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Subject: Morwell Mine Fire Submission
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SUBMISSION TO HAZELWOOD MINE FIRE INQUIRY

This submission is made from Monash University on behalf of the Hazelwood Health Study and relates to the Inquiry's Terms of Reference 6 and 7.

6. Whether the Hazelwood Coal Mine Fire contributed to an increase in deaths, having regard to any relevant evidence for the period 2009 to 2014;

The Hazelwood Health Study is very much focussed on potential long term health effects, rather than short term effects such as deaths. However we are planning to link with the National Death Index at some point in the future. This would permit an examination over a longer period of specific causes of death among residents of Morwell and other towns in the Latrobe Valley. We are developing exposure metrics to assess individual exposures to smoke from the Hazelwood coal mine fire. It will then be possible to conduct an analysis to determine whether there is any association between smoke exposure and causes of death such as cardiovascular, respiratory diseases or cancer. It will also be possible to adjust for confounding factors such as sex, age, socioeconomic status, tobacco smoking and occupational exposures. Unfortunately the data linkage and statistical analysis cannot take place during the timeframe of the Inquiry.

7. Short, medium and long term measures to improve the health of the Latrobe Valley communities having regard to any health impacts identified by the Board as being associated with the Hazelwood Coal Mine Fire;

The Hazelwood Health Study is studying potential long term health impacts that might be associated with the coal mine fire. Specifically we are conducting a **survey of adults** in Morwell and Sale. The population of Morwell was heavily exposed to smoke from the fire. Four major considerations guided the selection of Sale as the comparison community – a rural location, lower exposure to smoke from the mine fire, the need for a complementary socio-demographic composition and a suitable size population. Modelling conducted by the CSIRO Oceans and Atmosphere Flagship demonstrated that there was minimal if any exposure to smoke from the mine fire in Sale. We have requested access to the Victorian Electoral Roll to identify eligible adult participants and send them letters of invitation. We are currently evaluating bids to conduct Computer Assisted Telephone Interviews (CATI) of those with listed telephone numbers. It is planned that the adult survey will commence later this year, but it is likely to take 12 months to complete.

The Hazelwood Health Study will also look at the impact of the coal mine fire on vulnerable groups such as infants, children, young people and older people in the community. The overall aim of the Latrobe **Early Life Followup** (ELF) Study is to investigate the potential impacts of exposure to smoke from the fire during pregnancy or infancy on health and development of children in the Latrobe Valley. Babies and infants are a recognised vulnerable group for being adversely affected by air pollution and it is not known at this stage whether any longer term health issues will be identified.

The aim of the **Hazelwood Schools Study** is to see if there are any ongoing psychological impacts of exposure to smoke from the Hazelwood mine fire in school-aged children, as well as exploring other educational and wellbeing outcomes. It is important to involve a range of schools across the Latrobe Valley. The Department of Education and Training, Catholic Education Office and schools from across the Valley have been very helpful in assisting the investigators with setting up the research to better understand the possible impacts of the fire. The Schools study will run on a rolling basis, with schools

starting at different times. Parents of children in Year 3, 5, 7, and 9 at the targeted schools are being contacted in Term 3 to ask permission for their children to take part in a 9 year longitudinal study. In addition to understanding the specific smoke impacts, a study of this size and length is likely to shed light on other factors impacting on the wellbeing and academic outcomes of local students, which has the potential to shape future educational policy for the region and beyond.

The **Older Persons study** is underway. The aim is to assess the impact of the smoke event on older people, focussing on a review of policy decisions made during the event that affected older people. The objective is to inform best practice for future emergency events. The first part of this study is a series of group discussions with older people living in the Latrobe Valley community and another set of group discussions with the families and carers of older people. Further discussions will take place with older people in residential aged care as well as those receiving Home and Community Care services. These will be followed by discussions with the key organisations that supported older people during the smoke event.

The Hazelwood **Community Wellbeing** study is also underway. Focus groups and an analysis of local and social media will gather community perceptions of the most significant changes since the smoke event and the key features of effective communication. This work will build on Federation University's small study last year of the initial impact of the fire. Individuals involved in community rebuilding activities are also being interviewed to gather their perceptions of the effectiveness of these activities. The investigators are interested in the community's resilience after the smoke event. It is important to understand how community wellbeing has been affected and how information from the study can be fed back to the community to strengthen its resilience.

Unfortunately none of these substudies within the Hazelwood Health Study research program are likely to have any results available within the timeframe of the Inquiry. However it is certainly the intention of the investigators to inform the future development of long term measures to improve the health of the Latrobe Valley community. Further information is available at <http://hazelwoodhealthstudy.org.au/>

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