TRANSCRIPT OF PROCEEDINGS

The attached transcript, while an accurate recording of evidence given in the course of the hearing day, is not proofread prior to circulation and thus may contain minor errors.

2015/16 HAZELWOOD MINE FIRE INQUIRY

MORWELL

WEDNESDAY, 9 SEPTEMBER 2015

THE HONOURABLE BERNARD TEAGUE AO - Chairman

MRS ANITA ROPER - Board Member

PROFESSOR JOHN CATFORD - Board Member

MR PETER ROZEN - Counsel Assisting

MS RUTH SHANN - Counsel Assisting

MR RICHARD ATTIWILL QC - State of Victoria

MR ANTHONY NEAL QC - GDF Suez

MS MARITA FOLEY - GDF Suez

MR CHRIS BLANDEN QC - Dr Rosemary Lester

MS KATE BURGESS - Dr Rosemary Lester

MS MELANIE SZYDZIK - Voices of the Valley

MS MEGAN FIZTGERALD - Voices of the Valley

MR RAY TERNES - Voices of the Valley

CHAIRMAN: Yes, Mr Rozen.

MR ROZEN: Good morning Mr Chairman and members of the board. We have prepared a document which comprehensively sets out the submissions of counsel assisting and copies of that document should be in front of each member of the board and were provided to the parties yesterday afternoon. I won't read the document but we do rely on its contents in their entirety. What I will do, though, is identify the key passages in it in which we set out the findings that ought to be made and the recommendations that we submit ought be made by the board and, where necessary, I'll refer and summarise the evidence that we say supports those submissions.

Our submissions are divided into two parts. The first part deals specifically with term of reference 6, which is the question of the contribution of the mine fire to any increase in deaths in the Latrobe Valley. The second part of our submissions deals with some incidental matters which have arisen in the evidence that was presented to the board in the three days of hearings last week.

Starting with the first, that is term of reference 6, paragraph 6 of the terms of reference requires the board to enquire into and report on whether the Hazelwood Coal Mine fire contributed to an increase in deaths in 2014 having regard to any relevant evidence for the period 2009-2014. Counsel assisting submit, in summary, that the answer to the question that the Board of Inquiry is asked to enquire into is yes, the fire did contribute to an increase in deaths in the Latrobe Valley.

We make some brief legal submissions - I don't know

whether any of those are likely to be controversial - but we observe that "contributed to" is an ordinary English expression. "To contribute" means to play a part in the achievement of a result. We submit that "to contribute" is not the same as "to cause" and that an event can contribute to an outcome without necessarily causing the outcome in the legally understood meaning of that expression.

The Inquiry is, of course, conducted under Part 3 of the Inquiries Act and under Part 3, the board is not bound by the rules of evidence, nor is it bound by practices or procedures applicable to courts of record. A finding of fact must be based on some material that tends logically to show the existence of facts consistent with the finding. It is observed in a leading textbook on tribunal law that the test may be less demanding than the balance of probabilities test applicable to proof in civil litigation.

In paragraph 5 of our submissions, we make reference to the well-known Briginshaw formula, which we submit is applicable to the task of the board. We note that a finding that the fire contributed to an increase in deaths could have significant adverse consequences for a range of parties and therefore should not be made unless the evidence before the board leads to a reasonable satisfaction having regard to the consequences for any affected parties.

Turning to page 2, we summarise the four expert witnesses who have given evidence in these proceedings, Emeritus Professor Bruce Armstrong, a doctor and epidemiologist from the University of Sydney, Professor Ian Gordon, the director of the Statistical Consulting Centre and professor of statistics in the school of mathematics

and statistics at the University of Melbourne, Associate Professor Adrian Barnett, a statistician from the Queensland University of Technology, and Dr Louisa Flander, an epidemiologist from the University of Melbourne.

We then summarise the circumstances in which each of those experts came to be involved in their investigations, and I'll briefly summarise those, particularly in relation to Associate Professor Barnett, who was the subject of some cross-examination about that matter during the public hearings.

Associate Professor Barnett was contacted initially by the Australian Broadcasting Corporation to analyse data that had been provided to the ABC by the community group Voices of the Valley. Associate Professor Barnett provided a report, initially to the ABC, in which he compared mortality data in four Latrobe Valley postcodes in February-March 2014 with the average of the corresponding months from the previous five years. He reached the following conclusion, "The probability that the death rate was higher than the average during the fire is 0.89. This means the probability that the death rate was not higher than the average during the fire is 0.11. The mean increase in deaths as a relative risk is 1.14 or 14 as a percentage. The absolute number of deaths per postcode per month is 1.8, which, over four postcodes and two months, is 14.1."

Those findings are significant because we submit that the evidence that the board has heard from each of the other three experts is that their findings in relation to the same data are broadly consistent with the findings of Associate Professor Barnett. A number of them observe that

in their individual reports.

Associate Professor Barnett produced a second report, in which he looked at a broader range of postcodes and five more years of data, and we set out, in summary, the conclusion that he reached there.

At paragraph 10 we note that Associate Professor Barnett was subjected to lengthy cross-examination by senior counsel for GDF Suez, the mine operator, Mr Neal QC. Mr Neal drew Associate Professor Barnett's attention to some email correspondence that had passed between himself and Voices of the Valley and we note there were two particular emails that he was referred to, one in which he had endorsed as a great idea a proposal by Voices of the Valley to release his report to the media on 9 February 2015, the first anniversary of the fire, and an email dated 5 February 2015, in which he'd said, in the context of a discussion about the limited data because of the small number of deaths under examination, that "one way to bolster the arguments is to cite the very many larger studies that have consistently shown an increased risk of death after exposure to pollution".

We note at paragraph 12 that, in response to questions about the first email concerning the media, Associate Professor Barnett explained that this was based on his experience of engaging the media. He rejected that he was starting to be part of a campaign and pointed out that he was very protective of his reputation as a scientist.

In relation to the second of those emails, it was put to Associate Professor Barnett that he'd crossed the line from being an independent expert to advocating for a cause.

He rejected this. He told the board that he'd "always felt very down the line with the science", in his words.

The purpose of that examination appeared to be to undermine Associate Professor Barnett's credibility as an expert witness. However, we note, and it is important, we submit, that unlike, for example, Dr Flander, Associate Professor Barnett has never been held out as an independent witness by Voices of the Valley or anyone else.

In our submission, the phrase "bolster the argument", used by Associate Professor Barnett in the second of the emails, was unfortunate in the circumstances. However, and crucially, it was never suggested to him he'd been asked to alter any aspect of his reports by anyone else and he confirmed that no such request had been made of him and, further, his statistical analysis was endorsed by the other experts, including, we submit, Dr Flander.

Dr Flander is of the Melbourne School of Population and Global Health at the University of Melbourne. She was engaged by the Department of Health, as it then was, now the Department of Health and Human Services. Together with colleagues, she provided three reports to the department. We summarise the content of those reports. Broadly speaking, the first report examined the data, the mortality data. The second report was a critical appraisal of the work of Associate Professor Barnett, and her third report was an updated analysis of the mortality data.

At paragraph 20 we note that in the critical appraisal of Associate Professor Barnett's work, Dr Flander was critical of him, stating that his key assertions are not supported by the results reported in his paper.

At paragraph 21 we note in the third of the reports

provided by Dr Flander and her colleagues, there is a conclusion and we quote, "There is statistical evidence that air quality exceedances are associated with mortality throughout the study period, not just during the period of the 2014 Hazelwood Coal Mine fire or the 2009 bushfire." They went on to conclude, "As mortality was associated with air quality over 50 micrograms per cubic metre for PM 10 and the fire may have contributed to this measure of air quality, it is possible that a proportion of deaths in 2014 could have been due to the fire in February-March 2014." Those conclusions are important because they, as we will in due course demonstrate, were adopted by the expert panel when they gave their evidence as a group.

Later in these submissions, we will make reference to the extensive comments that were provided to Dr Flander by officers of the department in response to draft reports, and we will address the significance of that evidence later in our submissions.

Emeritus Professor Bruce Armstrong was engaged by the Board of Inquiry itself to address the matters set out in paragraph 23 of our submission. In his report to the board, entitled Expert Assessment and Advice Regarding Mortality Information as it relates to the Hazelwood Mine Fire Inquiry term of reference, Professor Armstrong reached 14 conclusions. In response to the question, "Was there an increase in mortality in Latrobe Valley during the coal mine fire in 2014?", Professor Armstrong concluded, "There is moderate evidence for a higher mortality from all causes and from cardiovascular disease in Latrobe Valley in February-June 2014 than in the same period 2009-13." And we go on and note other aspects of the conclusions at the

top of page 6.

The fourth of the experts from whom the board heard is Professor Ian Gordon. Professor Gordon was engaged in August of this year by Voices of the Valley and he was provided with the mortality data from the Registry of Births, Deaths and Marriages, as well as reports from Professor Barnett and Dr Flander.

At paragraph 27 we note that Professor Gordon, in his report, noted, in relation to the work of Associate Professor Barnett and Dr Flander, that they had arrived at broadly similar conclusions, which is that there was an excess of deaths in association with the fire of between 11 and 18 deaths approximately on the basis of comparison with the previous five years in the area of interest. He concluded that based on his own analysis of the data, "in which the period of potentially different risk is assumed to extend beyond the actual time of the fire, for example to May 2014, the excess of deaths is statistically significant at conventional levels", an expression that he explained in his oral evidence to the Inquiry.

At paragraph 29 we note that the four experts accepted an invitation to participate in a facilitated meeting at the Inquiry's office on Monday, 31 August 2015. At the meeting, the experts were asked to discuss the conclusions in Professor Armstrong's report to the board and to see if it was possible to reach agreement on any or all of those conclusions.

At paragraph 31 we make some general observations about the evidence to this Inquiry by the experts. We note that apart from their obvious expertise across a range of intersecting fields of scientific endeavour, there are

aspects of their evidence which are noteworthy. Firstly, the professionalism of their collaborative approach, the mutual respect with which they regarded each other and the process in which they were involved, their thought and care with language that they used to express their conclusions, their preparedness to compromise and defer to others where this was called for and their willingness to acknowledge frankly where the evidence pointed away from their preferred conclusions.

In these circumstances, we submit the board should not hesitate to act on the conclusions reached by the experts, especially where those conclusions are agreed to by all of them and are supported by the evidence before the Inquiry.

We submit that what emerges from the totality of the evidence before the board is that the board should approach answering the question posed by term of reference 6 by answering the two questions posited by Professor Armstrong in his report; firstly, was there an increase in mortality in Latrobe Valley during the coal mine fire in 2014 and, secondly, what environmental exposures might have increased mortality in Latrobe Valley during the coal mine fire in 2014.

At 34 we note what appears to be certainly common ground amongst all the parties, and that is that question B only arises if question A is answered in the affirmative. We note that the first question is answered at paragraphs 1.1 to 1.3 by the experts in their joint report and we submit that the board should answer the question in precisely the terms employed by the four experts at paragraphs 1.1 and 1.2 of their joint report, that is,

there is moderate evidence for a higher mortality from all causes and from cardiovascular disease in Latrobe Valley in Feb-June 2014 when compared to the same period in 2009-2013. There was some evidence that the increase in mortality in February to March 2014, the period of the mine fire, was greater than the increase in mortality during February to June 2014.

We also submit the board should make a finding in terms of what appears at the top of page 2 of the joint expert report, that is, if the period of risk to health is assumed to extend beyond the actual time of the fire, for example to May 2014, the excess of deaths is statistically significant at conventional levels.

In relation to the second question, that is what environmental exposures might have increased mortality in the Valley during the fire, the starting point, we submit, is to acknowledge that, as Professor Armstrong noted, it is to be answered having regard to the fact that the evidence for the increase itself is not strong. However, even having regard to that caveat, we submit that it is open on the evidence for the board to identify the most likely of the explanations for the numerical increase. Once again, in the words of Professor Armstrong, the most likely of the various explanations that can be put forward is that the increase of deaths was due to the increase in particulate pollution of the air during the period of the mine fire, most likely due to the mine fire but possibly added to by bushfires that occurred at the same time.

Professor Armstrong identified in his oral evidence to the Inquiry two principal reasons for this opinion. Firstly, the findings of Dr Flander and her colleagues in

their June 2015 report that there was a relationship between particulate pollution and the risk of death in Latrobe Valley and, secondly, the large body of evidence to indicate that short-term increases in particulate pollution are associated with short-term increases in deaths, as well as long-term exposure being associated with longer term increase in deaths.

In relation to the second aspect of that evidence given by Professor Armstrong, there is considerable evidence before the board about the adverse health effects associated with the inhalation of particulate matter, and we note what that evidence is at footnote 55, and we also observe that the reports relied upon by Associate Professor Barnett, which have now been obtained by the secretariat, also provide further scientific support for that, and I will shortly tender those additional reports.

At paragraph 41 we note that Professor Gordon was in substantial agreement with the opinion of Professor Armstrong, as was Associate Professor Barnett. Dr Flander told the Inquiry she had no fundamental disagreement with Professor Armstrong and had no objection to the further analyses done by Associate Professor Barnett and Professor Gordon.

At paragraph 42 we note that the experts were extensively cross-examined by other counsel, particularly senior counsel for GDF Suez.

At 43 we note that there appeared to be three main areas in which it was suggested the evidence was inconsistent with the two ultimate conclusions the experts had reached. These were, (a), the 19 per cent decrease in deaths in Morwell during the fire as compared to the

previous five years; (b), the modelling that was undertaken in the Rapid Health Risk Assessment in March 2014; (c), the lack of evidence demonstrating an increase in respiratory morbidity during the fire.

At 44 we submit that, for the reasons we've set out in some detail in our submissions, close analysis of each of these matters does not warrant a rejection of the overall conclusions reached by the expert panel.

Firstly, in relation to the Morwell data, we note that in the evidence of Dr Lester, the former chief health officer, she gave evidence that she didn't consider the proposition that the fire had led to an increase in deaths to be logical in light of the 19 per cent observed decrease in deaths in Morwell during February-March 2014. This was because, Dr Lester said, Morwell suffered greater exposure to particle matter 2.5 than other locations, such as Moe and Traralgon, such that she would have expected any increase to be observed there.

Both Professors Armstrong and Gordon were asked about this and Professor Armstrong conceded that the Morwell figure was inconsistent with the general thrust of the evidence, but he suggested that there were a number of reasons why he would discount this aspect of the evidence in reaching a conclusion. We've tried to summarise what those reasons are. The first of them is what he referred to as the imprecise nature of the Morwell data. Professor Armstrong opined that the statistical evidence for the Morwell figures is, to use his words "quite weak". One interpretation of the Morwell figures is that they may well be the result of natural variation. Similarly, Professor Gordon noted the observed rate ratios must be

understood in the context of the very small numbers for the Morwell data.

The second reason is that, as Professor Gordon explained, the readings of PM 2.5 pollution that vastly exceeded the advisory standard of 25 micrograms per cubic metre measured over one day were taken in Morwell South and we note that this is supported by the evidence in figure 4.27 of the Inquiry's first report, which is on the screen and it is a little bit hard to follow, but if one looks at the solid blue line, that is light blue, that is the data from Morwell East, and there is indicative data from Traralgon, which is the dotted orange line, indicative because the measurements at Traralgon were of PM 10, and it can be seen that, consistent with the evidence that was given by Professor Gordon, there is quite a similarity between the readings in Morwell East and Traralgon and, in fact, it points that the Traralgon figure is higher. It is a little bit hard to follow, but as one trails into the period of March, the Traralgon figures are higher.

