

**IN THE MATTER OF
The Hazelwood Coal Mine Fire Inquiry**

STATEMENT OF ROBERT KELLY

Date of Document: 26 May 2014
Filed on behalf of: The State of Victoria
Prepared by:
Victorian Government Solicitor
Level 25
121 Exhibition Street
Melbourne VIC 3000

Solicitor's Code: 7977
Telephone: +61 3 8684 0444
Facsimile: +61 3 8684 0449
DX 300077 Melbourne
Ref: 1403971
Attention: Peter Stewart

My full name is Robert James Kelly. My professional address is 222 Exhibition Street, Melbourne, Victoria.

I am the Manager of the Earth Resources Unit (**ERU**) in the Workplace Hazards and Hazardous Industries Group at the Victorian WorkCover Authority (**VWA**) based in Melbourne.

I have been Manager of the ERU since July 2011. My primary responsibilities include:

- Leading and managing the ERU;
- Representing Victoria at a State and National Level;
- Managing the planning of the ERU's activities; and
- Coordinating the policy, procedures, planning and performance monitoring for mining exploration and quarry sites in Victoria.

I have completed a Bachelor of Engineering (Civil) majoring in Infrastructure Management. I have also completed a Diploma of Civil Engineering, Diploma of Business (Frontline Management), Diploma of Government (Workplace Inspection) and a Lead Auditor (Safety Management Systems) certification.

I commenced employment with VWA in June 2002 in the position of Technical Inspector in the Major Hazards Unit. During my time at VWA I have held various other positions, mostly in the Workplace Hazards & Hazardous Industries Group, including as a Senior Inspector, Group Leader, Manager and Senior Mining Analyst.

Prior to commencing employment with VWA I was employed by CSR from 1993 to June 2002. I held a number of positions with CSR including Production Manager at CSR Gyprock and operational and technical positions at CSR Readymix. Prior to employment with CSR, I worked as a Sales Representative with Australian Lighting from February 1993 to September 1993 and a Civil Engineer with the Department of Housing and Construction from September 1989 to November 1991.

This statement has been prepared pursuant to the request made by Justine Stansen, Principal Legal Advisor on behalf of the Hazelwood Coal Mine Fire Board of Inquiry by letter of 6 May 2014.

I make this statement from my personal knowledge and understanding, and from the inquiries that I have made in my position as Manager of the ERU.

VWA INSPECTORS

1. The VWA ERU comprises a Unit Manager, two Senior Mining Engineers, one Group Leader and six specialist Inspectors, based in Melbourne CBD, Traralgon, Bendigo, Ballarat and Essendon Fields. The ERU is as follows:
 - (a) Sean Byrne - Group Leader (Appointed Inspector);
 - (b) Chris Walschots - Senior Inspector;
 - (c) Kevin Hayes - Technical Inspector;
 - (d) Marnie Ross - Technical Inspector;
 - (e) Anita Macartney - Technical Inspector;
 - (f) Donna Conley - Technical Inspector;
 - (g) Michael (Harry) Terry - Technical Inspector;
 - (h) Tony Ferrazza - Senior Mining Engineer;
 - (i) Sharn (Wally) Morrison - Senior Mining Engineer; and
 - (j) Myself, Robert Kelly - Unit Manager.
2. In the current ERU team, one of the inspectors was previously an electrician and safety advisor in a Latrobe Valley open cut coal mine and one of the Senior Mining Engineers is a former quarry manager who also has extensive La Trobe Valley coal mining experience.
3. ERU Inspectors are provided with both general Inspector training and specific training relating to the mining sector. All VWA Inspectors undertake a 15 to 18 week intensive OHS Inspector Induction Training program. Following this, VWA offers general competency based training and instruction programs and specific training programs that are undertaken by ERU Inspectors depending on their prior industry experience and their continuing development needs. The topics of the specific training include:
 - (a) Introduction to Underground Mining;

