Royal Commission on the Pike River Coal Mine Tragedy

Te Komihana a te Karauna mōte Parekura Ana Waro o te Awa o Pike

UNDER **THE COMMISSIONS OF INQUIRY ACT 1908**

IN THE MATTER OF **THE ROYAL COMMISSION ON THE PIKE RIVER COAL MINE TRAGEDY**

Before: The Honourable Justice G K Panckhurst
Judge of the High Court of New Zealand

Commissioner D R Henry

Commissioner S L Bell
Commissioner for Mine Safety and Health, Queensland

Appearances: K Beaton, S Mount and J Wilding as Counsel Assisting

J Haigh QC and B Boyd for Douglas White

J Rapley for Neville Rockhouse

S Moore SC, K Anderson and K Lummis for the New Zealand Police

N Davidson QC, R Raymond and J Mills for the Families of the Deceased

S Shortall, A Rawlings, A Glenie, D MacKenzie, A Gordon for certain managers, directors and officers of Pike River Coal Limited (in receivership)

C Stevens and A Holloway for Solid Energy New Zealand

R Buchanan for Fire Service Commission and West Coast Rural Fire Authority

K McDonald QC, C Mander, and A Boadita-Cormican for the Department of Labour, Department of Conservation, Ministry of Economic Development and Ministry for the Environment

G Nicholson and S Steed for McConnell Dowell Constructors

G Gallaway, J Forsey and E Whiteside for NZ Mines Rescue Service

B Latimour for Coal Services Pty Ltd

N Hampton QC and R Anderson for Amalgamated Engineering, Printing and Manufacturing Union Inc

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TRANSCRIPT OF PHASE TWO HEARING
HELD ON 9 SEPTEMBER 2011 AT GREYMOUTH

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COMMISSION RESUMES ON FRIDAY 9 SEPTEMBER 2011 AT 9.01 AM

THE COMMISSION:

There is a suppression issue to be dealt with and perhaps it's convenient we deal with it now. An order has been sought suppressing filming of the CAL scan or any other images for that matter which depict what is believed to be a body shape and so I make that order now so that it is clear that those images may not be filmed, or photographed, of course.

ORDER MADE SUPPRESSING FILMING OR PHOTOGRAPHING OF CAL SCAN IMAGES

Ms ANDERSON CALLS

GLENVILLE MCKENZIE STILES (SWORN)

Q. Mr Stiles, your full name is Glenville McKenzie Stiles?

A. Yes, it is.

Q. And you have a written brief of evidence with you?

A. Yes, I do.

Q. You are currently contracted through your company G M Stiles Limited to the Mines Rescue Service New Zealand as a trainer?

A. Yes, that's correct.

Q. And you've been doing that since about November 2009?

A. Correct.

Q. Can you explain, clarify for us the qualifications and experience you have that led you to be able to offer the training that you offer?

A. Yes, yes, certainly. My medical background was with the Royal Australian Air Force. My medical background started with the Royal Australian Air Force, six years as a medic and then a further six years after specialist training in pathology with a rapid deployment field hospital, so that's 12 years in uniform. Also St John's, based in Darwin, Northern Territory. After that, in New Zealand I did observer work for the fisheries, South Atlantic, Indian Ocean, Antarctic and all around New Zealand on joint venture vessels, which often involved

medical emergencies, and I became a first aid instructor, I was a warranted Sarin's instructor, Mountain Safety Council.

0904

Q. Is that the New Zealand Mountain Safety Council?

A. That is correct. And also through a contractor, police first aid training. I did my level 6 New Zealand Resuscitation Council exams and that's roughly equivalent to a paramedic, so that I could do the tutoring. And then prior to coming to work for Mines Rescue as a contractor I was the occupational health advisor at the Stockton Mine site.

Q. And at that time you were an employee of Solid Energy?

A. Yes, that is correct.

Q. So the training that you're providing to Mines Rescue Service, what sort of training is that?

A. It is NZQA-based unit standard first aid, but through Mines Rescue I'm able to deliver at site specific so that any equipment, that's the medical equipment on those sites I can incorporate into the training and that is not necessarily NZQA, it's over and above that.

Q. And how does that training in relation to first aid link to the audits that you've been conducting for Mines Rescue Service?

A. Yes, sites can have fairly advanced medical equipment on the sites and so my training incorporates that equipment, as I've stated, so therefore I wanted to maintain that equipment, or ensure that at the sites it was in good order, and that is the link between the audit process and the training. So it was just limited to the medical equipment that these folks would train with.

Q. And just to clarify, when you're carrying out the first aid training at Pike River Coal Mine you did not train any of the staff or contractors there on the use of rebreathers?

A. No, no, my training was limited purely to the first aid and medical equipment. So there was nothing that related to smoke lines, self-rescuers or any of that kind of specialist equipment, no.

0907

Q. Before I get you to start reading at paragraph 4 of your brief, could you just outline, in general terms, the medical equipment at Pike River Mine?

A. Yes certainly. We had fairly comprehensive trauma kits on the site. Smaller minor injury kits, basic oxygen medical oxygen kits.

Q. Can I just pause you there.

A. Yes

Q. So in a trauma kit, what's in a trauma kit?

A. The trauma kit had a lot more, this is distinct from, I guess, what we'd call a minor injury kit, so it'd have a lot of, like, heavy combine type dressings, what we might call shell dressings or more related to serious trauma rather than minor injury.

Q. And so that was packaged separately from the more minor injury kit?

A. Correct, they were packaged separately, yes.

Q. Continue.

A. We also had two stretcher pods and within those pods we had a ferno or Stokes litter backboard.

Q. Can you explain what that litter is?

A. Yes, in industry and also in like mountain safety, these are the big orange plastic high-sided stretchers that we often use for evacuation. Backboards, as I have said, scoop stretchers, we also had traction and vacuum splints, we had KED short backboard, Kendrick Extraction Device, hard collars and also within those pods there were, I think, there was a pillow, couple of blankets, a rope, tarpaulin. The Pike Mine site also had two AEDs, automatic external defibrillators, and we had two burns kits I built up. One for the first aid room for above ground use and one underground at the upper fresh air base, Slimline.

Q. And were there also oxygen kits?

A. Yes, yes, as referred to before.

Q. And what's in the oxygen kit?

A. Yes, there were just medical oxygen, they are not rescue equipment in any way, just straight forward medical, and within that kit we had low

and high concentration delivery masks and also bag masking for advanced resuscitation, OP airways, manual suction device.