In another figure, figure 4.14 in the first report, the location of the Morwell South and Morwell East measuring stations can be seen. The Morwell South station is the green dot towards the bottom left-hand corner of the photo in amongst some yellow dots - that is the bowling club location where the Morwell South readings were taken and, of course, that is very close to the northern edge of the mine - and the Morwell East location which Professor Gordon referred to is the green dot in the top right-hand corner, towards the top right-hand corner of the photo, at the Hourigan Road location, and as Professor Gordon noted in his evidence, many of Morwell's residents live in the

vicinity of the Morwell East location and he noted that the readings there were not that different to those in Traralgon on comparable days.

At the top of page 10 of our submissions, we note Professor Gordon's evidence that part of the explanation is "actually it was bad elsewhere in the Latrobe Valley as well as in Morwell and perhaps a simplistic assumption is well, it was terrible in Morwell, so we should see it worst here is mitigated a bit about the evidence about that the particulate material was elsewhere in the Latrobe Valley during the period".

The third reason we note at 53 is related to the second. As Professor Armstrong noted, as early as 14 February 2015, so in the first week of the fire, citizens of Morwell in at-risk groups were advised by the Department of Health to consider temporarily staying with a friend or relative outside the smoke-affected area. This advice was confirmed on 25 February 2015 and, as is well-known, on 28 February 2015 was upgraded to advice to temporarily relocate. We say it is significant that this latter advice was targeted specifically at people living or working in the southern part of Morwell, that is south of Commercial Road.

The potential impact of evacuations on the data is reflected in the joint report at paragraph 2.4. During their discussions on 31 August 2015, the evidence revealed that the experts added a section to 2.4 which read as follows, "However, this conclusion" - that is about Morwell's data - "does not take account of evacuation of some residents from Morwell during the period of the mine fire, which might explain the lack of observed increase in

mortality".

We note at 55 that the first report found that 65 per cent of all Morwell households received financial assistance for the purpose of respite or relocation. It is therefore likely that a significant part of the population of Morwell generally, but southern Morwell in particular, acted on the advice and left Morwell.

As Associate Professor Barnett explained, based on his analysis of the data, if around 20 per cent of the population of Morwell left during the fire, this would cancel out the statistical decrease. If 30 per cent left, according to Associate Professor Barnett, the relative risk starts to become very similar to those relative risks in other postcodes.

Finally, we note that it is likely that some residents of other Latrobe Valley locations, such as Moe and Traralgon, travelled to Morwell to work in Morwell during the period of the fire, for example council officers and in the mine itself. If any of those people died, they would be recorded as Moe or Traralgon deaths, based on their postcode of residence.

The second matter which has been raised in examination of witnesses as militating against the conclusion that the mine fire contributed to an increase in deaths is the Rapid Health Risk Assessment, which was undertaken by Monash University during the fire and concluded that no additional deaths in Morwell would be expected, even if the exposure continued for six weeks. It has been referred to in the evidence, in Dr Lester's statement and also by her senior counsel, as a predictive report as to the likely effect of the fire.

At paragraph 59 we seek to summarise the various limitations of that modelling which have been exposed by the examination of witnesses and we note at paragraph 60 that Professor Abramson, one of the co-authors of the assessment, gave evidence to the board that the conclusion reached in the assessment should not be taken to be a conclusion the board can rely on to posit that there were in fact no deaths attributable to the mine fire. As Professor Abramson said, the assessment was the best estimate that could be made at the time based on the data that was available to us and the model that we used.

We conclude at paragraph 61 that in these circumstances, it is submitted that the assessment does not provide any real basis for disregarding the experts' ultimate conclusions about the data itself.

The third suggested inconsistency is that there were no data indicating an increase in respiratory morbidity during the fire. This may be said to tend against a finding that it was the fire which contributed to any observed increase in deaths because one would expect to see an increase in respiratory morbidity in such circumstances.

Professor Armstrong was specifically asked about this matter and whilst deferring to Professor Abramson's greater expertise, he explained that based on his recent examination of the relevant scientific literature, he would not necessarily expect to see an increase in respiratory deaths but would expect to see an increase in cardiovascular deaths if the fire had contributed to an increase in deaths and the data, of course, does reveal an increase in cardiovascular deaths and that is specifically noted in the joint expert report.

The evidence was not contradicted by Professor Abramson, nor was it ever put to him directly that one could infer from the morbidity data from the Latrobe Valley that there was no increase in deaths associated with the mine fire.

We then go on and refer to the updated literature review of the Rapid Health Risk Assessment which was completed this year and we note that the review did not disclose a study of a directly comparable event to the mine fire and what emerges from a great deal of the evidence is the unique nature of the mine fire and the care with which one should look at other pollution events as guiding one's understanding of the effect of this particular fire.

At paragraph 66 we set out what we submit is the evidence about Professor Abramson's summary of the literature.

Finally at paragraph 68 we note after the cross-examination of the experts they were asked if the answers they gave in cross-examination should be taken by the board as detracting from the evidence they gave in their evidence-in-chief which we have summarised in our submissions and each of the expert witnesses clearly answered that those answers should not be taken as detracting from their evidence-in-chief

In those circumstances we set out at paragraph 69 the proposed findings that we say the board should make based on the evidence before it. We say that the board should not hesitate to act on the evidence of the experts and should find applying the Briginshaw formula referred to earlier, the six findings we have set out at paragraph A-23; firstly, there is moderate evidence for a higher

mortality from all causes and from cardiovascular disease in the Latrobe Valley in February to June 2014 when compared to the same period during 2009 to 2013.

Secondly, there is some evidence that the increase in mortality in February to March 2014 (the period of the mine fire) was greater than the increase in mortality during February to June 2014. Thirdly, if the period of risk to health is assumed to extend beyond the actual time of the mine fire, for example, to May 2014, the excess of deaths is statistically significant at conventional levels. Fourthly, the most likely explanation for the increase in deaths is it was due to the increase in particulate pollution in the air during the mine fire. Fifthly, the increase in particular pollution of the air during the mine fire was most likely due to the mine fire but possibly added to by bushfires that occurred at the same time and therefore the board should find that the mine fire contributed to an increase in deaths in the Latrobe Valley in 2014

At paragraph 70 we note if the board makes these proposed findings it may also be appropriate for the board to consider making recommendations for the management of future events where exposure to pollutants such as PM 2.5 are likely to occur.

In our submissions we then go on and deal with the relevance of terms of reference 7 and 12 to the board's current task. We note in 71 that the board in addition to enquiring into and reporting on term of reference 6 is required to enquire into a report on any other matter that is reasonably incidental to term of reference 6. In our submission there are a number of matters which have arisen

as reasonably incidental to the board's inquiry into term of reference 6 which warrant findings including in some instances adverse findings and recommendations. We note at 72 that term of reference 7 is also relevant to the board's present task.

Term of reference 7 requires the board to inquire into and report on: "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.

Some of the recommendations we submit the board should make may properly be seen as measures designed to improve the health of the Latrobe Valley communities. This is because implementation of them is likely to increase the communication between Government and the local communities thereby increasing trust in future health messages and measures provided by the State. In addition the proposed recommendations would we submit improve the way in which the Department of Health and Human Services manages the investigation of important public health issues in the future thereby increasing the likelihood of positive health outcomes

In the remaining part of our submission we deal with the following topics. Firstly, the roles played by Voices of the Valley and Associate Professor Barnett which we say warrant commendation by the board. Secondly, we deal with the response of the Department of Health and Human Services to the issue of an investigation of suggestions of increased mortality in the valley and we ultimately submit that that investigation warrants adverse findings being made and also recommendations being made

Thirdly, we briefly identify two matters which arise for further investigation. If I can deal with the first of those matters, that is the roles played by Voices of the Valley and Associate Professor Barnett. We note at paragraph 73 that during the mine fire itself community members became concerned about the potential adverse health impacts of the fire. We note meetings were held, data was collected which ultimately led to the formation of a local community group, Voices of the Valley which emerged from that process.

The board heard from Mr Ron Ipsen, a Latrobe Valley resident, born and bred, I think he told us, and a member of the Voices of the Valley. Mr Ipsen described how around May 2014 he and other members of the organisation started to hear anecdotal evidence from people concerned that the mine fire had led to an increase in deaths. As a result of their belief that the Department of Health, as it then was, would not itself investigate these concerns, Voices of the Valley wrote on 27 May 2014 to the Registry of Births, Deaths and Marriages to request relevant data, the purpose Mr Ipsen told us was to try to establish whether or not the anecdotal information was accurate, that is whether or not there was an increase in deaths during and after the mine fire as compared to the previous five years.

Unfortunately the data was not provided until 4 September 2014 which was after the first inquiry had already completed its first report and as a result of that delay and in demonstration of its commitment and initiative in exploring this important matter Voices of the Valley in May 2014 undertook the significant task of obtaining, collating and counting death notices from the local paper

during the relevant period to see if it showed an increase in various deaths. The results of that analysis were provided in August 2014 but unfortunately it was too late and the information was on-forwarded to the Department of Health and the Coroner for their consideration

Upon receipt of the data, Voices of the Valley approached the ABC which ran a story on 12 September 2014 with the assistance of Associate Professor Barnett. According to Mr Ipsen Voices of the Valley had themselves attempted to contact universities in Victoria but were unable to obtain that data.

We note at 78 Associate Professor Barnett provided his assistance on a pro bono basis to the ABC and later to Voices of the Valley who provided him with additional data they had obtained from the Registry of Births, Deaths and Marriages in late 2014/early 2015. He undertook statistical analysis of the data and published on the web two papers detailing the results. He told the Inquiry this was because he believed this was something of national interest and worthy of investigation and: "If people ask me for help from the public I'm paid by public money, I'm very happy to help them with my expertise in any way I can." On each occasions Voices of the Valley obtained data from the Registry of Births, Deaths and Marriages and had to pay a fee. Voices of the Valley have confirmed a total of $485 was paid and the evidence is this came from memberships and donations and almost entirely exhausted the money the organisation had. We note when the Department of Health and Human Services obtained data from the Registry of Births, Deaths and Marriages it paid no such fee

I note, and I hope I'm not stealing the thunder of

senior counsel for the State, but I understand the position to be that the State intends to reimburse Voices of the Valley the money they paid for the data and that is something that we would submit the board ought to commend.

At paragraph 80 we note in summary that in the circumstances of the evidence the board has heard it is of real significance that Associate Professor Barnett provided Voices of the Valley with pro bono assistance in analysing the data. It is submitted that the board should commend Associate Professor Barnett in his endeavour and assistance to a community organisation in need of such assistance. Further, we submit that the concern, enterprise and persistence of Voices of the Valley in investigating and responding to local community concerns is also worthy of the board's commendation. Without their efforts it is unlikely this important issue would be part of the board's current terms of reference

The other significant incidental matter that arises is dealt with at the top of page 16 of our submissions and that is the response of the Department of Health and Human Services to the issue which as we have noted warrants adverse findings and recommendations.

We start at paragraph 82 with some observations about relevant legislation, that is the Public Health and Wellbeing Act 2008 under which public health matters are generally the subject of regulation in Victoria. We note under that Act that the secretary to the department has various functions including appointing a chief health officer and we note that importantly the chief health officer remains subject to the direction and control of the secretary.

We note at paragraph 83 that the Act sets out a number of principles which guide the manner in which both the secretary and health officer should administer their functions under the Act. They include the principles of: Collaboration, including with communities and individuals and importantly, the principal of accountability, and I quote from the Act: "Persons who are engaged in the administration of this Act should as far as is practicable ensure decisions are transparent, systematic and appropriate and members of the public should therefore be given access to reliable information in appropriate forms to facilitate a good understanding of health issues." We note that the department was pursuant to its statutory functions the appropriate Government department to respond to community concerns about whether or not the mine fire contributed to an increase in deaths.

Dr Lester and her colleagues such as Dr Neil and Dr Csutoros (who took over relevant functions from her after she retired in February of this year) were employees of the department and therefore of the State, and we submit it's the State which is ultimately responsible for Dr Lester's conduct and decision-making and for that of her colleagues and the submissions we make are to be seen within that framework.

The first issue we dealt with at paragraph 85 is what we submit the evidence demonstrates that there was a failure to communicate and engage by the department. The department was made aware of the community concerns regarding increases in death by 17 August 2014 at the latest when the Registry of Births, Deaths and Marriages wrote to it to inform it of the requests that Voices of the

Valley had made for data. We note that Dr Lester responded to the Registry of Births, Deaths and Marriages by noting: "Your decision on his request", that is a request for data on behalf of Voices of the Valley, "is obviously yours; if you refer him to us my response would be that there has been an independent Inquiry into the fire and we have nothing further to add. Obviously his 'research' is up to him." Ms Cristine who gave evidence on behalf of the department was unable to say why the department declined to engage with Voices of the Valley after it was contacted by the Registry of Births, Deaths and Marriages.

At 87 we submit there does not appear to be evidence before the Inquiry of any direct engagement by the department with Voices of the Valley regarding their concerns. Indeed Mr Ipsen gave evidence there was none. We note that senior counsel for the State handed up a bundle of documents which were said to outline the interaction between Government and Voices of the Valley, exhibit 7. The documents did show the there had been contact from the Premier's office to Voices of the Valley. However, that contact did not originate from the department and there was reference to Voices of the Valley to access the department's website and/or the long-term health study. We submit there is nothing in that evidence which amounted to consultation and engagement with Voices of the Valley.

Senior counsel for the State referred not to meetings and phone calls but to meetings and consultations about the long-term health study, re-opening of the Inquiry and future recruitment of a community engagement officer for the Department of Health and Human Services. We submit these measures are not demonstrative of any meaningful

engagement between the department and community about whether the mine fire contributed to an increase in deaths

We submit from 17 August 2014 up until now there appears to have been no real application by the department of the function and guiding principles required by the Public Health and Wellbeing Act as they relate to community collaboration and engagement on this issue. We submit the deficiency is both surprising and unfortunate starting as it did only weeks before the first Inquiry released a report identifying significant deficiencies in the department's communication and engagement with the Latrobe Valley communities during the fire. We note that the State at that time undertook to improve local engagement on health issues and that was a commitment that was affirmed by the board in the first Inquiry report.

The response to the concerns raised by Voices of the Valley, rather than being consultative and demonstrating engagement with the Latrobe Valley community, was we submit handled in an inappropriate manner which has ultimately exacerbated mistrust felt by the community towards the department. We note the process was at least initially driven by the then chief health officer, Dr Lester, but was continued after Dr Lester retired in February 2015,

Our submissions then refer to evidence that was given by Ms Cristine, and there is a quoted passage that, "community consultation engagement can be improved and should be improved." We should correct the document there and note that is in fact a quote from Mr Ipsen's submissions to the board on this issue and not from the evidence of Ms Cristine. Also we do note Ms Cristine's evidence was very similar but not identical to the words

there used

The second aspect of the department's response that we refer to in paragraph 90 is under the heading, "Dr Lester should not have been permitted to investigate the issue." We submit on becoming aware that the Voices of the Valley were concerned the mine fire had contributed to an increase in deaths, Dr Lester personally assumed control of the department's investigation and response to the issue. She maintained that control up until her retirement in February 2015.

Her evidence before the Inquiry is that her role included analysing the data and drafting fact sheets, briefing the secretary and reviewing at least one media release, personal sources and briefing a consultant to provide opinions on the data and on Associate Professor Barnett's work and providing comments on drafts of that work. Dr Lester assumed this role despite the controversy surrounding her conduct during the fire itself. We note in the first Inquiry report Dr Lester was the subject of criticism and adverse findings particularly regarding the timing of the evacuation warning.

