceedances occur and the capacity to implement the measures;	Section 5.6 Key Component Plans
	(q)	proposes appropriate revisions to the Rehabilitation Management Plan required under condition 33 of Schedule 3; and	Section 5.3
	(r)	include a program to collect sufficient baseline data for future Extraction Plans.	Key Component Plans

Condition	Condition Requirement	Section Addressed
	The Applicant must implement the approved Extraction Plan as approved from time to time by the Secretary.	Acknowledged
	Notes: • This condition does not apply to mining operations covered by an approved Subsidence Management Plan in place at the date of commencement of this consent. • In accordance with condition 5 of Schedule 6, the preparation and implementation of Extraction Plans may be staged, with each plan covering a defined area of underground workings. In addition, these plans are only required to contain management plans that are relevant to the specific underground workings that are being carried out.	Acknowledged This Plan for LW30-31 EP Area.
6A	The Applicant must commission an independent expert whose appointment has been endorsed by the Secretary, to carry out a review of the groundwater model for the development. This review must include a: (a) review of all available monitoring data; (b) comparison of predicted and actual groundwater impacts; and (c) review of the effectiveness of the groundwater model. The review must be undertaken and reported to the satisfaction of the Secretary. The report must be submitted to the Secretary and DPI Water prior to the approval of any Extraction Plan relating to Longwalls 24 and/or 24A	Section 4.3 Water MP
7	The Applicant must ensure that the management plans required under conditions 6(g)-(q) above include: (a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since the date of commencement of this consent; and (b) a detailed description of the measures that would be implemented to remediate predicted impacts.	Sections 4 and 5 Key Component Plans
8 Archaeological Surveys	The Applicant must: (a) use its best endeavours to undertake archaeological surveys of privately-owned land which was not surveyed in the documents listed in condition 2(b) of Schedule 2, prior to subsidence impacts occurring on that land; (b) analyse the significance of any heritage sites/items identified during the surveys; and (c) include appropriate measures to avoid, minimise and/or mitigate impacts to the identified sites/items in the Heritage Management Plan required under condition 6(l) above, to the satisfaction of the Secretary	Section 4 Heritage MP
9 Grinding Groove Trial Mitigation	Prior to the extraction of Longwall 25, the Applicant shall undertake trial mitigation works at grinding groove sites RPS DF04 and RPS PS11, in consultation with Forestry Corporation of NSW, OEH and Registered Aboriginal Parties, and to the satisfaction of the Secretary.	Grinding Grooves DF04 and PS11 - Trial Mitigation Report (RPS, 2018)
10 Grinding Groove Trial Mitigation	The Applicant must: (a) monitor the effectiveness of the trial mitigation works during and following the extraction of Longwall 25; (b) provide a report on the monitoring to the Secretary, OEH and Registered Aboriginal Parties; and	Grinding Grooves DF04 and PS11 - Trial Mitigation Report (RPS, 2018)

Condition	Condition Requirement	Section Addressed
	(c) use the report to inform the impact avoidance, management and mitigation strategies in future Extraction Plans covering other grinding groove sites, to the satisfaction of the Secretary.	
11 Rock Shelter Monitoring	The Applicant must implement a monitoring program of subsidence effects at rock shelter sites 45-3-1228 and 45-3-1233 in the Extraction Plan for Longwall 34 or, if access to these sites is not granted by the landowner, other rock shelter sites as agreed to in writing with the Secretary. This monitoring shall be: (a) undertaken by a suitably qualified archaeologist, whose appointment has been approved by the Secretary, (b) undertaken in consultation with OEH and Registered Aboriginal Parties; and (c) used to inform impact management of rock shelter sites under future Extraction Plans required under this consent, to the satisfaction of the Secretary.	Section 4.6 HMP
12 First Workings	The Applicant may carry out first workings on site, other than in accordance with an approved Extraction Plan, provided that DRE is satisfied that the first workings are designed to remain stable and non-subsiding, except insofar as they may be impacted by approved second workings.	Letter sent to RR on 26/10/20 seeking first workings approval.
13 Payment of Reasonable Costs	The Applicant must pay all reasonable costs: (a) incurred by the Department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan; and (b) to the owner of privately-owned land subject to a Property Subsidence Management Plan under condition 6(h) above, to obtain legal and/or other advice on the Property Subsidence Management Plan.	Acknowledged Centennial has offered and provided all affected landowners with combined consideration payment for legal advice and PSMP participation.