- (b) Ground Support Awareness in Underground mines;
 - (c) Drill Rig Inspection;
 - (d) Geotechnical and Slope Stability Awareness – Quarries;
 - (e) Slope Stability and Ground Control Awareness in Open Cut Mines;
 - (f) Safe Use & Handling of Explosives;
 - (g) Safety Assessment;
 - (h) Introduction to Mine Ventilation; and
 - (i) Structural Integrity of Large Mining Equipment/Plant.
4. VWA Inspectors also undertake competency training within the Competency Maintenance Framework (CMF), which is a professional development program for Inspectors that focuses on a continuous learning approach. The CMF program uses the existing in house skills of inspectors and industry specialist to further develop the technical skills of the inspectorate. The training streams covered in the CMF are:
- (a) Mandatory training days for each field inspector;
 - (b) Targeted workshops on specific topics for specific target groups;
 - (c) Mobile short sharp presentations at scheduled office/team meetings or all staff days;
 - (d) Specific technical training to address team/individual skill gaps known as “Learning opportunities”; and
 - (e) Hands on training followed by supported visits in the field.

REGULATION OF THE HAZELWOOD MINE

5. The Hazelwood Coal mine is a prescribed mine within the meaning of Regulation 5.3.4 of the *Occupational Health & Safety Regulations 2007 (Regulations)*. Hazelwood was already determined to be a prescribed mine when VWA took over the regulation of OHS legislation for the earth resources sector from the Department of Primary Industries (now the Department of State Development, Business and Innovation (DSDBI)) in 2008. VWA does not have a copy of the instrument by which Hazelwood was prescribed. There is no publically available register of prescribed mines.
6. VWA conducted oversight of the duty holder’s compliance with OHS legislation at the Hazelwood mine prior to the fire on 9 February 2014 through the following means.

Monitoring Compliance

7. VWA monitors the duty holder’s compliance with their statutory obligations to assess the potential exposure to major mining hazards and provide control measures to prevent or mitigate against such incidents, through the following means:

- (a) Risk ranking prioritisation of mine sites;
 - (b) An annual verification process of the highest 12 risk ranked sites;
 - (c) Oversight inspections;
 - (d) Incident response and service requests;
 - (e) Accessible guidance materials concerning what constitutes compliance; and
 - (f) Stakeholder engagement.
8. In addition to the matters listed above, VWA monitors specific compliance with the OHS Act and Regulations via incident notifications, statutory notices, reviewing aspects of Safety Management Systems and Safety Assessments and confirming the mine's Emergency Plan has been developed in conjunction with the Emergency Services and the local municipal council.
9. OHS legislation does not require a duty holder to conduct or engage a third party to conduct a safety audit.

Verification Inspections

10. The annual verification process for the 12 highest risk ranked mines was introduced in the sector by VWA in late 2010 in order to monitor the duty holders' compliance with their statutory obligations to assess the potential for major mining incidents and to provide control measures to prevent or mitigate against such incidents.
11. The onsite verification inspections involve checking that a sample of control measures (as identified in Safety Assessments in relation to Major Mining Hazards and associated elements of the mine's Safety Management System) are implemented as described and functional. The verification process involves desk top document reviews, physical observations of selected control measures and discussions with onsite personnel.
12. VWA identifies a particular focus for the verification process each year. In the past three years, the focus has been as follows:
- 2011- Mining Plant (maintenance and jacking of plant);
 - 2012- Mine Fire (arising from operational plant); and
 - 2013- Traffic Management and Contractor Management.
13. VWA does not have the resources to make effective interventions in relation to every risk in every Victorian workplace. VWA therefore targets its interventions in the areas where it can have the greatest impact on workplace safety.
14. In selecting the particular focus for inspections at Hazelwood, the VWA has identified those major mining hazards that pose the greatest risk of more than one fatality. This in turn leads to decisions as to what activities and areas of the mine are observed or inspected. Inevitably this will be the operational areas of the mines where employees have the greatest exposure to harm from known hazards.

15. While the previously worked areas of the mine (batters and mine floor) are entered by employees/contractors to undertake periodic activities including inspection or maintenance work, the risk of one-off catastrophic incidents is significantly reduced compared to active areas of coal extraction. For that reason, directing resources away from the operational areas of the mine to the previously worked areas could not be justified from an occupational health and safety risk oversight perspective.

