

**QUEENSLAND COAL MINING BOARD OF INQUIRY**

*Coal Mining Safety and Health Act 1999*

*Establishment of a Board of Inquiry Notice (No 01) 2020*

Before:

Mr Terry Martin SC,  
Chairperson and Board Member

Mr Andrew Clough,  
Board Member

At Court 17, Brisbane Magistrates Court  
363 George Street, Brisbane QLD

On Thursday, 11 March 2021 at 10am  
(Day 16)

1           **COMMENCEMENT OF CLOSED HEARING**

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3           THE CHAIRPERSON:    Yes, Ms O'Gorman.

4

5           MS O'GORMAN:    Do you require appearances this morning,  
6           Mr Martin?

7

8           THE CHAIRPERSON:    No, we're going straight into playing  
9           the video?

10

11          MS O'GORMAN:    I understand there might be a matter that  
12          some of the parties wish to raise for consideration this  
13          morning.

14

15          THE CHAIRPERSON:    Yes, I've had correspondence.

16

17          MR HOLT:    Yes, Mr Martin.    In essence, we seek to be  
18          exempt --

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20          THE CHAIRPERSON:    I'm sorry, are we in private hearing at  
21          this stage?

22

23          MR HOLT:    I'm not sure.    I apologise.    This should all be  
24          done in public.

25

26          THE CHAIRPERSON:    I think we are already in private  
27          hearing.

28

29          MR HOLT:    Perhaps we can leave it until the conclusion --

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31          THE CHAIRPERSON:    Yes.    My recollection of the duration of  
32          the video was way out.    It's less than five minutes, so it  
33          may be convenient to play the video and then go into public  
34          hearing and you can inform me of your matters in public, if  
35          that's all right.

36

37          MR HOLT:    Thank you, Mr Chairman.

38

39          THE CHAIRPERSON:    Does that suit you, Ms Holliday?

40

41          MS HOLLIDAY:    Yes.

42

43          THE CHAIRPERSON:    Okay.    Yes, thank you.

44

45          MS O'GORMAN:    That being the case, Mr Martin, the video  
46          that's about to be played is the video that was referred to  
47          by the Board yesterday afternoon.    It is the conversation

1 conducted at the mine site with Adam Maggs on the day of  
2 6 May 2020.

3  
4 THE CHAIRPERSON: Yes, thank you, Mr Operator.

5  
6 (Video played)

7  
8 MS O'GORMAN: Mr Martin, that is the extent of the  
9 evidence that we propose to hear in private hearings. If  
10 it is a convenient time, we would seek to have the hearings  
11 reopened to the public now.

12  
13 THE CHAIRPERSON: Yes, very well. Yes, thank you. Would  
14 you open the hearing to a public hearing, please.

15  
16 **CLOSED HEARING CONCLUDED**

17  
18 MS O'GORMAN: That being the case, it having been  
19 foreshadowed by some correspondence that there were some  
20 submissions sought to be made by some of the parties in  
21 relation to practice guideline number 2, I wonder whether  
22 now might be a convenient time to at least hear about  
23 those.

24  
25 THE CHAIRPERSON: Yes. Mr Holt, firstly, I have received  
26 correspondence from RSHQ overnight and correspondence from  
27 Ashurst just half an hour or three quarters of an hour ago.  
28 Just from the point of view of today's hearing, does the  
29 practice direction, in respect of which I know you have an  
30 argument, concern the witnesses to be called this morning?

31  
32 MR HOLT: Not - well, it depends on how far we get. There  
33 are three witnesses, as we understand it, today,  
34 Mr Atkinson, Mr Nugent and Mr Nystrom. Mr Nystrom is the  
35 first of the experts and this issue will concern  
36 Mr Nystrom.

37  
38 THE CHAIRPERSON: It will concern you in respect of  
39 Mr Nystrom?

40  
41 MR HOLT: Exactly, but I will say that in the event that  
42 we were ultimately permitted to cross-examine Mr Nystrom,  
43 that cross-examination would likely be no more than 15 or  
44 20 minutes, so we're not talking about something that would  
45 take a lot of time were it to happen or not happen, if  
46 I can put it that way.

47

1 THE CHAIRPERSON: I see, yes. All right, would it be  
2 a matter, though, that you would be putting propositions or  
3 suggestions to Mr Nystrom?  
4

5 MR HOLT: Again, I think the difficulty, with respect, is  
6 what is ultimately considered to be a proposition or  
7 a suggestion. As the Chair knows, the way in which  
8 cross-examination proceeds will often result in those sorts  
9 of matters being put. I expect, if I can be frank with the  
10 Board, to assist with the way in which the Board proceeds,  
11 in terms of Mr Nystrom, the cross-examination is likely to  
12 be, if I can put it this way, more exploratory around the  
13 topics that we've foreshadowed in writing in accordance at  
14 least with the time frame in the direction. The issue  
15 might come to a head more acutely in relation to the  
16 witnesses next week, commencing on Monday with Mr Thomas.  
17

18 THE CHAIRPERSON: That's what I assumed, just reading the  
19 material, but --  
20

21 MR HOLT: Mr Martin, if I can put it this way, if you were  
22 to perceive the possibility that Mr Nystrom might be in  
23 a slightly different category, I wouldn't take any issue  
24 with that. We have provided notice of topics. I don't  
25 expect a particularly propositional or suggestive  
26 cross-examination to be undertaken in respect of him, and  
27 it may be one that it might be sensible simply to allow to  
28 proceed, if the Board were prepared to do so, and obviously  
29 subject to any submissions to the contrary by RSHQ. But  
30 the issue will unquestionably emerge acutely by Monday in  
31 terms of witnesses for next week.  
32

33 THE CHAIRPERSON: Okay, it may be as well for you to  
34 advance your argument now, and we will hear from  
35 Ms Holliday and see where we go after that.  
36

37 MR HOLT: Thank you. I will say, and I'm not suggesting  
38 there is anything wrong at all about this, but I at least  
39 haven't seen, and I don't know whether our instructors have  
40 seen, the correspondence from RSHQ. I don't say I would  
41 have expected to have seen it, but simply so the Board is  
42 aware that we haven't, so if I say something that appears  
43 not to anticipate something in that correspondence, that  
44 will be why.  
45

46 THE CHAIRPERSON: All right, thank you.  
47

1 MR HOLT: If I can make this clear following some  
2 discussions with senior counsel assisting the Board this  
3 morning, our application is not premised on the submission  
4 that the practice direction is per se ultra vires. It is  
5 not a suggestion that the Board was unable to make  
6 a practice direction of that kind. Indeed, as the Board  
7 well knows, the Board of Inquiry can conduct itself as it  
8 sees fit, subject to the rules of procedural fairness.  
9 That allows a substantial degree of latitude in the way in  
10 which the Board conducts itself. Indeed, the Board can say  
11 "No cross-examination by anybody", or, "We're simply going  
12 to accept reports." I put that issue to one side, to the  
13 extent that it wasn't clear in our correspondence. If it  
14 wasn't, I apologise.

15  
16 We seek effectively to be exempted from the  
17 requirements of paragraph 8(e)(iii) of practice guideline  
18 number 2, which was added in on 3 February 2021, which  
19 relates specifically to expert witnesses and, in  
20 particular, requires the provision by a putative  
21 cross-examiner four days in advance of the witness giving  
22 evidence of the topics - no controversy about that;  
23 orthodox entirely - and parts of the experts' reports  
24 which will be the subject of cross-examination, including  
25 the propositions and suggestions to be put to the experts  
26 sufficiently to enable the experts to properly address all  
27 questions. It's the aspect of the propositions and  
28 suggestions to be put to the expert which we take issue  
29 with.

30  
31 Our respectful submission is that for parties - and  
32 that is parties who I appear for, both corporate and  
33 individual, because as the Board knows we also act for  
34 members of the senior leadership team at Grosvenor - who  
35 are presently facing a known criminal investigation by RSHQ  
36 into the events of 6 May 2020, it is in those circumstances  
37 oppressive, in our respectful submission, to require  
38 effectively what becomes a roadmap to cross-examination to  
39 be given to the very experts who would no doubt be called  
40 by RSHQ as witnesses in any ultimate criminal trial, such  
41 that they effectively have that opportunity, with the very  
42 agency that is investigating potential criminal charges  
43 against corporate and individual clients over a four-day  
44 period. The net result of that, in our respectful  
45 submission, is that if we were to comply with practice  
46 guideline number 2, paragraph 8(e)(iii), we would  
47 necessarily be doing so contrary to the interests of our

1 clients and therefore would make the decision not to do so.

2  
3 That, in my respectful submission, would not benefit  
4 the Board, it would not benefit the process, and ultimately  
5 is not required in order to allow matters to properly  
6 proceed.

7  
8 Our respectful submission is that what is, in our  
9 submission, an entirely orthodox approach, which is the  
10 provision of topics, documents to take expert witnesses to  
11 and a sensible indication of the time to be required for  
12 cross-examination is all that ought be required of us in  
13 order to be able to conduct the matter fairly and  
14 appropriately, and in circumstances where we are not taking  
15 the risk, on behalf of both individuals and corporate  
16 entities, of, in effect, assisting an investigating agency  
17 in the preparation of a case against our clients.

18  
19 If I say any more, I will simply be saying the same  
20 thing in different words, Mr Martin. That's the essence of  
21 our submission.

22  
23 THE CHAIRPERSON: I understood "propositions and  
24 suggestions to be put to experts" in the context that, if  
25 you chose to do so, you would be putting suggestions and  
26 propositions that come from, effectively, your experts,  
27 directly or indirectly. Am I correct in that anticipation?  
28

29 MR HOLT: Again, and without wishing to be obtuse, it  
30 really depends on what is meant by "suggestions and  
31 propositions". In many ways, as the Board well knows, much  
32 of cross-examination is conducted often in a propositional  
33 or suggestive way, and one would need to ensure that there  
34 was a common understanding as to what that meant.  
35

36 If it is intended to say if something is going to be  
37 put that comes from expert advice that has been received  
38 from those advising my clients, I'm bound to say that's not  
39 the way in which we had construed the practice direction.  
40 But, in any event, that in itself creates, as I stand here,  
41 no fewer difficulties, in the sense that it effectively  
42 requires the provision of propositions and suggestions well  
43 in advance, which again effectively provides a roadmap to  
44 cross-examination and allows the agency that's  
45 investigating our clients presently for criminal charges to  
46 have that time with its ultimate witnesses to deal with  
47 those propositions.

1  
2           It's simply an entirely different kettle of fish from  
3 a perfectly orthodox cross-examination on topics, where, if  
4 the witness says, "I don't understand that and I'll need  
5 some time to think about it", they would ordinarily be  
6 given it. But often, given the level of expertise and time  
7 they have been working on this matter and the detailed  
8 nature of the reports, they ought be things that can be  
9 responded to sensibly in cross-examination.

10  
11 THE CHAIRPERSON: Well, I was just anticipating that  
12 without the practice direction, it may be that the witness  
13 does ask for time to consider what's been put and give  
14 a considered answer.

15  
16 MR HOLT: And those sorts of circumstances would be dealt  
17 with, in our submission, as they arise as necessary. I'm  
18 bound to say it's difficult to anticipate anything that  
19 would require any substantial time in that sense. It's  
20 really an exploration of the opinions that have been  
21 provided but necessarily in a way that would be suggestive  
22 or propositional in relation to either matters that were  
23 part of the stepping stones to come to an ultimate  
24 conclusion or the ultimate conclusion itself, which ought  
25 be well within the knowledge of the expert and shouldn't  
26 require effectively, as we say, and advance roadmap of  
27 cross-examination to be provided.

28  
29           As we say, in circumstances where it is known that  
30 hanging over, effectively, the conduct of this Board of  
31 Inquiry is a criminal investigation by this very agency.

32  
33 THE CHAIRPERSON: Yes, I just don't know how real the  
34 problem will ultimately be if you're merely testing the  
35 witness in relation to specific topics.

36  
37 MR HOLT: I suppose the difficulty from our perspective  
38 is, looking at the terms of the practice direction, one  
39 well imagines, without in any sense catastrophising, that  
40 counsel for RSHQ may be getting to their feet relatively  
41 regularly saying, "Well, that's a proposition", "That's  
42 a suggestion that hasn't been put and hasn't been put in  
43 the topics". And, in any event, we have been told by those  
44 assisting you in correspondence that the notices that we  
45 provided, which are topic based, are inadequate,  
46 effectively, so clearly something else is sought. Our  
47 respectful submission is that we should not be required to

1 provide the something else, for the reasons set out in the  
2 letter.

3  
4 THE CHAIRPERSON: As I say, I had envisaged that in the  
5 course of testing an expert's opinion or, as you say, the  
6 steps in arriving at the conclusion, you may suggest to  
7 them that they've overlooked something or there's another  
8 way to look at it, and that may be based on assistance  
9 you've received through experts. If you chose to do that,  
10 so be it.

11  
12 Again, I don't see your problem about giving advance  
13 notice of what's under scrutiny, if you like, to the expert  
14 and may be a matter for different evidence at  
15 a prosecution, but I had thought that the practice  
16 direction went more to that. I might just ask Ms Holliday  
17 how she interprets the practice direction.

18  
19 MS HOLLIDAY: Mr Martin, the interpretation being given to  
20 the practice guideline is exactly as you have just  
21 articulated it, and it achieves the purpose also of  
22 ensuring that there isn't delay in this Board of Inquiry's  
23 hearings.

