

1. Executive Summary

Mining health and safety laws in NSW remain among the best in the world. After examining and considering the provisions of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* (WHS (MPS) Act) and the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* (WHS (MPS) Regulation), and stakeholder views on their operation, the Review found that the section 3 objectives of the WHS (MPS) Act remain valid and its terms generally appropriate for securing those objectives. In particular, the WHS (MPS) Act and WHS (MPS) Regulation (collectively known as the WHS (MPS) laws) assist in securing the objective of the *Work Health and Safety Act 2011* (WHS Act) “to provide for a balanced and nationally consistent framework to secure the health and safety of workers and workplaces”.

The main qualification to this is that the onshore petroleum industry is embryonic in NSW and no submissions were received concerning the laws covering petroleum sites. If a major petroleum project such as Santos’s proposed Narrabri project proceeds, further consideration of the laws should be undertaken, having regard to the experience from similar operating arrangements in Queensland. The WHS (MPS) laws also cover carbon capture and storage (CCS) and additional scrutiny is appropriate if a large-scale CCS project were to proceed.

The WHS (MPS) laws remain largely consistent with the National Mine Safety Framework (NMSF) principles, although outcomes have been complicated by delays and differences within other jurisdictions, such that the framework has not facilitated the level of effective interstate regulatory cooperation originally intended. Additional cross-jurisdictional collaboration on comparative health and safety data and analysis and to ensure the best possible shared learning from incident investigation to help avoid future accidents is considered a priority. Some legislative amendments are desirable. The *Coal Industry Act 2001* is also overdue for review, including its actual and perceived overlaps with the WHS (MPS) laws.

The Mining and Petroleum Competence Board provides an important technical and oversight mechanism, and the Mine Safety Advisory Council has provided collaborative and helpful advice to Ministers. Board of Inquiry provisions, while not yet exercised, are broadly appropriate.

Most importantly, the framework of duties to protect workers including safety management systems, principal hazard management plans, controls and principal control plans, and licensing, authorisations and statutory functions remains appropriate and essential for these high-hazard industries. However, some amendments should be considered based on this Review and further simplification considered based on the scale and risk of operations and the past history of issues arising. Opal mining already has simplified provisions and guidance and similar arrangements could be further developed and publicised

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such as for small quarries and gravel pits. In any simplification, key controls such as for dust diseases and other provisions necessary to manage any serious hazards that are present should not be compromised.

There are a few areas of the WHS (MPS) laws that have had unintended outcomes, principally stakeholder difficulty and confusion with the varying requirements for incident notification reporting to the regulator that are found in various places within the WHS Act and Work Health and Safety Regulation 2017 and the WHS (MPS) laws. Consolidated amendment and cross-referencing within the WHS (MPS) Regulation is recommended along with additional regulatory guidance.

A total of 40 recommendations have been made. Four recommendations relate to consistency with the NMSF and improving collaboration among major mining jurisdictions; 11 recommendations address the WHS (MPS) Act including associated guidance and some overlap with the *Coal Industry Act 2001*; 23 recommendations address the WHS (MPS) Regulation and associated guidance; and two recommendations are in relation to a possible major on-shore petroleum project or CCS project.

2. Recommendations

Consistency with the National Mine Safety Framework and collaboration among major mining jurisdictions

- (1) Recent mine health and safety amendments in Queensland since 2018 should be reviewed by the Resources Regulator, with input from Mine Safety Advisory Council, to consider whether any have sufficient merit to be adopted in NSW.
- (2) When the Work Health and Safety Act and regulations have been finalised by the Parliament of Western Australia they should be reviewed by the Resources Regulator, with Mine Safety Advisory Council input, to assess whether any provisions should be adopted to meet *Work Health and Safety (Mines and Petroleum Sites) Act 2013* objectives and improve safety and health outcomes in NSW.
- (3) NSW should reinvigorate its work with Queensland, Western Australia and any other jurisdictions prepared to collaborate to share safety and health data and work towards commonality in definitions, classification, data storage fields, and data publication.
- (4) NSW should seek to collaborate with Queensland (and possibly other jurisdictions such as Western Australia and South Australia) to improve the quality and consistency of both industry and regulator accident and incident investigations and ensure the results are shared among regulators and published to maximise opportunities for industry learning.