16. Attached to this statement are the following documents:

- Action Item list from the 2008 Inspection of Hazelwood Power Mining Operations, Morwell (Attachment 1) [\[WSV.0002.001.0018\]](#);
- Hazelwood Mine- Verification Findings Report 2011 (Attachment 2) [\[WSV.0002.001.0029\]](#) and Action Item List (Attachment 3) [\[WSV.0002.001.0026\]](#);
- Hazelwood Mine- Verification Findings Report 2012 (Attachment 4) [\[WSV.0002.001.0076\]](#) and Action Plan (Attachment 5) [\[WSV.0004.002.0001\]](#); and
- Hazelwood Mine- Verification Findings Report 2013 (Attachment 6) [\[WSV.0002.001.0130\]](#) and Action Plan (Attachment 7) [\[WSV.0002.001.0120\]](#).

Fires at the mine

17. From January 2008 when VWA assumed responsibility from DSDBI for the oversight of workplace compliance with the OHS Act and Regulations in the mining sector, to 9 February 2014 when the fire commenced, there were four “significant” fires.

18. VWA classifies incidents as being serious, significant or minor. The classification system is as follows.

Serious	<ul style="list-style-type: none"> • Potential for a major mining hazard incident through the failure of major mining hazard incident controls • Potential for a fatality
Significant	<ul style="list-style-type: none"> • The failure of major mining hazard incident controls did not have the potential for a fatality • The injury did require or could have required admission to hospital
Minor	<ul style="list-style-type: none"> • The failure of major mining hazard incident controls did not have the potential for hospitalisation • The injury or potential for injury did not require, or was unlikely to require, hospitalisation

19. There have been no serious fires at the Hazelwood mine since VWA assumed responsibility for oversight and compliance with OHS legislation.
20. As stated above, there were four significant fires from January 2008 to 8 February 2014. Of the four fires, the first occurred when fire broke out in disused batters in a non-operational part of the mine; the second, involved a flash fire in an item of plant; the third involved a fire on a dredger; and the fourth involved burns to an employee who was refuelling a compressor. The first fire was the only one that involved in-situ brown coal catching fire.
21. Incident notifications were lodged by the duty holders in accordance with section 38 of the OHS Act for each of the four significant fires. These incident notifications resulted in follow-up action being taken by VWA.

14 September 2008

22. On 14 September 2008, a fire broke out on disused batters in the South-east part of the mine affecting a non-operational part of the mine. VWA Inspectors attended at the site on 15 September 2008 to inspect, observe and make enquiries into arrangements for workers working in buildings affected by the fire smoke and the use of carbon monoxide (CO) monitors (Attachment 8) [\[WSV.0003.001.0048\]](#).
23. On 15 September 2008, VWA received notification from CFA of an incident that resulted in two firefighters becoming overcome by smoke and CO (Attachment 9) [\[WSV.0003.002.0026\]](#).
24. A VWA Inspector attended at the site again on 16 September 2008 to follow up in relation to the reported incident and discuss the monitoring and testing of CO procedures. The inspector noted that the monitoring and testing appeared to be working well and was advised that the firefighters had both been released from hospital and their health was good (Attachment 10) [\[WSV.0003.001.0051\]](#).
25. On 22 September 2008, a VWA Inspector, Senior Mining Engineer and Principal Safety Analyst attended on site to discuss the findings from the 2008 Inspection of Hazelwood Power Mining Operations. During this visit, VWA was informed that, except for a few hot spots, the fire had been extinguished and that an environmental and engineering consultancy firm, GHD, had been contracted to investigate the fire incident (Attachment 11) [\[WSV.0003.001.0091\]](#).

1 August 2011

26. VWA received an incident notification on 1 August 2011, relating to an incident that occurred on that day where an employee received burns to his face and neck as a result of a 'flash' fire that occurred when the employee was oxy-cutting an item of plant (Attachment 12) [\[WSV.0003.002.0020\]](#).
27. On 1 August, a VWA inspector attended at the site. Initial inquiries revealed that the Job Safety Analysis (JSA) did not include the specific job steps necessary to carry out the task and that the JSA was not reviewed by Management. Prior to the Inspector leaving the workplace management and employees reviewed the job steps, identified all known

hazards, implemented specific controls and conducted a new JSA for employees who would be performing the task (Attachment 13) [\[WSV.0003.001.0013\]](#).

28. During the course of this visit, management also informed the VWA that the JSA system was under review as a result of the 2011 Verification process and that further training would be scheduled once the review had been completed.
29. A VWA Inspector conducted a follow up visit at the mine site on 5 September 2011. VWA was advised that the operator had conducted an investigation into the incident and the findings were discussed. Further discussion was had about reviewing the JSA system (Attachment 14) [\[WSV.0003.001.0020\]](#).