Q. Thank you. Can I ask you to begin reading your brief at paragraph 4?

A. Certainly.

WITNESS READS BRIEF OF EVIDENCE FROM PARAGRAPH 4

0910

A. Certainly. "Paragraph 4. I conducted my last audit of the Pike River Mine on the 12th of November 2010. This involved checking medical equipment, oxygen cylinders, trauma kits, stretcher pods and minor injury kits throughout the mine. The audit process involves checking of medical equipment, it's operational and is placed in the right areas."

Q. Can I just get you to pause there? Could we have up on screen DOL7770030099? Do you recognise that document as the written audit report that you prepared?

WITNESS REFERRED TO AUDIT REPORT - DOL7770030099

A. Yes, yes it is.

Q. Is it correct that when you began conducting audits at Pike River Coal Mine that you designed the reporting form?

A. Yes, yes this was my design.

Q. And the form that we see at the moment, looking down the left-hand side, the first heading is, "First Aid Room," then in yellow we've got, "CPP," and so on down the left-hand side?

A. Yes.

Q. And those are different physical locations at the mine site both above ground and below?

A. Yes that's correct.

Q. And is IT correct that in your earlier reports, until October, the form that you were using was in fact constructed to report by equipment based then cross-referenced to location, and this is a revised form that reports by location listing the equipment?

A. That is correct.

Q. Looking at that form, can you just enlarge the first area with the first aid room, the part in pink? This first aid room's above ground?

A. Yes that's right.

Q. And you're checking in there that there's the oxygen kit, spare kit, trauma kit. Would you characterise that as all standard first aid room equipment?

A. Yes, these are the ones that I described earlier and we had a complete set there, plus a spare at the first aid room, just opposite the control room there.

Q. And a notation there in red on the line with, "Trauma kit spare," that the notation, "That's now with CM underground." What does that signify?

A. Right, what I'd done is with I think we talked, Neville and I talked about this in that the – instead of having trauma kits in preset locations that they should really follow the crews, because the crews were often moving with their machines and we didn't want the first aid, the trauma packs left behind so that the trauma kits then were dedicated to the machines or obviously the crews and hence I was one short and there was a spare in the first aid room, so we utilised that spare to ensure that the crew underground with one of the machines had the appropriate equipment.

Q. And just in the part there, close to the heading, "Stores and Equipment," we should be able to – there's a reference Penthrox and Entonox?

A. Yes Entonox as a pain relief drug was being phased out and gradually replaced by Penthrox as is fairly common for many West Coast mines, Penthrox being the preference.

Q. If we can just move down and highlight the green section FAB upper. So wouldn't that reference to FAB upper that we see on the screen there, what is that referring to?

A. Yes, the upper fresh air base is what we've been – the Slimline fresh air base.

Q. And so listing down that we've got an oxygen kit that you've checked okay on the 12th?

A. Yes, correct.

Q. A trauma kit with Penthrox at that site?

A. Yes.

Q. The trauma kit that's referred to is the old McDowell large yellow that's notated in red that it's a bit damp?

A. Yes this one that had been left at that location by the Macdow crews and this was not the same one that Pike River Coal had. It was a different kit, so I've annotated that. And with the Pike River Coal ones we had orange outers made to keep them nice and dry, and protect them from the environment. The old Macdow kit did not have that and I had noted that the contents were a bit damp.

0915

Q. So then we've got a stretcher pod listed, and emergency tool cabinet. So the emergency tool cabinet, is that something that's part of medical equipment that you're training people in the use of?

A. No. If we look at the original audits that I did starting I think in May, it just was purely medical in those audits, but over the months, when I was underground if I noted other things and this was again just chatting with Neville, I'd, as I was walking past I'd just, you know, if they were there I'd note that they were there or if they were issues I would note them, but my primary tasking remained the medical equipment.

Q. Thank you. So the items that we can see there listed at "FAB upper", that we could characterise as non-medical, are the emergency tool cabinet?

A. Correct.

Q. The foam kit?

A. Correct.

Q. The self-rescue cache times three?

A. Yes, correct.

Q. The fire extinguisher times two?

A. That's right.

Q. And signage, what's the link between the signage and the first aid equipment that you're –

A. Yes, I guess in the signage there is a bit of a carryover in that originally there wasn't a great deal of signage just for the first aid equipment either, but we got that signage put on the first aid equipment, that's the trauma packs, the oxygen kits and the stretcher pod, so that what was on the inside of that pack was quite obvious by looking at the outside.

Q. So somebody coming up there in a hurry could see at a glance –

A. Absolutely.

Q. – what was in each package?

A. That was the aim.

Q. Can I just ask you about the reference there to self-rescue cache times three, do you have any comment to make about that reference to "times three"?

A. Yes, I am unsure how that came into the audit and in fact there was two, and I'm not quite sure how that carryover came –

Q. We'll come on it when we go into your brief to clarify how you, the basis on which you were confident there were two, but at the moment you're suggesting that that numbers been incorrectly recorded in the report?

A. Yes, that is incorrectly recorded. There are in fact, there were in fact two, and I'm absolutely confident of that.

Q. Looking at the line in pink, "FAB lower"?

A. Yes.

Q. Where would you locate that in the mine?

A. Yeah, that's the older fresh air base, the one at the stub 3.

Q. And so you're recording in there that there is a trauma kit and Penthrox that you saw on the 12th?

A. Yes, I'm referring to that.

Q. Can we just move down and highlight the next three areas, ABM, RH and – so the ABM, what's that a reference to?

A. Yeah, the ABM is one of the mining machine as is the RH and CM, and this relates to what I was stating previously where the trauma kits now followed the crews rather than having a set location in the mine. I think, this is going back a wee while now, but I think that the machines were

moving locations quite rapidly. It made sense that the kits followed them rather, and then the set locations that they were at before.

Q. So in this form as you've designed it, you're referencing the equipment, the medical equipment and other equipment by the location of the crews with their machines?

A. Yes, yeah.

Q. And the line in pink, "CX 1 crib"?

A. Yes, there was – you see with the machines all they've got is the trauma kit, but further back down at crosscut 1, the main crib area, you can see that they've also got an oxygen kit there and one of the larger stretcher pods that we were, I was referring to before.

Q. Ms Basher, are we able to have exhibit 14 up on the screen for a moment so we can just get Mr Stiles to identify where that location is on the map? And can we highlight the area that's pit bottom south/pit bottom north area of the map?