24  
25 Now, whilst not addressing the point directly, can  
26 I raise this as a concern. This practice guideline was  
27 brought to the attention of the parties more than a month  
28 ago, and it wasn't until compliance became due, and in fact  
29 beyond due, with that practice guideline that now counsel  
30 representing Anglo is contending that Anglo need not comply  
31 with that practice guideline.

32  
33 Each of the experts that have been given notice that  
34 they will be giving evidence has been informed of the  
35 existence of this practice guideline and are preparing on  
36 that basis. As the Board of Inquiry would be well aware,  
37 there is a large volume of material underlying each of  
38 these expert reports.

39  
40 If the experts are now expected to be familiar with  
41 all of that underlying material again, then it necessarily  
42 will involve an application by RSHQ to delay them giving  
43 evidence. It can be avoided by compliance with the  
44 practice guideline.

45  
46 There's nothing unfair or wrong in the existence of  
47 this practice guideline. It achieves the purpose of the



1 terms of reference. The fact that there may be, in the  
2 future, a criminal prosecution doesn't change the nature of  
3 these proceedings. These proceedings are inquisitorial,  
4 not adversarial, and the approach, as is set out in the  
5 practice guideline, achieves the necessary balance for this  
6 Board of Inquiry to fulfil its functions.

7  
8 THE CHAIRPERSON: It's been a touch adversarial, I must  
9 say.

10  
11 MS HOLLIDAY: The purpose of the Board of Inquiry, as  
12 counsel assisting set out in both tranches of proceedings,  
13 is to get to the truth, to try to avoid this happening  
14 again in the future, to make recommendations.

15  
16 THE CHAIRPERSON: Yes. I think we all understand the  
17 purpose, and I think, as I said on the first day, this is  
18 certainly not a prosecution nor a witch-hunt and the  
19 Inquiry very much does want to get as much information as  
20 possible to arrive at a conclusion.

21  
22 Mr Holt, it does seem that the idea of "suggestion and  
23 proposition" isn't in relation to you suggesting to  
24 a witness that he's got his arithmetic wrong or his science  
25 wrong or something of that nature. It was more directed  
26 towards letting an expert know that he hasn't considered  
27 another conclusion and suggesting to him that, on the  
28 material he has got there, the proper inference is that  
29 such and such occurred rather than what the expert was  
30 asserting.

31  
32 Do you have an objection to complying with that?

33  
34 MR HOLT: I think the difficulty, with respect, Mr Chair,  
35 is that the words "proposition" and "suggestion" are  
36 capable of being interpreted in any particular factual  
37 situation, even with that overlay, in any number of  
38 different ways. We do object, for the reasons which we  
39 have set out, which are acutely related to the fact that,  
40 from our clients' perspectives, they are under current  
41 investigation in relation to those issues.

42  
43 THE CHAIRPERSON: Yes, I know that, but ultimately if  
44 there were a prosecution, you would have to, I assume,  
45 disclose your expert reports to the prosecution.

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47 MR HOLT: Yes.

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THE CHAIRPERSON: In a timely fashion.

MR HOLT: We would have to do that to the extent of experts that we actually intended to call. There is no other obligation in respect of expert reports, and all of that would be determined at the point at which that curial process had commenced, with the prosecution nailing its colours to the mast, identifying what the particulars it alleged were, not this sort of a situation where, by virtue of nothing to do with the fault of the Board, an investigation and a Board of Inquiry are occurring at the same time.

To suggest that it doesn't change the nature of the current proceeding is true, but also utterly unrealistic, in our respectful submission. The Board has already been substantially affected by the existence of the prospect of an ongoing criminal investigation occurring and will continue to be so. The reality from our perspective, and this is borne from a desire to be able to assist the Board, from the unique perspective that Anglo necessarily has by virtue of its position and its access to people and all those sorts of things, with issues that may genuinely assist it, but to do so in a way that recognises the balance between that and the overlying imperative obligation, particularly to individuals who are potentially at risk of criminal prosecution or the subject of criminal investigation, not to be put into a position where we are ultimately seeking to assist the prosecution to put its case together.

That's the balance. What we know at the moment is that what we've said we want to talk to these first two witnesses about we have been told is not sufficient. The essence of my submission is that we object to being required to go beyond that which we've gone to, which are the topics that have been identified.

The only practical issue our friend relies on is the existence of a large body of documentary material, and of course that is so, but the practice direction unexceptionally requires us to identify the documents to which we will take the witness, both within the witness's material, we take it, and from anywhere else, journal articles or anything else of that kind.

1           To that extent, we're not saying, "Would you now have  
2 a look at document 9,427 that you haven't looked at for  
3 seven months." That would be grossly unfair and we don't  
4 suggest that for a moment. But to put ultimately the  
5 alternative hypothesis or the subpropositions that might  
6 lead to that alternative hypothesis at this point is, no  
7 matter how it's framed, something of a roadmap to  
8 cross-examination being given to the investigating agency  
9 which has a prosecutorial function also, albeit a complex  
10 one with the office of the workplace prosecutor.

11  
12 THE CHAIRPERSON: So could I understand that you have no  
13 objection to identifying the topics?

14  
15 MR HOLT: No.

16  
17 THE CHAIRPERSON: The documents?

18  
19 MR HOLT: No.

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21 THE CHAIRPERSON: Really, the idea that you would be  
22 putting to a witness an alternative expert's opinion is  
23 pretty unlikely.

24  
25 MR HOLT: I'm bound to say it's highly unlikely, in that  
26 kind of pure sense, but what undoubtedly may well happen,  
27 if we're permitted to do so, would be the putting of  
28 propositions and suggestions to an expert witness that are  
29 within their area of expertise and based on the material  
30 that they have that might reasonably lead to a particular  
31 position.

32  
33 THE CHAIRPERSON: And relevant to the topic which you have  
34 identified?

35  
36 MR HOLT: Precisely so. Straying outside of that, in the  
37 absence of leave, would not be permissible. The practice  
38 direction anticipates that we can seek leave for issues  
39 that arise - for example, if a new topic comes up in  
40 viva voce evidence, then the practice direction, with  
41 respect sensibly, permits that course, but subject to that,  
42 no.

43  
44 THE CHAIRPERSON: Ms Holliday?

45  
46 MS HOLLIDAY: Given that notice was only provided to RSHQ  
47 that there would be an argument about not complying with

1 the current practice guideline at a quarter to 10 this  
2 morning, I haven't gone back and had a look at the topics  
3 Mr Thomas is to be taken to by way of notice by Anglo to  
4 see and substantiate for the Board where that is deficient.  
5

6 So, in my submission, what should occur, and so that  
7 there's no further delay in proceedings this morning, is  
8 that proceedings proceed, and in the meantime we will look  
9 at particularly Mr Thomas and see where RSHQ's position is  
10 in terms of deficiencies with the practice guideline and  
11 whether there can be a position reached in relation to  
12 those topics, if more clarity was given or whether we  
13 continue to agitate that the practice guideline should be  
14 complied with.  
15

16 THE CHAIRPERSON: Well, really, the "suggestion and  
17 propositions" part of the guideline is unlikely to be of  
18 any concern. I read it in the sense of, as I said, putting  
19 another expert's opinion to a witness. Mr Holt said that's  
20 highly unlikely, given the nature of proceedings and the  
21 possibility of future proceedings. So I don't think  
22 there's anything to change in the guidelines, and I think  
23 Mr Holt is anticipating that he will be complying with the  
24 guideline in that sense.  
25

26 MS HOLLIDAY: Perhaps Mr Holt can place that on the  
27 record. I'm not quite sure if his submissions went that  
28 far, but if he in that sense is intending to comply with  
29 the practice direction, it may be that RSHQ doesn't agitate  
30 for a different interpretation of how it currently reads.  
31

32 THE CHAIRPERSON: Mr Holt?  
33

34 MR HOLT: I'm just not sure I can do that in those terms,  
35 because these things are intensely question or proposition  
36 specific. In some ways, Mr Nystrom might provide us with  
37 the perfect experiment this afternoon or later this morning  
38 to identify what RSHQ might see as being a proposition and  
39 what I might.  
40

41 What I have indicated is that it is highly unlikely  
42 that I would be putting an alternative hypothesis based in  
43 terms from expert advice that we have been provided, but,  
44 as I've indicated, we certainly would be intending,  
45 differently in relation to different topics, to put  
46 propositions that we would see as logically relating to  
47 a topic which would help to explore the nature of the

1 expert opinion.

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Now, that is what we intend to do. To the extent that the Board considers that that would comply with the guideline in terms of, Mr Chair, your view, which is ultimately the only view that matters, of the meaning of the words "suggestion" and "proposition" and what the practice direction was intending to do, then we will be compliant. But I can't say we are going to comply with words that at the moment, in the absence of practical application, I don't really know what they mean.

THE CHAIRPERSON: All right, we may or may not get to the stage where an expert asks for time to consider a proposition or suggestion put, in terms of testing their evidence, that you may have raised something that wasn't considered - you're not putting another expert's opinion but raising a matter that may not have been considered.

I just don't know that this is going to be such a major issue, provided that the topics for the experts are clearly identified so that there's no surprise about what the examination is going to be about.

MR HOLT: Can I say, Mr Chair, I imagine this would be expected in any event, we have been careful to ensure that. It doesn't mean reasonable minds couldn't differ on whether we have gone far enough or too far, but we have genuinely attempted to do that and will continue to do so.

THE CHAIRPERSON: Ms Holliday, are you happy to proceed on that basis? Differences of opinion may arise during the course of the evidence, but I think that we can comfortably get on.

However, you raised the point that it seems that no-one has really been complying with the direction - sorry, with the exception of whatever you've done so far, Mr Holt. Mr Trost, you didn't give notice yesterday about cross-examining the witness.

MR TROST: No, that's true.

THE CHAIRPERSON: There seem to have been a paucity of notices to the Board about any further cross-examination today. Is there anyone anticipating cross-examination in respect of which notice hasn't been given?

1  
2 MR HOLT: I should say, we have given notice in compliance  
3 with the four-day requirement for every witness, lay and  
4 expert to date. Where we've needed a little extra time  
5 because, for example, new information like a PowerPoint has  
6 come in, we've communicated with the Board and sought that  
7 time. Where we haven't complied is going from topic to  
8 suggestion and direction, and we've given notice in respect  
9 of today.

10  
11 THE CHAIRPERSON: Okay. Well, after all that, can we move  
12 on? Are you happy, Ms Holliday, or happy-ish?

13  
14 MS HOLLIDAY: I'll go with the "happy-ish". As Mr Holt  
15 said, perhaps Mr Nystrom will be a testing ground, if you  
16 like, although in reality it would seem more that it's  
17 going to be Mr Thomas.

18  
19 THE CHAIRPERSON: Yes. I think it's the experts next week  
20 which will be more complicated.

21  
22 MS HOLLIDAY: Yes.

23  
24 THE CHAIRPERSON: All right. Ms O'Gorman?

25  
26 MS O'GORMAN: The first witness for this morning is  
27 Inspector of Mines Geoff Nugent. I call him. He is in the  
28 back of the court presently.

29  
30 THE CHAIRPERSON: Thank you.

31  
32 **<GEOFF NUGENT, sworn: [10.39am]**

33  
34 **<EXAMINATION BY MS O'GORMAN:**

35  
36 MS O'GORMAN: Q. Mr Nugent, you've been an inspector of  
37 mines since September 2018?

38 A. Correct.

39  
40 Q. You have in total spent some 30 years in the mining  
41 industry?

42 A. Correct.

43  
44 Q. You hold a deputy's certificate of competency and an  
45 advanced diploma in underground coal mine management?

46 A. Correct.

47

- 1 Q. Is it the case that on or about 7 May 2020 you were  
2 asked to attend at Grosvenor mine and that you did in fact  
3 attend there on 7 May?  
4 A. That's correct.  
5
- 6 Q. When you did so, you did so in order to assist the  
7 underground re-entry process?  
8 A. That's correct.  
9
- 10 Q. When you were there on that day, you were shown  
11 a number of the injured coal mine workers' clothing by an  
12 employee of Grosvenor mine?  
13 A. Correct.  
14
- 15 Q. And you observed the process of that clothing being  
16 sorted and photographed that process?  
17 A. Correct.  
18
- 19 Q. You've made those photographs available to the Board?  
20 A. I have.  
21
- 22 Q. On 8 May you attended again at the mine site and saw  
23 the sorting process in respect of some more clothing and  
24 also some of the equipment seized from the injured coal  
25 mine workers underground?  
26 A. Yes, they were retrieved from the driftrunners, I was  
27 informed.  
28
- 29 Q. Again, that clothing and equipment was in the  
30 possession of a Grosvenor mine employee?  
31 A. That's correct.  
32
- 33 Q. Now, on this day - that is, 8 May 2020 -  
34 Murray Nystrom was also with you?  
35 A. He was present that evening.  
36
- 37 Q. And was present during the time at which the clothing  
38 was sorted, identified and photographed?  
39 A. That's correct.  
40
- 41 Q. As we understand it, the first lot of inspectors to go  
42 underground after the explosion did so on 10 May 2020?  
43 A. That's correct.  
44
- 45 Q. And you were one of those inspectors to go underground  
46 on that day?  
47 A. I was.

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Q. You did a walk-through of longwall 104?

A. That's correct, I went with the first team underground at 5am and accompanied them and, yes, walked through longwall 104.

Q. You've become aware subsequent to 10 May that Simtars personnel arranged for imagery to be taken of longwall 104 after the explosion?