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- (5) The necessary heads of power for notifications should continue to be included in Part 3 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* with additional details consolidated and cross-referenced in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.

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- (6) Provisions in relation to ‘causal’ investigation should be reviewed and broadened beyond the current section 18(2)(c) of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and clause 14(1)(n) and (o) of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 and include contributing factors and a systemic approach. This should also include formalising the Resources Regulator’s ‘causal investigation policy’ within legislation with associated protections. Part 3 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* should be renamed ‘Incident notification and investigation’ with a new head of power provided for investigation of incidents for the purpose of establishing ‘causality’ and future safety improvements. Industry investigations should be more professional and consistent. Industry investigation reports should be provided to the Resources Regulator within 30 days under clauses 11 and 12 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 with appropriate protections. These protections should be considered by a tripartite forum such as Mine Safety Advisory Council. Causal investigation should be separate from any investigation for the purpose of enforcement (e.g., via the current section 70(1)(b) of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013*) with details concerning the different types of investigation included in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014.
- (7) Section 42(3) of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* should be amended to enable mine safety and health representatives to ‘participate’ in investigations similarly to industry safety and health representatives under section 29(2)(b).
- (8) Section 28 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* should be amended to include a new subsection 1(c) stating that an eligible person must satisfy probity checks, and a new subsection (2B) stating that the Minister may appoint additional persons as industry health and safety representatives if they meet the eligibility requirements in section 28(1) and there are no fewer than four persons appointed under section 28(2) and (2A). The Minister should seek additional evidence of costs and benefits and obtain Mine Safety Advisory Council advice before proposing amendments to extend industry safety and health representative roles beyond coal in Part 5, Division 2 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013*.
- (9) The arrangements for safety and health representatives for coal mines in Part 5 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* should include similar provisions to sections 146 and 148 of the *Work Health and Safety Act 2011* when industry safety and health representatives and mine safety and health representatives are exercising *Work Health and Safety (Mines and Petroleum Sites) Act 2013* powers, namely to not unreasonably and intentionally delay, hinder, obstruct or disrupt work, and to not use or disclose documents for a non-WHS related purpose.

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- (10) The *Work Health and Safety (Mines and Petroleum Sites) Act 2013* section 56(1) Board of Inquiry purpose statement should be expanded to include 'contributing factors' and to explicitly allow for high potential emerging and systemic issues and the making of potential findings and recommendations to reduce the likelihood of future accidents and incidents.
- (11) The Chairperson of the Mining and Petroleum Competence Board should be required to be an independent person similarly to the Chairperson of the Mine Safety Advisory Council and Part 8 Division 2 of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Part 11 of the *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* should be amended accordingly.
- (12) The Mine Safety Advisory Council and Mining and Petroleum Competence Board should publish meeting agendas ahead of their scheduled meetings with sufficient time to allow for industry stakeholders to provide input.
- (13) The Resources Regulator should develop further guidance material on industry better practice documentation for safety controls, policies and procedures. Such documentation should be developed with, and tailored for, those who are required to use them and minimise unnecessary words and complexity of language.
- (14) Consistent with changes made to the *Work Health and Safety Act 2011* and the *Work Health and Safety Regulation 2017*, penalty amounts under the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* should be amended to specify penalty units and desirably should be automatically indexed with the Consumer Price Index.
- (15) Because the *NSW Coal Industry Act 2001* contains various provisions that overlap or are perceived to overlap with the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* and has not been reviewed since 2007, the *Coal Industry Act 2001* should be reviewed to ensure that it reflects best practice and there is clarity of regulation between the two Acts and regulatory staff. Memoranda of Understanding and/or guidance material in relation to overlapping functions between the Resources Regulator and relevant approved *Coal Industry Act 2001* companies is also desirable.