Schedule 5 Additional Procedures Relating to the Extraction Plan

Condition	Condition Requirement	Section Addressed
1 Notification of Landowners	As soon as practicable after obtaining monitoring results showing: (a) an exceedance of any relevant criteria in Schedule 3, the Applicant must notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the development is again complying with the relevant criteria; and (b) an exceedance of any relevant air quality criteria in Schedule 3, the Applicant must send a copy of the NSW Health fact sheet entitled “Mine Dust and You” (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land).	PSMPs Section 4 Volume 3

Condition	Condition Requirement	Section Addressed
2 Independent Review	If an owner of privately-owned land considers the development to be exceeding the relevant criteria in Schedule 3, then he/she may ask the Secretary in writing for an independent review of the impacts of the development on his/her land. If the Secretary is satisfied that an independent review is warranted, then within 2 months of the Secretary's decision the Applicant must: (a) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Secretary, to: • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the development is complying with the relevant criteria in Schedule 3; and • if the development is not complying with these criteria, identify and implement measures to ensure compliance with the relevant criteria; and (b) give the Secretary and landowner a copy of the independent review.	Acknowledged PSMPs
3 Land Acquisition	Within 3 months of receiving a written request from a landowner with acquisition rights, the Applicant must make a binding written offer to the landowner based on: (a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the project, having regard to the: • existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and • presence of improvements on the land and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed • subsequent to that date; • (b) the reasonable costs associated with: • relocating within the Lake Macquarie City Council or Central Coast Council local government areas, or to any other local government area determined by the Secretary; and • obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and (c) reasonable compensation for any disturbance caused by the land acquisition process. However, if at the end of this period, the Applicant and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Secretary for resolution. Upon receiving such a request, the Secretary will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to: • consider submissions from both parties; • determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;	Acknowledged PSMPs

Condition	Condition Requirement	Section Addressed
	• prepare a detailed report setting out the reasons for any determination; and • provide a copy of the report to both parties. Within 14 days of receiving the independent valuer's report, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination. However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Secretary for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Secretary will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report of the party that disputes the independent valuer's determination and any other relevant submissions. Within 14 days of this determination, the Applicant must make a binding written offer to the landowner to purchase the land at a price not less than the Secretary's determination. If the landowner refuses to accept the Applicant's binding written offer under this condition within 6 months of the offer being made, then the Applicant's obligations to acquire the land shall cease, unless the Secretary determines otherwise.	
4.	The Applicant must pay all reasonable costs associated with the land acquisition process described in condition 3 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General	Acknowledged PSMPs

Statement of Commitments of SSD-5144 (as modified)

Issue	Commitment	Section Addressed
Subsidence Monitoring and Management	Six months prior to the development of longwall 25, Centennial Mandalong will prepare the first Extraction Plan to manage subsidence associated with the proposed mining in the Southern Extension Area.	This EP.
	As part of the development of each Extraction Plan, Centennial Mandalong will update the Public Safety Management Plan, Public Roads Management Plan, Telstra Management Plan and Powerline Management Plan in consultation with relevant infrastructure owners	Key Component Plans Section 4.
Environmental Management	Centennial Mandalong will continue to report environmental monitoring results on Centennial's website in accordance with the POEO Act requirements	Section 5.1 Key Component Plans
	Each year, Centennial Mandalong will prepare an Annual Review, which will report environmental monitoring results and evaluate performance for the previous 12 month period, to be distributed to the relevant government agencies and the Mandalong Mine Community Consultative Committee.	Section 5.1
	***Note by Centennial**: Detailed Statements of Commitment specifically relating to supporting Environmental Management Plans (EMP) required for the Extraction Plan (eg Water, Biodiversity, Heritage) and where those are addressed are detailed within each EMP.*	Detailed within each EMP for the EP. Refer Section 4.

Mining Lease Conditions

The EP Area for LW30-31 is associated with three approved mining leases held by Centennial Mandalong; **ML1722** and **ML1744**. The relevant conditions relating to the Extraction Plan are summarised below.