A. That's correct.

Q. And you've seen that imagery and, indeed, a short video compilation of that imagery before today?

A. I have.

MS O'GORMAN: For the purposes, Mr Martin, of those of us in the courtroom who are not ourselves miners, that imagery has been condensed into about a four-minute video. Mr Nugent is going to be in a position to identify some features in that imagery and I propose to have that played now.

THE CHAIRPERSON: Thank you. Can the video be stopped to point out places?

MS O'GORMAN: It can, and I do propose to start playing it and then to stop it at various points and ask Mr Nugent if he can point out various features as we proceed.

THE CHAIRPERSON: Yes, thank you.

MS O'GORMAN: Might video BOI.027.001.0001 be played.

(Video played)

Q. If we can just stop there, please, Mr Operator.

A moment or so ago, Mr Nugent, you saw the words "99 chock" at the top of that video?

A. Correct.

Q. Just by way of orientation of yourself and those of us watching this video, is it the case that the video commences at the location of somebody standing in the front walkway of longwall 104 at 99 chock, looking back towards the maingate, at first instance?

A. Yes, that's correct. The vision starts at 99 shield. It's facing the maingate. The coalface is on the



1 right-hand side, and what we're looking at right now are  
2 individual powered roof supports, also known as shields or  
3 chocks, and behind those are the goaf.  
4

5 Q. What we can see is a series of cylindrical features?  
6 A. Legs. Yes, so they're large hydraulic legs. There's  
7 two on each shield. They apply pressure to the roof  
8 canopies, which you will see in a minute, which supplies  
9 force and support to the roof. On the front of the chock  
10 leg, you can see what's known as a mimic. It's an  
11 electronic control device. It's used by the coal mine  
12 workers to electronically operate shields adjacent and  
13 further afield with all functions. These mimics or  
14 controls are on every shield and they're also part of the  
15 longwall automation system.  
16

17 Q. Thank you. If we can continue, please? (Video  
18 played).  
19 Stop there. Mr Nugent, we can see above the shields  
20 a marker "99" visible on the screen there?  
21 A. Yes, that's correct.  
22

23 Q. They continue, those markers, don't they,  
24 consecutively all the way along the longwall?  
25 A. They do. Each shield will have its own individual  
26 number for identification for the coal mine workers.  
27

28 Q. Is what we can see there the canopy of the shields  
29 that you were referring to earlier?  
30 A. That's correct. That is the canopy, and that extends  
31 towards the face, and I believe the extent of the canopy is  
32 approximately 6 metres.  
33

34 Q. Thank you. We can continue. (Video played). If we  
35 could stop there, please, Mr Operator, the camera is now  
36 looking down towards the tailgate end of the longwall face?  
37 A. That's correct. Yes, we're still in the front  
38 walkway.  
39

40 Q. Yes.  
41 A. To the left of the screen again is the longwall face,  
42 and on the front of the canopy there are - you can see the  
43 flipper which extends and retracts to provide support to  
44 the face.  
45

46 Q. I'm just going to see if I can - when you talk about  
47 the flipper, you're talking about this object we can see

1 here (indicating)?

2 A. That's correct.

3

4 Q. Can you just explain to us what this is that we can  
5 see down the left-hand side?

6 A. Okay, so that's an AFC spill tray or spill plate.  
7 Over the front of that and between the face is the armoured  
8 face conveyor, which is known as the AFC, which is  
9 effectively two steel chains and flight bars, which carries  
10 the mined coal off the face and into the conveyor system.  
11 The spill plates are there to prevent the mined coal to  
12 obviously fall into the front walkways. Also the gap, if  
13 you can point to that?

14

15 Q. In here?

16 A. In the spill trays. In there, yes. That's called  
17 a bretby tray, and we'll see a bit later there's a yellow  
18 protective item called the bretby which follows the shearer  
19 and it contains the shearer cable and also the shearer  
20 water hose for it to operate.

21

22 Q. Thank you. If we can continue, please. (Video  
23 played). We're now at 102 chock?

24 A. That's correct.

25

26 Q. We've jumped now to 111 chock.

27 A. Yes.

28

29 Q. If we could just pause here, we're still at 111 chock,  
30 but now we're in the rear walkway, as opposed to the front.

31 A. No, we're in the front walkway still at the moment.  
32 If you allow the video to continue, it will progress to the  
33 rear walkway. Now we're in the rear walkway. Just allow  
34 the video to progress and it will --

35

36 Q. (Video played). If we can stop there, the camera is  
37 looking still down towards the tailgate, but this time from  
38 the position of the rear walkway as opposed to the front  
39 walkway?

40 A. That's correct. The rear walkway is, when production  
41 occurs, the normal position the coal mine workers would  
42 operate for reasons of safety, and that's where they  
43 traverse the face normally when the longwall face is  
44 operating.

45

46 Q. This equipment that we can see up the top here, can  
47 you describe what that is, please?

- 1 A. That is an electrical solenoid block or compact.  
2 There's electrical cables which protrude from it, and it  
3 assists with the functioning of the longwall shield, each  
4 individual longwall shield, and they each have one.  
5
- 6 Q. Thank you. Continue. (Video played). Just pause  
7 there briefly so that you can explain what this item is  
8 here?
- 9 A. Again, that is a mimic. That is the same item that we  
10 saw on the front shield. I believe at Grosvenor they have  
11 an alternate - one at the front of the shield and one at  
12 the back of the shield for practicality purposes.  
13
- 14 Q. Thank you. (Video played). The camera is now  
15 positioned at 117 chock?
- 16 A. That's correct.  
17
- 18 Q. (Video played). If we can pause there, the shearer is  
19 visible in this shot, Mr Nugent?
- 20 A. That's correct. The front part of the shearer, that's  
21 the maingate cutting drum, which is there and it's in the  
22 raised position to cut the roof, and you can make out the  
23 picks on the drum, the cutting picks. The cutting drum is  
24 attached to the shearer ranging arm, and that ranging arm  
25 can raise and lower the shearer as required, and  
26 particularly when - in regard to the direction of travel of  
27 the shearer. So when it's going towards the maingate, the  
28 maingate drum is normally cutting the roof, and when the  
29 shearer is travelling to the tailgate, that drum would be  
30 lowered and would be cutting the floor for the AFC pans to  
31 advance.  
32
- 33 Q. Thank you. We can continue. (Video played). The  
34 camera is now positioned at 120 chock?
- 35 A. That's correct.  
36
- 37 Q. (Video played).
- 38 A. We're now at the tailgate end. (Video played).  
39
- 40 Q. If we could just pause there, is the camera now  
41 looking in towards the tailgate itself?
- 42 A. That's correct. On the below left-hand side of the  
43 picture is the tailgate drive. We're looking toward the  
44 tailgate roadway.  
45
- 46 Q. These items here?
- 47 A. These items are known as butchers flaps. They're used

1 for localised ventilation management. They are normally  
2 hung in pre-determined positions, which allows the airflow  
3 to be directed to the back of the shields to disperse  
4 methane and improve the velocity.

5  
6 Q. Thank you. If we could continue with the footage.  
7 (Video played).

8 A. That's a flipper again, a closer shot.

9  
10 Q. (Video played) The camera has just panned there  
11 looking back towards the maingate end?

12 A. Back towards the maingate, that's correct, yes.

13

14 Q. We can see the word "tailgate" there?

15 A. The camera's positioned in the tailgate roadway. If  
16 you can pause it there, I think, and that's looking in  
17 toward the goaf in the tailgate roadway. The goaf at that  
18 point is standing.

19

20 Q. This piece of equipment here?

21 A. Yes, to the right-hand side, that's known as the  
22 flushing shield because the goaf at times can fall up to  
23 and adjacent to the shields. That's normal. And that  
24 assists in preventing spoil entering in front of the  
25 shields and preventing the particularly 149 shield  
26 advancing.

27

28 Q. If we just pan around a little further, we might see  
29 a different view from the tailgate. (Video played) If we  
30 pause the camera there, are you able to explain what the  
31 camera is looking at now?

32 A. Yes, we're looking outbye of the tailgate, so we can  
33 see the roof of the tailgate, which has its installed roof  
34 support. That is a Megabolt, and bolts were installed to  
35 the roof to provide active support at varying lengths, and  
36 I'm not a hundred per cent sure what the bolts, the  
37 Megabolts are at Grosvenor, but they can be up to 8 metres  
38 and they provide confinement of the roof to distribute  
39 stress. That is a pumpable crib. Effectively that's an  
40 outer plastic sheath with plastic ribbing. It's hollow  
41 normally. When it's dropped to the ground, cementitious  
42 grout is - it's filled with cementitious grout well in  
43 advance of the longwall, which hardens and provides further  
44 passive support when the longwall - or, sorry, when the  
45 roof starts to delaminate.

46

47 Q. We can see a number of the other ones further outbye?

- 1 A. Yes, so they're spaced as per the mine manager's  
2 support rules. As the roof support is installed, it's  
3 a defined plan which is applied by the coal mine workers.  
4
- 5 Q. Thank you. If we can continue probably through to the  
6 end. (Video played). The camera is panning back down now  
7 so we're looking towards the face and then out towards the  
8 maingate?  
9 A. That's correct.
- 10  
11 Q. And that's the conclusion of that footage. Mr Nugent,  
12 you're aware that at some point after 6 May an inspector  
13 with the inspectorate issued a document production notice  
14 to the longwall performance manager of Komatsu for  
15 a document called the Longwall 104 PRS Leg Pressure Map  
16 from data held for the period between 8 May - sorry, 8pm on  
17 3 May to 4pm on 6 May?  
18 A. That's correct.
- 19  
20 Q. And that document has in fact been provided to the  
21 inspectorate?  
22 A. It has.
- 23  
24 Q. Could I ask that document RSH.034.002.0001 be put on  
25 the screen. You've seen this document before?  
26 A. Yes, I have.
- 27  
28 Q. You're in a position to point out some of the features  
29 of the data that it represents?  
30 A. I can give a basic description of the data, sure.
- 31  
32 Q. If we could start firstly with what the X and Y axis  
33 represent?  
34 A. So the axis at the bottom, the X axis, represents time  
35 and we can see it starts at 2000 hours on 3 May 2020  
36 through to 1600 hours on 6 May 2020.
- 37  
38 Q. And the Y axis?  
39 A. Sorry, the Y axis are the shield numbers. So at the  
40 bottom of the screen you will see 10, and at the top 140,  
41 and that indicates the shields, so the bottom of the screen  
42 would be the maingate and the top of the screen on the  
43 Y axis is the tailgate.
- 44  
45 Q. There are a number of black lines moving vertically  
46 across the document. If you could explain to us what those  
47 lines represent?

1 A. Those lines represent the shearer position, which is  
2 tracked with the technology on the longwall. So you will  
3 see at 2000 hours, at the start of this heat map, the  
4 shearer is at 50 shield and is stationary until  
5 approximately midnight, where it begins to move and cuts  
6 towards the tailgate.

7  
8 Q. Could I just stop you there, because at the --  
9 A. Maingate, sorry, cut towards the maingate. My  
10 apologies, yes.

11  
12 Q. Thank you. At the time at which the shield is  
13 stationary, it's in a part of the document which is orange  
14 or red in colour. Obviously there are some warmer and  
15 darker colours on the map. Could you just explain to us  
16 the significance of those different colours?

17 A. You could see the coloured graph on the right-hand  
18 side, which indicates pressure. The warmer the colour, the  
19 reds, there's more pressure being applied at that  
20 particular shield, which means it's applying force to the  
21 roof.

22  
23 Q. These are pressures that are being picked up on the  
24 legs of each of the shields?

25 A. Correct, on the legs of the shields. The cooler  
26 colour, the blues, the legs would still have pressure, but  
27 they're not applying force and there's not as high a  
28 pressure, which would indicate that potentially there may  
29 be a cavity or very weak roof and they don't want the  
30 shields to be extending beyond the canopy line.

31  
32 Q. You said that after a period of time of the line on  
33 the left being horizontal, there's a representation of the  
34 shearer moving towards the maingate. If you could just  
35 continue to walk us through the data represented on that  
36 map in terms of the shearer's movements over the next  
37 number of hours?

38 A. Okay --

39  
40 THE CHAIRPERSON: Q. Sorry, Mr Nugent. Do you have  
41 a cursor for this, or not?

42  
43 MS O'GORMAN: I think it's hard to pick up against the  
44 colours. Maybe not. (Pointer handed to the witness).

45  
46 THE WITNESS: I will see what we can do. Mine is not  
47 working.

- 1  
2 MS O'GORMAN: Q. Mine is. I will see if I can use mine  
3 while you talk. So far you've been talking about this line  
4 here?  
5 A. That's correct, so the shearer is stationary and it  
6 commences towards the maingate. It's very difficult to  
7 see, but the shearer enters the maingate twice. Then it  
8 progresses towards the tailgate. It's in the tailgate  
9 approximately 2am and again there is a further two entries  
10 by the shearer in the tailgate. This particular pattern  
11 indicates that the shearer is cutting bi-di and advancing  
12 the full web or distance available to the shields in the  
13 pan line.  
14  
15 This continues for nine shears until --  
16  
17 Q. Well, at this point I've moved my cursor up and down  
18 the line until the point at which there's a horizontal  
19 line?  
20 A. That's correct. They've obviously stopped for  
21 a period of time, for a couple of hours.  
22  
23 Q. And then continued?  
24 A. And they've continued. They've done a few passes into  
25 the tailgate, probably because of roof conditions, they've  
26 come back down again to the maingate. They're obviously  
27 exiting and entering the maingate a lot quicker than the  
28 tailgate.  
29  
30 Q. Does this darker portion of the line down here suggest  
31 that it went in and out at the maingate twice?  
32 A. It did. It appears to be, yes.  
33  
34 Q. And then back into the tailgate?  
35 A. Correct.  
36  
37 Q. A number of passes in the tailgate?  
38 A. Yes.  
39  
40 Q. Back to the maingate, in and out twice?  
41 A. It appears, yes.  
42  
43 Q. And back up to the tailgate again?  
44 A. Once, then out.  
45  
46 Q. Then we get to a more protracted period of time of  
47 stationary lines telling us that the shearer has stopped at

1 this point in time?

