

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

**STATEMENT OF DR SHARON DAVIS**

---

Date of Document: 2 November 2015  
Filed on behalf of: The State of Victoria  
Prepared by:  
Victorian Government Solicitor  
Level 25  
121 Exhibition Street  
Melbourne VIC 3000

---

Telephone: +61 3 8684 0444  
Facsimile: +61 3 8684 0449  
DX 300077 Melbourne  
Ref: 1503689  
Attention: Andrew Suddick

I, Dr Sharon Davis, of Level 10, 8 Nicholson Street, East Melbourne, Victoria, Executive Director, Water Resources Division of the Water and Catchments Group in the Department of Environment, Land, Water and Planning (**DELWP**), can say as follows:

**Introduction**

1. I am the Executive Director of the Water Resources Division, Water and Catchments Group in DELWP. I report to Kate Houghton, Acting Deputy Secretary of the Water and Catchments Group, who in turn reports to Adam Fennessy, the Secretary of DELWP.
2. I have held my current role since April 2014. My primary responsibilities include:
  - leading a multi-disciplined workforce, dealing in a complex and multi-stakeholder environment;
  - navigating the political context, building and maintaining relationships with a broad range of people, and proactively shaping relationships with key stakeholders;
  - ensuring the highest ethical standards in the delivery of all of the department's objectives with strong commitment to the DELWP values;
  - supporting the development and implementation of water policy that balances the economic, environmental and social values of water;
  - being a modern public service leader, driving the development of a mobile and flexible workforce and supporting a positive, safe working environment for employees;

- ongoing delivery of core business functions associated with water entitlements, the water register, water information and assessment while also delivering new initiatives or additional projects as they arise; and
  - ensuring safety by creating a culture of 'safety first', leading by example and ensuring compliance with occupational health and safety legislation.
3. Prior to working in my current role, I was employed by the Murray-Darling Basin Commission and Authority for 13 years, where I was responsible for a diverse range of programs including elements of the development and implementation of the Murray-Darling Basin Plan.
  4. I have a Bachelor of Arts (Honours) in Physical Geography and a PhD in Hydrology.

### **DELWP and the Water and Catchments Group**

5. DELWP has offices located across Victoria, with around 3,100 staff. DELWP is made up of six broad groups that have responsibility for implementing Government policy relevant to the portfolios of our Ministers. The Water and Catchments Group is one of these groups and is primarily responsible for assisting the Minister for Environment, Climate Change and Water (**Minister**) administer the *Water Act 1989* (**Water Act**).
6. DELWP in partnership with water corporations and catchment management authorities is responsible for effectively managing Victoria's water resources to meet future urban, rural and environmental needs.
7. The Water and Catchments Group works across DELWP, with agencies, Ministers, stakeholders and the community to balance the economic, environmental and social values of water.
8. The group's objectives as set out in the DELWP Corporate Plan 2013 to 2017 are to:
  - improve efficiency of supply and use of water in cities and towns to improve liveability;
  - help to implement a more productive, efficient and sustainable irrigation industry supported by improved irrigation infrastructure;
  - implement a Basin Plan to ensure that social, economic and environmental interests in Northern Victoria are secured;
  - improve environmental condition of waterways supporting community needs;
  - improve governance arrangements for a high performing and efficient water sector; and
  - improve capacity to respond and adapt to a variable climate.

### **The Board's request for this Statement**

9. This statement has been prepared pursuant to the request made by the Hazelwood Mine Fire Board of Inquiry by letter of 14 October 2015 (**Board's letter**).
10. The questions posed by the Board's letter, and my responses, are set out in the remainder of this statement.
11. The information contained in the body of this statement is derived from research carried out by officers of DELWP at my request in response to the Board's letter and is accurate to the best of my knowledge, information and belief.