0920

Q. Have you got the pointer there, Mr Stiles?

A. Yes.

Q. Are we in the right place?

A. Yes, so this will be the fresh air base that we were referring to before.

Q. And just for the record, that's FABs marked on the map there?

A. Yes, yeah, so that's the Slimline one.

Q. Just to the left of stub 5?

A. In here.

Q. Yes.

A. Further up, if we can advance the map up into this direction, if that's possible please. So I think the ABM was up in this area, and if we could advance it just a little bit further up until west mains here please. This is going back a wee while now but my best recall was that the CM was round about here.

Q. So that's the area marked on the map, "One west mains?"

A. And the road here may be way back here somewhere. But that's a best recall, it's a while back now. Now the crosscut 1, this is where the

stretcher pod I believe was round here and the oxygen kit. So each machine –

Q. Can I just get you to pause there?

A. Yeah.

Q. So we can get on the record exactly the location on that map. So that's just to the right, the cross-cut to the right just of panel one B heading?

A. So each crew, wherever they were working in these areas had a trauma kit but the more advanced equipment was back here, that was the full stretcher pod and the oxygen kit, and that would cover this area here. And the other advanced equipment, that's the second full stretcher pod, oxygen kit, et cetera, was further down here that would cover this area of the mine.

Q. Can I invite you to continue with your brief at paragraph 5.

A. Yeah certainly. "I am very familiar with the equipment housed in the area known as the Slimline fresh air base. On the 23rd of April 2011 I was asked by Detective Superintendent Tom Fitzgerald to describe this area and the equipment in it and I supplied him with two sketched drawings, refer SOE.002.00038 and SOE.002.00039, and two handwritten pages relating to my underground audit on the 12th of November, refer SOE.002.00041."

Q. Can I just get you to pause there Mr Stiles. Ms Basher could we have up SOE.002.00038. Could you just talk us through that diagram with the pointer Mr Stiles?

WITNESS REFERRED TO DIAGRAM - SOE.002.00038

A. Yeah.

Q. So you've got annotation to the right of the page, "Main drift," and a direction arrow heading up to Spaghetti Junction?

A. Yes, correct. So this is the, yes quite right, main drift heading up to Spaghetti Junction up here and this the Slimline stub or fresh air base, up the fresh air base. The medical equipment that I'm referring to previously was hung on the rib at about eye level, so it was highly recognisable with the outer labelling on it. We have the Mcdow kit at the very outside here, that's the one I referred to as getting a bit damp,

without the outer vinyl covering. But these, the trauma kit, our oxygen kit, the larger stretcher pod here, these are the medical pieces of equipment that I was checking. But what I've also put in, because as I say, I knew this area pretty well, was the two self-rescuer boxes here, and the phone and branch box over here. The notice board at the back here, I've also noted on there the DAC, on the opposite side, that's the lower side, the left-hand side looking in towards the stub, the phones. Brattice at the entrance, both sides, and I've also mentioned the methane muffler up here.

0925

Q. And the second diagram that you drew, SOE.002.00039.

WITNESS REFERRED TO DIAGRAM - SOE.002.00039

A. Yes, this diagram is looking at that rib and the location of the kits. This being the floor, this being the rib. Again, looking the stone drive here the Spaghetti Junction in this direction and the entrance to the FAB, this way. Notice that I've also said that this is a schematic and of course it wasn't quite as neat and tidy as I've drawn here but the locations are accurate.

Q. Is that the Slimline shaft is not as neat and tidy as perhaps you've drawn there, is that your suggestion?

A. Yes. So when you're looking at a wall that looks like that it was mesh that was, you know, not all that even and of course the floor was not as even either. Again, starting back here, the notice board, the stretcher pod containing the ferno, the backboard, scoop et cetera, oxygen kit, trauma kit, the old Macdow kit referred to before as getting the contents a bit damp, the burns kit that I built up, that was the only burns kit underground, there was one also in the first aid room above ground, the DAC, methane muffler, brattice. Three boxes, note I've put two self-rescuer caches here and the self-rescuer cache I've put the multiple catches here and noticed that when I did the diagram for Mr Fitzgerald I indicated these had little ribs on the top on both of these. This is the phone and the phone branch box, the wooden construction as against these being heavy plastic construction.

Q. And you drew these sketches from memory prior to meeting with Mr Fitzgerald is that correct?

A. Yes, that's correct. Both of these diagrams were drawn by memory, yep.

Q. Can I invite you to continue reading at paragraph 7 of the brief?

A. Certainly. Paragraph 7, "In the description I referred to a number of items on the wall of the fresh air base stub, namely a stretcher pod, oxygen kit, trauma kit and a notice board. On the 15th of October 2010, I was in that area training some of the trainee miners and I shifted all this equipment from the lower wet side to the high dry side. Not marked in my diagram but noted in my handwritten audit notes is that on the 12th of November there were 12 fire extinguishers located on the floor on the drift side of the boxes. These were each in separate box, 12 boxes. As illustrated on my diagram, there was brattice on each side of the entrance to the stub. I cannot recall the exact detail of how it was deployed, although I recall the brattice was rolled up into the roof of the stub entrance. To the best of my recollection, the brattice could be pulled so that it would roll down vertically over the entrance. On 12 November, I observed brattice lying about the floor or the Slimline fresh air base."

Q. Mr Stiles, there should be a glass of water there, is there some water that you need?

A. It's okay. "Brattice is a heavy plastic type material. It was not unusual to see brattice on the floor of the Slimline fresh air base as I could often see brattice lying on the floor of stubs during my mine audits.

0930

A. "On 12 November 2010 I recalled that there was brattice piled up in front of the self-rescuer boxes as I described them in the following paragraphs. The boxes in the Slimline fresh air base containing self-rescuers. As set out in my sketch of the Slimline fresh air base there were three boxes stored in that area. Two of these boxes were the same. They were of heavy plastic construction, approximately a 1000 by 500 by 450 millimetres in size and they both contained self-rescuers.

I believe the boxes are the approximate size, I have given due to my memory when I saw them and the fact I shifted them with the trainees to the high dry side of the stub on the 15th of October 2010. It was a definite two man lift for each box to move them. I estimate the total weight of each box and its contents at approximately 80 to 100 kilograms." Can I just explain that previously that equipment was held or stored on the lower side of that fresh air base and there's a lot of water coming down that Slimline shaft and it exits that Slimline on the lower side so that's why the trainees and I shifted it to the high side of the that stub, so it was in a dryer area, just to explain that. Paragraph 11, "I also had signs made for the boxes to a design I supplied to the sign-maker, refer SOE.016.00002. The signs I ordered, received and placed in the Slimline fresh air base measured a 1000 by 400 millimetres which matches the dimensions of the ribs on the lid. I took the rib design into account when I decided on the dimensions of the signs as I was conscious that someone might stand on the boxes and I did not want the signs to extend past the ribs as this could lead to the signs being broken. For this reason I wanted to ensure the sign would fit precisely on the ribs with no overhang. I was also conscious that the sign would not have a solid backing because it would sit on top of the ribs and therefore I ordered thicker material to be used, three millimetre thick from memory."

