

*Oaths Act 1867***Statutory Declaration****QUEENSLAND****TO WIT**

I, Neville Atkinson, of [REDACTED] in the State of Queensland, do solemnly and sincerely declare that:

1. Since 1 July 2020, I have held the position of Senior Inspector of Mines (“SIOM”) within the electrical discipline of the Coal Mining Inspectorate (“the Inspectorate”) within Resources Safety and Health Queensland (“RSHQ”). Prior to this, from December 2019, I was employed in the same role by the Department of Natural Resources, Mines and Energy, and prior to that I was an Inspector of Mines since July 2006. Prior to this I was employed in various operational and management roles in the mining industry and I have been employed in this industry since 1979.
2. I am a qualified electrical fitter mechanic and I have completed numerous courses in relation to the mining electrical field.
3. I provide the following evidence to assist the Inquiry.

**Involvement with the investigation into the incident at the Grosvenor coal mine**

4. My only previous involvement with the mine was a routine inspection that I had conducted on 15 April 2020. That inspection was for the purposes of familiarising myself with mines that I had not personally visited before I took up the role of SIOM. On that occasion, I visited the scene of the incident at the longwall but did not make any observations of relevance to the investigation beyond noting that there did not seem to be any issues with the machinery on site from an electrical perspective.

5. I became aware of the incident on 7 May 2020 when I attended an Incident Management Team meeting about it. We discussed the incident and made some plans for the investigation at that time. I was responsible for the electrical aspect of the investigation.
6. I directed Principal Investigation Officer ('PIO') John Tolhurst to issue document production notices to the mine in an attempt to obtain data about the machinery that was in place at the site of the incident so that I could determine whether that machinery was running or not at the time, and if so, to see if the stored data could tell me anything of note from an electrical perspective. I was specifically interested in electrical equipment that was on the face line of the longwall and also what may have been carried by workers at the site.
7. This data was provided to me and based on that material, I considered the possibilities of what may have been potential electrical causes of any ignition of gases underground which formed the scope of my investigation. I formed a plan as to the steps that I would need to take to investigate the electrical aspects of what took place.
8. On 10 May 2020, I attended the site of the incident and was able to go underground to conduct my own observations of the scene. I personally did so, inspecting the equipment looking for anomalies or other damage which may have been relevant to my investigation. I inspected the scene generally and with an open mind at that stage as I had not received any information as to the possible source of any ignition nor any possible cause.
9. I did not notice anything unusual until we reached #100 shield, in which area I saw some damage on this shield and others moving inbye. I could see where there were signs of burning to the equipment in the form of scorch marks, bubbled paint and charred and burnt cables and hoses. Despite noting this damage, I did not see anything which looked to me like the source of the flame. At some places, the damage looked worse than others and there did not seem to be a uniform exposure of the equipment to flame. In this area, it did not appear that the AFC showed significant signs of damage.
10. While I was inspecting this area, Mr Murray Nystrom of Australian Forensics was in attendance and conducting his own inspection and taking photographs of the scene. He told me at the conclusion of his inspection that he believed that the flame had started around #111 shield.

11. On 20 May 2020 I went underground to conduct further observations of the scene. In attendance on this occasion was, amongst others, Mr Graham Ray, who was employed as a fire investigator by the mine. Prior to going underground with Mr Ray, I had been informed by another inspector that he had heard that the mine had thought the ignition had occurred around the shield #136 / #137 area. I had also learnt that shield #136 was the last shield that had operated prior to the explosion. This was also the area that I had observed as showing greater heat damage during my inspection with Mr Murray Nystrom.
12. During the inspection underground, I walked with Mr Ray along the entire face line.
13. I walked with Mr Ray from shield #100 to #111 shield. Mr Ray pointed out various aspects of the flame path taken, which included a cardboard box located at #103 shield, which indicated flame / heat from tailgate to maingate, which was against the normal flow of ventilation. He pointed out that from shield #100 to #110 / #111, all indications were from tailgate to maingate. He pointed out heat / flame after shield #111 was from maingate to tailgate. At shield #111 Mr Ray pointed out that the flame came from the upper back of the shield to the front and not the reverse because of the heat signature on the pan line, and also due to heat damage on the shield. Mr Ray looked closely at the solenoid block on shield #111 and said it was definitely a point / focus of interest.
14. I spoke to Mr Ray as he investigated the scene of the incident and he pointed out to me various aspects of the things that he observed which led me to believe that he was forming the view that the flame seemed more likely to have originated around #111 shield.
15. Items were seized for testing from shields #109 to #112, and #135 to #138. Items from shields #109 to #112 were selected based on the observations of Mr Nystrom and Mr Ray that suggested the most likely source of the flame was around #111 shield. Items from shields #135 to #138 were selected because of the information I had heard initially that had raised this area as a possible ignition location, and also as shield #136 was the last shield operated, and where the heat damage appeared to be the greatest. Accordingly, shields #135 to #138 were not excluded as a possibility.