In those circumstances we submit that Dr Lester showed poor judgment in deciding to take charge of the investigation of this issue of whether or not the fire contributed to an increase in deaths. It ought to have been clear that the community would have difficulty accepting the results of an investigation she was managing. It is further submitted that Dr Lester's investigation gave rise to a conflict of interest. Had the result of the investigation been an acceptance there was in fact an increase in deaths, that finding would have reflected

poorly on Dr Lester personally in light of her role during the fire. This ought to have been plain both to Dr Lester and to those more senior within the department. She should not have been permitted to assume carriage of the matter in such circumstances.

We note there were other options open. Indeed after Dr Lester retired in 2015, her replacement, Dr Ackland, did not take over management of the investigation. In other words the chief health officer wasn't considered appropriate to continue the investigation. It rested back in the health protection branch with Dr Andrew Neil and with a senior medical advisor in the office of the chief health officer, that is Dr Csutoros, in her evidence before the board Dr Lester was unable to identify why she personally headed the investigation other than to say she didn't see any conflict in taking personal charge and she felt she needed to because it was an issue of such significance and importance to the people of Latrobe Valley. We submit that is the very reason the department's response to the issue should have been overseen by someone who had no vested interest in the outcome

At the top of page 19 of our submission we make reference to the fact sheets which were produced by the department which we submit were unbalanced and misleading. Soon after assuming personal control of the department's response to the Voices of the Valley concerns Dr Lester formed the opinion that the fire had not contributed to an increase in deaths.

We note this position was adopted prior to any independent expert analysis of the data and it became the public position of the department by 12 September 2014 when

the ABC program was aired. It will be recalled the department provided a briefing to the program which is part of the evidence of Linda Cristine. We also note that it was apparently the position of the then Government and we make reference to the quote from Deputy Premier Ryan also aired in that program

Shortly after the issue arose within the department three fact sheets were placed on the department's website, two in September and one in October of 2014. Each of those fact sheets emphasised the 19 per cent decrease in deaths in Morwell in the relevant period compared to the same period in previous years. In relation to the significant increases in deaths in Traralgon and Moe in the same periods, the fact sheets did not compare them to the average in previous years but merely drew the reader's attention to selected years with death rates that were similar to 2014.

As Professor Gordon, who had been asked to review the fact sheets observed, the document lacks an appropriate level of objectivity as they focus on particular elements of the data and appear to be arguing persuasively toward a particular conclusion, namely that the mine fire did not cause any excess deaths. Professor Gordon fairly accused the department in his report of selective reporting.

We submit that the fact sheets did not live up either to their own claim of providing accurate and clear information that would be well understood or the requirements of s.8(2) paragraph (b) of the Public Health and Wellbeing Act which states: "Members of the public should be given access to reliable information in appropriate forms to facilitate a good understanding of

public health issues."

At the top of page 20 of our submissions we note that Dr Lester in her evidence did make a number of concessions concerning the limitations of the Morwell figures and we note in evidence there also that in the very first report she received from the University of Melbourne there was some highlighting of the uncertainties surrounding the Morwell and other figures.

At paragraph 102 we conclude in these circumstances the continued emphasis on the Morwell figure in the fact sheet without reference to the limitations was misleading. This was particularly so when combined with the failure of the fact sheets to give equal prominence or statistical evidence to other data which tends to confirm an increase in deaths. Put simply the statement contained in the fact sheet dated 17 September 2014 that, "it is important that any information provided is accurate and well understood", was not adhered to in that or the later document and the guiding principle of accountability in the relevant Act was not followed

The next topic that we address in our submissions is the department's engagement in the management of Dr Flander and her colleagues we submit lacked rigour and independence. We noted earlier in these submissions that the Melbourne School of Population and Global Health from the University of Melbourne was engaged by the department in September 2014 to provide independent expert advice on the contentious issue of mortality rates in the Latrobe Valley. We noted the university provided three reports to the department and as the final fact sheet in October 2014 clearly demonstrates the department wanted to demonstrate

to the public that it had obtained such independent advice and that the advice supported its position that there was no link between any increase in deaths and the mine fire.

However, we submit the evidence before the Inquiry raised questions about the true degree of independence of the university in carrying out this work. We note that each of the three reports provided to the department went through several drafts and we set out the evidence about those drafts. We note at paragraph 105 of our submissions that the extensive comments on the drafts provided by departmental officers to Dr Flander address matters of substance and led to substantial changes to the drafts. We set out two examples of this in our submissions.

The first relates to the first report that was provided by Dr Flander and colleagues to the department. We note in mid September 2014 Dr Lester herself asked Professor Terry Nolan of the university if he could provide a quick review of the data and of Associate Professor Barnett's work. Professor Nolan gave the task to colleagues Dr Flander and Professor English and the evidence is Dr Flander assumed primary carriage of the task. Despite realising the significance of this issue to the local community Dr Lester conceded in evidence she didn't make any enquiry of Dr Flander's background or her capacity to fulfill her duties of the project and that is a matter of some significance because it is submitted Dr Flander was in fact lacking in experience. She told the Inquiry she had never previously done this type of consultancy, further and equally significantly she is not a statistician and the work she was being asked to do was essentially a statistical study. In these circumstances we

submit Dr Flander was an inappropriate choice to review the work of Associate Professor Barnett as she herself conceded in her evidence to the Inquiry.

Furthermore having undertaken her own analysis of the data and provided an opinion on it in September 2014 Dr Flander became an inappropriate choice of expert to review Associate Professor Barnett's work for a different reason. Had the department desired a review of Associate Professor Barnett's work it ought to have sent it, and for that matter Dr Flander's work, to a third party who it who had not already formed an opinion about what the data showed.

In addition although in her evidence to the board Dr Lester accepted it was important that the University of Melbourne be engaged as completely independent of the department, we submit this was not borne out by the approach undertaken by Dr Lester and those who took over management after her retirement.

Dr Lester's position that the data did not show an increase in deaths was in fact communicated to the independent expert, Dr Flander, at various stages including in the brief itself and in email responses to the draft reports she received. The board may recall that evidence of an email sent by Dr Lester to Dr Flander which we set out at footnote 144, after receiving a draft report on 23 September Dr Lester wrote to Dr Flander and I quote: "One of the things which gives us comfort is that this is nothing more than random variation that the increase was greatest in the Moe postcode which is 13 kilometres away from the fire." As noted, after Dr Lester retired, the conduct of the department of the investigation was taken

over by Dr Neil and Dr Csutoros.

The second example we refer to at paragraph 112 of the inappropriate nature of the department's comments and engagement of the University of Melbourne concerns Dr Flander's critical appraisal of the work of Associate Professor Barnett. The board will recall the evidence of a draft report dated 13 March 2015 which had been provided to the department and then two pages of comments about the draft under an email from Dr Danny Csutoros. We make specific reference to comments in number 2 and 6 in paragraph 112 of our submissions. Comment 2 included the following: "Alternatively, is it possible that the conclusion could be drawn instead that the data presented do not suggest strong evidence for the author's hypothesis that the fire had an effect on mortality?". We submit the comment the so-called independent expert was being asked was in terms to change her conclusion.

We also note that comment 6 made reference to "our interpretation of the data", that it is the department's interpretation, and pointed out the Associate Professor Barnett's conclusion about the fire having caused an increase in deaths needs to be challenged more directly. We note a further draft dated 9 April 2015 was provided to the department, and in Dr Flander's email of 27 March 2015 she incorporated all of the comments that had been sent to her and we note at paragraph 113 she changed the wording which reflected word for word the comments that had been provided.

We note that Dr Flander in her evidence agreed that the department had on more than one occasion communicated its view to her about how the mortality data should be

interpreted. However, she denied that she had adopted the suggestions without sufficient reflection. Dr Flander told the Inquiry that what she meant in the email that she would incorporate all suggestions was that she would take on board the suggestions and consider them. Dr Flander maintained in her evidence that her work was independent of the department and was not a collaborative piece of work. We note at 115 that Linda Cristine, a departmental officer, gave evidence to the Inquiry she was asked about the appropriateness of Dr Csutoros' suggestions to Dr Flander, she stated that, "there is no rule book for us as public servants in providing feedback to consultants."

At 117 we submit that what flows from the evidence the board has heard about the draft reports and comments and changes to draft reports is because of the nature and number of the emails between Dr Flander and Dr Lester (and also her colleagues after her retirement), that the board has seen, demonstrate that at best the final reports from the University of Melbourne were more akin to collaborative rather than independent documents.

We have addressed the evidence concerning the manner in which the department responded to the concerns of the community generally and Voices of the Valley in particular at some length. This is because we submit the evidence raised some serious questions about the conduct of the department and its officers and whether that conduct was consistent with the statutory principles that guide their work and was otherwise appropriate in all of the circumstances.

The evidence in these public hearings needs to be understood in the context of the findings of the first

Inquiry's report that the conduct of departmental officials during the fire itself had left some Latrobe Valley residents more distrustful of Government agencies and service than they previously were.

In the next part of our submissions we set out the findings about the conduct of the department that we submit should be made by the board and the recommendations we submit should flow from those findings. These we submit are required to improve the relationship between the department and Latrobe Valley communities and thus contribute to a collaborative approach to the future health needs of the Latrobe Valley and it's in that spirit the recommendations are proposed.

Firstly, in relation to the proposed findings we set those out at paragraph 120 of our submissions. We submit the board ought to make the following findings: The Department of Health and Human Services did not communicate or engage with Voices of the Valley regarding concerns the mine fire had contributed to an increase in deaths. Secondly, it was a conflict of interest for Dr Lester personally to investigate claims by Voices of the Valley and then manage subsequent expert investigations into its concerns. Thirdly, the process by which the Melbourne School of Population and Global Health at the University of Melbourne was selected to undertake the data analysis was unclear and lacking in rigour.

Fourthly, the three reports prepared by the Melbourne School of Population and Global Health at the University of Melbourne were not independent from the department. Fifthly, the fact sheets published by the department in September and October 2014 were incomplete, misleading and

unchallenged and failed to acknowledge any uncertainties concerning the mortality data, and finally, it was inappropriate to choose the same consultant to undertake the mortality analysis and then subsequently peer review an analysis by another expert.

In the circumstances of this Inquiry we submit that the board ought to make the following five recommendations arising from those findings, these are set out at paragraph 121 of our submissions.

Firstly, that the State should review as a matter of urgency how its 2014 commitment to improving community engagement in health would be implemented, regularly monitored and evaluated. Secondly, the State should ensure the Hazelwood Mine Fire Inquiry monitor, Neil Comrie, gives this special attention with quarterly progress reports provided to the Premier. Thirdly, the State should establish a more rigorous process for the investigation and consideration of matters of public health concern including the selection and management of independent experts. Fourthly, consultants engaged by the State should make a declaration in their reports about any comments and suggestions made by departmental officials and what their responses to those comments have been, and finally, the State should establish an internal rapid review process for reviewing and updating public statements concerning the health status of the population to ensure balanced, unbiased and understandable information is provided which allows the community to come to an informed view.

Finally, members of the board, there are two matters that require in our submission further investigation that have arisen in the evidence. We note that the board is

required to report in relation to these terms of reference by 2 December 201. The two matters we set out at the top of page 30 of our submission concern the completeness of the Registry of Births, Deaths and Marriages data relied on by the experts, and secondly, the appropriateness of the present scope of the long-term health study excluding emergency responders.

I can deal with the first matter quite briefly, that is the evidence that is before the board from the Registry of Births, Deaths and Marriages is that the data which has been provided to the Inquiry and examined by the experts only included deaths which were registered in the Registry system as "complete" on the date the data set was extracted. We note that a registration is not complete if there is some outstanding piece of information required such as when the Coroner has yet to determine cause of death. Further, the evidence is that completion can take some time. What that means for the Inquiry is as we set out at 124, it is possible the data set used by the experts who gave evidence to the board did not reflect all deaths from the relevant postcodes. There could be some additional deaths to add to the 2014 figures and although less likely, to add to the previous years as well.

We note the evidence is that the Registry has been requested to provide information to the board regarding any additional deaths by 14 October 2015 at the latest so it can be considered in time to be included if relevant in the final report. We record that it's the intention of counsel assisting that upon receipt of the data an assessment will be made about whether or not the information should be provided to the experts and in the event that any change of

views occurs all parties involved in this matter will be notified and given the opportunity to make any submissions about that that they consider should be made.

The second matter for further investigation is the scope of the long-term health study. Professor Abramson gave evidence regarding the current scope of the study and referred to a component of it known as an adult survey and that it will only consider residents of Morwell and health impacts observed from late 2015 onwards. The adult survey will be used to consider the impact of the mine fire on respiratory and cardiovascular function and be linked to the national death data index in the future. It is this part of the long-term health study at some stage beyond the conclusion of the current Inquiry that further answers to the question about whether the mine fire contributed to an increase in deaths may emerge.

The evidence that this Inquiry and also the first Inquiry heard is that the range of people who where exposed to the mine fire extended beyond those who resided in Morwell at the time, in particular people who worked in Morwell during the fire including emergency responders to the fire were potentially heavily exposed.

Professor Abramson gave evidence it would be possible to include these persons in the study and that he and his colleagues are "seriously interested" in such an inclusion as the information obtained would be "extremely valuable". At least some emergency responders have also indicated an interest in participating in the long-term held study.

We note Ms Cristine gave evidence in the Inquiry that firefighters and other responders have their own programs and studies which are monitoring the health impacts of the

fire. However, there are no details of this presently before the board. Ms Cristine said the department considered there to be significant methodological issues in including non-resident emergency responders in the study but she was unable to tell the Inquiry whether there had been discussions with Monash University about whether any such difficulties would be overcome.

We note at 130 that investigations will be made by the board regarding the scope of any such studies and whether their existence lessens any need for emergency responders and others to be included in the long-term health study.

At 131 we summarise other questions regarding the study which we say have emerged from the evidence. For example, whether it would be possible to expand the study to considers death data during the fire, whether other parts of Latrobe Valley ought to be included in the adult survey particularly in light, for example, of the comparable PM 2.5 levels in Traralgon compared to Morwell east. Thirdly, the adequacy of the current duration of the study and contractual arrangements for options and extensions, the level of independence the study has from the department and the level of community engagement and ownership of the study.

We note that further investigations will be undertaken on these issues by the board and we also note that the public forums set to run at the end of September are likely to explore at least some of these issues. It may be that additional findings and recommendations are proposed at the conclusion of those investigations. One potential recommendation, and we emphasise, potential, may

be that the State should undertake with the support of independent experts a review of the terms of reference of the long-term study addressing the scope issues. Parties will be notified if that course is contemplated by the board.

They are the submissions that we make about the evidence that the board has heard. Unless the board has any questions from me I should at this point tender various documents which were left over from the evidence we heard last week and perhaps now is an opportune time to do that so all the parties are aware of the totality of the evidence. Perhaps if I deal with each of them in turn.

Firstly there are three reports that were referred to Associate Professor Barnett in his evidence and you will recall that Mr Ipsen I think it was made some observations about their absence, and the three reports have been obtained and I will perhaps tender them as a bundle. I will read out their titles, American Heart Association scientific statement, 2010, and the correct title of that is, "Particulate matter air pollution and cardiovascular disease", and the extract to the document says it draws on the work of a wide range of experts, and in the fourth line of the abstract I read: "The main objective of this updated American Heart Association scientific statement is to provide a comprehensive review of the new evidence linking particulate matter exposure with cardiovascular disease ... (reads) ... health care providers", that's the first of Associate Professor Barnett's reports that he referred to.

The second is entitled, "The World Health Organisation fact sheet on outdoor air pollution", and the

third document is a product of the United States Environmental Protection Agency, and I'm instructed it runs to 1071 pages so we haven't printed it out but we do have a copy of it available. So I tender those.