2 A. That's correct. I believe there was some mechanical  
3 issue for a period and it's stopped for approximately 27,  
4 28 hours.

5  
6 Q. The cessation of the shearer commenced here at a time  
7 approaching midnight on 4 May?

8 A. The 4th, yes, 4th. And there's some movement there.  
9 I'm not aware of what particular activity was being  
10 conducted at the shearer.

11  
12 Q. And then the line remains flat?

13 A. Yes.

14  
15 Q. Down until approximately 4am on 6 May?

16 A. That's correct.

17  
18 Q. Then we can see the movement of the shield as  
19 represented by this line into the tailgate that morning?

20 A. Correct.

21  
22 Q. Movement back down into the maingate?

23 A. Correct.

24  
25 Q. Perhaps a couple of passes in the maingate?

26 A. Yes.

27  
28 Q. Back up towards the tailgate?

29 A. Yes.

30  
31 Q. And then from what looks to be about 8am on the 6th  
32 some movement in and around the tailgate?

33 A. Yes, they've been doing a lot of work in the tailgate,  
34 probably due to the geological conditions.

35  
36 Q. Overall you mentioned that the map represents that  
37 there had been nine shears during the period of time  
38 represented on the map?

39 A. Nine shears up until they stopped at 2200 hours on the  
40 4th, so that's nine, and a further two, it appears -  
41 they've had two passes on the face on the 6th.

42  
43 Q. And overall does this map give us an indication of the  
44 distance of advance that had been achieved during that  
45 time?

46 A. It does, yes, coupled with the ERZ controller's  
47 production reports, it gives you an indication of the



1 advance distance.

2

3 Q. And what is that, approximately?

4 A. Ten metres, give or take a metre, 11 metres, yes.

5

6 MS O'GORMAN: Thank you, Mr Nugent. Those are the  
7 questions that I have, Mr Martin.

8

9 THE CHAIRPERSON: Thank you.

10

11 MR HOLT: No questions, thank you, Mr Martin.

12

13 THE CHAIRPERSON: Who else? Ms Grant?

14

15 MS GRANT: No questions, thank you, Mr Martin.

16

17 THE CHAIRPERSON: Mr Trost?

18

19 MR TROST: No questions.

20

21 THE CHAIRPERSON: Mr Dollar?

22

23 MR DOLLAR: No questions, Mr Martin.

24

25 THE CHAIRPERSON: All right. Mr Clough, do you have  
26 anything?

27

28 MR CLOUGH: No, I have no questions, thank you.

29

30 MS O'GORMAN: Might Mr Nugent be excused?

31

32 THE CHAIRPERSON: Yes. Thank you, Mr Nugent, for your  
33 attendance. You are excused.

34

35 <THE WITNESS WITHDREW

36

37 MS O'GORMAN: The next witness to be called is Senior  
38 Inspector of Mines Neville Atkinson.

39

40 <NEVILLE ATKINSON, sworn:

[11.08am]

41

42 <EXAMINATION BY MS O'GORMAN

43

44 MS O'GORMAN: Q. Your full name is Neville Atkinson?

45

46 A. That's correct.

46

47 Q. You've been a senior inspector of mines since December

1 2019?  
2 A. That is correct.  
3  
4 Q. Prior to that, you were an inspector of mines since  
5 July 2006?  
6 A. Yes.  
7  
8 Q. And you've worked in the mining industry since 1979?  
9 A. That's correct.  
10  
11 Q. You're a qualified electrical fitter mechanic?  
12 A. Yes.  
13  
14 Q. On 7 May 2020 I understand that you attended an  
15 incident management team meeting convened by the chief  
16 inspector in respect of the incident that occurred at  
17 Grosvenor on 6 May 2020?  
18 A. That's correct. We did it as a Teams meeting.  
19  
20 Q. I might ask you to speak up a little bit because  
21 I can't hear you very well. As a result of that meeting,  
22 you were made responsible for the electrical aspects of the  
23 investigation at Grosvenor?  
24 A. That's correct.  
25  
26 Q. As I understand it, one of the inspectorate's  
27 inspectors obtained data from the mine about the machinery  
28 that was running at the time of the incident, and that  
29 information was subsequently relayed to you; is that  
30 correct?  
31 A. Yes, I asked for a lot of data on what was running at  
32 the time of the incident to try and ascertain what was  
33 working.  
34  
35 Q. Having gone through that data, were you able to  
36 establish that the AFC was running at the time of the  
37 incident, but the shearer was not?  
38 A. That's correct.  
39  
40 Q. Did the playback data that you had reference to show  
41 that the last shield to have been operated prior to the  
42 incident was shield 136?  
43 A. Yes, 136 tip down function.  
44  
45 Q. Tip down function?  
46 A. Mmm.  
47

- 1 Q. You seized a number of electrical items for testing?  
2 A. That's correct.  
3
- 4 Q. If we can seek to understand what items you seized and  
5 why, you went underground firstly on 10 May 2020?  
6 A. Yes.  
7
- 8 Q. On that occasion, as I understand it, as you walked  
9 along the longwall, you didn't notice anything particularly  
10 unusual until about shield 100?  
11 A. Yes, 100 you'd start to see evidence of fire damage.  
12
- 13 Q. You started seeing evidence of fire damage?  
14 A. Mmm.  
15
- 16 Q. Murray Nystrom was present during your time  
17 underground?  
18 A. Yes, he was.  
19
- 20 Q. And did he express a view, preliminary view, to you  
21 that it may have been that the flame had entered the  
22 longwall at about shield 111?  
23 A. That's correct.  
24
- 25 Q. And as a result of that indication, at least in part,  
26 did you start to consider taking equipment from around that  
27 shield?  
28 A. That's when I started, yes, formulating a plan.  
29
- 30 Q. Did you subsequently, on 20 May 2020, go back down  
31 underground?  
32 A. Yes, I did.  
33
- 34 Q. This time, you were with another fire investigator you  
35 understood was an investigator assisting the mine?  
36 A. Yes, that's correct.  
37
- 38 Q. Did you understand from some discussions with him that  
39 he also might have thought that the flame originated at  
40 that shield?  
41 A. That was the impression he gave me while I was down  
42 there, yes.  
43
- 44 Q. Did you also hear that certain people at the mine  
45 might have considered the possibility of the flame having  
46 entered the longwall at around shields 136 or 137?  
47 A. I had heard that, yes.

- 1  
2 Q. As a result of all of that information, did you  
3 primarily seize equipment from the area between shields 109  
4 and 112?  
5 A. Yes.  
6  
7 Q. And 135 and 138?  
8 A. Correct.  
9  
10 Q. In terms of the items that you seized, if we can just  
11 go through those?  
12 A. Yes.  
13  
14 Q. Firstly, from those locations - that is, from shields  
15 109 through to 112 and from shields 135 to 138 - you seized  
16 the solenoid banks?  
17 A. Yes.  
18  
19 Q. That's the equipment which controls the hydraulics to  
20 operate the shields?  
21 A. That's correct.  
22  
23 Q. You seized the LED lights, the mimics and the tilt  
24 sensors from those shields?  
25 A. Yes.  
26  
27 Q. The RS20 equipment?  
28 A. Yes.  
29  
30 Q. If you could just explain to us what that is?  
31 A. It's like the electrical communication system for the  
32 shields.  
33  
34 Q. You also took the mains powered cables with plugs and  
35 sockets for the power supplies?  
36 A. Yes.  
37  
38 Q. That comprises, does it not, two separate 240 volt  
39 power supplies, which in turn go on to supply power to the  
40 other equipment we've already referred to?  
41 A. Yes, that's correct.  
42  
43 Q. And finally you seized the intrinsically safe powered  
44 cables with the connectors for the control of the shields?  
45 A. Yes, I did.  
46  
47 Q. In addition to that equipment, you also seized, did

1 you not, the power supply units and changeover relays for  
2 shields 99 through to 144?

3 A. Correct.

4

5 Q. On the basis that they powered every power supply in  
6 the affected areas?

7 A. Well, they were the power supplies for all the  
8 equipment, all the operational equipment, on the shields.

9

10 Q. And finally on that day or shortly thereafter, you  
11 seized a personal detector device, a number of cap lamps  
12 and personal gas detectors?

13 A. Correct.

14

15 Q. Taken from, as you understood it to be, people who  
16 were working on or near the face at the time of the --

17 A. On the longwall that day, yes.

18

19 Q. You identify in your statement some items which were  
20 not seized by you. If we can just confirm that those items  
21 were the components of the DAC equipment?

22 A. Communication system, yes. Those and the Promos  
23 E/Stops were planned to be taken in our next lot of  
24 equipment to be removed. It was on the Monday after the  
25 second explosion that we were planning to do that, so we  
26 didn't have the ability to remove that gear.

27

28 Q. You referred to a Promos E/stop. Is that the  
29 emergency stop for the hydraulic pumps?

30 A. Yes, it's for the dump valve to dump the hydraulic  
31 pressure.

32

33 Q. Had you reached the preliminary view that, in any  
34 event, that equipment was less likely to have been  
35 a potential cause for any ignition than the equipment that  
36 you had already seized?

37 A. That's correct. They were located lower on the  
38 shields and physically I think they were every 10 shields,  
39 so there was one on shield 110 and then 120, 130, 140, so  
40 mainly it was just the cables interconnecting those devices  
41 that were on those shields of interest.

42

43 Q. At a point in time subsequent to all of those items  
44 that we've just been discussing having been seized by you,  
45 they were tested by you at Simtars, were they not?

46 A. Correct.

47

1 Q. Subsequent to the testing that you conducted with  
2 others in respect of this equipment, were you involved in  
3 producing a report described as report E200003 Grosvenor  
4 Mine Equipment Assessment?

5 A. That's the Simtars report?  
6

7 Q. Yes.

8 A. Yes.  
9

10 Q. For the benefit of the parties, that report is  
11 available, but we won't need to bring that up for these  
12 purposes. That report does detail in quite specific detail  
13 the steps that you took to assess and test the electrical  
14 integrity of all of the equipment?

15 A. Yes.  
16

17 Q. Without going to the level of technical detail in that  
18 report, can we summarise your testing of the equipment in  
19 this way: first of all, you did some point to point  
20 testing on new equipment to get some baseline information  
21 about the equipment you were to test?

22 A. Yes.  
23

24 Q. You then conducted a visual inspection of all of the  
25 equipment seized from the mine?

26 A. Correct.  
27

28 Q. You disconnected all the cables and did point to point  
29 testing of each of the electrical components?

30 A. Yes, we did comparison testing against that baseline  
31 of the new equipment, yes.  
32

33 Q. You then put power on the power supplies to make sure  
34 that each of those units were working?

35 A. Correct.  
36

37 Q. You checked each of the power supplies to ensure that  
38 they wouldn't be able to ignite methane?

39 A. Yes, and a spark ignition test was done on those, yes.  
40

41 Q. And ultimately put the whole system together and  
42 physically operated that system?

43 A. Yes, while we were doing that, we took current voltage  
44 readings to see if there were any differences between a new  
45 unit compared to those ones, and we found no anomalies.  
46

47 Q. Your report notes, whether it's in your statement or

- 1 the Simtars report, that the testing of some of the cable  
2 insulation did identify that some cables had low insulation  
3 resistance?  
4 A. Yes.  
5  
6 Q. But you couldn't identify any faulty or open-circuited  
7 cables?  
8 A. Correct.  
9  
10 Q. The conclusion that you reached as a result of that  
11 was that there was nothing to indicate to you that they  
12 were the source of the ignition?  
13 A. That's correct.  
14  
15 Q. As I understand it, there were no abnormal findings,  
16 other than in respect of the cable insulation that we've  
17 just spoken of or damage that would have been sustained  
18 during the course of the explosion itself, as part of your  
19 investigation?  
20 A. Yes.  
21  
22 Q. And so having tested all of the equipment, the  
23 conclusion that you reached was that there was no evidence  
24 that the electrical components tested by you might have  
25 been the cause of the ignition?  
26 A. That's my belief, yes.  
27  
28 Q. Similarly, some testing that you did of the cap lamps,  
29 personal detector device and personal gas detectors  
30 revealed no abnormalities?  
31 A. That's correct.  
32  
33 Q. You couldn't detect any evidence in respect of those  
34 pieces of equipment to suggest to you that they might have  
35 been the cause of the ignition?  
36 A. No.  
37  
38 Q. Finally, I just want to ask you some questions about  
39 the dust gutters.  
40 A. Yes.  
41  
42 Q. I'm not sure if you were in the hearing a little  
43 earlier when the walk-through of the longwall at Grosvenor  
44 after the explosion was played?  
45 A. No, I wasn't.  
46  
47 Q. Have you seen that previously?