21 January 2012

30. On 21 January 2012 a fire occurred on a dredger. The fire created enough heat to affect the structural integrity of the discharge boom's mainstay (support) causing the discharge boom to fall to the ground (Attachment 15) [\[WSV.0003.001.0074\]](#).
31. A VWA Inspector responded to this incident with a site visit on 21 January 2012. As a result of the fire, a Prohibition Notice was issued to the operator to ensure that access to the dredger by any person, other than for rendering the dredger safe, was prohibited until an initial report indicating the structural integrity of the fire affected areas had been obtained (Attachment 16) [\[WSV.0003.002.0027\]](#), (Attachment 17) [\[WSV.0003.002.0031\]](#).
32. A VWA Inspector attended at the site on 20 February 2012 to follow up on the Prohibition Notice (Attachment 18) [\[WSV.0003.001.0055\]](#). The Inspector noted that the Prohibition Notice had been risk remedied. A further Prohibition Notice was issued prohibiting the activity of applying additional loads to the fire affected areas of the dredger (Attachment 19) [\[WSV.0003.002.0028\]](#).
33. VWA made further follow up visits on 14 February 2012 (Attachment 20) [\[WSV.0004.001.0001\]](#), 5 March 2012 (Attachment 21) [\[WSV.0003.001.0016\]](#), 13 June 2012 (Attachment 22) [\[WSV.0003.001.0038\]](#) and 20 June 2012 (Attachment 23) [\[WSV.0003.001.0071\]](#). The further Prohibition Notice was noted as being risk remedied during the inspector attendance on 5 March 2012.
34. As a result of this incident, the ERU determined that the verification topic for 2012 would be mine fire (operational plant).
35. VWA conducted the annual verification on 20/21 June 2012 and followed up on elements relating to the dredger fire. Two Improvement notices were issued as a result of enquiries and observations relating to the Mine Fires Safety Assessment and Safe Systems of Work associated with the use of firefighting equipment on a different dredger (Attachment 24) [\[WSV.0003.002.0015\]](#). These notices were complied with on 8 October 2012 (Attachment 25) [\[WSV.0003.001.0034\]](#) and 6 December 2012 (Attachment 26) [\[WSV.0003.001.0030\]](#).

15 May 2012

36. On 15 May 2012, a jerry can containing petrol ignited whilst being opened by an employee who was in the process of refuelling a compressor. During the process of opening the can, fuel was spilled onto his sleeve, and this was set alight. The employee received no injuries and the fire was extinguished (Attachment 27) [\[WSV.0003.002.0025\]](#).
37. A VWA Inspector and senior mining engineer responded to this incident with a site visit on 22 May 2012 (Attachment 28) [\[WSV.0003.001.0084\]](#). The duty holder advised that they were conducting an investigation into the circumstances of the incident. An Improvement Notice was issued requiring the risks associated with the refuelling of petrol powered plant be eliminated, or reduced so far as is reasonably practicable (Attachment 29) [\[WSV.0003.002.0013\]](#).
38. VWA Inspector conducted a follow up visit on 13 June 2012 and was advised that the investigation report had been completed and there were a number of actions suggested. It was noted that compliance with the Improvement Notice was not required until 27 August 2012. VWA Inspector followed up on the Improvement Notice on 28 August 2012 and determined that compliance had been achieved (Attachment 30) [\[WSV.0003.001.0104\]](#).

SAFETY OF FIREFIGHTERS

39. VWA's initial visit at the mine included attending the Emergency Response Control Room on 11 February 2014 where discussions were had with the duty holder and emergency response personnel (Attachment 31) [\[WSV.0003.002.0001\]](#). These included:
- (a) Management of the impact of the fire and water on the stability of the batters, and potential impact of the safety of personnel working around the fires in the event of a batter failure;
 - (b) Site Emergency Commander informed VWA of the system used to assess the geotechnical integrity of the mine and how the safety status was communicated to the CFA. This was done at two levels; through formal briefing meetings (which were attended by VWA and included a CFA representative) and through directions from a mine site person who was embedded in each firefighting team;
 - (c) Site Incident Controller – CFA, showed VWA around the control room, described the incident response plan and provided a copy of the current Site Incident Action Plan. He stated that the firefighting team members were aware of possible hazards related to batter instability and what signs to look for when working around batters e.g. loose material, the opening of tension cracks and poor drainage;
 - (d) The establishment of fixed CO monitors around the perimeter of the mine; and
 - (e) Provision of a site geotechnical expert (contractor) within the Emergency Response Control Room to provide ongoing advice.