#EXHIBIT 37 - Bundle of reports.

The second of the left-over matters concerns the email chain that passed between the Registry for Births, Deaths and Marriages and the Department of Health in August 2014, that was referred to in the evidence of Dawn Sims from the Registry, this was served yesterday and I'm instructed that one page of it was accidentally not served and we are in a position to do that today but I tender the complete email chain.

#EXHIBIT 38 - Email chain between RBDM and Dawn Sims.

Thirdly, it will be recalled Mr Ipsen gave some evidence - - -

MR BLANDEN: Sir, can I rise to raise an objection to the last tender, the documents just referred to in fact were not put to any of the witnesses in the case, they have not been asked for comments from any of the persons who gave evidence and as we stand here now we still don't have all the documents that are purported to be relied upon and in those circumstances we say it's inappropriate to tender that material.

CHAIRMAN: What do you say, Mr Rozen?

MR ROZEN: There is evidence before the board in the evidence that Dawn Sims gave about the email communication between the Registry of Births, Deaths and Marriages and the Department of Health. It is specifically in paragraph 10 of her statement which I will read to you: "On 17 August 2014 the Registrar contacted the Department of Health and

Human Services to confirm whether it was appropriate ... (reads) ... declined this approach", all we're doing is completing the picture by producing the actual emails that the witness is referring to.

CHAIRMAN: I'm prepared to take it with the qualification you have raised an objection, Mr Blanden, and that objection will be noted.

MR BLANDEN: And my concern, so the board is particularly aware of it, is that one of the email in that chain purports to be an email written by my client and that was never put to her in her evidence at all. She has not had the opportunity of any comment on the email, why it was written, the circumstances in which it was written et cetera et cetera, and it's of grave concern to us that that's an omission from the process and if the board's prepared to accept it with that qualification - - -

CHAIRMAN: I think it's appropriate what you have said should be taken into account in dealing with that matter.

MR BLANDEN: If the board pleases.

MR ROZEN: We accept those concerns. One way of addressing it may be to provide Dr Lester with an opportunity to put in a further brief statement concerning the email if she wishes to.

CHAIRMAN: It will be taken for granted that would be a course we would be happy to see followed.

MR BLANDEN: My other concern, sir, is the statement referred to as talking about those emails in fact doesn't refer to the same dates as the emails that we have. It refers to an email of the 17th, the documents albeit the incomplete documents we have seem to be dated 18 August, so I'm not quite certain how the matter arises at all in the evidence

at this stage.

CHAIRMAN: Yes.

MR ROZEN: Without taking up too much time I'm instructed the missing pages, the email of the first date, 17 August, that commences the chain of emails, perhaps that will be clearer when that additional page is provided and it is in fact on the screen as we speak.

CHAIRMAN: I don't think it's necessary to go into the detail at this stage, Mr Blanden has made clear he wants the matter to be not treated as something that is unexceptional and the exceptions he's specifically mentioned will be taken into account.

MR ROZEN: If the board pleases. I think I had started to refer to the evidence of Mr Ipsen about paying for the data from the Registry of Births, Deaths and Marriages. We have obtained from solicitors for Voices of the Valley a receipt for the data dated 12 December 2014 and I tender that.

#EXHIBIT 39 - Receipt from RBDM for Voices of the Valley.

Finally, in relation to the evidence of Dr Burdon it will be recalled that a report of Dr Burdon was tendered and is exhibit 32 and one of the parties' representatives, it may have been Mr Blanden, made the submission that the exhibit should also include any correspondence to Dr Burdon seeking his report and what instructions were given to him, and we have been provided with two emails from the solicitors for Voices of the Valley that we understand were provided to Dr Burdon that set out his instructions, and I would seek to tender those emails as part of Exhibit 32.

#EXHIBIT 32 - (Addition) Emails from Environmental Justice Australia to Dr Burden dated 12/8/2015 & 21/8/2015.

MR ROZEN: Unless there are any other matters that I can assist

the board with, they are the submissions of counsel assisting.

CHAIRMAN: Yes, thank you, Mr Rozen. Mr Attiwill.

MR ATTIWILL: Thank you. Mr Chairman and members of the board, as you know, I appear on behalf of the State of Victoria. I do so today with Renee Sion of counsel.

The State makes the following submissions: first, the State notes the proposed findings on term of reference 6 set out in paragraph 69 of the submissions of counsel assisting the board. The Inquiry heard evidence on whether the Hazelwood fire contributed to an increase in deaths from a number of persons, including from a resident, a representative of Voices of the Valley, a representative of - a range of experts, I should say, and also too the former chief health officer. The issues were thoroughly explored at the hearing. The State looks forward to the findings of the board on term of reference 6. The State notes that the long-term health study will provide further data and information over time on this important issue for the community.

Secondly, the State also notes the other proposed findings and recommendations set out in paragraphs 120 and 121 of the submissions of counsel assisting. First to Voices of the Valley. The proposed finding set out in paragraph 120(a) of the submissions concerned Voices of the Valley. The State acknowledges that it did not adequately communicate and engage with Voices of the Valley with respect to its concerns in 2014. As counsel assisting this Inquiry said, the State is taking steps to reimburse Voices of the Valley for the $485 it expended on obtaining data from RBDM and those discussions are progressing between

counsel for Voices of the Valley.

The State took action to establish this Board of Inquiry to, among other things, examine whether the Hazelwood fire contributed to an increase in deaths. This was the very matter that was raised by Voices of the Valley and other members of the community. The State refers to the correspondence exchanged with Voices of the Valley in 2015. That is in Exhibit 7.

Secondly, in relation to the former chief health officer, the Department of Health and then the Department of Health and Human Services, we make the following submissions: the proposed findings set out in paragraph 120(b) to 120(f) of the submissions concern the chief health officer at the time, the Department of Health until 31 December 2014 and the Department of Health and Human Services from 1 January 2015. The State takes the proposed findings and the recommendations, and the matters upon which they are based, very seriously. The State considers that it is open to this board to find that some mistakes were made and that some of its processes may be improved. The State submits that the nature of the proposed findings, and the matters upon which they are based, together with the State's commitment to improving its engagement with the Latrobe Valley community, mean that further judgment on these matters should be left to the board. Those are the State's submissions, if the board pleases.

CHAIRMAN: Thank you, Mr Attiwill. Mr Neal.

MR NEAL: If the board pleases, we too have produced written submissions and we trust those find themselves before the members. Mrs Roper is shaking her head. Apologies. We thought that had already happened.

The course I propose to take, and we're conscious that we are limited in time, is to go through the written submissions at a certain level, similarly to what my learned friend Mr Rozen aspired to do, trying to avoid reading them to you in great slabs as much as I can. I'm sure I'll fail in part in that endeavour, but I'll try as much as I can not so.

We'd also seek, substantially at the end of our oral address, to reserve a few moments for some necessarily ad hoc responses to the written submissions of counsel assisting. We obviously received those yesterday afternoon, in the midst of trying to produce our own. There are some comments we'd seek to make about those. Necessarily they can't be comprehensive and, unfortunately, not perhaps as coherent as we'd like them to be in other circumstances.

Going to our written submissions, we set out for the benefit of the board the terms of reference at paragraph 1 and then acknowledge that there are two questions which are of assistance to the board - not the same as the term of reference but of assistance to the board - which include the two propositions was there an increase and, secondly, did the fire contribute.

Can I break from my sequence just for a moment to say this: insofar as counsel assisting's submissions suggest to you, in paragraph 2, that "contribute" is an ordinary English expression, that it means to play a part in the achievement of a result, it is not the same thing as "cause", we respectfully disagree. We would submit that it has been plain through the course of this Inquiry that the word "contribute" has been understood to mean "cause" and

that the very lengthy examination of expert witnesses in this case has in part included the premise of a causal correlation. We would say in its context in this term of reference, the word "contribute" clearly has a causal connotation.

Whilst I'm dealing, albeit out of my own sequence, with counsel assisting's submissions, can I draw attention to the question of what is the standard that the board should make its decisions by reference to. That is touched upon in paragraphs 4 and 5 particularly of counsel assisting's submissions. We say this: ultimately it seems to be plain from their submissions that they accept that what is known as the Briginshaw test - apologies to the non-lawyers - the Briginshaw test is the appropriate test. We agree with that.

To the extent that paragraph 4 of counsel assisting's submissions draw attention to a proposition out of Forbes work of justice and tribunals and quotes the idea that this test may be less demanding than the balance of probabilities, we robustly disagree with that idea. We have ourselves looked at the relevant text that is relied upon out of Forbes and we respectfully suggest to the board that the proposition in 4 involves a misreading of what the author is saying. What in fact is being said by the author is in circumstances where the Briginshaw test does not apply, it may be that some lesser standard than probability could be applicable.

It may assist to make - this is, I suppose, members of the board who've perhaps been more comfortable with statistics than we have, this is the lawyers revenge part, where we can talk about things that are unique to the

lawyers - in Briginshaw, where the court was discussing the question of what do we do in circumstances which are, formally speaking, civil but have very serious content. Do we satisfy ourselves with the balance of probabilities test or do we go to the higher test, beyond reasonable doubt, used in criminal matters. The answer in Briginshaw, as we take it, is that depends on the gravity of the matter.

In Briginshaw, Dixon J actually said reasonable satisfaction is a benchmark for the tribunal, but I quote, "Reasonable satisfaction is not a state of mind that is attained or established independently of the nature and consequences of the fact or facts to be proved. The seriousness of an allegation, the inherent unlikelihood of the occurrence of a given description or the gravity of the consequences flowing from a particular finding are considerations which must affect the answer to the question whether the issue has been proved to the reasonable satisfaction of the tribunal. In such matters, reasonable satisfaction should not be produced by inexact proofs, indefinite testimony or indirect inferences."

Bearing those propositions in mind, we say that this matter most clearly deals with matters of gravity, it concerns the question of death, and in those circumstances, the relevant test must be well beyond, we would say, a simple more likely than not scenario and something that corresponds to but perhaps does not go so high as the criminal standard.

Bearing that in mind, we would submit that what is said in paragraph 4 of counsel assisting's submissions is unhelpful. The acknowledgment which appears in paragraph 5 seems to be back to the point, which is this is a grave

matter.

That said, taking that to be the benchmark and that to be the meaning attributed to the word "contribute", we return to our own submissions. In essence what we are saying to the board today in paragraph 3 and similar paragraphs is that it would be unsafe, on the basis of the material that the board presently has, to proceed to a determination in the affirmative as to the questions posed. We say that for three reasons, which we identify in paragraph 4. Essentially, we express in paragraph 4(a) our reservations about the methodology and the data. We note latterly in the submissions that this was not a test of whether people died, this was a generic question about death. We say the latter approach is always an inferior one to the former.

We also, at this summary point, draw attention to what we would say is the inadequacies of the data that were used within that methodology, and we'll expand upon that in a moment.

In (b) we draw attention to the quality of the outcomes that came from applying the methodology and the test - the methodology and the data, I should say, that appears in (a) and we say that, unsurprisingly, it turns out qualifiers such as "moderate", "some", "not strong", "weak" statistical evidence, yet those are the basis on which this board is called upon to make findings of a grave nature.

Thirdly, we say that in the circumstances of the case and the evidence as it has unfolded, there has been, regrettably, insufficient opportunity to properly interrogate some of the critical evidence, and we expand

upon that again.

May I go to, for cross-referencing purposes, to paragraph 5, where we deal first of all with question 1, the question of the increase. We say there that there should not be a finding as to increase for either of two periods, February to March or February to June. Mr Rozen asked Professor Armstrong was there a straightforward answer to those questions. If I could paraphrase what follows. I think the answer was a resounding no, there isn't a straightforward answer, there is a very qualified, very complicated answer.

In paragraph 7 we draw attention to the two ways in which Professor Armstrong chose to answer the question and reminding the board that he said, "I think we have as described moderate evidence for an increase in deaths during that period, so anything I say about the cause of it has to take into account the fact that the evidence for the increase itself is not strong." And we say to the board that that is a caution that always needs to be borne in mind as one proceeds through an understanding of this evidence.

We note that in addition to Professor Armstrong taking that position, there was evidence that was not strong. Dr Flander offered two further caveats to that. In paragraph 8(a) she did, and I think this was a constant of her evidence, refer to the better form of enquiry, which is the longitudinal study already under way in one sense, and she also draws attention to the fact that in this case we are constantly bedevilled by the fact that we are dealing with small numbers and in those circumstances it behoves us to be wary of conclusions.

From paragraph 9 onwards, we expand upon the idea of what limitations there were in the model that was actually undertaken. We contrast what was done here, not by way of criticism but by way of fact, with an analysis in which particular deaths were investigated with the knowledge that that would have brought. In this case we note a number of things that limit the quality of the outcomes. Firstly, the statistics don't identify the actual place of residence at the time of death or in the period of the mine fire - this appears at 9(a).

Now, necessarily what appears from the material is a capture of deaths in a postcode. What we know, and what seems to be constant in the expert evidence, is that if there were deaths caused by this fire at all, it would be a function of emissions from the fire. So the correlation between that proposition and deaths is critical in this case because it deals with the critical question of exposure.

Now, it is a fact that the material of postcode death capture is in fact only a function of a residence. What the board, unfortunately, does not know at this point is whether those persons known to have died were associated with their place of residence at the time of death. We do know that, from a cursory look at the mortality data that latterly came in the Excel spreadsheets, I think Exhibit 35, and unsurprisingly, that many of those who are captured by this data were elderly. It would be notorious and unsurprising that at the end of life, many elderly people do not occupy their usual place of residence.

Now, we do not know, and there is no reliable basis for knowing, whether any of the people who are associated

with a residential address within a postcode had any exposure at all to this fire, whether they were in respite care, whether they were in hospitals, whether they were away on holidays, any number of variables enters the equation, we don't know. That is not a criticism per se, someone has done the best they could, but it is to acknowledge the gross limitations of what was done.

At subparagraph (c) of 9, we also note the concern that in this case there's been a capture variously of four and six postcodes. What we do know from the evidence of Professor Abramson is that the CSIRO did a modelling, and the board will no doubt remember the graphic that he produced, which indicated an east-west distribution of emissions from the fire. It is uncontroversial that many postcodes that are included here are some distance removed in a north-south axis from the fire - on our calculations, perhaps up to 70 kilometres north or south. Now, that of itself is problematic when we know that everybody within a postcode who died at a certain time has been captured by the data.

A constant feature of the statistical analysis in this case was that one could look at two periods, February to March 2014 and February to June 2014. Now, as best we can understand it, the medical evidence for extending beyond February to March is unsatisfactory. It seemed largely to proceed from what was described by Professor Gordon as "a logical assumption". Interestingly, Professor Abramson doesn't stand for that logical assumption, nor, as we understood it, did Professor Armstrong. Now, any one of us is in a position to make supposed logical assumptions, it is no better that

it comes from the mouth of Professor Gordon than from anybody else.

The point we would make is generally that the period of February to March is the best indicator if one is to look at mortality figures and it is significant because generally, on the statistical evidence, one sees a greater statistical strength produced out of an analysis of February to June than one does out of February to March and a real caution needs to be exercised in that context in discriminating why are we allowing it to extend beyond that period.

We note generally that once you get into the February to June extension, what are called the P-values, the probability values, et cetera, sometimes gather strength because of that fact, but one shouldn't be blinded to the idea that why are we looking at that period in the first place.

In our submissions we note, apropos the legitimacy of that approach, that Professor Armstrong turned his mind to the question of whether or not we should be looking at a correlation between - based on a daily basis based on exposure and his testing was well, we should take it to a time lag period, and I think he tested three days, but his evidence would suggest perhaps a lag of five days was appropriate.