Mining Leases 1722 and 1744

Condition	Condition Requirement	Section Addressed
ML1722 and ML1744 Condition 5	**Environmental Incident Report** (a) The lease holder must notify the Department of all: (i) breaches of the conditions of this mining lease or breaches of the Act causing or threatening material harm to the environment; and (ii) breaches of environmental protection legislation causing or threatening material harm to the environment (as defined in the Protection of the Environment Operations Act 1997), arising in connection with significant surface disturbing activities, including mining operations, mining purposes and prospecting operations, under this mining lease. The	Acknowledged

Condition	Condition Requirement	Section Addressed
	notification must be given immediately after the lease holder becomes aware of the breach. Note. Refer to www.resources.nsw.gov.au/environment for notification contact details. (b) The lease holder must submit an Environmental Incident Report to the Department within seven (7) days of all breaches referred to in condition 5(a)(i) and (ii). The Environmental Incident Report must include: (i) the details of the mining lease; (ii) contact details for the lease holder; (iii) a map identifying the location of the incident and where material harm to the environment has or is likely to occur; (iv) a description of the nature of the incident or breach, likely causes and consequences; (v) a timetable showing actions taken or planned to address the incident and to prevent future incidents or breaches referred to in 5(a). (vi) a summary of all previous incidents or breaches which have occurred in the previous 12 months relating to significant surface disturbing activities, including mining operations, mining purposes and prospecting operations under this mining lease. Note. The lease holder should have regard to any relevant Director General's guidelines in the preparation of an Environmental Incident Report. Refer to www.resources.nsw.gov.au/environment for further details. (c) In addition to the requirements set out in conditions 5(a) and (b), the lease holder must immediately advise the Department of any notification made under section 148 of the Protection of the Environment Operations Act 1997 arising in connection with significant surface disturbing activities including mining operations, mining purposes and prospecting operations, under this mining lease.	
ML1722 and ML1744 Condition 6	**Extraction Plan** (a) In this condition: (i) approved Extraction Plan means a plan, being: A. an extraction plan or subsidence management plan approved in accordance with the conditions of a relevant development consent and provided to the Secretary; or B. a subsidence management plan relating to the mining operations subject to this lease: I. submitted to the Secretary on or before 31 December 2014; and	This Extraction Plan LW30-31 Built Features Management Plan LW30-31 Public Safety Management Plan LW30-31 Subsidence Monitoring Program LW30-31

Condition	Condition Requirement	Section Addressed
	II. approved by the Secretary. (ii) relevant development consent means a development consent or project approval issued under the Environmental Planning & Assessment Act 1979 relating to the mining operations subject to this lease. (b) The lease holder must not undertake any underground mining operations that may cause subsidence except in accordance with an approved Extraction Plan. (c) The lease holder must ensure that the approved Extraction Plan provides for the effective management of risks associated with any subsidence resulting from mining operations carried out under this lease. (d) The lease holder must notify the Secretary within 48 hours of any: (i) incident caused by subsidence which has a potential to expose any person to health and safety risks; (ii) significant deviation from the predicted nature, magnitude, distribution, timing and duration of subsidence effects, and of the potential impacts and consequences of those deviations on built features and the health and safety of any person; or (iii) significant failure or malfunction of a monitoring device or risk control measure set out in the approved Extraction Plan addressing: A. built features; B. public safety; or C. subsidence monitoring.	
ML1722 and ML1744 Condition 7	**Resource Recovery** The lease holder must optimise recovery of the minerals that are the subject of this mining lease to the extent economically feasible.	Section 3.2.7

Environment Protection Licence (EPL) 365

Mandalong Mine operates under Environment Protection Licence (EPL) 365, which permits coal handling and production to a scale of up to 6.5 million tonnes per annum in line with Development Consent SSD-5144 (>5 Mtpa classification).

There are no specific EPL conditions relating to the preparation of this EP, however conditions related to specific aspects such as water management and monitoring are detailed within the relevant management plans as well as in this EP.

Work, Health and Safety (WHS) Legislation (subsidence related)

Mandalong Mine has developed a safety management system framework (MS-1001) that integrates plans, policies and procedures that enables a systematic approach to establishing and maintaining effective systems to manage health and safety consistent with WHS legislation and AS/NZS 4804:2001.

The following Work, Health and Safety (WHS) requirements have been considered for the Extraction Plan principally within the context of subsidence related risks to public safety, including to private property and public infrastructure.