Q. Can I just get you to pause there Mr Stiles. You have with you today a replica of that sign that illustrates the dimensions, but also the reflective quality?

A. Yes.

Q. Can you show that to the Commissioners please?

A. Yes. So this is an exact – from the – so this is the sign that I got made for the self-rescuer caches and the dimensions are 400 by one metre, means that it sits exactly within the dimensions of the rib on those plastic boxes. I know it's an exact copy because I asked the sign manufacturer, he still had it on his file, and he just made another copy of the ones I had ordered. So that's the reflective and they do stand out. It

just looks yellow, but when it's dark and you put your cap lamp on it is really is loud.

Q. Just returning to paragraph 12 of your brief.

A. Paragraph 12. "In my audits I had referred to the need for these two signs to be attached to the top of the two boxes containing the self-rescuers. The two signs were to be riveted to the lids of the self-rescuer boxes, but this had not occurred.

0935

A. "For this reason the signs were near the boxes but unattached to the boxes when I saw them on the 12th of November. They were propped up against the rib of the Slimline behind the self-rescuer boxes. And this was recorded in the audit report submitted. I also had two further self-rescuer signs made for Pike River Coal exactly the same size, colour and design as the signs for the self-rescuer boxes, except these further two signs were double-sided so that when the sign was hung from the roof of the stub or the drift it could be seen from two directions. The rationale for this purchase, being that the two self-rescuer cache boxes had been earlier sited at different locations. One of these double-sided signs had been hung on the roof of the stub in the Slimline fresh air base, inside the entrance to the stub but near where the drift intersected with the stub entrance, i.e. it could be seen by those in the drift. I saw this sign in that position on the 12th of November 2010. I believe that the now spare double-sided sign was stored behind the cache boxes against the rib with the other lid signs. My recollection is that each box contained 40 self-rescuers, which each weighed about two kilograms. As my role was to audit the medical equipment, it was not part of role to specifically look at the self-rescuers, so I have not made any notes about the size or the dimension, and I did not count them. The self-rescuers used by the workers in the Pike mine were contained in a metal container worn on a belt or harness, as per the photo of the self-rescuer container, which I am told was referred to at the inquest on the 27th of January 2011, refer IMG.11297. I am familiar with this size and type of self-rescuer container as I took one of these

into the Pike River Coal Mine with me when I carried out my audits in the mine. However, my recollection is that the self-rescuers in the plastic box at the fresh air base were of longer duration and consequently the container of each self-rescuer was a different shape and size to the one I carried on my belt in the Pike River Mine. I cannot recall the precise size or shape. The self-rescuers were placed in two layers of 20 in each box."

Q. Can I just get you to pause there. What's the basis of your recollection there of two layers of 20?

A. Yes, I guess that's an assumption. I'm relating it back to para 14, in my recollection that each box contained 40 rescuers et cetera. I was led to believe, I thought that there were 80 in the fresh air base, 80 self-rescuers. So I said, well if there's two boxes there were 40 in each, and I could see that they were in two layers so it was just a mass.

Q. Could you please continue reading.

A. "I do not recall how the layers were separated but I believed that the self-rescuers were stored in an upright position."

Q. And can I just invite you to, I've stopped you at the end of two layers and 20 in each box, there's just another sentence there to read out.

A. Certainly. I do not recall any large unoccupied space in the boxes above the top of the self-rescuers.

Q. And then just starting at paragraph 18.

A. This refers to the box in the Slimline fresh air base containing fire equipment. "My recollection is that the third box, the fire equipment box, was of wooden construction and slightly smaller than the plastic boxes containing the self-rescuers. It contained three 20 litre containers of fire-fighting foam, each approximately 300 x 300 x 300 millimetres in size and a branch adaptor. I cannot remember the exact makeup of the hinge system of this box, but to the best of my recollection the catch was a single clasp and staple type. I've been shown a photograph of a fire equipment box, refer SOE.016.00001. The photo matches my recollection of the wooden box and how the fire equipment was stored in the wooden box at the Slimline."

0940

Q. Can you just pause there Mr Stiles. Ms Basher, are we able to have that image up on the screen? So that image there Mr Stiles, it's the three separate containers – is it possible to enhance that just a little bit so that we can see the whole of the image? And so what we can see at the front there, is that part of what you've referred to as the branch adaptor?

A. Yes, correct.

Q. What is a branch adaptor?

A. I'm not really familiar with this equipment, but the foam was like a volume expander and it sucked up from the containers by venturi effect, I believe, and is common in use, piece of equipment for fire fighting.

Q. Thank you, if you could continue reading at paragraph 20?

A. Yes. "When I saw the three boxes in the Slimline fresh air base on the 12th of November 2010, I recall that the lids were down. CAL scan images of the boxes in the Slimline fresh air base. When I met with Detective Superintendent Tom Fitzgerald on the 23rd of April 2010, and after I had provided him with my sketches of the area, I was shown a printout of two images of the stub area of the fresh air base. I was advised that these images were from a CAL scan taken after the explosion in the mine on the 19th of November 2010. In viewing the images I was able to see two boxes. Refer SOE01700001, and SOE01700002. One appeared to be open with the lid leaning towards the rib. I was concerned when viewing these two images that I was unable to see the third box I had described. However, as the images were cropped, I thought it was possible the third box was out of frame. I was asked by Detective Superintendent Fitzgerald to attend a meeting at Solid Energy at Westport on the 26th of April 2011 to view the more detailed image of the CAL scan on computer. I attended that meeting with Detective Superintendent Fitzgerald and Mr John Taylor from Solid Energy who operated the CAL scan for viewing. I understood that the purpose of my viewing the CAL scan was to see if I could say what was the same or had changed in this area since my audit on the

12th of November 2010, particularly in relation to the boxes. Viewing it in this format where the images can be rotated allowed me to quickly see a number of pieces of equipment that I identified what I believe to be the stretcher pod and either the oxygen or trauma kit on the rib. As Mr Taylor continued to rotate the scan, I was able to make out the third box located behind the open box. A close look at the images from a couple of angles revealed to me that the third box appeared to be similar in shape and construction to the closed box. We discussed dimensions and agreed that the open box appeared to be smaller than the closed box directly behind it. I believe that the placement of these three boxes as I viewed them in the CAL scan is broadly consistent with the sketch I supplied to the police on the 23rd of April 2011 and my memory of this area from my audit on the 12th of November 2010. This leads me to conclude that the open box is likely to be the wooden fire equipment box and the other two closed boxes are likely to be the s elf-rescuer boxes. Further comments. On the 22nd of May 2011 I provided a written description of the Slimline fresh air base including a description of the three boxes. Refer SOE00200040.