CO exposure

40. In accordance with section 38(1) of the OHS Act, the duty holder notified VWA at 4.03pm on 9 February 2014 of fires in the mine area and (in the same notification) of an incident where a male employee was struck in the mouth by a fire hose (Attachment 32) [\[WSV.0003.002.0021\]](#).
41. On 12 February 2014, VWA personnel planned a site visit to Yallourn and Hazelwood coal mines which were both experiencing mine fires. On 13 February 2014, VWA was notified of an incident occurring at the Hazelwood mine relating to exposure of a firefighter to CO (Attachment 33) [\[WSV.0003.002.0024\]](#).
42. On 14 February 2014 a VWA Inspector and Senior Occupational Hygienist visited the mine in order to monitor the steps that the relevant duty-holders were taking to protect the health and safety of the mine employees and firefighters at the Hazelwood mine, particularly from the risk of exposure to CO (Attachment 34) [\[WSV.0003.001.0044\]](#). VWA reviewed the system of work for dealing with the risk of CO exposure and was informed that it included the following:
- (a) The use of personal CO monitors with set pre-determined levels;
 - (b) Employee health assessments and CO screening, pre, during and post activities within the affected area of the mine;
 - (c) Modified work rosters and scheduled work breaks;
 - (d) Standards of exposure (% in blood);
 - (e) Modified instructions for treatment including the use of oxygen and medical treatment at hospital; and
 - (f) Modified site medical treatment facilities.
43. VWA made observations of the above system, including test results, testing and employee monitoring. VWA also observed random samples indicating that employees were recording data every 15 minutes in the 'field'. On the basis of this information the Inspector and hygienist formed the belief that the system of work reduced, so far as was reasonably practicable, the risk to firefighters of CO Exposure.
44. VWA Inspectors attended at Hazelwood on 18 February 2014 to discuss with the duty holder the provisions in place to maintain power station operations in the event that there was a regional/area evacuation and what CO exposure protections and monitoring would be provided to the mine workers. It was on this visit, that Inspectors were informed of dehydration concerns raised by firefighters at the 'coal face'. This issue had been addressed by the mine operators who had purchased eskies and containers for the CFA vehicles (Attachment 35) [\[WSV.0003.001.0059\]](#).
45. On 15 February 2014 and 18 February 2014, VWA received three further incident notifications from the CFA regarding CFA firefighters receiving CO exposure on 10 February 2014 (Attachment 36) [\[WSV.0003.002.0022\]](#), 12 February 2014

(Attachment 37) [\[WSV.0003.002.0023\]](#) and 14 February 2014 (Attachment 38) [\[WSV.0004.003.0001\]](#).

46. VWA Inspectors attended Hazelwood on 21 February 2014 in response to incident notifications received by VWA on 18 February 2014. VWA Inspectors discussed the status of CFA firefighters' health, observed random sample testing and monitoring records. The Inspector observed that the monitoring process was governed by a Health Management and Decontamination Plan dated 14 February 2014 and appeared more robust than at the time of the visit of 14 February 2014. This plan had not been sighted by VWA personnel during the earlier site visit on 14 February (Attachment 39) [\[WSV.0003.001.0080\]](#).
47. On 26 February 2014, VWA received a complaint from an MFB firefighter regarding the adequacy of P2 face masks for the purposes of fire fighting in the mine (Attachment 40) [\[WSV.0003.001.0001\]](#). Direct contact was made with the complainant on 4 March 2014 by a VWA Inspector. VWA obtained further details concerning the complaint and then requested that the complainant email the contact details for his supervisor and OHS manager. The ERU group leader made direct contact with the Incident Controller on 5 March 2014. During this contact it was identified that monitoring for air contamination, including CO, was subject to a systematic process of testing and reporting that key messaging communicated at the commencement of each shift, addressed instructions for CO management, including risk controls for high levels of CO.
48. On 27 February 2014, VWA received a complaint from an MFB firefighter regarding possible exposure to firefighting water he believed to be contaminated by unknown substances (Attachment 41) [\[WSV.0003.001.0007\]](#). The complainant believed he was not provided results of tests in a timely manner by the MFB. Direct contact was made with the complainant by a VWA Inspector on 3 March 2014 and it was confirmed that test results had subsequently been provided and that the complainant did not seek to continue the matter.