Work, Health and Safety Legislation

WHS Legislation and Clause	Condition Requirement	Section Addressed
WHS Regulation 2017 Clause 34	**Duty to identify hazards** A duty holder, in managing risks to health and safety, must identify reasonably foreseeable hazards that could give rise to risks to health and safety.	EP Section 4.1 Key Component Plans Extraction Plan Appendix 2 -Risk Assessments
WHS Regulation 2017 Clause 35	**Managing risks to health and safety** A duty holder, in managing risks to health and safety, must: (a) eliminate risks to health and safety so far as is reasonably practicable, and (b) if it is not reasonably practicable to eliminate risks to health and safety, minimise those risks so far as is reasonably practicable.	EP Section 4.1 Key Component Plans Extraction Plan Appendix 2 -Risk Assessments
WHS Regulation 2017 Clause 36	**Hierarchy of control measures** (1) This clause applies if it is not reasonably practicable for a duty holder to eliminate risks to health and safety. (2) A duty holder, in minimising risks to health and safety, must implement risk control measures in accordance with this clause. (3) The duty holder must minimise risks, so far as is reasonably practicable, by doing 1 or more of the following: (a) substituting (wholly or partly) the hazard giving rise to the risk with something that gives rise to a lesser risk, (b) isolating the hazard from any person exposed to it, (c) implementing engineering controls. (4) If a risk then remains, the duty holder must minimise the remaining risk, so far as is reasonably practicable, by implementing administrative controls. (5) If a risk then remains, the duty holder must minimise the remaining risk, so far as is reasonably practicable, by ensuring the provision and use of suitable personal protective equipment. **Note.** A combination of the controls set out in this clause may be used to minimise risks, so far as is reasonably practicable, if a single control is not sufficient for the purpose.	EP Section 4.1 Extraction Plan Appendix 2 -Risk Assessments
WHS Regulation 2017	**Maintenance of control measures** A duty holder who implements a control measure to eliminate or minimise risks to health and safety must	Key Component Plans

WHS Legislation and Clause	Condition Requirement	Section Addressed
Clause 37	ensure that the control measure is, and is maintained so that it remains, effective, including by ensuring that the control measure is and remains: (a) fit for purpose, and (b) suitable for the nature and duration of the work, and (c) installed, set up and used correctly.	
WHS Regulation 2017 Clause 38	**Review of control measures** (1) A duty holder must review and as necessary revise control measures implemented under this Regulation so as to maintain, so far as is reasonably practicable, a work environment that is without risks to health or safety. (2) Without limiting subclause (1), the duty holder must review and as necessary revise a control measure in the following circumstances: (a) the control measure does not control the risk it was implemented to control so far as is reasonably practicable, (b) before a change at the workplace that is likely to give rise to a new or different risk to health or safety that the measure may not effectively control, (c) a new relevant hazard or risk is identified, (d) the results of consultation by the duty holder under the Act or this Regulation indicate that a review is necessary, (e) a health and safety representative requests a review under subclause (4). (3) Without limiting subclause (2) (b), a change at the workplace includes: (a) a change to the workplace itself or any aspect of the work environment, or (b) a change to a system of work, a process or a procedure. (4) A health and safety representative for workers at a workplace may request a review of a control measure if the representative reasonably believes that: (a) a circumstance referred to in subclause (2) (a), (b), (c) or (d) affects or may affect the health and safety of a member of the work group represented by the health and safety representative, and (b) the duty holder has not adequately reviewed the control measure in response to the circumstance.	EP Section 5.2 Key Component Plans Extraction Plan Appendix 2 -Risk Assessments
WHS Regulation (Mines and Petroleum Sites) 2014 Clause 9	**Management of risks to health and safety** (cl 617 model WHS Regs) (1) A person conducting a business or undertaking at a mine must manage risks to health and safety associated with mining operations at the mine in accordance with Part 3.1 of the WHS Regulations. (2) A person conducting a business or undertaking at a mine must ensure that a risk assessment is conducted in accordance with this clause by a person who is competent to conduct the particular risk assessment having regard to the nature of the hazard. (3) In conducting a risk assessment, the person must have regard to: (a) the nature of the hazard, and	EP Sections 4 and 5 Key Component Plans