0945

A. "On the 28th of July 2011, I was shown the formal written statement of Janina Savage which included photographs of a blue plastic box and a wooden box. Refer SOE.0013.00001. When I viewed her statement my immediate reaction was that I had no doubt that the picture of the plastic boxes are the same type and size as those I saw during my Pike audits and the wooden box was the same as the wooden fire equipment box at the Slimline fresh air base on the 12th of November 2010. I see that Janina Savage has measured the wooden box as being 900 millimetres in length, 500 millimetres wide and 450 millimetres in height. This is shorter in length and slightly less wide than the blue plastic box, but the same height as the plastic box. Those measurements are consistent with my recollection of the size difference between the wooden and plastic boxes. I attended a meeting at Police National Headquarters Wellington on the 4th of August 2011 to view a video of the Slimline

which I was told was taken on the 23rd of November 2010 and also to view again the CAL scan I had seen on the 26th of April 2010 on Mr Taylor's computer and to look at two boxes, a blue plastic box and a wooden box. I immediately recognised the blue plastic box as being the same as those used at Pike River to store self-rescuers and the wooden box as the fire fighting box which was used to store the plastic containers of foam and a branch adaptor."

Q. Can I just get you to pause there Mr Stiles. And the two boxes we've got here, the blue box and the wooden box, these are the boxes you viewed in Wellington that are referred to in paragraph 33 of your brief?

A. Yes, correct and on my October and November audits, this fire fighting equipment box is actually on my audit at the portal and it's noted there as well. So that's the link.

Q. Thank you, continue reading at paragraph 34.

A. "I viewed the video and CAL scan images of the Slimline fresh air base in the presence of Detective Superintendent Fitzgerald and Detective Sergeant Haughey on the 4th of August 2011. Video images of the Slimline fresh air base on the 4th of August viewing. In relation to the video I was able to orientate the view of the camera from my knowledge of the layout of the Slimline and taking into account a rope and also water movement visible in the video. The rope and falling water provided vertical orientation. I saw separate views of the word, "Self-rescue," and "First Aid." I am of the opinion that what I saw in this part of the video was one of the signs I had made for the self-rescuer boxes. The sign appears to me to be lying on its end. To me it looks to be in a damaged condition and to be located near the Slimline shaft end of the stub, ie towards the back of the stub some 10 metres from where I last saw it on the 12th of November near the boxes. I also saw a distinctive object of a rectangular/oblong shape. I was unable to identify the object as least in part due to the camera angle. I cannot recall anything in the Slimline on the 12th of November 2010 that I can match to that image. CAL scan images of the Slimline fresh air base 4th August viewing. I then viewed the CAL scan of the Slimline on a

computer with software providing a three-dimensional view of the Slimline. The image could be expanded or contracted and rotating allowing me to view the Slimline fresh air base from different angles. This was the same CAL scan that I had viewed on the 26th of April. I was able to clearly discern the shape of the Slimline and the intersection with the drift. The images are unlike a photograph, but the relative dimension, shape and location of the objects in view made it possible for me to identify objects based on what I had previously seen in the fresh air base.

0950

A. "As with the previous time I had viewed the CAL scan, I could see three boxes, one of which is open. I could also see various objects on the rib of the Slimline, which I had drawn in a sketch plan for Detective Superintendent Fitzgerald. I was able to see the stretcher pod, the first aid and trauma pads that hung on the rib of the Slimline. I noted a rectangular shape hanging on an angle from the roof of the Slimline near the drift. This appears to me to be the double-sided sign that I had made and had seen in position on the 12th of November, but in the CAL scan it appears to have changed position previously hanging parallel to the roof and now appearing to have dropped on one side. I also noted a coil shape at the junction of the Slimline in the drift that appears to me to be the methane muffler. I also noted in the same area, lines running downwards on an angle from the roof that would've been where the brattice door was located. Towards the rear of the Slimline, that is away from the drift, I could see objects on the rib, which I cannot reconcile with on my recollection of that area. I could also see a shape in front of the boxes. That shape appears to me to be in a similar position to the brattice that I had seen on the floor in front of the boxes when I completed my audit on the 12th of November 2010. I have been asked to comment on the condition of the floor in the Slimline fresh air base including how level it was. The Slimline floor sloped down from the higher right to the lower left, looking from the entrance. The result was that the continuous flow of water from the shaft exited the stub on

the left-lower side, making it very wet. The reason I had changed the position of the boxes. The floor was uneven and covered in small rocks."

Q. Thank you Mr Stiles. As you are aware, the normal order of questions coming directly to you at the conclusion of your evidence has been altered and that counsel will have an opportunity later to put questions to you, but for the moment you are to be excused as I understand it.

THE COMMISSION ADDRESSES MR STEVENS – ORDER OF WITNESSES

THE COMMISSION ADDRESSES WITNESS

WITNESS STOOD DOWN

WITNESS INTERPOSED

MR STEVENS CALLS

JOHN BARRY TAYLOR (SWORN)

Q. Mr Taylor, do you have your copy of your statement of evidence of the 25th of August 2011?

WITNESS REFERRED TO BRIEF OF EVIDENCE DATED 25 AUGUST 2011

Q. Do you have a copy of it?

A. Yes I do.

Q. Can you state please your full name?

A. My name is John Barry Taylor.

Q. Thank you. Could you confirm that your statement of evidence to the best of your knowledge is true and correct save that you've provided a memory stick rather than a CD-ROM of the images that we'll see?

A. That is correct.

Q. Do you have the qualifications and experience stated in your brief?

A. I do.

0955

Q. And you've taken CAL scans and some videos at Pike, both before and after the explosion on 19th of November last year?

A. That is correct.

Q. Could I take you please to – if we take as read with Your Honour's leave, could I take you please to the section heading, "CALS equipment," and could you just read those paragraphs, ignoring the photograph of the CALS probe.