### **The Board's Questions and my responses**

***Question 1 - Provide an overview of the role and responsibilities of DELWP (and its predecessors) in relation to the regulation of water licences and entitlements, in particular in relation to the Latrobe Valley mines***

12. DELWP manages Victoria's water resources in partnership with a network of government agencies and water corporations. It does this primarily under the Water Act.
13. DELWP's responsibilities include the management of groundwater, catchments and waterways, infrastructure oversight, water saving and re-use projects, flood management, governance and water legislation.
14. A detailed breakdown of the roles and responsibilities of DELWP, Southern Rural Water, West Gippsland Catchment Management Authority, Gippsland Water and others in the regulated Latrobe system is outlined in the *Latrobe System Entitlements Explanatory Note 2013* published on the Victorian Water Register website. A copy is annexed to this statement and marked **(DELWP.1006.001.0041)**.

***Question 2 - Provide an overview of the regulatory framework administered by DELWP (and its predecessors), in particular in relation to water licences and entitlements, in particular in relation to the Latrobe Valley mines.***

#### The Water Act

15. The Water Act is the legislation that governs water entitlements and establishes the mechanisms for managing Victoria's water resources. Under the Water Act, the State (the Crown) retains the overall right to the use, flow and control of all surface water and groundwater on behalf of all Victorians. The purposes of the Water Act are set out in s1, including *to promote the orderly, equitable and efficient use of water resources* (s1(c)).

Victoria's water entitlement framework

16. Victoria's water entitlement framework aims to balance the demands for water for consumption, the environment and other non-consumptive uses. It guides how water is shared, held, used and traded for maximum value.
17. The water entitlement framework works at three levels:
- Tier 1 – the State (the Crown) retains overall right to the use, flow and control of all surface water and groundwater on behalf of all Victorians.
  - Tier 2 – the Minister is responsible for granting rights to authorities (including environmental entitlements allocated in accordance with s48B of the Water Act) and setting limits and caps.
  - Tier 3 – individual rights to water including private rights, supply to urban customers, water shares issued in accordance with s33F(2) of the Water Act, licences and supplies by agreement.

Entitlements issued by the Minister

18. The Minister issues entitlements under the Water Act . These include:
- bulk entitlements;
  - environmental entitlements;
  - water shares; and
  - s51 take and use water licences.
19. The Latrobe Valley mines hold bulk entitlements for surface water and s51 licences to take and use groundwater.

Bulk entitlements

20. A bulk entitlement is a right to take, use and supply water. Bulk entitlements may be granted to entities such as water corporations and other specified bodies, including a generation company within the meaning of the *Electricity Industry Act 2000*. Bulk entitlements can be held for water in a waterway, water in storage works of a water corporation and groundwater. To date, bulk entitlements have generally covered surface water systems.
21. Bulk entitlements can be created in two main ways. They can be granted by the Minister, pursuant to an application made under the Water Act, or a pre-existing right to water (ie: a right granted prior to the Water Act) can be converted into a bulk entitlement.
22. Depending on the nature of a proposal for access to water, the application process may involve consultation with stakeholders and local communities and submissions from DELWP or the applicant. At a minimum, the Minister must forward a copy of any bulk entitlement application to

the specified ministers for the environment & planning portfolios, and any public statutory body that may be directly affected by the application.

23. These consultation and notification steps identify the potential impacts of the proposal in the application, including any adverse impacts on existing water users and the environment. The Minister will consider any submissions received before making a determination on the application.
24. Bulk entitlements are issued subject to a range of conditions and obligations. Bulk entitlements may set out:
  - rules about when water can be taken and in what volume;
  - the reliability associated with the entitlement;
  - a policy for restricting the entitlement when the water resource is limited;
  - obligations to release flows for environmental uses;
  - obligations to release flows for primary entitlement holders;
  - obligations to contribute to the payment of operation and maintenance costs; and
  - metering, accounting and reporting obligations.
25. Provisions may also be made for a storage manager, resource manager and environmental manager.
26. Bulk entitlements may be traded on a temporary or permanent basis. The conditions for trading a bulk entitlement are set out in s46 of the Water Act.

#### Water licences

27. A take and use licence is a fixed term entitlement to take and use water from a waterway, catchment dam, spring, soak or aquifer. Licences are subject to conditions set by the Minister and specified on the licence. This includes s51 licences to take and use groundwater. Licence conditions can specify the maximum amounts of water that may be taken in particular periods or circumstances.