1 A. I have seen that video, yes.

2

3 Q. When you viewed that footage, were you able to see at  
4 various points the dust gutters in between the shields?

5 A. I could see on shield 111 the remnants of one, yes.

6

7 Q. You saw on shield 111 the remnants?

8 A. Yes.

9

10 Q. That, or at least the remnants of that dust gutter,  
11 wasn't seized by you, as I understand it?

12 A. Not at the time. Then when it became a point of  
13 interest, that second explosion had occurred, so we  
14 couldn't retrieve it.

15

16 Q. Did you make some inquiries with the mine as to  
17 whether it had stored in its warehouse any samples of the  
18 dust gutters which were actually in place on longwall 104?

19 A. Yes. We asked that, and they didn't have any spares  
20 on site and they had none of the original ones. All  
21 original ones were used underground and that's where they  
22 were.

23

24 Q. Did you, subsequent to that line of inquiry, seek to  
25 source some samples from Moranbah North?

26 A. Yes.

27

28 Q. In the belief that they were supplied by the same  
29 manufacturer?

30 A. That's correct.

31

32 Q. And did you subsequently test those samples?

33 A. Yes.

34

35 Q. Was it the case that when you did test those samples,  
36 they didn't pass the electrical resistance requirements in  
37 MDG 3608 4.2.2.1?

38 A. That's correct. They failed.

39

40 Q. However, as I understand it, you went on to test some  
41 samples at Broadmeadows that were also produced by the same  
42 manufacturer?

43 A. Yes.

44

45 Q. You were aware that those samples, or that product  
46 supplied to both Broadmeadows and Grosvenor had passed  
47 testing in the past?



1 A. Yes. They had documentation saying that they'd passed  
2 previously.  
3

4 Q. When you tested those samples, they did in fact meet  
5 the necessary requirements?  
6 A. Yes, the Broadmeadows one did, yes.  
7

8 Q. So it's the case that you haven't been able to test  
9 the particular sample from longwall 104?  
10 A. Yes, we haven't been able to do that.  
11

12 Q. But you've been able to test a sample from the same  
13 manufacturer provided at approximately the same time to  
14 Broadmeadows?  
15 A. Yes.  
16

17 Q. And that sample did pass the test?  
18 A. Correct, yes.  
19

20 Q. As I understand it, you've reached the conclusion that  
21 irrespective of that testing, the dust gutters are unlikely  
22 to have caused an ignition of the event that occurred at  
23 Grosvenor, for two reasons: firstly, because the remnants  
24 at shield 111 were only small?  
25 A. Small in nature, yes.  
26

27 Q. And also because of the data that you had received  
28 that those shields weren't being operated at a time  
29 proximate to the incident, anyway?  
30 A. Yes.  
31

32 MS O'GORMAN: Those are the questions that I have,  
33 thank you, Mr Martin.  
34

35 THE CHAIRPERSON: Q. Sorry, what's the relevance of  
36 that, that the shields weren't working?  
37 A. For a static charge to cause an ignition, it needs to  
38 come in contact with metal, and because the shields aren't  
39 moving, there was no ability for it to - or reason for it  
40 to move and touch metal. It's held on there by a magnet,  
41 which may have been causing it to have a good conductive  
42 path, which would have then also ensured it couldn't build  
43 up a static charge as well.  
44

45 THE CHAIRPERSON: Mr Holt?  
46

47 <EXAMINATION BY MR HOLT:

- 1  
2 MR HOLT: Q. Mr Atkinson, my name is Saul Holt. I'm the  
3 barrister for the Anglo entities that have been given leave  
4 to appear. I just have a few questions for you.  
5 Mr Operator, do we have Mr Atkinson's statement and, if so,  
6 might we go to paragraph 20 and the heading immediately  
7 above it. This is the part of your statement, Mr Atkinson,  
8 where you talk about testing that could not be actioned for  
9 a number of different reasons; is that right?  
10 A. That's correct.  
11  
12 Q. One of those reasons which you've previously alluded  
13 to, and you describe in detail in your statement,  
14 unsurprisingly, is that after the second incident the  
15 longwall area could no longer be accessed?  
16 A. Yes.  
17  
18 Q. Obviously from that point onwards it was just simply  
19 not possible to get equipment off the longwall face?  
20 A. That's correct.  
21  
22 Q. Might I ask you, I'm sorry, to speak up a little bit,  
23 if you can. Thank you. But in paragraph 20 you refer to  
24 the fact that you wanted to test the AFC and shearer mains  
25 cables?  
26 A. That's correct.  
27  
28 Q. I have a few questions about that. You note that you  
29 wanted to test those cables which were located at or near  
30 the scene of the incident. Do you see that?  
31 A. Yes.  
32  
33 Q. When you say "scene of the incident" in that context,  
34 do you mean in the vicinity of chock 111 for the reasons  
35 you've discussed previously, or do you mean more generally  
36 on the longwall face?  
37 A. It was about the AFC and shearer mains cables went  
38 past that area, so that's why they were a point of focus.  
39  
40 Q. So you wanted to test the cables, in effect, because  
41 they went past that chock 111 area which was an area of  
42 focus for you?  
43 A. Yes.  
44  
45 Q. As you've explained there, the way in which you wanted  
46 to test those cables underground was to do something  
47 called - to megger the cables?

1 A. That's correct.

2

3 Q. That involves passing using a device that you take  
4 underground to pass electrical voltage through the cable to  
5 identify faults?

6 A. Correct.

7

8 Q. Ordinarily when a miner is in control of the longwall,  
9 you would expect, as you would know, there to be a standard  
10 operating procedure dealing with the taking underground of  
11 what are called uncertified portable electronic equipment?

12 A. Yes.

13

14 Q. Or UPEE as it's commonly described?

15 A. Yes.

16

17 Q. Your expectation would be that would be a standard  
18 operating procedure that any longwall miner would have in  
19 place and that Grosvenor did indeed have in place?

20 A. Yes. That's correct. They also have certified  
21 portable electrical equipment as well.

22

23 Q. Of course. The thing about uncertified portable  
24 electrical equipment and the need for an SOP is because one  
25 of the critical controls that's in place for the operation  
26 of a longwall in relation to controlling the risk or  
27 mitigating the risk of ignition is to remove any ignition  
28 source - yes?

29 A. That's correct.

30

31 Q. And one of the obvious ignition sources which the  
32 set-up of these longwalls seek to remove is the risk of  
33 a spark from an electrical device?

34 A. That's correct.

35

36 Q. And that's why we've heard during the course of the  
37 Inquiry that the various levels on certain methanometers  
38 caused power to the longwall to be tripped, which means to  
39 end power to the longwall, effectively?

40 A. Yes.

41

42 Q. So obviously enough when people are going underground,  
43 if they're taking with them something else, like a camera  
44 or a phone or a light that they're trying to take  
45 underground, there needs to be a process, a careful  
46 process, to assess that uncertified portable electrical  
47 equipment before any decision is made to permit it to go

1 underground?

2 A. Correct.

3

4 Q. Part of what you would expect to be in place for that  
5 standard operating procedure is that the electrical manager  
6 would have a sign-off role, in effect?

7 A. Yes.

8

9 Q. Together with the underground mine manager?

10 A. Yes.

11

12 Q. Those would be the two decision-makers who would make  
13 that assessment in accordance with the standard operating  
14 procedure?

15 A. Yes.

16

17 Q. On this day, for obvious reasons, completely  
18 correctly, the longwall was not within the control of  
19 Grosvenor, of Anglo; it was in control of the inspectorate?

20 A. That's correct.

21

22 Q. The inspectorate had, for the purposes of its  
23 investigation, taken control of that longwall?

24 A. Yes.

25

26 Q. Anglo couldn't do anything on that longwall, quite  
27 rightly, without the consent and permission of the  
28 inspectorate?

29 A. That's correct.

30

31 Q. Now, there was taken, for the purposes of the  
32 investigation underground, things like lights and cameras  
33 and so on, to be able to do the kinds of things that the  
34 Board has been assisted already in seeing?

35 A. That's correct.

36

37 Q. But those things that went underground were things  
38 which, while they didn't go through the SOP, were things  
39 which were highly unlikely to cause a spark of any  
40 significance?

41 A. Yes, they still were given to the EEM and checked and  
42 approved to go underground.

43

44 Q. The lights and the cameras?

45 A. Yes, the uncertified portable equipment - they have to  
46 keep a register of all equipment that goes underground, so  
47 we provided all that to site before they were taken

1 underground. We just didn't take them underground.

2

3 Q. In any event, those were the kinds of equipment that  
4 wouldn't cause any issues at all, that went through that  
5 process without any difficulty?

6 A. Yes, well, part of the process is you've got to take  
7 a methanometer with them to ensure that the methane doesn't  
8 get above 0.5 per cent.

9

10 Q. Exactly, you've got a handheld monitor with you as  
11 well?

12 A. Yes.

13

14 Q. Let's talk about the meggering process, because you  
15 explain here that you sought permission from the mine to  
16 megger the cables, and in effect that would involve taking  
17 underground the equipment required to pass a voltage  
18 through those cables?

19 A. That's correct.

20

21 Q. You've indicated you were refused permission to do  
22 that?

23 A. Yes.

24

25 Q. So that was the EMM and the UMM making the decision  
26 between them that there was an unacceptable risk in taking  
27 that uncertified electronic equipment underground?

28 A. At that time they believed it was an unacceptable  
29 risk, yes.

30

31 Q. To be clear, the reason for that is because a megger  
32 can pass up to 10,000 volts through a cable?

33 A. Yes, it can.

34

35 Q. When it finds a fault, if indeed there is a fault for  
36 it to find, that voltage, whatever it is on that particular  
37 occasion, can discharge in a spark?

38 A. Correct.

39

40 Q. And given that at that point in time the source of the  
41 methane that had been the combustive source of the ignition  
42 on 6 May was not known, the risk assessment concluded that  
43 taking the risk of creating that kind of spark underground  
44 was unacceptable?

45 A. Correct.

46

47 Q. Equally there's another mechanism, isn't there: had

1 there been an incident on the face when the megger was  
2 being used - that is, an ingress of methane quickly - there  
3 would then have been the need to effectively turn off the  
4 megger?  
5 A. Yes.  
6  
7 Q. That would have itself risked creating a spark?  
8 A. Quite likely.  
9  
10 Q. And so you asked to be able to do those two things  
11 underground and Anglo said no?  
12 A. Yes.  
13  
14 Q. On what you would consider, I imagine, on the basis of  
15 these questions and answers, to be a reasonable risk  
16 assessment?  
17 A. Yes.  
18  
19 Q. Thank you. Could we go to paragraph 23, please. You  
20 here explain, as our learned friend Ms O'Gorman took you  
21 to, the reasons why you say that the things that you  
22 couldn't test, the remaining electrical equipment which  
23 remains underground, you don't consider as being too  
24 problematic, if I can put it that way --  
25 A. Yes, yes.  
26  
27 Q. -- in large measure because it was based on the  
28 observations of the fire experts underground - I'm reading  
29 from the middle of your paragraph - "the flame/heat  
30 appeared to come from the upper area behind shield  
31 chock 111"?  
32 A. Yes.  
33  
34 Q. So may we take it that the reason why you're  
35 comfortable that no other electrical equipment other than  
36 that that was taken would be significant to this Inquiry is  
37 because of your understanding that the ignition source was  
38 in the region of chock 111?  
39 A. There's that, and the fact that those VAAs and Promos  
40 are all intrinsically safe circuits, and we did look at the  
41 certification of those and there was no issues with that.  
42  
43 Q. I understand, but everything underground had to be  
44 intrinsically safe, didn't it?  
45 A. It has to be explosion protected. Intrinsic safety is  
46 one of those techniques.  
47

1 Q. Can we just rewind a moment. So you took a set of  
2 equipment from around the area of chock 111,  
3 understandably, on the basis of the information you were  
4 given on the day by the fire expert?  
5 A. Yes.  
6  
7 Q. You focused on that area. Equivalent equipment from  
8 the rest of the longwall face wasn't able to be taken  
9 because of the second incident?  
10 A. Yes.  
11  
12 Q. Completely understandable. The reason why you say  
13 that that hasn't limited matters too much is because of  
14 what you understand to be the conclusion that the ignition  
15 source was in the region of chock 111?  
16 A. Yes.  
17  
18 MR HOLT: Thank you.  
19  
20 THE CHAIRPERSON: Mr Crawshaw?  
21  
22 MR CRAWSHAW: No questions, Mr Chair, thank you.  
23  
24 THE CHAIRPERSON: Thank you. Ms Grant?  
25  
26 MS GRANT: No questions, thank you, Mr Martin.  
27  
28 THE CHAIRPERSON: Mr Trost?  
29  
30 MR TROST: No questions, Mr Martin.  
31  
32 THE CHAIRPERSON: Mr O'Brien?  
33  
34 MR O'BRIEN: No questions.  
35  
36 THE CHAIRPERSON: Ms Holliday?  
37  
38 MS HOLLIDAY: No questions.  
39  
40 THE CHAIRPERSON: Might Mr Atkinson be excused?  
41  
42 MS O'GORMAN: Thank you.  
43  
44 THE CHAIRPERSON: Mr Atkinson, thank you for your  
45 evidence. You are excused.  
46  
47 <THE WITNESS WITHDREW

1  
2 THE CHAIRPERSON: We might take the morning break.

3  
4 **SHORT ADJOURNMENT**

5  
6 THE CHAIRPERSON: Yes, Ms O'Gorman.

7  
8 MS O'GORMAN: Mr Martin, there is only one further witness  
9 for today. That's Mr Nystrom. He's here and is just  
10 coming into the courtroom.