A. Starting at paragraph 9. "CALS involves a motorised probe unit, which is primarily designed as an investigative tool to enter and survey mine workings or cavities used in the underground mining industry for remote void monitoring and measurement. The CALS image gathers three-dimensional survey data from areas of a mine that are generally dangerous or inaccessible. Its usual purpose is to give those working in the mine the ability to safety evaluate risks associated with mining operations. The probe unit itself employs two internal motors. One in the rotating axis of the probe and the other on the hinged head of the probe itself. In the head there is a miniaturised laser unit that fires out a

laser beam which travels through the void until it hits the solid object. The laser rebounds off the solid object back to the receiving port and allows a three-dimensional shape of the void to be measured. The hinged joint allows the scanner to complete near full 360 degree scans, in both the horizontal and vertical planes, essentially creating a three-dimensional underground map of the entire underground void. The amount of detail collected by CALS image is determined by the scan increment. As mentioned above, if the probe unit is hanging horizontally it will scan in both the horizontal plane and the vertical plane by its hinged head. When deployed in the vertical scanning mode the scanner, which is hanging off the end of the probe hinges itself up to scan the roof then swings down and comes right back to the vertical, effectively giving a 360 degree scan, less the slight angle of the hinge. After one complete scan the scanner moves round by a definable increment and repeats the process again. For example, this can be done by increments of .5 or one degree. A scan of one degree takes approximately one hour, the smaller the increment the longer the scan takes and the higher the quality. A video camera is also fitted on the probe head. The camera will pick up any obstructions or blockages in the hole and essentially allows the operator to check the condition of the hole before the deployment of the probe unit. CALS probe units are deployed using specialised load-bearing cables. The cables are available in various lengths, depending on the depth of the hole, i.e. 50 or 100 metre. The cable allows data from the probe unit to be transmitted back to the surface control unit. While the scan is in process the data is displayed and logged in real time on a computer and stored directly onto the computer. The raw data can be converted into a number of formats for direct export to third parties."

Q. Yes, if I could just stop you at the end of that paragraph 15. Mr Taylor, the Pike scans at two degree increments, can you say approximately how many individual scan points they would comprise?

A. Two degree interval we'll be looking at probably four to 500,000 points.

Q. And the scans at .3 of a degree, how many individual scan points would they involve?

A. They'll probably be going up to 700 or 800,000.

Q. And what would be the highest number of points in any of the scans you've undertaken at Pike?

A. Recently we've rescanned hole 47 with a .1 degree scan, sorry .2 degree scan interval, and that involved 2.25 million points.

Q. Yes, thank you. If I could take you please to your brief as read through to page 10, and could you commence reading please at paragraph 31 under the topic, "Saturday 20 November?"

1000

A. "On Saturday morning I was working at Solid Energy's office in Westport and I received a group email to all staff from Terry Liddy, the general manager of the Alliance asking whether, as Stockton is an opencast mine, we were able to offer any assistance to Pike River. I replied to Terry's email and said I had made a number of trips to Pike River previously and provided CALS expertise. Terry came straight back to me and said he had not realised our previous involvement at Pike River and gave his approval for us to go to Stockton, mobilise our equipment and remain on standby. Terry made it clear we needed to co-ordinate our efforts through Stephen Bell, the development manager at SENZ, who is at that stage, acting in his capacity as trustee Mines Rescue. I then contacted Trevor Shepherd, Gary Bainbridge and Allen Morris. On Saturday afternoon, Trevor, Gary, Allen and I arrived on site at Stockton. We packed up three vehicles, one with gas equipment, one with camera equipment and a third with CALS equipment. The trucks were driven down to Westport and put on standby. On Saturday evening a request came through from Pike River to mobilise our gas equipment and to move it to Pike River as soon as possible. Allen Morris got a phone call from Gary Stiles saying Pike River Company wanted his portable gas analyser. Allen then proceeded down to Pike River on Saturday night with the gas equipment truck. I didn't hear anything further on Saturday night. On Sunday I was due to

take a technical subcontractor to Christchurch as we were meant to be attending a workshop at Solid Energy's office in Christchurch on Monday morning. We drove across to Christchurch on Sunday. About 5.30 I got a call from my wife to say that Steve Bell is trying to contact me urgently. I called Steve at 6.00 pm. He asked me to get the crew together and head to Pike River first thing on Monday morning. One of the problems with the CALS equipment on board our truck was that we only had a 50 metre cable. That was insufficient for Pike River. Therefore, my immediate job on Sunday night was to contact two organisations in Australia, Centrix in Perth, which had a 105 metre cable and our scanner agents in Melbourne, MDL, which had a 300 metre cable, the longest available globally. I emailed both companies and requested these be expedited out of Australia first thing on Monday morning. I also sent emails to our customers' agents in Christchurch and asked them to contact Centrix and MDL directly and to facilitate the freighting of the cables to Christchurch and then to Pike River. We'd not be able to do any useful scanning at Pike River until the cables had arrived and were in place. Steve Bell also asked me to inspect the sewer camera at New Brighton. There was already a similar sewer camera on site at Pike River. Steve Bell wanted me to see whether CALS had any benefits over this. Trevor Shepherd had to collect some extra gear from Stockton. He then proceeded with Gary Bainbridge to Pike River. They arrived at Pike River at 10.30 am on Monday the 22nd of November. On arrival they went to Pike River offices to talk to Steve Bell. Meanwhile I inspected the sewer camera at New Brighton on Monday morning. I doubted whether the sewer camera would be particularly useful at Pike River. This is because sewer cameras are designed to go in pipes which are small in diameter and relatively lightly coloured. In contrast, when the camera is lowered into a massive black void, with black walls, a large amount of the illumination is lost. I know from using our cameras in tunnels that beyond the direct line of view, light simply dissipates into an immense void. After I had inspected the sewer camera, I drove across to Greymouth. I would've left

Christchurch at around midday. Steve Bell had asked me to speak to Jason Bevington, a Pike River Coal electrician, when I arrived.