#### Victoria's water planning framework

28. Victoria has an integrated and dynamic water regulatory framework supported in legislation. This regulatory framework incorporates:
  - year-to-year or short term planning through measures such as seasonal resource determinations on rural unregulated systems, or drought response plans in urban systems;
  - local planning to balance the demand of water and available supply in our urban areas through the development of water supply-demand strategies every five years;

- local planning to maintain and improve the health of rivers and wetlands through the development of regional river health strategies every five years;
- strategic planning through the development of regional sustainable water strategies every 7 to 10 years; and
- long-term assessment of the resource base and river health every 15 years (adapted from the former Department of Sustainability and Environment 2011).

#### Victoria's groundwater management framework

29. The Minister, through the Water Act, has oversight of the State's groundwater resources and the monitoring and reporting on the condition of those groundwater resources.
30. Rural water corporations, under delegation from the Minister, have operational responsibility for managing groundwater resources and license use in accordance with statutory management plans or local management plans.
31. All groundwater resources are governed by the groundwater management framework. The framework comprises: groundwater basins, groundwater catchments, water supply protection areas (**WSPA**), and groundwater management units (which include groundwater management areas and WSPA's).
32. A Groundwater Basin comprises one or more groundwater catchments within a geological basin. The extent of the basin may extend off-shore or across State boundaries.
33. A Groundwater Catchment is an area containing a connected groundwater resource(s), bringing together the input (recharge) areas, use (demand) areas and discharge areas.
34. The Minister can declare a WSPA for the protection of the groundwater resources in the area or the surface water resources in the area or both. These are generally established in areas of intense use and result in the preparation of a management plan to ensure the water resources of the relevant water supply protection area are managed in an equitable manner and so as to ensure the long-term sustainability of those resources.
35. A groundwater management Area is an administrative area where groundwater has been intensively developed or has the potential to be.
36. Management within these areas involves:
  - preparation of statutory management plans or local management plans to ensure groundwater use is sustainable and the available resource is shared equitably between users and the environment;
  - permissible consumptive volume (**PCV**) set by the Minister as the maximum volume of water that can be licensed for consumptive use.

- licensing irrigation and commercial use to ensure the rights of existing users and the environment are protected;
- enabling trade for those who want access to groundwater or to increase their current entitlement volume, when the PCV is fully allocated, to purchase a volume from another licence holder in the area;
- metering to ensure compliance with licence conditions and to track groundwater use;
- monitoring groundwater levels and quality through the state observation bore network; and
- annual reporting on groundwater use and the condition on the groundwater resource.

37. The Latrobe Valley mines source water through a combination of bulk entitlements and ‘take and use’ licences for groundwater issued under s51 of the Act. These allocation arrangements are discussed further in the response to question three.

Question 3 - Provide details of the water allocation arrangements for each of the Latrobe Valley mines, including:

*a. What are the current water entitlements and water licences held?*

Surface water

38. There are three bulk entitlements held to supply power stations in the Latrobe Valley from water from the regulated Latrobe system. These are:

- the Bulk Entitlement (Latrobe – Yallourn) Conversion Order 1996 to supply Yallourn power station, held by Energy Australia;
- the Bulk Entitlement (Latrobe – Loy Yang A) Conversion Order 1996 to supply Loy Yang A power station, held by AGL; and
- the Bulk Entitlement (Latrobe – Loy Yang B) Conversion Order 1996 to supply Loy Yang B power station, held by Southern Rural Water. Southern Rural Water supplies GDF Suez, who operate Loy Yang B power station, with water under a s51 licence (Diversion Licence No. 2004148).

39. Copies of each power generator’s bulk entitlements together with an explanatory note summarising all entitlements in the regulated Latrobe System, are published on the Victorian Water Register website (<http://waterregister.vic.gov.au/water-entitlements/bulk-entitlements>). The consolidated versions of the Yallourn (**DELWP.1006.001.0028**), Loy Yang A (**DELWP.1006.001.0001**) and Loy Yang B (**DELWP.1006.001.0014**) Bulk Entitlements are annexed to this statement.