11  
12 THE CHAIRPERSON: Thank you.

13  
14 **<MURRAY NYSTROM, sworn: [11.49am]**

15  
16 **<EXAMINATION BY MS O'GORMAN**

17  
18 MS O'GORMAN: Q. Mr Nystrom, your full name is Murray  
19 Nystrom?

20 A. It is.

21  
22 Q. You're the director of Australian Forensic Pty Ltd?

23 A. I am.

24  
25 Q. In terms of your qualifications, you have a Bachelor  
26 of Applied Science in Chemistry from what is now QUT?

27 A. Yes, I do.

28  
29 Q. And you obtained that in March 1983?

30 A. I did.

31  
32 Q. You also have a Graduate Certificate in Fire  
33 Investigation which you obtained through the Charles Sturt  
34 University in New South Wales in November 2012?

35 A. I do hold that, yes.

36  
37 Q. You're a Fellow of the Royal Australian Chemical  
38 Institute?

39 A. Yes.

40  
41 Q. And a Member of the International Association of Arson  
42 Investigators?

43 A. Yes.

44  
45 Q. You worked for the QPS, including as a scientific  
46 officer and a senior scientific officer, from 1974 until  
47 1988?



1 A. I did.

2

3 Q. And you left that service in 1988 to begin what is now  
4 Australian Forensic Pty Ltd?

5 A. That is correct.

6

7 Q. In the course of your career, you have examined in  
8 excess of 6,000 fire scenes in order to determine origin  
9 and cause?

10 A. I have.

11

12 Q. You've authored a number of papers and conducted  
13 seminars in relation to fire and explosion investigations?

14 A. I have.

15

16 Q. In respect of this matter, you've prepared a report?

17 A. Yes.

18

19 MS O'GORMAN: Mr Martin, in the absence of any of the  
20 parties having a difficulty, might Mr Nystrom have that  
21 report and have regard to it as need be?

22

23 THE CHAIRPERSON: Yes.

24

25 MS O'GORMAN: Q. Mr Nystrom, you were engaged by DNRME  
26 to conduct an explosion scene investigation at Grosvenor?

27 A. Yes.

28

29 Q. On 7 May 2020?

30 A. That's correct.

31

32 Q. And in furtherance of that investigation, you attended  
33 at the mine on 8 May 2020?

34 A. That's correct.

35

36 Q. On that first day, you attended at a surface building  
37 for the purpose of examining, viewing and photographing  
38 a number of pieces of clothing and equipment which you were  
39 told had been taken from coal mine workers who were working  
40 on the longwall face at the time of the incident?

41 A. That's correct.

42

43 Q. And on 10 May 2020 you went back to the mine. This  
44 time you time you attended underground and examined the  
45 longwall face itself and various features that you could  
46 see, the chocks and the like, on the longwall face?

47 A. I did.

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Q. We've made reference to your report. In it, you make clear that you were provided with information at the time of your investigations that there had been two pressure waves approximately 15 seconds apart on 6 May 2020?

A. Yes.

Q. But at the time that you went underground on 10 May, you had very little other information about the incident itself?

A. That's correct, yes.

Q. So the report that you have provided for the assistance of the Board is based on, really, your observations of the clothing and the equipment that you examined on 8 and 10 May 2020?

A. That is correct.

Q. Ultimately we can see from your report that you reach two conclusions - firstly, that there was a momentary flame front which passed along the longwall face, and that the temperature of that flame front would have been between 200 degrees Celsius and several hundred degrees Celsius?

A. That's correct.

Q. That you base on your observations of the clothing and the equipment from the coal mine workers that you saw on 8 May primarily?

A. Yes.

Q. Secondly, you conclude, having examined various items along the longwall face itself, that the flame front probably entered the longwall at about chock 111?

A. That's correct.

Q. And travelled outwards from that chock in two directions along the face?

A. That's correct.

Q. Can we go to the examinations that you conducted of the clothing on 8 May.

A. Yes.

Q. Ultimately on that day you observed Grosvenor personnel and an inspector from the department taking bagged clothing items out, spreading them on a table, identifying for you the position of the person who had been

1 wearing that clothing, and you were able to examine it?

2 A. Yes, that's correct.

3

4 Q. You took a number of photographs, a couple of hundred  
5 photographs in all?

6 A. Yes, I did.

7

8 Q. Some of those I'm going to put up on the screen now  
9 for us to have a look at. Up on the screen now is  
10 a PowerPoint, slide number 1, and we can see two items of  
11 clothing. Were those items - are those items one and the  
12 same, a front and a back view?

13 A. Yes, they are.

14

15 Q. Does the photograph depict the front and back of  
16 a shirt of a worker that was described to you as being  
17 worker number 3 positioned at chock 131?

18 A. It does.

19

20 Q. We can see in respect of the second photograph on that  
21 slide that the more significant damage is to the upper-left  
22 back of the shirt?

23 A. That's correct.

24

25 Q. And what does that indicate to you?

26 A. That indicates to me that the flame approached the  
27 garment from an elevated location and from his left side.

28

29 Q. In terms of the temperature of that flame front, what  
30 were you able to discern from the nature of the damage seen  
31 on that item of clothing?

32 A. Because of the singeing and combustion of the fibre in  
33 the cloth, I estimate that the temperature would have been  
34 at least 200 degrees and it may have been quite  
35 significantly hotter.

36

37 Q. Why is that? Why were you able to ascertain that  
38 range?

39 A. There are rules of thumb regarding the ignition of  
40 cellulosic and other fibres. They typically start at  
41 around the 200 to 250 degree range, but there is an  
42 alternative to the view that a particular item will catch  
43 fire at a certain temperature, and that is that the item  
44 will catch fire at a certain temperature with a certain  
45 time duration. So the higher the temperature, the shorter  
46 the time duration of the exposure.

47

- 1 Q. So the fact of that damage suggests to you that the  
2 exposure would have been, I think you've described it as,  
3 momentary or fleeting?
- 4 A. I describe it that way because it appears that the  
5 garment has not extended a prolonged level of fire growth  
6 in the material itself, which indicates to me that it was  
7 only momentary.  
8
- 9 Q. If we could go to the next slide, please, this slide  
10 contains, on the left-hand side, the picture of a belt  
11 described as coming from that same worker, that is, worker  
12 number 3?
- 13 A. That's correct.  
14
- 15 Q. And on the right-hand side is a closer version of that  
16 belt?
- 17 A. That's correct.  
18
- 19 Q. Is the damage that you can see there on that belt  
20 consistent with the observations that you have made about  
21 the temperature and the duration of the flame front?
- 22 A. Yes, it is.  
23
- 24 Q. Could we move to slide 3, please. There we can see  
25 a photograph of again another belt, and this belt was  
26 described to you as coming from worker number 1, who was  
27 positioned at chock 133 at the time of the incident?
- 28 A. That's correct.  
29
- 30 Q. You were able to see, when you looked at it, fire  
31 damage to the rear of the right-hand side pocket?
- 32 A. That's correct. This was different to the other belt,  
33 in that the damage was on the right-hand side, but it was  
34 on the left-hand part of the right-hand side.  
35
- 36 Q. Would that indicate something to you about  
37 directionality of the flame if you knew the orientation of  
38 the person at the time of the incident?
- 39 A. Yes, it would.  
40
- 41 Q. But without knowing anything about the orientation of  
42 that person, it doesn't tell you anything about  
43 directionality?
- 44 A. It becomes a little more confusing unless you have  
45 better information.  
46
- 47 Q. If we could go to slide 4, here we have, don't we,

1 a photograph of the belt described as coming from worker  
2 number 4, who was located at chock 120 at the time of the  
3 incident?

4 A. The photograph I have has chock 100 written on it.

5

6 Q. 100? All right.

7 A. I'll check my notes.

8

9 Q. In any event, when you looked at this belt, you were  
10 also able to discern some indication of fire damage to it?

11 A. In fact, my notes show that this is 120. There's been  
12 a mistake on the slide.

13

14 Q. I see. So this did come from the worker described to  
15 you as being positioned at 120?

16 A. Yes.

17

18 Q. It seems, if one does a comparison between this  
19 photograph and the one of the belt taken from the worker at  
20 the position of chock 133, that there is less damage to  
21 this belt?

22 A. Yes.

23

24 Q. Does that aid in telling you anything about the  
25 intensity of the flame front or anything like that?

26 A. To the same extent, that the relationship between the  
27 temperature and the time exists no matter where, so with  
28 less damage, it's either a lower temperature or less time  
29 or a combination of both.

30

31 Q. Could we go to slide 5, please. This slide contains  
32 two photographs, one on the left of the entire belt and one  
33 on the right of a close-up of that same belt; is that  
34 correct?

35 A. Yes, it does.

36

37 Q. And this belt was described to you as coming from  
38 worker number 5 at chock 100?

39 A. Hang on. This one - I have this as --

40

41 MS HOLLIDAY: Sorry, I am loath to interrupt but the copy  
42 of the slides being put up is different from the copy that  
43 we have in terms of the shearer numbers at the top of the  
44 screen, so I'm not sure what has happened, because it has  
45 the same number of the RSH.019.001.255, but the images at  
46 the top are not the same.

47

1 MS O'GORMAN: Yes, and I can see that the image at the top  
2 is not reflecting the description that I have just  
3 provided. Would it be possible to have a couple of minutes  
4 just to ascertain that the PowerPoint slides are correct?

5  
6 THE CHAIRPERSON: Yes. We will just adjourn. Let me know  
7 when you're ready.

8

9 **SHORT ADJOURNMENT**

10

11 THE CHAIRPERSON: Yes, are we right?

12

13 MS O'GORMAN: Yes, thank you.

14

15 Q. Mr Nystrom, we have a new version of the PowerPoint  
16 slides that were being shown to you, but we're still on  
17 slide 5, which is the slide I was asking you questions  
18 about earlier. Just to step back to where we were, this is  
19 a slide which shows two photographs of a belt, which was  
20 described to you as coming from worker number 5, who was  
21 positioned at chock 100 at the time of the incident?

22 A. That's correct.

23

24 Q. And again, comparatively to the damage to the belt of  
25 the worker at chock 131, there is less damage to be seen on  
26 this belt?

27 A. There is, yes.

28

29 Q. If we go to slide 6, it's the case, isn't it, that you  
30 also were provided with and looked at the helmets of  
31 a number of the workers?

32 A. I did.

33

34 Q. Were they able to assist you in any particular way  
35 with respect to your investigations?

36 A. No, they did not.

37

38 Q. So ultimately the manner in which your observations of  
39 this clothing was able to assist you was with respect to  
40 the momentary nature of the flame and the potential  
41 temperature range of it?

42 A. In the first place, yes.

43

44 Q. But in the absence of knowing the position of or  
45 orientation of any of those workers, it didn't particularly  
46 assist you with directionality?

47 A. I was given certain information about their

1 orientation, which provided me with enough to form a view  
2 about flame front travel in respect of those items of  
3 clothing.

4  
5 Q. And what was that?

6 A. Generally the coal mine workers would have been facing  
7 the coalface, and in respect of the coal mine worker  
8 number 1, he may have been squatting and facing toward the  
9 tailgate. In respect of those suggestions, then there is  
10 a consistency of a flame travel that commenced somewhere  
11 between coal mine workers 4 and 5.

12  
13 Q. To be clear, that conclusion depends on the accuracy  
14 of information conveyed to you about the orientation of  
15 those workers?

16 A. That is absolutely correct, yes.

17  
18 THE CHAIRPERSON: Ms O'Gorman, what happened to slide 4?  
19 Is that still part of the evidence?

20  
21 MS O'GORMAN: We could go back to it. I had thought that  
22 we had finished with that slide.

23  
24 THE CHAIRPERSON: Is that slide 4?

25  
26 MS O'GORMAN: That's slide 4.

27  
28 THE CHAIRPERSON: I don't think that's what was shown  
29 before, was the difficulty. Anyway, that's slide 4?

30  
31 MS O'GORMAN: That's slide 4.

32  
33 THE CHAIRPERSON: And that's coal mine worker number 4?

34  
35 MS O'GORMAN: Yes, positioned at chock 120.

36  
37 THE CHAIRPERSON: Okay, thank you.

38  
39 MS O'GORMAN: Q. If we move on, then, to slide number 7,  
40 these are the start of the photographs relating to your  
41 observations of the longwall face when you attended  
42 underground on 10 May 2020?