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Work Health and Safety (Mines and Petroleum Sites) Regulation 2014

- (16) References to all standards in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 should be reviewed. Some such as AS/NZS 1972 in clause 80(3)(b) should be updated with Resources Regulator consideration given to automatically updating to the latest version or whether enduring mining and petroleum related elements in some standards are better specified in the Regulation or in a code of practice. The Resources Regulator, in consultation with the Mining and Petroleum Competence Board should consider a formal provision to enable a professional engineering demonstration of an alternate means of compliance that entails a level of risk equivalent to, or better than, following a standard.
- (17) The Resources Regulator, in consultation with the Mining and Petroleum Competence Board, should consider and recommend to the Minister whether, given the extensive arrangements already in place in NSW, engineering roles in mining and petroleum should be specified in legislation similarly to professional engineering roles in construction under the *Design and Building Practitioners Act 2020*.
- (18) The Resources Regulator should consider broadening the exemptions in clause 184 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 for small gemstone, opal and tourist mines to include low risk 'tier 3' mine sites such as small surface gravel pits used by regional and remote councils for roadworks, and small exploration sites.
- (19) The Resources Regulator should provide additional guidance to assist with the utilisation of existing provisions in the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 that provide flexibility and how they will be interpreted to reduce the regulatory burden for smaller and lower risk mining and extraction such as gravel pits for roadworks and in exploration.
- (20) Notwithstanding the provisions of Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 clauses 179(j), 23(1) and Schedule 1, consideration should be given by the Resources Regulator to clarifying that rock and coal bursts and related pressure bursts are a principal mining hazard (or an important element of an existing principal mining hazard).
- (21) The Resources Regulator should provide additional information and guidance to industry on the rationale for the amendments to the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 effective on 1 February 2020, especially the change to make a less serious instance of spontaneous combustion at a surface coal mine a high potential incident rather than a dangerous incident.

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- (22) The Resources Regulator should provide guidance to ensure that all significant electricity risks in mining, such as electrical protection settings, are addressed in the Electrical Engineering Control Plan and included in the mine record. Consideration should also be given to updating EES-005 'Electrical protection and earthing guideline' and EES-011 'Technical principles for design of electrical systems' and providing guidance in relation to electrical control systems.
- (23) The Resources Regulator should reference the August 2020 Global Industry Standard on Tailings Management in its guidance material and consider potential legislative amendments to incorporate aspects of the standard.
- (24) The Resources Regulator should seek amendments linked to clause 34 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 that clarify: that safety devices like oxygen candles can be used in refuge chambers during an emergency under clause 3(1)(d) of Schedule 4 to the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014; and that the prohibitions in relation to explosives testing and exploders storage and battery changing at clause 5(2) and 5(3) of Schedule 4 should refer to while 'underground at an underground coal mine' rather than anywhere on site.
- (25) The Resources Regulator should undertake or sponsor a technical study to consider the hazardous zone classification, including clauses 3, 65, 78, 80 and 82 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 of longwall homotropical conveyor roadways and standing faces and development panels.
- (26) The Resources Regulator should review whether emergency sealing in clause 68 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 should make provision for re-entry and if so, include an airlock.
- (27) The Resources Regulator should consider whether: sampling of airborne dust at coal mines in Schedule 6 Part 1 clause 2 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 should be amended to change the minimum sampling period from at least five hours to a minimum of 80% of a shift; Part 1 clause 2(8) should be strengthened to require analysis of the level of respirable silica for each respirable dust sample; and for surface coal mines, Part 3 clause 7 should include more detail on sampling of the drill and blast area, and areas involving mobile equipment and maintenance, coal handling preparation and mobile crushing plant.