#### **Seizure of items from the scene and testing at SIMTARS**

16. I relied upon the above information when determining which steps to take in my investigation and I directed that certain parts of the electrical equipment and cables be seized and examined as outlined below.
17. The process whereby this took place was that PIO Tolhurst requested that these items be provided through the provision of relevant notices to the mine to do so. The compliance with these notices by employees of the mine was overseen by Inspector of Mines ('IOM') Mark Lydon and IOM Paul Sullivan.
18. A number of these items were directed by me to be sent to SIMTARS for testing. Those items, and the reason why they were selected, were:
  - (a) Solenoid banks for the respective roof supports – this was the solenoid banks taken from #109 to #112, and #135 to #138 shields.
  - (b) Power supply units - power supplies were taken from #99 shield through to #144 shield. These were chosen because they were every power supply in the affected area, and they provided the power to the solenoids, lights and sensors in the area. The last power supply unit that fed power up to and including shield #149 was located at shield #144. The power supplies from #1 shield to #98 shield were not an immediate priority because they did not provide power to the affected area.
  - (c) LED lights, roof support controller, tilt sensors – all this electrical equipment was removed from #109 shield through to #112 shield and #135 shield through to #138 shield due to their proximity to the possible source of the flame, and proximity to the last operated shield, and it being an area where visible damage was observed. These items were seized for this reason.
  - (d) Changeover relays – these items formed part of the power supply units. They were taken from #99 shield through to #144 shield as described above.
  - (e) RS20 equipment – these items were taken from the #109 to #112 shields and #135 to #138 shield.

- (f) Personal detector devices, Cap lamps and personal gas detectors – all these devices which were in the possession of the affected workers were taken. The Cap lamps and personal gas detectors of the affected workers were analysed. The testing of personal detector devices was destructive testing, therefore personal detector devices of other mine workers were sent to SIMTARS for that destruction testing. The personal detector devices of the affected coal mine workers were not subjected to that destructive testing in case they were later required.
  - (g) Non-metallic materials for FRAS testing, gutter guard – this item relates to the dust covers which were in place at the scene of the incident. I was unable to obtain samples of this material from the actual scene of the incident and the way in which this material was selected for testing is explained in more detail below at paragraphs [24] to [26].
  - (h) Mains powered cables with plugs and sockets for the power supplies – these items formed part of the electrical equipment which were taken from #109 to #112 shields and #135 to #138 shields.
  - (i) IS powered cables with connectors for control of the shields – these items were removed from #109 shield through to #112 shield and #135 shield through to #138 shield due to their proximity to the possible source of the flame.
19. Testing of electrical components at SIMTARS did not reveal any potential ignition sources in normal or fault induced conditions (SIMTARS Grosvenor Mine Equipment Assessment: Inspection and Electrical Tests: Report E20/0003.)

#### **Testing that was unable to be actioned**

20. I wanted to test the AFC and shearer mains cables which were located at or near the scene of the incident. The testing that I wanted to do in relation to that cabling was to megger the cables (in simple terms, pass an electrical voltage through the cable) to ascertain if there was a fault with them. I asked for the site to conduct a risk assessment in relation to testing of that type at the scene of the incident and I was refused permission to conduct this test.

21. As a result of the second explosion at the mine, the underground area was sealed off. The remaining shields and other electrical equipment which remained onsite became inaccessible for further testing. The next equipment scheduled to be removed from underground was the VAA's (commonly called the DAC), Promos E/stop equipment and associated cables located on shields #109 through to #112 and #135 through to #138. This was unable to be actioned due to the second explosion.
22. I was of the belief that the equipment which I caused to be seized for examination presented a more likely cause of potential ignition and therefore warranted priority. It is uncertain as to what further testing of the remaining electrical equipment would have been conducted as that decision was yet to be made but it is unable to occur now in any event.
23. As a result of the observations that I made of the site of the incident and the other information obtained during the course of the investigation more generally, I do not believe that the remaining electrical equipment which remains untested presents a significant possibility as being a potential source of ignition. Based on the observations of the fire experts underground, the flame / heat appeared to come from the upper area behind shield #111. The VAAs, cables and Promos Estops are located in the lower section of the shield. Our visual inspection underground of the electrical equipment, and subsequent analysis, did not reveal any obvious electrical fault. The certifications for the intrinsically safe systems found no anomalies or cause for concern. For all electrical equipment on the face line, there was nothing in the data supplied that suggested a sudden current / voltage spike or cause for concern.

#### **Dust gutters**

24. I was unable to obtain a sample of the dust gutter which was in place at the scene of the incident due to being unable to access the site after the second explosion. The dust gutters were first supplied and installed at Grosvenor in 2017. I requested that the operator of the coal mine provide a sample of that same material but was informed that there was none stored in their warehouse.
25. The original documentation supplied to the mine confirmed that the type of material used had been tested to the requirements of MDG 3608 4.2.2.1 in 2014. Also testing at SIMTARS of dust gutters supplied to Broadmeadow underground coal mine for a trial in

January 2018, made and supplied by the same manufacturer, identified that this material met the electrical resistance requirements of MDG 3608 4.2.2.1.

26. A sample was also provided from the nearby Moranbah North mine which I was informed was from the same supplier. This sample was from a couple of years later. That sample was also tested by SIMTARS in lieu of a sample from the site of the incident. The testing at SIMTARS did identify that this sample, utilised by the same manufacturer of the dust gutters and supplied from Moranbah North mine, did not meet the resistivity anti-static requirements of MDG 3608 4.2.2.1.
27. The coal mine sites that had been supplied previously with that type of dust gutters have been made aware that those dust gutters did not meet the requirements of MDG 3608 4.2.2.1.
28. Mine Safety Alert 381 has been issued on 29 September 2020 to inform mines about potential issues in relation to FRAS rated equipment.
29. The potential for the dust gutters to create an ignition source at shield 111 is unlikely due to the shields not being in operation or moving, and minimal size of the remnant dust gutter.

And I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the *Oaths Act 1867*.

[REDACTED]

Signature of declarant/deponent

Taken and declared before me at [REDACTED] this 2nd day of March 2021.

[REDACTED]

126656  
JP (QUAL)

A Justice of the Peace/Commissioner for  
Declarations