Now, as we understand it, the mine fire was out by 25 March, so in fact the end of March is a very convenient point to say that is the time at which we would most relevantly expect to examine data about death from emissions from the fire.

We note that Associate Professor Barnett called in

aid a study, the author of which is Brook, and at paragraph 9(d) of our submissions, towards the end, we actually quote what that study had to say and without reading the quote, the relevant extract is that the effect was tested during the preceding one to five days, which seems to be the relevant point for examination. It does not justify Associate Professor Barnett or others extending the period to June.

At paragraph 9(e) we also draw attention to the question of temperature. Now, we understand the evidence largely to stand for the proposition that extreme fluctuations of temperature may have an effect on death, extreme cold, extreme heat. What we understand here to have been done is that monthly averages of temperature were applied, which would, of course, obscure a study of particular periods of very hot or very cold weather. So if one had a heatwave but had in the same month several very low temperatures, the average for the month, of course, would tend to blend that out, which is unhelpful in terms of understanding what effect heat, acknowledged as it does, had on mortality in this case.

At paragraph (f), continuing with what we say is some of the inherent limitations of the approach that was taken to answering the questions we're concerned with, we note that there is a limited sample size of the data and it seems the statisticians were at one in saying small data samples are much less satisfactory than large ones because they can tend to give random variations based on very small figures.

We note the further proposition: if one takes an originally small data set like death in a particular

postcode and then, as it were, splits it into an examination of all causes of death and then mortality caused by cardiovascular or respiratory disease, one increases the problems in relation to the reliability of the data and it might be an appropriate time to briefly refer the board to the table that we annex to our submissions on the last couple of pages, where we endeavour to capture some of the critical joint report findings. We sourced them to their material in the evidence and we then note two things: the confidence intervals and the P-values and just by way of making good the point that I was then attempting, for example in the first of those - at the top right hand of the page, under Confidence Intervals, we note that the February-June period of 2009-2013 has a confidence interval of .80 to 1.001 and the February-June 2009 P-value is therefore .04, which we take to be within the concept of statistically significant because it is below .05.

We note, however, that if you look at February to March, the next figure under that, so the smaller data set, if you like, the confidence intervals are markedly different, .68 to 1.02 and the P-value becomes .08. I don't want to take the board to that document in its entirety, but what will be seen is that as the period extends, the P-value tends to rise and as the data are subdivided, the confidence intervals tend to widen and the P-values tend to get less. So when you're looking at specifics like cardiovascular and respiratory subsets of small populations, we are very probably dealing with material which might indicate no increase at all, which might indicate an increase or a decrease and on that account, one proceeds with great caution to attach much

significance to them.

I'm reminded of the time, so I will try and pick up the pace, consistent with making understandable what we want to say. Could we pass then to the question dealt with at paragraph 9(g), which is simply to say again that this is a relatively crude approach because what we have is monthly data and all deaths within a given month. So we would know, if we were able to examine the material in greater detail, that there would be some deaths which should automatically be excluded; if an elderly person falls, breaks a hip and dies of complications, that is not going to be related to this fire.

We also note at (h) that in this case the capture of material for February-March included deaths that predated the fire.

In paragraphs (i) and (j) we make a point, which I won't labour here, in relation to the lack of randomisation, as it is called, and the inability of the board to discriminate between adverse outcomes, respiratory and cardio, which might be referable to fires but not necessarily to the mine fire.

We pass at paragraph 10 then to question 2 and the question we raise here is, firstly, the value and the role of statistical analysis. We say that what one has in this case is a maybe as to a temporal correlation and then a super-added discussion of cause. Now, what we want to say about that is it is really a very strange proposition of logic that we're dealing with. We're dealing with did something happen? Well, perhaps. What was the cause of what perhaps happened? It is a bit like us going out in the morning and saying, "Is the grass wet?" Well, if the

answer is, "Nobody knows", to ask the question, "Why is the grass wet?" is, in one sense, nonsensical, but if someone then adds the view to the first proposition, "No-one knows if the grass is wet, but if it is, it was caused by the rain", well, can we conclude from that that it rained last night? The answer is, obviously, no. The question is hardly sensible at that stage. We say, with great respect, that the evidence in this case suffers from a very similar vice, that one is considering and trying to ascribe cause to an event that no-one is persuaded actually happened.

We want to draw particular attention to the way in which Professor Armstrong gave evidence on this point, and at paragraph - and by reason of time, I want to pass over some of the intervening paragraphs and go to 16, not to diminish them - but what we note about Professor Armstrong is this: his answer, on the second day of the evidence, to the direct question from counsel assisting as to any link between the mine fire and an increase in mortality was very heavily qualified. He emphasised in his evidence that the evidence for an increase in deaths was only moderate and anything about cause of the increase had to take into account the fact that the evidence for the increase itself was not strong and with that caveat he added the idea that the most likely explanation for the various explanations one can put forward was that the increase, if one occurred, was due to the increase in particulate pollution of the air during the period of time, most likely due to the mine fire but possibly added to by the bushfires that occurred at the same time.

Now, what really that amounts to is a proposition that if something occurred, we are more inclined to

attribute it to one of three or four variables that we've considered. That is not an answer to an absolute question what caused the increase, it is an answer to we considered a number of scenarios and we consider that of the four we nominated, one was preferable.

Now, we don't know, as we stand here, whether or not there were other health issues raging through this community at the same time as the fire, which may well be an explanation for any increase, if there was one. So one needs to understand the inherent limitations of the proposition that the expert picked out a particular probable cause of those that they limited themselves to.

In relation to the expert evidence, we should say this: we take Dr Flander not to have gone beyond the proposition that there may have been an increase and that, in those circumstances, one should not exclude the hypothesis that the fire had a causal relationship with it but it did not substantiate that hypothesis. We think that very clearly emerges from what was put to her in cross-examination and we don't say that she ever took a step back from that proposition and we do remind the Inquiry that a question that my learned friend asked latterly of witnesses about contradiction between - my learned friend asked the question as to contradiction between evidence-in-chief and cross-examination. I just want to come to the effect of that in a moment. The first point to make is he didn't ask that question with Dr Flander present, she'd gone by that stage, and secondly, we, with great respect, say that there is no value in that question. The question was you've dealt with in examination-in-chief all these issues, you've given answers

to all those issues. In cross-examination you're asked about the same issues and you gave differing answers to those questions. Then my learned friend says globally did you intend, if there were contradictions, to make contradictions and he gets the answer, unsurprisingly, "no". That has no value at all, with respect.

If you wanted to ask a question, you would need to go to the specific answers that were given, point them out to the witness and say, "This and this stand side by side. They may appear to be different. If they are, what do you want to say?" With great respect to my learned friend Mr Rozen, you can't have an abracadabra question. You can't say at the end, "Did anything you say in cross-examination which is inconsistent with your evidence-in-chief, can we forget about it?", you can't.

Can I say, in relation to Associate Professor Barnett, that we do not depend in our submissions, so it is clear, on characterising him as being ungenerous or deliberately misleading, or anything of the nature, that is not what we would put. We put to him that he was too close to the cause that he was giving evidence about and that in those circumstances there is a natural inclination that tends away from impartiality and independence and we put it simply that he can't be considered as the same sort of independent witness as others who appeared in this case.

I skipped out of sequence to him. Can I cross-refer the board back to paragraph 21, where we comment about the evidence of Dr Flander. She put in answer to one question in cross-examination, I think, something that certainly resonated very much with our thinking, which was, we say at paragraph 22, there is a concept in observations and

evidence around epidemiology which speaks of the under-determination of observations and evidence, and that's the case here, there are simply not sufficiently reliable and robust observations to enable the board to choose between alternative explanations or alternative hypotheses as to causal relationship in this case and that, we say, was the basis on which she was then happy to accept the proposition put to her in cross-examination, "Well, are we at the point here where there may be enough evidence to think an increase is a conceivable idea and then to further test whether or not it had a particular cause" and that's why we say she answered the question. We would accept that that hypothesis is still a viable hypothesis but it is not a substantiated hypothesis. We think that is a very correct way of understanding the evidence.

If I may go to what we say at paragraph 31, which is making comments in relation to the joint report much relied upon in this proceeding. Firstly, as we say, when the board is able to look quietly at the material in annexure 1, many of the important findings that are made in this case by the experts are in the category of not statistically significant at the conventional levels.

Secondly, we make the point that the tenor of the expert report, the joint expert report, is somewhat disquieting. It is disquieting because it seems to proceed in the context of an assumption in favour of an increase in death at least. Now, we say that the joint report certainly doesn't reveal that of itself, but when one looks at its language, we are puzzled by the change in language, why things like "some data" become "weak data", why "weak data", which is suggestive of no increase, is translated to

"some data", which is more suggestive of increase. We note the odd expression "lack of increase", which is preferred to "decrease". We note with some bemusement that the proposition added to 2.5, "A large increase in mortality in Morwell cannot be ruled out", when challenged in cross-examination about why that was said, Professor Armstrong, to his credit, said yes, the corollary proposition is equally open, that there may have been no increase or there may have been a large decrease. When asked about why that answer was given in that form, he made a reference to Freudian thinking, but what we say is that that should be regarded as somewhat disturbing, that what is said in the report tends to presume something which the data dealt with in the report does not. And in particular in that context, as to what Professor Armstrong was prepared to concede, we note that the confidence intervals in that case were .51 to 1.26 and, if we're correct, more consistent with decrease than increase. So in that sense it is a somewhat perverse way to express an outcome.

In the last part of our submissions, from paragraphs 33 onwards, we make points about the timing of the delivery of material and our capacity to absorb and intelligently interrogate the witnesses based on that. The point of that is not an abstract complaint, it is simply to say this: we understand as a general principle, and we imagine the board would accept, that evidence is the better when it is intelligently cross-examined. For it to be intelligently cross-examined, the cross-examiner has to be apprised of what is going to happen. That would happen by timely delivery of material and in particular we note that the evidence of the expert witnesses, in their individual

reports and their joint reports, conspicuously did not deal with the proposition if there was an increase, what was its cause. So those of us who came to the hearing saying the experts appear to be agnostic about that point were only disabused of that idea at the very end of their examination-in-chief, when my learned friend Mr Rozen asked them what might be called a form of ultimate question. We are uninformed as to why things happened that way, but we note the consequence, which is that those who would seek to challenge that idea had only at the very last moment the opportunity to even know that it was being raised. That necessarily rebounds in terms of the quality of the outcome and the ability of those who might wish to challenge that proposition to do so in an informed way.

The submissions that we ultimately make proceed from paragraph 39 onwards and they include the propositions that we've adverted to at the start, that we would respectfully submit at this stage that the evidence is unsafe to come to a conclusion of the gravity that is in front of this board. We say it in large part depends upon statistical analysis which is often times not conventionally regarded as strong material. We say that in relation to the second question of if there was an increase, is there a causal correlation, we say would be far better, with respect, dealt with in what is the long-term health study because that study is an inherently superior process. It is going to deal with actual people, with actual medical histories, with actual exposure knowledge, with knowledge of smoking and many other co-variants that the witnesses say are extremely important when one wants to make a causal association between two events.

Now, true it is that the long-term health study has a prospective character, but it should be recalled, I think, that Professor Abramson said once it is done, it may well be possible for us, by inference, to reflect on the period that's before the board and one can imagine circumstances where the long-term health study looks at people in, say, Morwell South, in the same area, with similar age, with similar health profiles, et cetera. If the long-term health study were to say, "Notwithstanding exposure, we do not find that there was any mortality arising out of the mine fire", that would be a proper basis for an inference that the period under consideration here also is susceptible to the same outcome. What we say, with respect, is that if it is accepted that that is a qualitatively superior process than the one that the board has been able to have insight to, then it is preferable not to endeavour to make hypothetical decisions which are then liable to contradiction, because that will undermine the whole value of what this important Inquiry is to do.

The final propositions that we wanted to say were in relation to the submissions made by counsel assisting and again I bear in mind that I have probably exceeded my statutory allowance, but may we take the board in particular to paragraph 69. What we say is remarkable about that series of proposed findings is really that, (f), the mine fire contributed to an increase in deaths in the Latrobe Valley in 2014, is really, for term of reference 6, that if you are to answer that question, it would appear you ought to have regard to paragraphs (a) to (e) as the foundation for it. What we say about paragraphs (a) to (e) is that they are not the foundation factually for what

appears in paragraph (f), they are heavily qualified propositions which don't, as a matter of logic, lead to (f), which has in it not the contingencies that all the preceding paragraphs have but the statement of fact that there was an increase. One never gets to that point unless one is happy to accept (a) to (e) in the first place and in our respectful submission, (a) to (e) don't allow you to get to (f).

One of the vices, we would say, with this sort of highly contingent finding is that at the end of the day, all the hypothetical bases will fall away, people will forget that and they will look at paragraph (f) and say the board found the mine fire contributed to an increase, albeit that the evidence for doing that doesn't really allow one to do so. That is a mischief which we say, with great respect, the board should avoid at all costs. If the board is able to make a finding in relation to (f), it has to do so on robust evidence and, in our respectful submission, that robust evidence is not available. If the board pleases.

CHAIRMAN: Thank you, Mr Neal. Mr Blanden.

MR BLANDEN: Thank you, Mr Chairman. We have an outline of submissions that we will pass around to everyone and there are copies for the members of the board as well. While that's being done may I say as to many of the matters raised by counsel for GDF Suez we are in agreement and as to the preliminary matters we are specifically in agreement in relation to the meaning of the word contribute (indistinct) we are considering it and we adopt counsel's submissions in relation both to that and the application of the *Briginshaw* test, I won't repeat what was said but we

simply adopt those submissions and agree with them.

Our primary position as the board will see from our outline of submissions set out in paragraph 1 and that is that there is no sufficient evidence, no adequate evidence upon which the board can make a finding on the balance of probabilities that there was or was not an increase in deaths at the relevant time, and if a finding of increased deaths was made we say contrary to the evidence, there is certainly no evidence that the fire was a cause of any increase having regard to the evidence.

We say the practical conclusion of the evidence in relation to the statistics leads us to a position where the board can be satisfied that there could have been an increase in deaths during that period based on the various statistical models and the analysis of particular data, but the statistical evidence goes no further than that, that is there can have been an increase, whether there was or was not it is not possible to determine at the present time.

We say the second limb of the term of reference requires some factual or medical causation to be established in terms of the link between any punitive increase in deaths as compared to the causative element provided by the mine fire as posited in the terms of reference. We say that evidence simply does not exist at the present time.

Our conclusion is very much along the same lines as GDF Suez, that is that the best vehicle for determining the term of reference is in reality the long-term health study being undertaken by Professor Abramson and Monash University. It will satisfy the problems present with the data as it exists at the moment, it will provide much

better data, a much bigger sample, it will in fact link in a proper medical causative way any deaths due to exposure and that is what we say is at the nub of the term of reference.

I'm not going to read the outline of submissions, the members of the board have them, they can be read at leisure. Instead I want to spend a little time on the submissions of counsel assisting and on some other aspects of the evidence.

In terms of the evidence as such it is important to note, and I think it's already been referred to and it appears at transcript 50.5, that Professor Armstrong was keen to point out that the report, that is the joint report, only addresses the first part of the question, that is the statistical question about whether the statistics can be said to demonstrate an increase in deaths, and he went on at transcript 506 to confirm that there are additional considerations when one starts to look at the cause and effect component of what we say term of reference 6 includes.