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- (28) Guidance material in other major Australian mining and petroleum jurisdictions should be reviewed by the Resources Regulator to consider whether NSW guidance material should be supplemented or revised. This review should include Queensland's QGL02 dated April 2020 covering the management of respirable dust in mineral mines and quarries.
- (29) The Resources Regulator, with input from the Mine Safety Advisory Council, should review whether in clauses 93 and 95 and Schedule 7 clause 4(3) of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 there should be additional prescription in relation to testing of, and training in relation to, the emergency plan with a minimum workforce to be trained in mine rescue for underground coal mines and possibly other underground mines.
- (30) The emergency plan and associated provisions in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 should require specific details of the underground coal mine escape and rescue plan to be displayed at all times with key features such as exits, refuges, firefighting equipment, communications and oxygen stations clearly indicated. Mine workers should have a reasonable opportunity to utilise the exits during periodic training.
- (31) Given recent issues with silicosis, the Resources Regulator should review the drafting of Part 3 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 and consider whether elements of the former wording prior to the April 2018 amendment or other elements at Part 26 of the National Mine Safety Framework consolidated non-core drafting instructions, or the provisions used in other jurisdictions would better ensure ongoing worker health and safety.
- (32) All incident notification requirements should be consolidated in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 including with clear specification of notification timing and a reference to any notifications that are required under the *Work Health and Safety Act 2011* and Work Health and Safety Regulation 2017 and the *Work Health and Safety (Mines and Petroleum Sites) Act 2013*.
- (33) The proposed consolidated provisions in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 in relation to incident notification to the regulator should be supported by further guidance from the Resources Regulator.

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- (34) The scope of the functions in Schedule 10 should be reviewed by the Mining and Petroleum Competence Board to ensure that there are no significant omissions or inflexibilities. For example, the significance of an electrical engineer in clauses 20, 28 and 33 of Schedule 10 not having a monitoring role in the absence of a position of electrical engineering manager, the scope of a mining engineering manager's duties, any need for a power system protection specialist, and if requirements for a qualified mechanical tradesperson in clause 15(2) of Schedule 10 unduly lack flexibility and an alternative such as a Certificate III in Heavy Commercial Vehicle Mechanical Technology may be appropriate in some circumstances.
- (35) The Resources Regulator should further consider the scope to simplify plant registration requirements under clause 177 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 and in doing so seek the advice of the Mine Safety Advisory Council.
- (36) Minor amendments should be made to update section 5(1) of the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* to change the Department name from the Department of Planning and Environment to the Department of Regional NSW. Minor updates should be made in the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 such as the titles of the interstate regulators with which the NSW Resources Regulator cooperates, including in clause 145(5) to cite the Western Australian Department of Mines, Industry Regulation and Safety (DMIRS) and Resources Safety and Health Queensland (RSHQ). Clause 181 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 in relation to corresponding laws should also be updated where necessary. Transitional clause 185 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 should be removed.
- (37) The Resources Regulator should consider additional stakeholder education on the meaning and application of 'reasonably practicable' in relation to the elimination and reduction of risk especially as new technology and control options become available, and also further education and compliance activity with regard to officer 'due diligence'.
- (38) After the Minister and Parliament have considered this Review report and when the Resources Regulator is preparing to consult with industry on amendments to the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and Work Health and Safety (Mines and Petroleum Sites) Regulation 2014, it should check to ensure that no issues in submissions have been overlooked or developed subsequently that should be discussed with industry and drawn to the Minister's attention.

Petroleum and Carbon, Capture and Storage

- (39) If a major onshore petroleum project such as Santos's proposed Narrabri project gains approval to proceed, the provisions in the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* for petroleum should be further reviewed having regard to relevant experience in Queensland.

- (40) If a major carbon capture and storage project is approved in NSW, the provisions in the *Work Health and Safety (Mines and Petroleum Sites) Act 2013* and *Work Health and Safety (Mines and Petroleum Sites) Regulation 2014* should be reviewed in light of Australian and international best practice.