43 A. Yes.

44  
45 Q. As I understand it from your report, as you progressed  
46 along the longwall face from shield 1, you didn't observe  
47 any particular damage to the chocks at the maingate end

- 1 until you reached about shield 100; is that correct?  
2 A. That's correct, yes.  
3  
4 Q. Ultimately, as a result of your investigations, your  
5 observations of various pieces of equipment and fire damage  
6 along the longwall face, you concluded, as we've already  
7 discussed, that the flame front probably originated from or  
8 entered the longwall face in the vicinity of chock 111?  
9 A. That's correct, yes.  
10  
11 Q. And there were some localised pockets of intense  
12 damage along the longwall face?  
13 A. There were, yes.  
14  
15 Q. But ultimately those localised pockets didn't  
16 interfere with your overall conclusion about the origin of  
17 the flame front?  
18 A. No.  
19  
20 Q. There are a number of photographs, you say in your  
21 report, that assist you in reaching that conclusion?  
22 A. Yes.  
23  
24 Q. And we might step through those now. There's two  
25 photographs that are visible on this slide. These are  
26 items of equipment taken or located at chock 100, are they  
27 not?  
28 A. Yes, they are.  
29  
30 Q. And the photographs depict limited damage to the comms  
31 module?  
32 A. That's correct.  
33  
34 Q. And the LED light on the right-hand side at chock 100?  
35 A. Yes.  
36  
37 Q. Did that just represent some of the first pieces of  
38 equipment showing evidence of fire damage as you progressed  
39 from the maingate towards the tailgate?  
40 A. That's right, that's about - that seems to be about  
41 the limit of observable heat damage to equipment.  
42  
43 Q. Moving from chock 100 to 101, and if we go to slide 8,  
44 please, is this a photograph depicting some damage to chock  
45 101?  
46 A. It is.  
47



1 Q. And in particular are you able to point out - do you  
2 have a mouse?  
3 A. No, I don't.  
4  
5 Q. Could Mr Nystrom be given a mouse? (Handed).  
6 A. It doesn't seem to be working. It's stationary.  
7  
8 Q. I'm just going to see if another one might work for  
9 you.  
10 A. It's moving about a bit, yes.  
11  
12 Q. All right. Using that mouse, are you able to identify  
13 the areas of damage that you could see on that equipment?  
14 A. There's a slight amount of damage that one sees to  
15 some tape in this location, roughly in the centre, and then  
16 just to the left over here.  
17  
18 Q. Go over to slide 9, please. According to your report,  
19 these photographs depict equipment located at chock 107 on  
20 the left and 108 on the right?  
21 A. That's correct.  
22  
23 Q. And the damage that you were able to observe at those  
24 chocks?  
25 A. Yes, again it's limited damage, but it appears to me  
26 to be more substantial damage than the earlier chock at  
27 100, 101, and so on.  
28  
29 Q. If we could go to slide 10, please, this photograph  
30 depicts what you describe in your report as a plastic label  
31 at chock 107?  
32 A. Yes. This is the label in the centre. The manner in  
33 which this label has melted indicates a flame front  
34 approaching this item from the left-hand side, which would  
35 be from the tailgate side, as this is facing away from the  
36 longwall.  
37  
38 THE CHAIRPERSON: Q. So does this show the direction?  
39 A. It does.  
40  
41 MS O'GORMAN: Q. Can you explain how the direction is  
42 shown, by use of your mouse showing the orientation?  
43 A. Sure. What we observe is quite typical in fire travel  
44 where things develop from what's called a U pattern or a V  
45 pattern, where fire spreads upwards and outwards, so at  
46 this lower left there is a lower trajectory - sorry,  
47 there's a lower impact of damage than there is at the top

1 right. One also observes the local melting to this  
2 top-left corner as well.

3

4 Q. If we have a look at the schematic along the top of  
5 that slide, we can see chocks 1 to 149 depicted from the  
6 left to the right of the slide?

7 A. Yes.

8

9 Q. You've described that this image shows the flame  
10 travelling from the left, that is, towards the tailgate end  
11 of the slide?

12 A. From the tailgate.

13

14 Q. Which is consistent with your conclusion that the  
15 flame originated at 111?

16 A. It is.

17

18 Q. It was to the left of 107?

19 A. That's correct, because the orientation in the upper  
20 schematic there of the 1 to 149 is facing downwards in the  
21 page.

22

23 Q. If we could go to slide 11, please, this is an image  
24 of equipment at chock 110?

25 A. Yes.

26

27 Q. If you're able to point out the areas of damage on  
28 that equipment, please, Mr Nystrom?

29 A. Really all it shows is that the communication module  
30 has some sort of a cover over it which has been, in my  
31 opinion, more substantially damaged than the equipment we  
32 saw at the previous slide.

33

34 Q. And is the increasing amount of damage on these pieces  
35 of equipment that you've photographed as they moved towards  
36 shield 111 consistent with your ultimate conclusion --

37 A. It is.

38

39 Q. -- that the flame front commenced at that location?

40 A. It is, yes.

41

42 Q. If we could go to slide 12, please, these photographs  
43 depict, don't they, the rear of chocks 110 and 111?

44 A. They do.

45

46 Q. So a different orientation than the position that  
47 we've been in up until now?

- 1 A. That's correct. So in this slide, on the left we  
2 have 111, where the face of this module here is more  
3 substantially damaged than is the face of the same module  
4 on 110. In these two photographs, we're facing towards the  
5 longwall as opposed to away from it, as the other images  
6 show.  
7
- 8 Q. What does the variation in damage to those pieces of  
9 equipment tell you about the orientation or origination of  
10 the flame front?  
11 A. It appears to me that the flame front in here is more  
12 likely to have originated from 111 rather than 110. These  
13 slides are actually captured by me very late in the  
14 walk-through going both directions down along the longwall  
15 and back, so these came in late, where I was tracking back  
16 towards where I believe the flame front originated.  
17
- 18 Q. If we go to slide 13, this photograph depicts the  
19 damage to the overhead valve bank at chock 111; is that  
20 correct?  
21 A. Yes.  
22
- 23 Q. What's the significance of this photograph to your  
24 conclusion?  
25 A. Well, there's quite substantial damage at the valve  
26 bank, the valve bank covers, and also the, for want of  
27 a better word, sticker which goes over the valve bank cover  
28 in this area. And the cover itself, the adhesive doesn't  
29 appear to exhibit any directionality, which is quite  
30 typical of something which is located at the location where  
31 a flame front develops from, as opposed to the next chock  
32 down or the next structure downwards.  
33
- 34 Q. If we move to slide 14, this slide contains  
35 photographs of various aspects of chock 120; is that right?  
36 A. Yes.  
37
- 38 Q. This is the first of the photographs taken from the  
39 other side, the tailgate side, of chock 111?  
40 A. That's correct, yes.  
41
- 42 Q. What is it that is of significance to you as depicted  
43 in these two photographs?  
44 A. In both cases, the damage that I observed on the  
45 covers on these hoses appeared to have originated from the  
46 right, which would be from the general direction of 111.  
47

- 1 Q. If we go to slide 15, that's a photograph of the valve  
2 bank located at chock 123; is that correct?  
3 A. Yes.  
4
- 5 Q. We can see there the sticker that you referred to when  
6 you were talking about the valve bank at chock 111?  
7 A. Yes, and the part that I'm circling with the mouse  
8 shows an area where the sticker has become detached and  
9 somewhat melted from the right.  
10
- 11 Q. When you say "from the right", that's consistent with  
12 the direction of chock 111?  
13 A. It is.  
14
- 15 Q. What's the significance of it melting at that end or  
16 coming away from the equipment at that end rather than at  
17 the other?  
18 A. It's typical of the flame front approaching it from  
19 that side.  
20
- 21 Q. Go to slide 16, then, please. This slide contains two  
22 photographs of damage to equipment located at chock 129?  
23 A. There's nothing particular about this other than that  
24 it just shows that there is elevated damage toward the rear  
25 of the chocks.  
26
- 27 Q. You're talking in particular to the hose coverings  
28 that appear to have been burnt and to come away from the  
29 hose?  
30 A. Yes.  
31
- 32 Q. If we could go to slide 17, please, here we have  
33 a photograph, don't we, of some equipment located at  
34 chock 129?  
35 A. 129, yes.  
36
- 37 Q. And in particular we can see a label or some kind of  
38 sticker there in the middle of the photograph?  
39 A. Yes. This label is located between the rams, and  
40 again it also exhibits the melting from the right-hand  
41 side. So in the orientation looking downwards from above  
42 on the depiction of 1 to 149, it's another indicator of  
43 flame travelling from the general direction of 111.  
44
- 45 Q. Slide 18, please. Here is a photograph taken at  
46 chock 132, again of that valve bank area towards the top of  
47 the chock?

1 A. Yes.

2

3 Q. And again we can see the plastic label that you made  
4 reference to at a couple of the earlier chocks?

5 A. Yes.

6

7 Q. Again this one appears to be burnt or coming away more  
8 significantly at one end than the other?

9 A. That's correct.

10

11 Q. And you said earlier that that indicates direction of  
12 the flame front travel?

13 A. From the maingate toward the tailgate in that  
14 location, and that was the consistency of that examination  
15 all the way through this area.

16

17 Q. If we go to slide 19, please, that's a photograph of  
18 some equipment at chock 133?

19 A. At 133 there is another label that's present on the  
20 underside of this apparatus, and one sees a streaming  
21 effect around that label, which again is typical of the  
22 flame front travelling over that surface from one side to  
23 the other, and in this case it's from the right to the  
24 left, which again is from the maingate to the tailgate.  
25 It's hard to see in this particular photograph, but the  
26 same evidence in respect of the valve bank was present on  
27 this particular valve bank adhesive in this area that I'm  
28 indicating here. And another thing that I saw about this  
29 was that there there's some what seems to be a localised  
30 effect around these hose covers that is not evident about  
31 ones that are close by, which is the effect I mentioned  
32 earlier of little pockets where things are a little bit  
33 more intense than they are elsewhere.

34

35 Q. Is there an explanation for why there might be  
36 localised damage at certain areas and not others?

37 A. There is.

38

39 Q. And what might some of those explanations be?

40 A. One of those explanations is to deal with the actual  
41 concentrations of the flammable mixture in the particular  
42 location. There may well be others in terms of turbulence  
43 in the atmosphere. But the observation of a vapour phase  
44 ignition - it shows this same feature in many of the  
45 investigations that I've undertaken over the years, where  
46 while one can say that the explosion initiated from  
47 a particular location, there is also an observation of

1           pockets around a room or a structure of localised areas of  
2           more deeply charred timber surfaces, for example, or more  
3           badly burnt plastic or things like that, which could be  
4           attributed to, amongst other things, concentration of the  
5           actual flammable mixture in the atmosphere in that  
6           location.

7

8           Q.    Or the actual amount of gas in that area?

9           A.    Exactly, or the actual amount within the area.

10

11          Q.    Is there anything about your observations of the  
12          localised damage here that causes you to have any concerns  
13          about your overall conclusion about the origin of the flame  
14          front?

15          A.    No.

16

17          Q.    Could we move to the next slide, please, slide 20.  
18          This slide contains a photograph taken at chock 134, does  
19          it not?

20          A.    It does.

21

22          Q.    And what we can see is the back of that valve bank  
23          that we've looked at from a couple of different angles in  
24          previous slides

25          A.    Yes, that's right, and again, this is the same  
26          feature.

27

28          Q.    And in particular towards the bottom of that picture,  
29          we can see the sticker that you've made reference to  
30          previously?

31          A.    That's right, that's the one I've just identified with  
32          the mouse.

33

34          Q.    Thank you. It's coming away at one end?

35          A.    And not the other.

36

37          Q.    And the end at which it's coming away from is the end  
38          pointing towards shield 111?

39          A.    That's correct, yes.

40

41          Q.    Could we move to slide 21, then. Here we can see  
42          a photograph of the numberplate, as it were, for chock 135?

43          A.    That's correct.

44

45          Q.    You mentioned streaming markings on one of the labels  
46          or stickers that we saw in an earlier slide.

47          A.    Yes.

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Q. Can you see similar markings on the equipment here?

A. Yes. The same as observed in this slide. The orientation of the photograph here is to be - my back was toward the maingate, facing toward the tailgate, so the streaming effect that's observed over this particular adhesive indicates that the flame travel in this location was coming from behind me, which means it's coming from the maingate toward the tailgate, which is consistent with the other evidence that I saw.

Q. Could we move to slide 22, please. This is also a photograph taken from chock 135, is it not?

A. It is.

Q. And it shows some damage to a hose at that chock?

A. It does, and it's rather interesting in that it was a little localised pocket and low down in this particular case. I couldn't say what the height of that was, but my recollection is it was fairly low down.

Q. And that's to be contrasted with many of the other items that you photographed, where they were located more towards the top of the shields?

A. That's correct. That's correct, but even having said that, the manner of damage around this particular cover also is an indicator of a front coming from the right-hand side in this image. It's the same consistency, it's just a little more intensity in this particular area than there is just nearby.

Q. I was just going to say, in relation to the orientation of this photograph, the right-hand side is consistent with it coming from the maingate end?

A. That's correct, yes.

Q. If we move to slide 23, please, this is a photograph of the next chock, that is, chock 136, isn't it?

A. Yes.

Q. And again showing damage of the valve bank that you referred to and, in particular, the sticker on the bottom of that valve bank?

A. Yes. Again you see the similarity, the consistency in the damage to the sticker, and around this area towards the left there's a little localised what seems to be a pocket of more intense damage than there is in other locations.

- 1  
2 Q. Again, the pocket of intense or localised damage that  
3 you saw there at chock 136, did it cause you to reconsider  
4 your conclusion about the origin of the flame front?  
5 A. It did not.  
6  
7 Q. If we could move to slide 24, please, this is another  
8 photograph, is it not, of chock 136?  
9 A. Yes.  
10  
11 Q. And provides a different view of the damage to the  
12 hoses up in the top part of that chock?  
13 A. It does.  
14  
15 Q. Again, that represents, doesn't it, the localised  
16 nature of the burning at that chock?  
17 A. It does.  
18  
19 Q. Finally, if we could move to slide 25, we can see in  
20 reverse the nameplate for chock 141 there?  
21 A. Yes.  
22  
23 Q. And close to it, another label with some streaming  
24 markings?  
25 A. That's correct, and this is the same effect as there  
26 were in the other two images showing this same type of  
27 device where the streaming characteristic is over the  
28 surface from the maingate toward the tailgate.  
29  
30 Q. Other than the localised damage that you observed at  
31 chock 136 did you generally observe less damage as you  
32 moved beyond chock 136 and towards the tailgate?  
33 A. I did. It was less damage down towards that end, yes,  
34 and I think it was about 147, I think, there appeared to be  
35 little, if any, damage in the upper level toward the rear,  
36 but there were a couple of hoses that were under the roof  
37 support further forward which did exhibit some damage.  
38 A little bit localised in that area there, but the damage  
39 was diminishing further away, further toward the tailgate,  
40 I mean.  
41  
42 Q. Thank you. You've said in your report and again today  
43 that ultimately your conclusion, having made your  
44 observations on 10 May and having reviewed your  
45 photographs, is that the flame front which spread along the  
46 longwall originated at chock 111?  
47 A. Or in that vicinity.