40. The relevant bulk entitlements are specified as an annual entitlement volume, share of flow and share of storage capacity in Blue Rock Reservoir and Lake Narracan in the table below.

Power Generator	Annual Entitlement (ML)	Share of flow (%)		Share of storage (%)	
		Tanjil R at Blue Rock Reservoir	Latrobe R at Lake Narracan	Blue Rock Reservoir	Lake Narracan
Yallourn	36,500	14.97	22.41	14.97	29.94
Loy Yang A	40,000	16.40	24.55	16.40	32.80
Loy Yang B	20,000	8.20	12.28	8.20	16.40

41. There is no bulk entitlement to supply Hazelwood Power Station from the regulated Latrobe system. Hazelwood has its own water storage (Hazelwood pondage). Water is supplied to the mine owner by Gippsland Water by agreement for the pondage and boiler operations via supply by agreements under its bulk entitlement.

#### Groundwater

42. Each mine is issued with 'take and use' licences under s51 of the Water Act by the Minister. A Regional Monitoring Committee consisting of all three mines and managed by Southern Rural Water Corporation prepares an annual report on each mines' licensed entitlement, groundwater use and water levels. The annual reports are available on request to the public. It provides the licensed volumes and annual extraction, and has a generic copy of the licence. Annual licence volumes by aquifer are attached as a schedule to each groundwater licence. Copies of the take and use licences for the mines are annexed to this document, (**DELWP.1006.001.0044, DELWP.1006.001.0079, DELWP.1006.001.0048**).

***b. What is the purpose for which the current water entitlements and water licences are granted?***

#### Surface water

43. The power generators' bulk entitlements are not explicit about the purpose they should be used for, other than to "supply electricity generation works". The bulk entitlements do not define what constitutes electricity generation works.

#### Groundwater

44. The mines' take and use licences are issued for the purpose of "efficient depressurisation" of the open cut mine. The objective is stated on the licences. Depressurisation is the removal of groundwater to maintain pressure levels within the adjacent aquifer systems, which is necessary to maintain mine stability. This water may subsequently be used for purposes such as fire prevention within the mine.



***c. When do the water entitlements and water licences expire?***

Surface water

45. Bulk entitlements do not expire.

Groundwater

46. All three groundwater take and use licences expire in 2025.

***d. Are the water entitlements and water licences secure or can they be revoked/cancelled? If the latter, under what circumstances could a water entitlement or water licence be revoked/cancelled?***

Surface water

47. Bulk entitlements are issued by the Minister without an end date and are ongoing. A bulk entitlement holder can apply to the Minister to have their bulk entitlement cancelled or transferred to an environmental entitlement under s44B of the Water Act.

48. Bulk entitlements can only be amended by the Minister on application of the holder under s44(2)(a) of the Water Act, or on application by another Authority with the support from another Minister under s44(2)(b) of the Water Act. The Minister may also temporarily qualify any rights to water, including under a bulk entitlement, if the Minister declares that a water shortages exists under s33AAA of the Water Act.

Groundwater

49. All three groundwater take and use licences are for the period until 2025. The Minister may revoke a take and use licence, under s60 of the Water Act, where the licence holder fails to comply with the licence.

***e. What is likelihood that a water entitlement or water licence will be renewed in the event that it is to expire before the end of mine life?***

Surface water

50. Bulk entitlements do not expire.

Groundwater

51. The holder of a licence may, before the expiry of the licence and in accordance with s58 of the Water Act, apply to the Minister for the renewal of the licence. The Minister must have regard for the matters set out in s53 of the Water Act, including the report of any panel appointed by the Minister to consider submissions on the application and the matters set out in s40(1) of the Water Act. The Minister must renew the licence unless there are good reasons not to do so.

**Question 4 - Assuming that the Latrobe Valley mines' rehabilitation plans are to fill (partially or fully) the mine pit, please indicate:**

**a. Has DELWP considered the likely volume of water required to fill (partially or fully) the Latrobe Valley mines?**

52. DELWP has not assessed the likely volume of water required to fill the mines.

**b. What are the current and future costs of water allocation?**

53. There is no established water market in the regulated Latrobe system at present, so information cannot be provided on current or future costs of purchasing water allocation or water entitlements.