We say at the outset that we share the concern about the joint expert process. We in fact did not find out about it until after it had happened, we were first advised about the process that was to be undertaken, the joint meeting, who was to be involved and how it was to be done on the Monday after the meeting had occurred and clearly could have no input into the parameters under which that was to take place, and we say there are some real concerns about the process. We say it for this reason, it's well-known that joint expert routes can be of value, certainly of value in terms of saving time and expenditure,

but of value to a trier of fact, a decider of fact because they tend to collate the evidence and put it in hopefully an understandable form.

This, however, was an exercise that didn't adopt the normal parameters that such exercises adopt. Ordinarily when there is to be a joint meeting of experts one would find that the trier of fact, the decider of fact would outline the assumptions of fact that the experts were to adopt, the experts themselves would have the same qualifications and specific questions would be posited to the experts for their answer in order to assist the trier of fact. None of that process was followed here, and indeed the rather unusual course of adopting as it were the further parameters of the discussion, the agenda of the discussion were the views or conclusions of one of the experts himself.

So we have some real concerns about the way that was done and the fact they are differently qualified. It's not, with respect, sufficient to simply say well, they have sort of got similar qualifications or crossing qualifications or complementary qualifications, it's not to the point because they don't have the same qualifications and the parameters are not set. Then one experiences what with respect the board experienced, and that is experts straying outside their area of expertise, and coming back to Professor Armstrong's comment at transcript 506, that the cause and effect component of the term requires additional considerations. Professor Armstrong was quick to acknowledge that in that respect, a causation respect, he was not the expert who ought be asked the question.

We make the point in our written submissions but it's

worth noting again, that if he with medical qualifications and his other qualifications was not qualified or not best qualified to answer those matters how could it be said statisticians or straight epidemiologists were qualified to answer the question, and it's a rhetorical question obviously because the answer is they are not. Yet despite the lack of qualification we see some of those experts seeking to rely on reports or studies again outside their area of expertise in order to posit a view that contributes to that cause and effect discussion.

We say there are a number of issues that arise from the general discussion. I want to deal with them generally before I go to counsel assisting's remarks. There is what we might call the extension of the period within which the risk of the fire should be considered and that's been dealt with. We concur with the view expressed that really this was a piece of speculation by Professor Gordon and nothing else in relation to the extension of the period of risk of the fire. There is no literature before the board and the acknowledged expert in that area, which is Professor Abramson, was never asked about it, he was not asked the question about whether it was appropriate to extend the period or not, in fact he was never asked any question about that at all.

Can I come to counsel assisting's comments and there are, and the board will have to excuse me because again we got these reasonably late so I will have to go through them seriatim where we see an issue rising, but the comment in paragraph 14, for example, that Associate Professor Barnett's never been held out as an independent witness by Voices of the Valley or anyone else I'm sure will come as a

big surprise to him because he spent considerable time in evidence trying to establish his independence. The comment that his statistical analysis was endorsed by others applies equally to the statistical analysis undertaken by Dr Flander, indeed by all the various people who looked at the statistics. There was no essential disagreement with them about the statistical side of the matter, each came, we say, to the conclusion we have noted at the commencement of our submissions.

Coming to the part of the report where counsel assisting refers to the approach that should be taken by the board, so I'm up to paragraph 33, counsel assisting's submissions, what's put there is that the board should approach its task by seeking to answer two questions posited by Professor Armstrong. We say if the board does that it will be falling into error, that it is not the approach that should be taken at all. It's up to the board to determine the term of reference, it's not up to the board to adopt an approach taken by an expert to a particular confined matter which is relevant during the course of the Inquiry. We say what is posited as the second of the two questions is in any event not the appropriate second question to be asked when determining the matters that arise from the term of reference: Was there an increase in mortality in the Latrobe Valley during the coal mine fire is presumably a question that relates to the statistical evidence. Part B, what environmental exposures might have increased mortality does not go to the issue before the board. The issue before the board is if there is an increase in mortality shown in the statistics, can it be said that increase in mortality is related

causally to the mine fire? And it's important that distinction be borne in mind because simply saying what exposures were there does not address at all the question of causation.

So we say that the second element of the term of reference is in reality whether any demonstrated statistical increase has been shown to be caused by the fire.

We say that the board contrary to the invitation of counsel assisting should not be limited to adopting simply the evidence of the four experts as the invitation is extended in paragraph 35. The submission reads as follows: We submit the board should answer the question in precisely the terms employed by the four experts at paragraphs 1.1 and 1.2. If that were done that would be tantamount to the board ignoring all the other evidence before it and much of that evidence is important, much of that evidence is evidence which goes to the two issues combined which lead to the term of reference. There is, for example, the evidence of Professor Abramson, there is the evidence of Professor McNeil, that's a report we tendered and relied upon. There are other witness and authors of reports all of whom have had a contribution to make in relation to the evidence before the board and it's all that evidence that needs to be looked at and decided upon in terms of what conclusion the board reaches.

In terms of the suggested inconsistencies outlined at paragraph commencing at 42 of the submissions of counsel assisting, the three main areas in which it was suggested the evidence was inconsistent with the two ultimate conclusions are set out there. What's omitted from that

list of areas is the lack of any evidence before this board that any death was actually caused by exposure to particulate matter at the time of the mine fire. There is simply no evidence at all that that occurred or has occurred as a result of the mine fire. We say that's a very important fact that the board needs to bear in n mind.

The Coroner's Court when asked if it could provide assistance said they were not aware of any death that could be considered in that group and indeed there simply is no evidence of any such death.

In terms of the Morwell data, what we might call for our purposes the Morwell inconsistency with the theory that the mine fire was a cause of any statistical alteration in the death rate, Professor Armstrong eventually trying to base an explanation on people moving away is in the absence of any evidence, and there is no evidence about it, simply speculation. So the Morwell inconsistency, if I can call it that, on the data can't be dismissed simply by positing or supposing that really there is an explanation for that that people simply moved out at the time, there is simply no evidence to support that and that would be indeed a speculative exercise to conclude it was the case.

The imprecise nature of the Morwell data, this is where Professor Gordon had something to say including the very small numbers, the actual description given by Professor Gordon about the data itself providing that inconsistency is to be found at transcript 520 where he said the possibility that by chance other factors came into play is something that could be taken into account. Now, again, that is pure speculation, not based on any evidence at all. And similarly, for his evidence given here before

the board but certainly not finding an avenue in his report or the joint report, that perhaps people lived more in this area than that or the wind blew into particular direction or it blew more in one direction than another falls in the realm of pure speculation and nothing else. So the only thing that's really been called in aid to diminish or discount the Morwell inconsistency is speculation and nothing else, there is no evidence before this board on which that inconsistency can be dismissed.

In terms of submissions, I'm still on the Morwell data, this is on page 9, that seems to incorporate paragraph 51, not only Professor Gordon's speculation about where people live in Morwell but counsel assisting seems to have been assisted by the provision of its own evidence in there as well comparing readings not being terribly different on comparable days of the fire and the like, of course none of the experts relied on that or referred to it.

In terms of the balance of the Morwell data as referred to on page 10 the note that in paragraph 53 Professor Armstrong noted as early as 14 February citizens of Morwell were in an at risk group, in fact he didn't say that at all, that comes from first report of the board. That wasn't Professor Armstrong's evidence, and the footnotes, 71 and 72 do not support the propositions they are there to advance.

We have some concern also at the speculation in counsel's submissions contained in paragraphs 55, 56 and 57 and these are pure speculation, again, advanced by counsel assisting where he says for example, in 55: "It is likely that a significant part of the population of Morwell

generally but southern Morwell in particularly acted on this advice and left Morwell." Zero evidence before the board about that. In 56 there is a reference to Professor Barnett explaining on his analysis that if people left, 20 per cent left or 30 per cent left, again sheer speculation, no evidence for that assertion at all, and again, we refer to Professor Armstrong, transcript 60, he was asked about that, he very properly said he didn't include any of that speculation in his own report because it was simply speculation.

Lastly in 57 it is posited as follows, "It is likely that some residents of other Latrobe Valley locations such as Moe and Traralgon travelled to Morwell to work in Morwell during the period of the fire", again that's speculation, there is no evidence. It is footnoted though as footnote 76 purports at the bottom of that page to say as Dr Lester accepted at transcript 419, and I will just read to the board what transcript 419 actually says, it can't be just an insignificant reference to a page because not only is it cited at transcript 419 at lines 22-29, lines 22-29 read as follows: Question: "The other thing about that analysis of Moe is it assumes people in Moe, for example, don't come to Morwell to work and therefore would have been exposed during the mine fire"; the answer is: "Yes, exposure is very important as you heard Professor Abramson speaking yesterday knowing more about patterns of exposure and ill-health and mortality is extremely important." So the proposition was never put to Dr Lester that residents of other Latrobe Valley locations travelled to Morwell to work in Morwell during the period of the fire. It might be a fact, it might be a reasonable

supposition but there is no evidence about it and to put it on the basis that this was a proposition agreed with by Dr Lester is simply false, it's misleading, it is a misrepresentation of the evidence as was given.

Unfortunately there are numerous instances of the footnotes in counsel assisting's final address document which in fact do not seem to correspond with the evidence they purport to represent so can we caution the board that the footnotes need to be kept very carefully to ensure that in fact they stand for the proposition that is asserted that they support.

The rapid health risk assessment is the next issue raised by counsel assisting, and it is interesting that at paragraphs 59 counsel assisting sets out some what are said to be relevant limitations of the rapid health assessment, each and every one of those limitations applies to the data used by all the experts who gave evidence to the board without exception. There is no point in saying the rapid health risk assessment is irrelevant because it has limitations because the limitations it has are exactly the same limitations as the data that each and every expert used, and they are the limitations which relate to causation.

When one looks at those limitations, the modelling used during exposure events was not directly comparable to the mine fire. There is no data for exposure levels in Morwell during the first few days. The modelling might have under-estimated or over-estimated exposures, didn't consider occupational exposure, didn't take account of any particularly vulnerable group and there was no data available for a number of pollutants, all exactly the same

limitations the data that the experts considered.

The rapid health assessment was we say a useful document and remains a useful document, given its clear relevance and usefulness one wonders why it was seemingly never going to see the light of day before this board. Professor Abramson was not going to be a witness before the board until the rapid health assessment and his latter review of the documentation and articles in relation to the relevant exposures was appended to my client, Dr Lester's, statement. It was only after those documents were appended to her statement that the office of counsel assisting contacted Professor Abramson and a draft statement was prepared by that office. Even that draft statement did not refer to the rapid health risk assessment and it's very difficult to understand why in the circumstance. It's also difficult to understand why Professor Abramson was not initially contacted to be to be a witness in this proceeding.

It is difficult to understand why when Professor Abramson came to the board and gave evidence he was asked no questions by counsel assisting that related to medical or factual causation as a result of particulate matter exposure in the course of the mine fire, not one, not one single question despite the fact that clearly it was either known or should have been known he was the pre-eminent expert in this area, how was that known? It was known because Professor Armstrong readily volunteered the fact he was indeed the expert in the area.

One rhetorically asks why wasn't he invited to be part of the joint expert study? He after all was a man who had done a predictive report at the time of the fire as to

its likely effect, he after all was the man who was conducting the long-term health study. Why exclude him, the expert, from the obvious middle ground which was consideration of the effect of the mine fire on any statistical alteration in the death rate? It makes no sense and it makes for no assistance to the board in terms of the causation issue which we could have and should have, we would respectfully submit, addressed.

We say if the board were to make the proposed findings in paragraph 69 numbered D, E and F there is simply no evidence to support those findings. Indeed, such findings are likely to be contrary to the evidence before the board. Again, in relation to the proposed finding C we say and share with counsel for GDF Suez this submission, there is no cause or reason to extend beyond the actual time of the fire the period of risk, there is simply no reason for doing that, there is no basis on which to do it save for the speculative attempt of Professor Gordon to do that but it is not found in the evidence anywhere.

We take issue with the assertion that what follows from paragraph 71 on are matters that are reasonably incidental to what precedes it. We have some specific concerns in relation to what are the comments made in relation to Dr Lester's involvement, may I ask the board to turn to paragraph 85 of counsel assisting's comments.

The concerns there and the requests et cetera are in fact a reference to the email chain that was sought to be tendered by counsel assisting this morning. They weren't in evidence until an hour or so ago and none of the contents of that paragraph was ever put to Dr Lester. Indeed the emails one will see over the page, there is a

reference to Linda Cristine, they were never put to her either so they in fact weren't put to anybody in the course of the hearing. It was never put to Dr Lester that she failed to fulfill her statutory duty under the terms of the Public Health and Wellbeing Act at any stage, she never had an opportunity of answering such an allegation. The allegation put in 88 that there had been no real application by the department at least under her watch of the functions and guiding principles required by the Act was never put to her.

A comment in 89 about an exacerbation of the mistrust felt by the community, I might have missed it but that didn't seem to figure in the evidence anywhere and is more speculation by counsel assisting.

In terms of the continued submissions over the page at 91, the contention in paragraph 91, and this is in the fourth line, that Dr Lester showed poor judgment in deciding to take charge of the investigation, was not put to her. Indeed we say that she by asking for an independent analysis of the data from Dr Flander confirmed what she was doing was conforming with section 5 of the Public Health and Wellbeing Act, that is making decisions based on proper evidence.

There is no reasonable basis on which to suggest that it was not appropriate for her to undertake that further investigation in relation to the statistics and the suggestion that the investigation of the statistics should have been overseen by someone with no vested interest in the outcome again is a matter which was not directly put to her.

She was asked in the course of evidence whether she

thought she might have had a conflict of interest to which she replied no, she didn't. It was never then gone on, the questioning never then went on to say to her well, you were wrong about that, you did have and I want to suggest to you that you did have a conflict of interest; that was never put. So the failure to put it implies an acceptance of the answer, and while I'm on that point it is a trite point but it's worth remembering that the evidence before the board is not found in the question that's asked, the evidence before the board is found in the answer to the question, and if the answer to the question is no or the non acceptance of a proposition that is the evidence, not the proposition that still hangs about in the question, but the answer to the question, that is an important matter for the board to bear in mind.

The proposition starting at 95 that the department fact sheets were unbalanced and misleading again was never put to her in those terms, transcript 397. In 98 the proposition that the fact sheets were by their own claim accurate and clear information is the quote that wasn't put, it was accurate and complete was the quote, and well understood; again not put to her. In part B, it wasn't ever put to Dr Lester that the information given in the various fact sheets was in some way, shape or form contrary to the requirements of the Public Health and Wellbeing Act. The referral by Dr Lester to the fact that the statistics showed there was a decrease in the number of deaths in Morwell as compared to the average for the previous five years can hardly be criticised as that was the fact. Again in paragraph 100, the proposition that the limitations of the figure were not acknowledged in any of the public

documents was not put to her, the speculation again in the evidence about whether there was a significant increase in the number of deaths and people could have been working in Morwell at the time of the fire, that wasn't put to her and it's based on speculation in any event.

In 102 the proposition that emphasising the Morwell figure without reference to the limitations was misleading, was never put. The comment that equal prominence should have been given to the statistical treatment of other data which tended to confirm an increase in deaths is a nonsense given the actual evidence before the board because of course there was no such data.

We have some disquiet about the attack on Melbourne University and Dr Flander. It seems to us that it's hard on the one hand as is done at the commencement of these submissions to accept Dr Flander as an eminent expert and then somewhat schizophrenically at paragraph 104 and on, effectively try and discredit both her competence and independence, not only her independence but the independence of Melbourne University who I'm sure will be surprised to hear about that.