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Q. Are you in a position to say whether the flame front originated within the chock itself or from a position behind the chock in the goaf?

A. I'm not able to say that, no.

Q. Are you in a position, based on your expertise, to venture any opinion about the cause of the fire?

A. No.

MS O'GORMAN: Those are the questions I have for Mr Nystrom, thank you.

**<EXAMINATION BY MR HOLT:**

MR HOLT: Q. Good afternoon, Mr Nystrom. My name is Saul Holt. I am one of the barristers for the Anglo entities who have been given leave to appear. You have your report there, I take it?

A. Yes.

Q. We will put it up on the screen as we go. Could we please have page 13, Mr Operator? NMU.001.001.0001. That's on page 0013. Could we call out, please, the text below the images 25 and 26, so the fire indicia, that part down to the bottom. Just to work through some of the conclusions that you came to, you've concluded here, if we look, at the second dot point:

*The generality of directional indicators appears to point to a fire front developing from the general area centring about Chock 111.*

A. Yes.

Q. You've also noted that there were localised areas of greater and lesser intensity of fire damage across that whole area on the chocks where you observed fire damage that you've taken us to?

A. Yes.

Q. And as you've noted there helpfully towards the bottom, an atmosphere which will be explosive by virtue of methane will exist where the concentration of methane is between 5 per cent and 15 per cent of that atmosphere?

A. In round figures, yes.

1  
2 Q. In round terms. I know there are arguments around  
3 4.6, 4.8, but ballpark for these purposes?  
4 A. I understand; and temperature and so on.  
5  
6 Q. And pressure, I understand. But for these purposes,  
7 5 to 15 is probably okay?  
8 A. Yes.  
9  
10 Q. As you've noted, there is a most energetic ignition  
11 phase at about 9.5 per cent?  
12 A. Yes.  
13  
14 Q. And so there are, aren't there, two reasons why you  
15 might see, as you've indicated, differential areas of  
16 damage within a directional flame front system like you've  
17 described. One is what you've described as turbulence?  
18 A. Sorry?  
19  
20 Q. Turbulence?  
21 A. Yes.  
22  
23 Q. And in effect that is because, in very simple terms,  
24 as the explosive atmosphere is moving, as the gas is moving  
25 after combustion from a particular point, the more things  
26 it hits, it creates eddies and whirlpools, those sorts of  
27 things?  
28 A. Yes.  
29  
30 Q. And as a result, that alters the stoichiometry, that  
31 is just the ratio of gases within that atmosphere at  
32 a local level?  
33 A. Not certain of the physics, but I know it alters it.  
34  
35 Q. And in addition, and as our learned friend Ms O'Gorman  
36 was talking to you about, you might get a localised pocket  
37 of an explosive atmosphere?  
38 A. Yes.  
39  
40 Q. Which means you have a particular quantity of that  
41 explosive atmosphere sort of gathered in a particular area?  
42 A. More concentration, yes.  
43  
44 Q. I was just going to say, and with potentially  
45 different concentrations?  
46 A. Yes.  
47

- 1 Q. And we know here, if we can have a look, please, at  
2 page 14, the diagram at the bottom - might we call that  
3 out, please. As you've noted, there was a cavity  
4 identified as above chocks 109 to 114?  
5 A. Yes.  
6
- 7 Q. About 3 metres?  
8 A. Yes.  
9
- 10 Q. And the existence of a cavity could easily be  
11 responsible for the existence of a body of an explosive mix  
12 of atmosphere?  
13 A. I'm not sufficiently expert to say "yes" or "no", but  
14 I would think so.  
15
- 16 Q. I understand. Thank you very much. Now, if we can  
17 talk about exactly how a combustion at around chock 111  
18 might work to create the fire directional pattern that  
19 you've identified seeing, which I take no issue with.  
20 Effectively it involves, doesn't it, a heating of gas at or  
21 around chock 111 caused by a combustion of gas at that  
22 location?  
23 A. I don't know what the ignition source is.  
24
- 25 Q. No, I'm not suggesting that. Regardless of what the  
26 ignition source is, if the flame front starts there, then  
27 there's a body of gas which has combusted at that point?  
28 A. Yes, and hot, yes, I agree.  
29
- 30 Q. We will come back to ignition sources a bit later, but  
31 for those purposes there's a combustion of gas to create  
32 the beginning of that flame front that you've discussed?  
33 A. Yes.  
34
- 35 Q. The heating of that gas by virtue of the combustion  
36 increases the pressure of that gas?  
37 A. Yes.  
38
- 39 Q. That's called, in case anyone is interested, the ideal  
40 gas law?  
41 A. Yes.  
42
- 43 Q. Which means the gas pressure is proportional to its  
44 temperature?  
45 A. Yes.  
46
- 47 Q. And so when gas combusts in that way, it increases in

1 its size effectively and, by virtue of that energy, pushes  
2 outwards?

3 A. Yes.

4

5 Q. What you've essentially identified here is the  
6 combustion of gas at or about chock 111, which by virtue of  
7 that immediate increase in temperature is pushing out in  
8 the two directions we've seen?

9 A. Yes.

10

11 Q. And as it pushes out, it's hitting those various  
12 obstacles which we see on the longwall, which is likely to  
13 create those kinds of localised areas that you were talking  
14 about?

15 A. Yes.

16

17 Q. But generally speaking you can see those signs of  
18 direction?

19 A. Absolutely.

20

21 Q. Gas in that context is moving from the very high  
22 pressure that exists at the point of combustion towards  
23 lower pressure areas; right?

24 A. Yes.

25

26 Q. That's the physical manifestation of why it's moving.  
27 And here you'd understand that the forces that are created  
28 by that mechanism, that is, by the gas moving from higher  
29 pressure to lower pressure, were sufficient here to do so,  
30 to move even against the ventilation that was running  
31 across the longwall face?

32 A. Well, the flame front itself will travel faster than  
33 the 2 metres per second.

34

35 Q. So effectively it pushes against --

36 A. Yes.

37

38 Q. -- and is stronger than the ventilation?

39 A. Yes. It might be the pressure wave or it might just  
40 be the simple flame front itself, which has its own  
41 pressure wave, as I understand the physics of it.

42

43 Q. We've talked about turbulence. A flame front of this  
44 kind, but of any kind, also moves as well as by virtue of  
45 the pressure that's been created from that increase in  
46 temperature - also moves, generally speaking, in the  
47 direction of a further fuel source? Effectively, the flame

1 seeks a further fuel source to move towards?

2 A. No, the flame doesn't have a mind. It just travels.

3

4 Q. No, as a matter of physics, I mean. I was using  
5 a phrase. But as a matter of physics, it's going to move  
6 towards the existence of a further fuel source in order to  
7 propagate?

8 A. It will propagate if it meets that fuel source, yes.

9

10 Q. You've identified, with respect very carefully, the  
11 fact that your conclusion is that there was a flame front  
12 that, in your opinion, commenced at, if I can put it that  
13 way, or combusted at or about chock 111?

14 A. Yes.

15

16 Q. You were unable to identify within the vicinity of  
17 chock 111 any ignition source that would have lit it up at  
18 that point?

19 A. That's right.

20

21 Q. As you note in your report, for obvious reasons you're  
22 not able to look in the goaf to see if there was an  
23 ignition source in the goaf?

24 A. The best I could do was try to look between the  
25 chocks, which was unsuccessful. From beyond 149, I climbed  
26 over some things, with supervision, and had a look behind,  
27 and all I saw was a lot of collapsed material. So there  
28 was nothing I could see in there that would give me any  
29 assistance at all.

30

31 Q. The way you put it, or the way you agreed with  
32 Ms O'Gorman in terms of the way that it was put, was that  
33 the flame front appeared to enter the longwall at about  
34 chock 111?

35 A. Yes.

36

37 Q. By which you mean just enter that space where the  
38 combustive gases were?

39 A. Well, it came from somebody - somewhere, I should say,  
40 not "somebody". Somewhere.

41

42 Q. I understand. Thank you. Obviously enough, behind  
43 chock 111, indeed all the chocks, is the goaf area?

44 A. Yes.

45

46 Q. You understand that the goaf area runs, effectively,  
47 the entire length of the longwall behind the chocks?

1 A. Yes.

2

3 Q. Separating the goaf from the chocks is some compacted  
4 material that has fallen from the roof as the longwall  
5 advanced; you would have seen that?

6 A. Yes.

7

8 Q. The degree of compaction of that material, obviously  
9 enough, isn't uniform?

10 A. Beg your pardon?

11

12 Q. It wouldn't appear to be uniform; it's sort of falling  
13 randomly?

14 A. I don't know whether it was uniform or not, I'm sorry.

15

16 Q. In any event, behind the chocks and within the goaf -  
17 and tell me, please, if I'm taking you outside your area of  
18 expertise - there would, you would expect, be pathways for  
19 gas to be located and to move through different pathways  
20 through the goaf area?

21 A. I would certainly expect that.

22

23 Q. That could easily be behind the chocks or above the  
24 chocks?

25 A. Yes.

26

27 Q. And just back in the goaf somewhere in that sense?

28 A. Yes.

29

30 Q. In addition, if there was a point of ignition - I'm  
31 sorry. For the flame to have entered the longwall at or  
32 about chock 111, are you in a position to say anything  
33 about where in the goaf or anywhere else that ignition  
34 source would have existed initially?

35 A. No. I would think that it would be possible that  
36 within the goaf itself, the ignition source could be  
37 virtually anywhere.

38

39 Q. Exactly.

40 A. But it appears to have entered predominantly at 111.

41

42 Q. When you say "nominally at 111", that's only because  
43 that's the point at which, for some reason associated with  
44 the geology of that particular area, a flame has come in  
45 and combusted an area of gas?

46 A. I accept that. So if the flame - if an ignition  
47 source and a fire in the vapour phase initiated 10 or

1 20 metres within the goaf, I would think it's possible that  
2 it could have just emerged at 111. I think that's  
3 possible.

4  
5 Q. It's also possible, isn't it, that, for example, an  
6 ignition source somewhere else along the longwall face,  
7 which has then caused a flame to go into the goaf somewhere  
8 else, could have travelled and then exited at 111, and we  
9 simply don't know?

10 A. I don't know, but I think that's possible.

11  
12 MR HOLT: Yes, thank you, Mr Martin.

13  
14 THE CHAIRPERSON: Mr Crawshaw?

15  
16 MR CRAWSHAW: No questions, thanks, Mr Chair.

17  
18 THE CHAIRPERSON: Ms Grant?

19  
20 MS GRANT: No questions, thank you, Mr Martin.

21  
22 THE CHAIRPERSON: Mr Trost?

23  
24 MR TROST: No questions.

25  
26 THE CHAIRPERSON: Mr O'Brien? No. Ms Holliday?

27  
28 **<EXAMINATION BY MS HOLLIDAY:**

29  
30 MS HOLLIDAY: Q. Just in relation to the questions that  
31 Mr Holt was asking, did you see the indicia of any other  
32 flame front?

33 A. No.

34  
35 MS HOLLIDAY: I have no more questions, thank you.

36  
37 THE CHAIRPERSON: Ms O'Gorman?

38  
39 MS O'GORMAN: No further questions, thank you. Might  
40 Mr Nystrom be excused?

41  
42 THE CHAIRPERSON: Mr Clough?

43  
44 MR CLOUGH: No questions from me.

45  
46 THE CHAIRPERSON: Mr Nystrom, thank you for your  
47 attendance. You are excused.

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<THE WITNESS WITHDREW

MS O'GORMAN: We don't have any further witnesses for today, Mr Martin.

THE CHAIRPERSON: Okay.

MS O'GORMAN: Or tomorrow.

THE CHAIRPERSON: Or tomorrow, all right. Mr Holt and Ms Holliday, is there any further argument on the matter raised this morning?

MR HOLT: I don't think so. We had imagined that Mr Nystrom was something of a test run. There might be some advantage, I think, in Ms Holliday and I speaking to see whether there are any issues with that, and Ms Holliday wishes to have a look at the topics that we have identified for next week. Perhaps that might be a process we could go through and then liaise with those assisting the Board as to whether there seem to be any issues that require your attention?

THE CHAIRPERSON: Yes, all right. Obviously if there are no witnesses tomorrow, if you could sort out your differences, it would be great. If you can't, if you could alert me by submissions, perhaps, I will try to attend to it before Monday so that we can have an uninterrupted run of witnesses next week.

MR HOLT: Of course. Thank you.

THE CHAIRPERSON: Is that all right?

MS HOLLIDAY: Yes. Thank you.

THE CHAIRPERSON: We will adjourn until 10am on Monday.

**AT 12.45PM THE BOARD OF INQUIRY WAS ADJOURNED  
TO MONDAY, 15 MARCH 2020 AT 10AM**



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