#### Surface water

54. The bulk entitlement holders in the regulated Latrobe system, including the power generators, have to pay annual storage management costs to the storage manager, Southern Rural Water. The charges are determined to cover the costs of operating the system storages and other infrastructure and are approved by the Essential Services Commission. The relevant costs are set out in Southern Rural Water's current Water Plan, which is annexed (**DELWP.1006.001.0076**).

#### Groundwater

55. In terms of groundwater, there are no costs for an entitlement.

56. In capped systems entitlements are required to be traded where the system is fully allocated. The PVC of the groundwater management areas (Rosedale and Stratford Groundwater Management Areas), where Latrobe Valley Coal mines' licences are held, are fully allocated.

57. Within the licence each mine is required to pay an annual fee of \$19,300 to administer the groundwater licences. As the administrator of the groundwater licences, this fee goes to Southern Rural Water.

**c. Will the Latrobe Valley mines need to purchase water through the open water market in order to firstly, fill (partially or fully) the pit and secondly, to maintain water levels in the pit?**

58. If the Latrobe Valley mines require additional water beyond that which they are currently entitled to under their bulk entitlements and take and use licences, they will need to trade water allocation or additional entitlement from another entitlement holder. As there is no established water market in the regulated Latrobe system, there is no way of predicting the ease or cost of trading additional water.

**d. Has DELWP considered the option of diverting the Latrobe and Morwell Rivers to assist in the filling of the Latrobe Valley mines nearby these rivers? If it has considered this option, please provide details of these considerations including how likely this option might be and whether the pits could be used for the purposes of flood mitigation or potential water storages.**

59. DELWP has not considered the option of diverting the Latrobe and Morwell Rivers to assist in the filling of the Latrobe Valley mines.
- e. Whether the water contained in the Blue Rock Reservoir and Lake Narracan will be used to assist in the rehabilitation of the Latrobe Valley mines, and if so, please provide details about the use of that water and the cost to the Latrobe Valley mines*
60. The purpose of Blue Rock Reservoir is to supply entitlement holders in the regulated Latrobe system in accordance with the terms and conditions of the bulk and environmental entitlements allocated in this system.
61. All water in Blue Rock Reservoir is allocated to existing entitlements so it can only be used in accordance with the terms and conditions of these entitlements.
62. Collectively, the power generators are entitled to a 39.47% share of Blue Rock Reservoir for the purpose of supplying electricity generation works.
63. The Victorian Government also holds a 10.43% share of Blue Rock Reservoir for the Loy Yang 3/4 Bench site, which it holds for future power generation development.
64. Together, the four bulk entitlements make up the electricity industry's historical 50% share of Blue Rock Reservoir and 100% share of Lake Narracan.
65. The remaining 50% share of Blue Rock reservoir is held in bulk or environmental entitlements for urban, agricultural or environmental use.

***Question 5 - Any other matter relevant to term of reference paragraphs 8, 9 and 10.***

66. N/A

Dated: 2 November 2015

**List of attachments**

1. **Attachment 1** Extract from Latrobe System Entitlements Explanatory Note 2013 [DELWP.1006.001.0041]
2. **Attachment 2** Bulk Entitlement (Latrobe - Loy Yang A) Conversion Order 1996 Consolidated Version [DELWP.1006.001.0001].
3. **Attachment 2.1** Bulk Entitlement (Latrobe - Loy Yang B) Conversion Order 1996 Consolidated Version [DELWP.1006.001.0014].
4. **Attachment 2.2** Bulk Entitlement (Latrobe - Yallourn) Conversion Order 1996 Consolidated Version [DELWP.1006.001.0028].
5. **Attachment 3** Hazelwood Groundwater Licence No. 2007412 [DELWP.1006.001.0044].
6. **Attachment 3.1** Yallourn Groundwater Licence No. 2007403 [DELWP.1006.001.0079].
7. **Attachment 3.2** Loy Yang Groundwater Licence No. 20120713 [DELWP.1006.001.0048]
8. **Attachment 4** SRW Water Plan 3 Blue Rock storage charges extract [DELWP.1006.001.0076].