The fact that Professor Nolan was contacted was of course acknowledged but then paragraph 107 seems to criticise Dr Lester for the choice of Dr Flander as the person to undertake the study, made it absolutely clear she contacted Professor Nolan whose choice it was, very difficult to see how she can be criticised for that choice, a choice not made by her. The criticism of course is that she's an epidemiologist rather than a statistician, we note in passing the board chooses its own expert and epidemiologist so one wonders how criticism can be levelled

at Dr Lester for doing exactly the same thing.

We also note in passing that Dr Flander's work has never been the subject of any actual criticism in terms of either its method or its conclusions, there is indeed agreement either tacit or actual by all the other experts engaged. So the submission that somehow Melbourne University weren't independent we say simply does not bear any reasonable scrutiny.

Again we take exception with the suggestion that the report of Melbourne University was a collaborative rather than independent document. We note with some curiosity footnote 104 in paragraph 116 which says as follows: "It is significant in the three reports provided to the department by the University of Melbourne there is no disclosure of the changes that were made to earlier drafts in response to comments made by the department officer." It is well accepted practice that an independent expert who changes her or his opinion on a material matter should disclose in a supplementary report the nature of the changes made."

Footnote 154 down the bottom of the page then refers to the Supreme Court of Victoria Expert Witness Code of Conduct. This of course was not the retention of an expert to give evidence at court where that Code of Conduct applies, the Code of Conduct doesn't apply to anybody who has given evidence before this board. Certainly none of the experts have adopted it. It is ludicrous we say to refer to it in the context of that comment, not only ludicrous but unfair when of course the arrangement between the department and Dr Flander was a commercial one. She had been given a brief for want of a better description to

do an analysis and a report and as the board heard it's perfectly normal and acceptable in those circumstances to forward a draft to find out whether it actually answers the question that you want answered. Of course that is another example of the evidence not being the question but the answer, and we refer the board to Dr Flander's evidence at transcript 448 in that context.

We submit that the questions that also arise, and this is now at paragraph 131, we simply don't understand how D or E in that list arise at all from anything that the board's heard. The level of independence the study has from DHHS, we would have thought the perfect person to answer any questions or suggestions about that matter would have been Professor Abramson when he came and gave evidence to the board, yet another example of something not being asked of a witness who was in the perfect position to answer it, yet it's still said by implication at least that there is some level or lack of a level of independence in that study when there is simply no basis for drawing that conclusion, and again (e), the level of community engagement and ownership, one would have thought if there was a concern there, Professor Abramson, as head of the study, would have been the perfect person to ask, but no questions were asked.

We want to conclude by simply saying the following: we have issues with the way this Inquiry has been conducted by counsel assisting. Our submission is we could have reasonably expected accurate references to the facts and evidence and an open, objective approach according procedural fairness to the witnesses and in particular my client. Instead what we have is, at best, inaccurate

referencing of facts and evidence, at the worst some of that is misleading and the references are almost always selective. We, regrettably, make the submission that the presentation of the evidence and the questioning of the witnesses was, rather than being open and fair, partisan and clearly agenda driven. It failed to accord procedural fairness to my client by serially failing to put propositions to her which have now been seen to be the source of comment in the final submissions.

I've referred already to the failure to advise us of the joint report procedure, the failure to retain Professor Abramson as a witness, to involve him in the joint report procedure, a failure to refer to the rapid health response assessment, a failure to ask him anything about the CSIRO's modelling of exposure - one would have thought, again, a matter clearly relevant to the issue of causation. It is inconceivable that that could have been thought irrelevant in terms of the terms of reference that we are dealing with, and the result of that is that there is a significant deficiency in the evidence before the board on which it is able to make findings.

We submit that the community of the Latrobe Valley is not best served by a report based on inaccuracies and speculation but one based on the evidence produced and by recognising the deficiencies and limitations of that evidence. We say the evidence does not allow the board to make a finding one way or another and we agree with the proposition already put, that the long-term health study is the key to the resolution of the general proposition as to the involvement of the mine fire with any statistical alteration in the death rate. They are the matters we wish

to put to the board.

CHAIRMAN: Yes, Mr Blanden. Ms Szydzik.

MR BLANDEN: And can I just say, in line with the invitation given, can we simply reserve our right, on the point of the late-served emails, to file an extra statement.

CHAIRMAN: Yes.

MS SZYDZIK: If the board pleases, just by way of a preliminary matter, I note the time. It is almost 1. I presume we continue, but I just thought I should check.

CHAIRMAN: We're continuing, yes.

MS SZYDZIK: Thank you. I'm grateful for that indication. The first point that we seek to make is to reiterate one that I said in the opening statement, and that is that Voices of the Valley are very grateful to be here and they're also very grateful for the board in considering these matters with the thoroughness that they have. We indicate at the outset that we, in large part, agree with the submissions that have been put by counsel assisting and the recommendations. I'll just pause there for a moment. We too have some written submissions that have been prepared and they are being provided to the parties at the moment and we'll also hand up copies to the board. I won't be taking the board through them step by step, but there are some passages of the submissions that I will ask the board to go to particularly.

Indeed, one of those matters arises from the submissions that have been made by in particular my learned friends Mr Neal and Mr Blanden regarding the applicable standard to be applied. Reference in particular has been made to the Briginshaw standard. It is our submission that the present question for the Inquiry is analogous to the

question of causation in negligence cases and so it is instructive then to look to some of the principles that have been applied by the courts, although, of course, not binding upon you, but to see how it is that the courts deal with complicated questions of causation, in particular when there is an issue about medical evidence and how cause can be determined from that evidence.

In that regard, we also note, just in passing, that in relation to that question, so that is how can a causal event be determined from medical evidence, as is the question before this board in relation to the terms of reference, that doesn't involve questions of fraud or intentional or malicious or deceitful conduct that are typically issues that come up in relation to the Briginshaw test, but if I could take the board to the passage in the written submissions concerning the legal principles that we say are instructive. That is located at page 17 of the written submissions, starting at paragraph 3.32. What the board will see is a collection of some of the authorities essentially that deal with or grapple with this difficult question of causation. What we see from the authorities is it is not essential that there be scientific certainty or precision or in any sense absolute data in order to be able to decide a causal link. In fact, doubts and gaps in scientific knowledge will not be determinative. Where expert evidence is before a court, that will assist the tribunal, but the expression of that evidence will not necessarily determine whether or not, on the balance of probabilities, which a court is applying, is to be - whether the balance of probabilities test has been satisfied. Rather, the court's task is to look to all of

the evidence before it. That includes the opinions that are given by the experts, but it also includes the additional material that goes beyond that.

We've also there made some reference to in particular the High Court authority of Tabet v Gett, that identifies that in relation to the question of causation specifically, the threshold is in fact quite low. What we're looking at, as is set out here, is something that is more probable, which means no more than on a balance of probabilities such an inference might reasonably be considered to have some greater degree of likelihood, it does not require certainty, and the court there in fact used the term the threshold is relatively low.

If I could ask the board to turn over to the next page. Starting at paragraph 3.34, we address the specific High Court authority of Amaca v Booth, which looked at the question that arises in relation to asbestosis cases and how it is that the court can derive from an increased risk that is identified within the medical evidence the link then to cause and as we've set out there, French CJ in that particular decision observed that in some instances the association in statistical data, and there it was epidemiological data, was sufficiently strong to enable the causal link to be determined on the face of the association. Alternatively, it may be necessary that you need to find some other causal explanation to draw that link.

Now, we would say in fact the current situation before this tribunal falls absolutely squarely within all of the principles that we've just addressed. In fact, if one were applying the balance of probabilities test, we

would far surpass it based on the statistical evidence that is before this board and also then the other evidence that the board will no doubt consider.

I make those observations in direct response to some of the issues that have been raised by my friend. Obviously we raise that also in our written submissions, but I'd just like to now go back to the substantive submissions in the order that we were going to address them before the board here today.

The first issue that we want to canvass before the board is the course of events. The evidence has been clear, we submit, that despite the seriousness of the health effects on this community, obviously of the most serious kind, that is death, the concerns that were raised by Voices of the Valley more than once were dismissed out of hand and then actively sought to be disproven and that is something that has plagued this community group for this very significant period of time, since they first identified this as an issue way back when the mine fire first began and then immediately afterwards.

So just to run through some of the chronology of events, the first request was made by Voices of the Valley back in May 2014. That was in the order now of 18 months ago. They wrote to the Registry of Births, Deaths and Marriages, requesting data for February to June, as we all know, in the 2009-2013 period and then also for the 2014 period up to the time the request was made. No response was received. No explanation was given for the lack of any response. Of course, as can be expected, given that they were considering and fearful that there were deaths occurring in their community that were the direct result of

air pollution, they wanted then to try and answer that question for themselves and so they undertook the very time consuming, arduous task of going through archived newspapers for a period of five years prior to the mine event itself. Unsurprisingly, that took months. It was undertaken by volunteers. It shows just how dedicated these individuals were, this group was, to try and resolve this question and it is not surprising why. It was a question of the serious effects on their community, including death. They wanted to know the answer.

Once they'd compiled that information, they did the first thing that they thought they could, which was provide it to the Hazelwood Mine Fire Inquiry, the first iteration of this Inquiry. Unfortunately, by that time, of course, the board was in its final stages of preparing a final report and so the data wasn't able to be included, but we find ourselves here and we're grateful for that.

Continuing with the chronology, there were two further requests for data that were made to the Registry of Births, Deaths and Marriages that occurred on 4 and 25 August. On 17 August the registry had inquired with the Department of Health, as it then was, whether the Department of Health could assist in response to the Voices of the Valley request. In accordance with Ms Sim's statement at paragraph 10, the Department of Health declined to provide any assistance. We've also seen some of the email correspondence relating to that.

The data was finally received by Voices of the Valley on 4 September. It appeared to Voices of the Valley that the data was consistent with the data that they had themselves obtained by going through archived newspapers

and comparing it with the results they knew from 2014.

Continuing through the chronology, then there is some media about these particular concerns raised by Voices of the Valley. We had an ABC 7.30 Report about the possible increase in deaths. The ABC then engaged Associate Professor Barnett and Associate Professor Barnett then provided his first report.

In relation to the Department of Health's response, in addition to what I have already referred to about rejecting the concerns raised by Voices of the Valley outright, there was also then the statement to the ABC on 11 September, indicating that there was no increase in deaths in Morwell and that the data showed no significant pattern. Then there were also the fact sheets that were uploaded on 16 and 17 September, that we've heard a lot about and which emphasised that there was a decrease in fact in the deaths in Morwell and also that the thrust of the facts sheet was there was no increase in deaths and therefore no reason for concern.

Dr Flander was engaged to review the data and also, although it didn't happen until later, to provide comments on the report of Associate Professor Barnett. Further data was received in November - there was a further data request by Voices of the Valley in November and that was received in about December and there was a payment fee for that of $485, which we've now had the invoice for tendered before the board. Voices of the Valley welcomes the State Government's indication that this will be repaid to them.

Associate Professor Barnett produced his second report, which, in substance, reiterated the earlier conclusion, although based on additional data, and then

following that, as I have already alluded to, Dr Flander was again engaged to comment upon that report in addition to the additional data.

Voices of the Valley consider the response in all of those events by the Victorian Government was entirely inadequate. Before the announcement in May this year that this Inquiry would be reopened, Voices of the Valley had been rebuffed in their enquiries and it was done in a really flippant and offhand manner. The Department of Health adopted an adversarial and defensive approach to Voices of the Valley and to the data that was put forward by them and also the analysis that was put forward by Associate Professor Barnett, and that approach is in the context where there were very grave concerns raised. It was also in the context of a mine fire that ran for 45 days - or continued for 45 days and shrouded Morwell and surrounds in toxic smoke. It is also in the context where the health effects, including the potential for death, was known, or ought to have been known, certainly not least from the Rapid Health Risk Assessment. It is also in the context where this particular event was unprecedented and so a cautious approach needed to be taken.

18 months after the mine fire, Voices of the Valley are finally vindicated, their concerns have been legitimised. The data shows an increase in mortality and the cause is the mine fire, and we say that because the evidence does go that far. It is possible, based on the evidence before the board, to draw conclusions that there was an increase and that that is causally linked to the mine fire.

Then I'd like to turn to that data. The two key

conclusions that were reached by the experts were in relation to what the particular statistical data shows in terms of the likelihood of the increase in the number of deaths, first that there is moderate statistical evidence for a higher mortality from all causes and from cardiovascular disease. Two, that there is some statistical evidence that the increase in mortality in the February to March period was greater than the increase in mortality across the February to June 2014 period. In relation to the second, we note that when the period of the mine fire is compared to the longer period, what this is really telling us is that when the period of the fire is compared to the longer period, then there is some evidence that there was a greater increase, i.e. the rate ratio was higher.

If we go then to the data itself, what we have is in the period February to June 2014 there was a - and this is based upon the analysis in Professor Gordon's report and we've set that out, the citation there, in the submissions - there was a 17 per cent increase in mortality for all causes. The P-value, as calculated by Professor Gordon, associated with that 17 per cent increase was 0.014. Now, flipped around, in the way that the evidence disclosed we can with P-values, that tells us that the probability that the increase was the result of chance alone is 71 to 1, so chance is ruled out. The other way to put it is that it is 98.6 per cent likely that the increase was not due to chance.

If we look then at the narrower period between February and March 2014, we see that there was a 20 per cent increase in mortality, i.e. a higher rate

ratio. Again, this is for all-cause data. The P-value here is higher, it is 0.088, and that tells us that the probability that the increase was the result of chance in this instance was 11 to 1, or put another way, it is 91.2 per cent likely that the increase was not due to chance.

The statisticians refer to this as moderate evidence or some evidence, but when one looks at it in terms of probabilities, the probability is that there was an increase because we've got something so different to what the expected data would have been if the pattern had continued from 2009 to 2013.

Then the next question is what is the cause. The experts identified four potential causes and there has been some criticism today about the fact that not all causes were potentially investigated. However, the evidence of the statisticians was at that point, once you determine that there is an increase or, in their view, that there is moderate evidence of an increase, then they scouted around for all the possible causes. The four are the ones that they identified and they are set out in the joint report. So they are fine particle air pollution from the mine fire or bushfires, that is the two, then air pollution from carbon monoxide and then also heat. So they reviewed and considered the data in relation to those and they concluded that it was very likely that air pollution during the mine fire caused an increase in mortality and the reason, as was identified, was that knowledge and learning around the adverse health impacts, including mortality - that there is substantial knowledge and learning around the adverse impacts on health, including mortality, because of

particulate air pollution.

There has been some discussion before the tribunal about whether the state of the evidence before the board is sufficient to enable that causal connection to be drawn, in particular whether the state of the medical evidence is sufficient. That was raised both in the way that I've just put it but also as a question about whether or not it was appropriate to extend the - to consider the timeframe of February to June in addition to February to March. What those submissions, in my view, ignore is the evidence that Professor Armstrong gave himself in oral evidence. It may be - I'm not sure if the board have transcript or copies of transcript. I certainly didn't flag that I would be referring to that, although I think most of it is set out in the submissions. Let me just check. Certainly the first transcript reference is. The transcript reference, as no doubt the board will see, is on page 13 and in particular it is the second half of that extract, so starting from the fifth line down, at the end of that line essentially, firstly, the evidence that there is a relationship between particulate pollution and risk of death in the Latrobe Valley is observed by Dr Flander and her colleagues and, secondly, there is a large body of evidence to indicate that short-term increase in particulate pollution are associated with short-term increases in death, as well as long-term exposure being associated with longer term increase in death.