Slope Stability

49. VWA also attended at the mine to determine and assess the safety of workers continuing work in the operational part of the mine and assess the issue of slope stability for the firefighters. Enquiries and discussions relating to the duty holder's geotechnical controls made by VWA during site visits between 11 February 2014 and 6 March 2014 included:
- (a) Monitoring/ hazard identification batter movement - use of batter inspection reports, crack monitoring and other monitoring instrumentation;
 - (b) The provision of geotechnical expert advice during night shift;
 - (c) Batter Stability Assessment – methodology including modelling;
 - (d) Dewatering – impact of excess water, power failure and coal movements on aquifer dewatering efforts. Also, impact of excess water on batter stability including floor heave as well as surface dewatering efforts;

- (e) Risk Assessments for Batters – a hazard plan overlaid onto the Hazelwood Mine Plan had been developed showing colour coded risk areas. High Risk areas were deemed as ‘No Go Zones;’ and
 - (f) Emergency Management.
50. A VWA Senior Mining Engineer attended Hazelwood on 21 February 2014 to assess if the fires had impacted batter slope stability and how this was being managed by GDF Suez. The Engineer determined that GDF Suez, at the time of the site visit, was providing an adequate level of safety in relation to the possible adverse effects of the coal fires on batter slope stability on personnel. Other matters discussed included provision of site personnel as escorts for emergency services vehicles (Attachment 42) [\[WSV.0003.002.0003\]](#).
51. VWA Inspectors and a Senior Mining Engineer attended Hazelwood on 28 February (Attachment 43) [\[WSV.0003.001.0100\]](#) and 6 March 2014 (Attachment 44) [\[WSV.0003.001.0026\]](#) to follow up on the ongoing impact of the fire on batter slope stability and water management and determined GDF Suez was continuing to provide a safe system of work for personnel. Inspectors did not identify any compliance issues requiring enforcement action.
52. On 25 March 2014 a VWA Inspector, Group Leader, Senior Mining Engineer and Manager, ERU attended Hazelwood and met with senior mine management. The purpose of this visit was to discuss and gain an understanding of what actions/reviews the duty holder planned to, or had already, commenced to ensure the ongoing health and safety of persons entering fire affected areas, recovery tasks, geotechnical inspections, ongoing group CO monitoring and the review and, if necessary, revision of the mine Safety Management System (Attachment 45) [\[WSV.0003.001.0094\]](#).
53. Additional enquiries by VWA on 25 March 2014 into how the dutyholder(s) were ensuring the Health and Safety of all employees including firefighters identified:
- (a) Re-entry risk assessment, titled "Feb 2014 Hazelwood Mine Fire - CFA Hand-over";
 - (b) Clearing of drains, road repair, replacing of bund walls and other 'general' earth works;
 - (c) Geotechnical inspections of fire affected areas including geotechnical assessment; and
 - (d) VWA observed a Batter Assessment Map dated 24-03-2014 and discussed the documented 'extreme/high' risk areas.

OTHER ACTIONS SINCE THE FIRE

Fire Breaks

54. On 20 March 2014, VWA inspectors and a Senior Mining Engineer attended at the Hazelwood mine to enquire into the mine fire. On this occasion, Inspectors observed that the provision of ‘Fire Breaks’ within the mine tenement boundary had not been

maintained in accordance with the mine Safety Assessment. 'Fire Breaks' were identified by the duty holder as a system control against the major mining hazard of mine fire (Attachment 46) [\[WSV.0003.001.0065\]](#). An Improvement Notice was issued to the mine duty holder requiring the contravention to be remedied by 23 June 2014 (Attachment 47) [\[WSV.0003.002.0009\]](#).

No further improvement notices issued

55. No other improvement notices or prohibition notices have been issued to any duty holders to date as a result of the mine fire at Hazelwood in February and March 2014. Enquiries are ongoing.

Dated: 26 May 2014

Robert Kelly