WHS Legislation and Clause	Condition Requirement	Section Addressed
	(b) the likelihood of the hazard affecting the health or safety of a person, and (c) the severity of the potential health and safety consequences. (4) Nothing in subclause (3) limits the operation of any other requirement to conduct a risk assessment under this Regulation. (5) A person conducting a business or undertaking at a mine (who is the mine operator of the mine or who is a contractor) must keep a record of the following: (a) each risk assessment conducted under this clause and the name and competency of the person who conducted the risk assessment, (b) the control measures implemented to eliminate or minimise any risk that was identified through any such risk assessment. (6) A person conducting a business or undertaking at a mine is not required to keep a record of a risk assessment if: (a) the risk assessment is one that an individual worker is required to carry out before commencing a particular task, and (b) the person keeps a record of risk assessments that addresses the overall activity being undertaken (of which the task forms a part) such as risk assessments carried out in relation to the development of the safety management system for the mine or for a principal mining hazard management plan. (7) The record kept under subclause (5): (a) if kept by a mine operator—forms part of the safety management system of the mine and the records of the mine, or (b) if kept by a contractor who has prepared a contractor health and safety management plan—forms part of the plan.	
WHS Regulation (Mines and Petroleum Sites) 2014 Clause 10	**Review of control measures** (cl 618 model WHS Regs) (1) A person conducting a business or undertaking at a mine must review and as necessary revise control measures implemented under clause 9 in the following circumstances: (a) an audit of the effectiveness of the safety management system for the mine indicates a deficiency in a control measure, (b) a worker is moved from a hazard or assigned to different work in response to a recommendation contained in a health monitoring report provided under Part 3, (c) an incident referred to in clause 128 occurs, (d) any other incident occurs that is required to be notified to the regulator under the WHS laws. (2) The mine operator of a mine must ensure that a control measure that is the subject of a request by a health and safety representative under clause 38 (4) of the WHS Regulations is reviewed and as necessary revised, whether the request is made to the mine operator or notified to the mine operator under	EP Sections 4.1 and 5.2 Key Component Plans MS-1001

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	subclause (3) by another person conducting a business or undertaking at the mine. (3) A person conducting a business or undertaking at the mine who is not the mine operator of the mine must immediately notify the mine operator of a request made to the person under clause 38 (4) of the WHS Regulations. (4) A health and safety representative for workers at the mine may request a review of a control measure under clause 38 (4) of the WHS Regulations as if the circumstances referred to in subclause (1) were included as a circumstance in clause 38 (4) (a) of the WHS Regulations.	
WHS Regulation (Mines and Petroleum Sites) 2014 Clause 23 Identification of principal mining hazard management plan	(1) The mine operator of a mine must identify all principal mining hazards associated with mining operations at the mine. (2) The mine operator must conduct, in relation to each principal mining hazard identified, a risk assessment that involves a comprehensive and systematic investigation and analysis of all aspects of risk to health and safety associated with the principal mining hazard. (3) The mine operator, in conducting a risk assessment under subclause (2), must: (a) use investigation and analysis methods that are appropriate to the principal mining hazard being considered, and consider the principal mining hazard individually and also cumulatively with other hazards at the mine.	Centennial Risk Management System – consistent with AS/NZS ISO 31000:2009 Risk Assessments in Appendix 2 Extraction Plan Subsidence WHS No. 1001025001 Environment LW30-31 No. 1001284063 Built Features LW30-31 No. 1001284061 PSMPs LW30-31 No. 1001285007
WHS Regulation (Mines and Petroleum Sites) 2014 Clause 24 Preparation of principal mining hazard management plan	(1) The mine operator of a mine must consider the following when preparing a principal mining hazard management plan for a principal mining hazard at the mine in accordance with this clause and Schedule 1. (2) A principal mining hazard management plan must: (a) provide for the management of all aspects of risk control in relation to the principal mining hazard, and (b) so far as is reasonably practicable, be set out and expressed in a way that is readily understandable by persons who use it.. (3) A principal mining hazard management plan must: (a) describe the nature of the principal mining hazard to which the plan relates, and (b) describe how the principal mining hazard relates to other hazards associated with mining operations at the mine, and (c) describe the analysis methods used in identifying the principal mining hazard to which the plan relates, and (d) include a record of the most recent risk assessment conducted in relation to the principal mining hazard, and (e) describe the investigation and analysis methods used in determining the control measures to be implemented, and	Extraction Plan LW30-31 Public Safety Management Plan