It is also important in this context to note some of the evidence that Professor Armstrong gave in relation to the particular role he has at present, advising the chief health officer of New South Wales. That transcript

reference is found at page 569, it starts at line 14, and Professor Armstrong says, "Let me first say that under normal circumstances I would defer completely to Professor Abramson", about effects relating to particulate air pollution. However, he is saying that he knows somewhat of it because he is a member of the expert advisory panel to the chief health officer of New South Wales in respect of air pollution and he goes on to identify some of the data that he has recently come across relating to cardiovascular illness, which I'll come back to briefly.

Importantly, this evidence was not challenged in cross-examination, it stands before the board as evidence of causal connection. We also then have, of course, the evidence of Associate Professor Barnett, which is also extracted within the submissions and I won't read that out for the board. But then moreover, and this is where the layers start appearing in terms of how it is that we can draw this causal link, the experts also look at and consider mortality data by specific cause, namely cardiovascular, and so we have set out in the submissions there some of the analyses - or the results of the analyses that was undertaken by the experts and so we know, for example, that there was an 11 per cent increase in mortality and because the P-value is 0.04, it becomes 96 per cent likely that the increase was not due to chance. Then if we narrow that down to the February to March period, the rate ratio goes up, the P-value drops and we have set that detail out.

Professor Armstrong, in the transcript reference that I just took you to, in addition to identifying his recent experience in relation to the New South Wales chief health

officer, also there identifies that his own recent studies of the literature show quite strong indications of a contrary view, i.e. that respiratory would be dominant and that the dominant effect of air pollution on health has been seen to be cardiovascular, rather than respiratory, in the acute situation.

Another factor that is critical, both in the experts' analysis and then also in the material before this board, is the emergency admissions data. Again, we've set out some of these statistics in these submissions, but by way of highlight, the overall admissions increased by 16 per cent, with a P-value of 0.001, i.e. a 1 in 1000 chance that that is the result of chance alone. Admissions relating to cardiovascular conditions increased by 16 per cent, the P-value is higher, so we have a 1 in 4 essentially chance of that being the result of chance alone. Admissions relating to respiratory conditions increased by 31 per cent, with a P-value of 0.07. And these conclusions - or this data is then reflected within the conclusions of the joint report, set out at paragraphs 3.1 and 3.2 and 4.1, although I won't take the board to those. They are set out within our submissions.

As part of their analysis in examining all potential causes, the experts ruled out air pollution, carbon monoxide and also temperature. They did consider the possibility of the 2014 bushfires contributing, but it was identified only as highly as that, a possible contributor, and in respect of that we have included some specific submissions in our written submissions for the reasons that were articulated by Professor Gordon in his evidence, and that is that the duration and the severity of those fires,

as in the smoke from those fires, pales in comparison to what was experienced from the mine fire and so the board will see that there are extracted from the first Inquiry report the details of those three fires and how long they burned for, which, as you'll see, was not very long and nothing near the duration of the mine fire itself.

Then, moreover, as was the evidence before the tribunal, the nature of the smoke is entirely different, it is an acrid smoke, not, as was described by Mr Ron Ipsen as the smell of eucalypts, which is what you get if you have a eucalypt fire.

There have been a number of comments that have been made about inconsistencies in the data and we have sought to deal with the two main inconsistencies in our written submissions that were raised, namely, that in relation to Morwell specifically in the period February to March and then also the decrease in mortality in relation to respiratory illnesses only. We consider we've dealt with those sufficiently in the written submissions and we don't go into the details of that. Needless to say what is important is that those sorts of inconsistencies do not - are not determinative of a finding in relation to cause. The extract from the transcript that we have set out in our submissions from Professor Gordon at the bottom of page 18 is useful in that regard. We are not in a situation that is a gold standard paradigm, as he described, where we have a clinical trial, where we control all of the external factors and we can simply tweak one particular variable to assess the direct effect, that is not the universe we're in, and nor could it ever be, because no real-world situation is like that, but the task to grapple with is is

there a causal link in those circumstances and there are a body of principles that deal with that, as we have already referred to, in particular arising from cases in negligence and the question of causation that arises there. As I said at the start, what that tells us is that certainty and precision are not required but instead the totality of the evidence is what needs to be looked to and in that regard we submit that there is ample material before the board to draw the conclusion positively that there was an increase in deaths and that the cause of that was air pollution from the coal mine fire.

That then brings me to the recommendations that have been put by counsel assisting and a point of difference between the submissions or the recommendations that are put by Voices of the Valley and those that are put by counsel assisting. As you will see from page 20 of the written submissions, it is our submission that the board can and should find that it was probable that there was an increase in mortality for all causes and respiratory illness - cardiovascular illness in the relevant periods and that it was probable that that increase was caused by air pollution from the mine fire.

We say that the evidence supports that, but in addition to that what this has is it uses language that is understandable by people other than statisticians. One of the difficulties with the use of terms like "moderate evidence" or "some evidence" is that it is not easily understandable to somebody in the street or in a community who isn't a statistician as to how that translates to how likely it is, but the evidence, for the reasons we've explained, does enable the board to conclude that it is

probable that there is the link in relation to both two questions and we urge the board to make findings in those terms.

The board will see that a number of further recommendations are set out within the written submissions as well. These arise because of the nature of the matters before this board. We now know - well, we have known for some time, but certainly it has been confirmed on the evidence before this board, that the health impacts were extreme on this community. We also know that they included death and Voices of the Valley are very concerned to ensure that further health effects are appropriately mitigated, given what this community has already gone through and the exposure that resulted from the mine fire, and so the recommendations that we have set out reflect that. It is focused on the further steps that are necessary to ensure that the health crisis that resulted from the mine fire is appropriately responded to.

We understand, of course, that term of reference 7 is directed to the very issue of health and so we understand that these recommendations can't arise or may not arise directly from term of reference 6 but certainly should be addressed and considered in full during the course of the consideration of term of reference 7.

One final note in relation to the long-term health study. While, of course, that is important and to be commended, Voices of the Valley are very concerned that they're not just a study of the effects of pollution, they want to stop people getting sick, not just watch them getting sick, and so the recommendations that are set out in our submissions and that we say carry into term of

reference 7 are as important as they could be to Voices of the Valley. They mean everything to stop this from continuing to happen. There are no further submissions.

CHAIRMAN: Thank you. Yes, Mr Rozen.

MR ROZEN: If I could just briefly respond to a handful of matters that have been raised in submissions, firstly the submissions that were made on behalf of GDF Suez by Mr Neal. At paragraph 9 of the written submissions, a number of limitations in the data are identified. We'd merely observe that they are limitations and the reference sources for those limitations are from the evidence of the experts, so they are clearly aware of those limitations and they are limitations that the board can be satisfied have been taken into account by the experts in their analysis of the data and the conclusions that they have reached.

Secondly, some criticisms seem to be made that the experts have limited themselves to the four possible causes identified initially in Professor Armstrong's report. In our submission that is perfectly reasonable. It was said that there might have been a raging disease, for example, that hadn't been taken into account. That is clearly getting into the realms of pure speculation. There is no evidence before the first Inquiry, or this one, of any such thing and, in fact, no alternative was put to any of the experts as to what another cause might be.

At paragraph 32 of Mr Neal's client's submissions, the following appears, "The joint report appears to have been written with some unspoken presumption in favour of a finding of increase in mortality due to the fire" and then some examples of language are given which it seems are said to suggest that rather serious criticism of the four

experts. In our submission, there is no suggestion of that at all and, in fact, the very contrary is the case. Everything about the way the experts have gone about assisting the board in this case would suggest that they've approached all of the issues with open minds and have been very careful and, as my learned friend Ms Szydzik has pointed out, perhaps particularly conservative in their use of language to describe the statistical evidence. What is more, I certainly don't recall that being put to any of the experts by Mr Neal or by anyone else, and that is a matter that ought to have been put if that is a submission that the board is being asked to accept.

A complaint was made about the late provision of material and that it inhibited in some way intelligent cross-examination by Mr Neal. I'm not sure if that was meant to be quite as self-critical as it came out. We would merely make the observation that the late provision of material in any sort of curial proceedings is something we've all had to deal with from time to time. If one is truly embarrassed or put in a difficult position by the late provision of material, then the way one responds to that is to ask for additional time. There was no such request made here, either of the board or of me, and to make the complaint now that the late provision of material has somehow limited Mr Neal's ability to cross-examine the witnesses is really a baseless complaint in the absence of having raised the issue when something could be done about it.

Finally, Mr Neal, and he is joined by Mr Blanden in this regard, says, "Don't worry about all this, it is all very difficult, but you have got the long-term health

study, that will answer the question." A couple of difficulties with that. One is that the evidence shows that the long-term health study will not examine deaths in 2014. In fact, it is unlikely to examine deaths even in 2015, on the evidence of Professor Abramson. So if Mr Neal's submission that one would expect the deaths to have occurred within five days of the exposure is right then a long-term health study is not going to answer those questions and there is an obvious contradiction between the submission that there was five day window for deaths and the reference for the long-term health study not looking at data until late 2015 is in paragraph 126 of our submissions

If I could turn to the submissions of Mr Blanden, the first of those was what was said to be the normal process for joint expert meetings had not been followed. It may be that a normal process in relation to civil litigation can be identified along the lines of what Mr Blanden suggested, I make no observation about that but it may be the case, but here we're not dealing with civil litigation. We are dealing with a public inquiry. So for example, the use of the board's expert if I can call Professor Armstrong that, as a basis for discussion is perfectly proper and sensible in my submission. One can't compare what might be the norm in civil proceedings where the parties themselves retain experts, when the experts come together with a situation where a board such as this retains an expert and then that expert meets with experts that have been retained by the parties, a very different situation

In relation to the evidence of Professor McNeil which is exhibit 11, there are references to that evidence in both the submissions of Dr Lester and of GDF Suez and it is

said the board will be assisted by consideration of that evidence. Obviously it's part of the evidence before the board and the board is to assess and weigh it as it thinks appropriate but we make a couple of observations about Professor McNeil. He didn't examine the data, he is the one expert along with Professor Abramson who hasn't examined the data and so in those circumstances his evidence is in a different category. Further, whilst he did see the reports of Associate Professor Barnett and Dr Flander he did not see the report of Professor Armstrong, that is clear from the letter of instruction that was sent to him and contrary to the suggestion by Mr Blanden in his opening statement at transcript 260.

Thirdly, much was made by Mr Blanden of what was said to be, "numerous instances" of inaccurate and misleading references in the submissions of counsel assisting. They are serious submissions indeed. One example was cited out of the 160-odd footnotes in our submissions and that was the reference at footnote 76, we would concede that the transcript reference there does not make out the proposition that Dr Lester accepted the proposition set out in the first sentence of paragraph 57, we apologise to the board for that, but having said that, the proposition that's stated there is hardly a controversial one.

The proposition is that it's likely some residents of Latrobe Valley locations such as Moe and Traralgon travelled to Morwell to work in Morwell during the period of the fire, we would say that is a proposition that is well supported by the evidence before the board particularly the evidence from the first Inquiry which we would remind all present is considered to be evidence

before this Inquiry, and I don't think I need to go in detail to that evidence but it clearly in our view establishes that proposition.

To then extrapolate from that and say there are numerous instances of misleading and inaccurate references in counsel assisting's submissions is a most unfair and improper submission to make without citing any other examples that counsel relies upon.

The next complaint made by Mr Blanden is that the rapid health risk assessment was, "Never going to see the light of day", until it was produced by his client in her statement. Firstly the rapid health risk assessment was already in evidence before this Inquiry before we received Dr Lester's submission, it was part of the evidence before the first Inquiry, it was an exhibit at the first Inquiry, it is in evidence, there is no suggestion of it being hidden or not being drawn to the board's attention.

Secondly, Professor Abramson told counsel assisting the Inquiry he was not allowed to release the document to us, he did not have permission to release it, therefore it could not be attached to his statement. A related complaint made is that Professor Abramson wasn't included in the expert meeting, the simple answer to that is Professor Abramson never reviewed the data, he was not in a position to contribute in the same way as the other four experts were.

Mr Blanden makes the submission that the proposed findings we set out in paragraph 69D and E ought not be made by the board because they are contrary to the evidence before the board. Once again a serious submission to make that counsel assisting would ask the board to make the

submission that it's not only not supported by the evidence but contrary to the evidence. We say that on the contrary, proposed findings D and E are supported by the evidence. Without going into detail the references that support the findings are set out in paragraphs 38-41 of our submissions. The words are drawn directly from the evidence of Professor Armstrong and reference is there made to the other experts agreeing with Professor Armstrong's evidence so they are certainly supported.

Then a broad procedural fairness concern is raised by my learned friend, Mr Blanden. It is said various matters were not put to his client. It is an interesting submission to make when Mr Blanden on I think at least two occasions on day one objected to questions I asked of witnesses on the basis they were cross-examination, the suggestion seemed to be that would be inappropriate and to a certain extent I would submit that is a legitimate concern because it's not the role of counsel assisting an Inquiry to engage in the sort of wholesale cross-examination one might see in litigation. But having said that I just draw the board's attention to two examples in the cross-examination of Dr Lester when in my submission it was fairly put to her matters that are now the subject of proposed findings. The first of those is in transcript 397 at line 15, this is in relation to the proposed finding that the fact sheets are selective and misleading, the question that was asked of her was: "You see, I suggest to you that in relation to the 19 September 2014 document there is a degree of selectivity about the way the data is presented to support in effect an argument there was no relationship between the fire and any increase in

deaths; what do you say to that?", and she responded to the effect she didn't agree with that proposition. Further, Dr Lester had access to Professor Gordon's criticism of those fact sheets before she came to give her evidence here so any suggestion she was unaware of that criticism or that somehow is now taken by surprise that criticism is being made is entirely baseless.

The second example concerns this conflict of interest issue. It seems to be said that for the first time Dr Lester finds out today counsel assisting considered she may have had a conflict of interest in relation to her engagement at the time, I note transcript 400, line 4, a question after referring to the engagement of the Melbourne University: "Did you feel you may have had a conflict of interest in doing this work?---No, I don't believe I had a conflict of interest"; then at line 12: "I understand that but did it not occur to you that it might have been better if you were at arm's length from that process?---No, look, I don't agree with that." So far as the substance of the concern, they were clearly put. There are other examples and I won't take up the board's time but in my submission there is no question of unfairness in the way this Inquiry has been conducted either in general terms or in relation to the specific concerns about Dr Lester.

A number of other concerns under the broad heading of procedural fairness or a lack thereof were raised. If I can deal with one, something was sought to be made of the CSIRO modelling, it hadn't been properly examined. The evidence is clearly the case that in Professor Abramson's evidence that not only did he refer to the modelling that was put up on the screen, there was an opportunity for him

to give evidence about it and it was observed this was an incomplete process that the CSIRO were doing further modelling which would inform the long-term health study.

The final matter I would say by way of reply is to endorse the submissions of counsel representing Voices of the Valley in this regard, and that is that the board has had the benefit of a very thoughtful and considered examination of the evidence particularly from four expert witnesses who gave considerable time and their own convenience to assist the board by coming together and producing a joint report. That joint report when considered in light of the statistical evidence that they referred to in their individual reports provides in our submission a secure basis for making the findings that we urge the board to make, and with respect, whilst we have in our submissions sought to faithfully reproduce the actual findings of the experts, the evidence of the experts, there may well be considerable merit to the observations made by counsel for Voices of the Valley that a formulation of findings along the lines of probability as set out in their submissions could be an entirely appropriate way for the board to approach making any findings in this case.

They are the submissions in reply.

CHAIRMAN: Thank you, Mr Rozen. There may or may not be further hearings but certainly not in respect to this matter, so I will repeat the thanks I gave to everyone concerned last week and we will now end the proceedings.

- - -