1005

Q. "Jason told me they wanted to try a sewer camera already on site. I mentioned to Jason I doubted a sewer camera would be of particular benefit given the poor visibility in the mine although I did agree that using the sewer camera in the first instance was a good idea as it was intrinsically safe tool as opposed to a CALS unit. The primary pieces of CALS equipment, camera and scanner are not intrinsically safe. Intrinsically safe means that the electrical spark cannot escape and cause ignition in an inflammable atmosphere. It was decided Pike River Coal would progress with the sewer camera and the Slimline. PRC thought the men may have moved there following the explosion. Depending on the outcome of the sewer camera, Pike River Coal would then decide whether or not they wanted to use our CALS unit. The remainder of Monday I oversaw the logistics around getting the cables to Pike River. I spoke to Centrix, MDL and customs agents to make sure the cables were being shipped as fast as possible. I wasn't sure whether they would be phone reception at Blackball so I remained in Greymouth in case I needed to contact customs. It was confirmed that both cables were flying over from Australia on Monday, the 300 metre cable arrived at Christchurch 11.30 pm on Monday night. It was cleared immediately by Air New Zealand and customs and put on the truck out of Christchurch at 1.00 am. It would have got to Pike River about 4 o'clock or 4.00 am on Tuesday morning. Tuesday the 23rd of November. On Tuesday morning I remained in Greymouth. I got through to the customs agents in Christchurch who confirmed the cable had arrived the previous night and had been transported from Christchurch to Pike River. I then drove from Greymouth to Pike River. I wanted to confirm the cable had actually got to Pike. When we arrived on site we had a hue difficulty locating the cable itself. There were boxes, other cables and various pieces of police and army equipment scattered at the site surrounding the Pike River offices. CALS cable

was eventually located. I spent the rest of Tuesday in the task room in Pike River's office with Steve Bell and Dean Fergusson from Solid Energy and various Boart Longyear personnel. There were numerous discussions around the risk assessments with the police and the Department of Labour. I wasn't involved but I witnessed some fairly acrimonious debate around risk assessments being sent all the way to Wellington which is seen as causing undue delays to the rescue operation on site. I recall most of the discussions were around whether the risk assessments were static documents or dynamic documents that could be modified and updated as conditions changed. It was my understanding that the Department of Labour wanted it to be a static document so that once signed and vetted there would be no freedom to modify actions as events unfolded. The tone of the discussions turned so that at one point the Boart Longyear manager said if they signed that document they would refuse to drill any further. They wouldn't have a loaded gun held to their heads in a situation where they couldn't adjust their actions according to events as the conditions changed. I think by that stage the police had come to act as intermediaries between the Department of Labour and Boart Longyear and SENZ personnel who are helping to plan the drilling operations. Gary Bainbridge, Trevor Shepherd, Jason Bevington from PRC and a police officer named Anthony were flown up to the first drill site to use the sewer camera down the Slimline. No one was allowed to land at the helipad at the main vent shaft due to the high levels of methane. It was clear there was venting coming from the shaft, the smoke and fumes were obvious. Gary took a general body gas reading with a Draeger gas detector at the main vent shaft which showed normal atmospheric air. Trevor and Gary then carried the equipment down to the Slimline. The air had been down casting. Before putting any of the equipment down the Slimline, an indicator was tied over the hole to show the direction of the air. Another general body gas reading was taken which proved to be safe.

1010

A. "The gas detector was then lowered down to take some gas readings from the bottom of the Slimline. The results showed there was natural atmosphere at the base. The readings had not changed from Monday. All the data was recorded and extracted. The discs containing all the data were then handed to Jason Bevington at Pike River Coal. Late on Tuesday, Gary Bainbridge and Trevor Shepherd came down fro the Slimline. The confirmed that they had successfully lowered the sewer camera down the Slimline with a gas detector attached to it. The camera had picked up evidence of something lying on the ground which was an indication that one of the display panels on the dry wall had blown off. On the images taken by the camera, the floor could be seen so the area had not totally collapsed. A temperature probe had been attached to the camera which showed the temperature down the Slimline was in the range 10 to 12 degrees C. Following the results of the sewer camera inspection, the decision was made by Steve Bell and Hugh Bradley to go ahead with a CAL scan at the Slimline. On Tuesday night I drove to Crofts a rural transport company in Stillwater to pick up the 105 metre cable that was coming in from Australia. When I got to Crofts I discovered the cable wasn't there. I got hold of the manager who confirmed the cable hadn't arrived but he said it was coming in by truck that night and if I came back the following morning, Wednesday at 7.00 am, the cable would be there and I could then take it up to site at Pike River. Wednesday the 24th of November. I left Greymouth the next day at 7.00 am. When I got to Crofts in Stillwater I found the cable had arrived. The cable was then loaded into a vehicle and transported to Pike River. Steve Bell who was our co-ordinator had confirmed a risk assessment had already been completed and signed off, although I hadn't physically seen it or signed it. Gary Bainbridge saw the risk assessment which was a re-dated copy of the risk assessment used on Tuesday the 23rd of November."

Q. Can you confirm there please, Mr Taylor, that that risk assessment was for a scan at the Slimline that you've just referred to at paragraph 56?

A. That is correct.

Q. Thank you could you continue reading at 57?

A. "Having been cleared to go ahead with the scan at the Slimline we then transferred the CALS and gas monitoring equipment with the 105 metre cable down to the helicopter pad. As the Slimline was only 80 metres deep we did not need the 300 metre cable. Helicopter priority was being given to moving drill equipment up to the second drillhole site. On the basis of what we had observed since the first explosion on Friday 19th of November, we knew that methane levels would rise during the afternoon. As our site had lower priority relative to other activities, we were later getting to the Slimline than we wanted. At around 10.00 am we got flown into and dropped off at the main vent shaft. Gary Bainbridge took a general gas reading at 10 past 10 am, from the main ventilation shaft. The methane readings were down from Tuesday to 2.4%. The cut-off was 3%. We then walked 50 metres down to the Slimline, we took another general gas body reading at the Slimline platform to check the conditions were safe. All our equipment had been slung in onto a flat spot just below the Slimline, this is also where the equipment was to be collected from once we'd finished the scan. The arrangement was that we would walk back up to the main vent shaft to be collected or to one of the helicopter pads higher up the hillside. I could see there was a large angled duct off the top of the Slimline which had to be partly unbolted and slid to one side. There was still a couple of bolts holding it in place and a line with a bucket attached filled with radios and food had been lowered down the Slimline by the rescue crew. We moved our equipment into the enclosure around the shaft. We then removed the bucket with the rescue equipment to ensure the CALS unit and the cable wouldn't get tangled. Everything in the bucket was completely wet. Nothing had been removed from the bucket.