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	(f) describe all control measures to be implemented to manage risks to health and safety associated with the principal mining hazard, and (g) describe the arrangements in place for providing the information, training and instruction required by clause 39 of the WHS Regulations in relation to the principal mining hazard, and (h) refer to any design principles, engineering standards and technical standards relied on for control measures for the principal mining hazard, and (i) set out the reasons for adopting or rejecting each control measure considered. (4) The mine operator of a mine must consider the following when preparing a principal mining hazard management plan for a principal mining hazard at the mine: (a) the matters set out in Schedule 1 in respect of the principal mining hazard, and any other matter relevant to managing the risks associated with the principal mining hazard at the mine.	
WHS Regulation (Mines and Petroleum Sites) 2014 Clause 67 Subsidence	(1) In complying with clause 9, the mine operator of an underground coal mine must manage risks to health and safety associated with subsidence at the mine. (2) Without limiting subclause (1), the mine operator must ensure that: (a) so far as is reasonably practicable, the rate, method, layout, schedule and sequence of mining operations do not put the health and safety of any person at risk from subsidence, and (b) monitoring of subsidence is conducted, including monitoring of its effects on relevant surface and subsurface features, and (c) any investigation of subsidence and any interpretation of subsidence information is carried out only by a competent person, and (d) all subsidence monitoring data is provided to the regulator in the form and at the times required by the regulator, and so far as is reasonably practicable, procedures are implemented for the effective consultation, co-operation and co-ordination of action with respect to subsidence between the mine operator and relevant persons conducting any business or undertaking that is, or is likely to be, affected by subsidence	This EP document Key Component Plans TARPs Extraction Plan Appendix 2 - Risk Assessments
WHS Regulation (Mines and Petroleum Sites) 2014 Clause 128 Duty to notify regulator of certain incidents	(1) The operator of a mine or petroleum site must take all reasonable steps to ensure that the regulator is notified in accordance with this clause after becoming aware of an incident (other than a notifiable incident) arising out of the carrying out of mining operations or petroleum operations at the mine or petroleum site, but only if the incident: (a) results in illness or injury that requires medical treatment within the meaning of clause 13 of Schedule 9, or (b) is a high potential incident. (5) In this clause:	EP Section 5.1 Key Component Plans TARPs Public Safety Management Plan

WHS Legislation and Clause	Condition Requirement	Section Addressed
	high potential incident means any of the following: (m) any indication from monitoring data of the development of subsidence which may result in any incident referred to in clause 179 (a) (xvi) - a failure of ground, or of slope stability control measures, or 179 (a) (xvii) - rock falls, instability of cliffs, steep slopes or natural dams, occurrence of sinkholes, development of surface cracking or deformations or release of gas at the surface, due to subsidence.	
WHS Regulation (Mines and Petroleum Sites) 2014 Schedule 1 Subsidence Clause 3C Principal hazard management plans – additional matters to be considered	**Subsidence** The following matters must be considered in developing the control measures to manage the risks of subsidence: (a) the characteristics of all relevant surface and subsurface features, (b) the characteristics of all relevant geological, hydrogeological, hydrological, geotechnical, topographic and climatic conditions, including any conditions that may cause elevated or abnormal subsidence or the formation of sinkholes, (c) the characteristics of any previously excavated or abandoned workings that may interact with any proposed or existing mine workings, (d) the existence, distribution, geometry and stability of significant voids, standing pillars or remnants within any old pillar workings that may interact with any proposed or existing mine workings, (e) the predicted and actual nature, magnitude, distribution, timing and duration of subsidence, (f) the rate, method, layout, schedule and sequence of mining operations.	This Extraction Plan Extraction Plan - Appendix 3 (Ditton Geotechnical Services, 2021) Key Component Plans
WHS Regulation (Mines and Petroleum Sites) 2014 Schedule 3 Clause 16 High Risk Activities	**Secondary extraction or pillar extraction, splitting or reduction** (1) The following are identified as high risk activities: (a) secondary extraction by longwall mining, shortwall mining or miniwall mining, (b) pillar extraction, (c) pillar splitting, (d) pillar reduction. (2) The waiting period for any such activity is 3 months. (3) The information and documents that must be provided in relation to any such activity are as follows: (a) details of the authoritative sources used in determining that the proposed method of work can be done safely, (b) engineering plans showing the manner and sequence of extraction, endorsed by the individual nominated to exercise the statutory function of mining engineering manager at the mine, (c) information about the land above or in the vicinity of the proposed activity including land use and details of who owns or occupies any land that may be affected by subsidence,	This Extraction Plan High Risk Activity Notification for LW30-31

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	(d) in the case of a pillar extraction, details of the procedures for the recovery of buried and immobile mining plant in or around a goaf, (e) details of how the risks to the health and safety of workers and other persons from subsidence caused by the activity will be managed.	