1015

A. "At Stockton we use a standard powered winch and tripod system to lower the CALS unit. However, there wasn't enough room to set up the winch so we had to manually lower the unit and cable 80 metres down

the Slimline to the designated place in the fresh air base. We carried out two scans, a quick two degree scan and a second detailed .5 degree scan. We knew there was a lot of water coming down from between the Slimline shaft casing, which was a steel pipe, and the edge of the drill hole into which the pipe had been inserted. CALS probe units are particularly sensitive to water. There was some concern that the amount of water might damage the unit so we made a water shield to put on top of it. We did a quick two degree scan, which took about half an hour, effectively half the normal time. This was completed successfully. As the CALS unit had survived the first scan, despite the amount of water, we went ahead with a second detailed .5 degree scan. This took approximately two and a half hours and was completed successfully. Harry Bainbridge was continuously monitoring the gas levels and airflow around the edge of the shaft during both scans. Once the equipment was out of the shaft it was packed up and moved outside the enclosure to the location where the equipment was to be slung in. Trevor Shepherd downloaded and saved the data from the scan. It was put onto a flash drive and given to me to process. We would have been at the Slimline for about three hours into the afternoon. Once we were ready Jason Bevington contacted the control room to say we had completed the task and ready to be lifted out. While we were at the Slimline Jason Bevington was using a search and rescue radio to communicate between us and the control room. The only thing we were aware of via Jason's radio was a Pike River representative communicating that methane was 'off scale' or 'off limit'. We were unaware of where that reading was coming from or what the scale was, and particularly what "off scale" actually meant. We also didn't know what kind of meter they were using. At some point the gas readings at the main vent shaft rose to about 3%, which meant no helicopters could land. At this stage we were not made aware that there could be source of ignition. There hadn't been another explosion since the first one on Friday afternoon. Even though gas was off limit, there wasn't necessarily a dangerous situation if there was no source of ignition.

There was no visible sign, nor any other evidence that the conditions at the shaft had changed. At no time while we were at the Slimline on Wednesday afternoon were we advised to stop work or to get off the hole and vacate the area. Due to priority being given to moving the drilling equipment up to the second hole we were not extracted from the Slimline site immediately once our work was completed. We waited for the helicopter for about an hour and a half. Trevor Shepherd was sitting four to five metres from the shaft outside a mesh fence, the rest of the group was sitting approximately seven to 10 metres away down the hill. While we were waiting we suddenly heard a huge roar and immediately took off down the hillside. A huge plume of smoke, soot, coal dust and other debris had gone up the Slimline. This quickly dissipated but a huge pall of smoke was still hanging over the main ventilation shaft. All the trees in close proximity to both the ventilation and Slimline shafts were covered in the huge amount of black substance, which could've been coal dust or soot. The duct that had been partly moved to one side had now been completely blown off the top of the shaft and only just missed hitting our CALS equipment. Some of the debris landed on one of our tool boxes and smashed it to pieces. There was some concern around being able to pick us up due to the venting coming off both shafts. We decided to go back and pick up the available CALS equipment we could carry and left the cable at the Slimline.

1020

A. "We initially walked down the hillside to the creek and headed upstream to the extraction site where we understand we would be picked up by helicopter. Jason Bevington then overrode that as there were workings underneath the creek bed and he was concerned the creek bed could subside if there was another explosion and we will be in danger. We therefore moved down the creek bed carrying all our equipment, where we had no choice but to continue. It took us nearly three hours carrying heavy equipment through dense and rugged terrain before we were collected by helicopter. We attempted to drop into the creek bed a number of times to places where we thought the helicopter could get us

out, but each time the helicopter was unable to get in. Eventually the helicopter was able to land further down in the creek. It picked us up and dropped us off back at the Pike River offices. By the time we got back to the offices it was fairly late. Almost all the emergency services had packed up and gone. Following the second explosion which was in fact two explosions almost simultaneously, all work with non-intrinsically safe equipment effectively came to a halt until further notice. It was obvious at this point any further CALS work would not be required in the near future. Once we had been dropped back I went straight into the task room, processed data in the CALS image and brought it up onto the screen. There would be a number of people in the room when we processed the scan and everybody who was present in the room crowded round the screen to have a look. The people in the room who would've seen the scans included members of the CALS team, various members of the police, Jason Bevington, Steve Bell, Steve Ellis and Doug White. Neville Rockhouse was possible also present. First we used three different software products to process the data. CavityScan is sold with the product itself and produces a relatively good image. Images then go into a product called Studio, which is a proprietary product we have. From Studio the image can be dropped into Vulcan software archive format. Pike River Coal had Vulcan so they were able to pick up the last stage of the process. I couldn't give them a copy of Studio as it requires a licence to run it. I therefore left Pike River Coal with Cavity Scan, the Cavity Scan version of the images and the Vulcan dump of the scan, advised Pike River Coal and the police that if they wanted to have a look at the scan in fine detail that they would need to get a copy of the Studio software. The quality of the scan wasn't as good as we would normally get due to large amounts of water pouring down the Slimline pipe, obliterating sections of the laser beam, but various objects appear visible. When we processed the scan, a number of Pike River personnel were quite concerned with what they saw. Those viewing the image remarked on what looked like two large boxes, one of which having an open lid. There was a fair amount of debate

about this. There was also a lot of uncertainty about what this represented. There was some discussion as to whether the box could've been opened by the blast or could've been opened by human intervention. We were told by Pike River personnel present that the boxes contained backup self-rescuers. I have read the statement of Police Constable David Pitchford dated 1st of July 2011. With respect to Constable Pitchford, I think he was mistaken in respect of some details. I'm confident that I did not make the statements referred to at paragraphs 20 and 30 of Constable Pitchford's statement. I had no knowledge of the box contents or whether it's possible for an explosion to have opened the lids of the boxes. I've never seen the boxes or the box fittings. It was Jason Bevington, Pike River's representative who commented on what was inside the boxes and whether an explosion could've opened the lid.

1025

A. "All the people in the room referred to in paragraph 82 would have seen the image with the two boxes. When we had processed the data I gave the official Pike River copy of the data to Jason Bevington to pass on to Pike River personnel who had access to the Studio software. This included the video clip of the sewer camera which was taken on Tuesday the 23rd of November 2010. I also gave one copy to the police. For every file put onto the computer at Pike River the police asked for and received a copy. I understand from reading Constable Pitchford's statement that the police asked Jason Bevington to take the scan file home to make a copy for the police on his home computer. At the time the scanned images were downloaded on to my laptop at Pike River's offices. The Pike River computers had been switched off and no one who could access the computers or necessary Studio software was present. I made a decision to return to Christchurch on Wednesday evening, so that effectively was the end of my involvement with the immediate rescue and recovery operation at Pike River. Since these images were shown to Pike River and the police I have been told that Pike River had gone to the agents of Studio and taught how to use that

software. I believe the Slimline images have also been sent to Maptek in South Australia for further enhancement. Until recently the information from the scan was not publicised. I'm not aware of why that was, but obviously the images can be interpreted in a number of different ways. Between January and April 2011 we undertook a series of scans at holes 44, 45, 46 and 47 and a second scan down the Slimline shaft at Pike River. These are set out in schedule 1."

Q. Yes I'll just stop you there Mr Taylor.

MR STEVENS ADDRESSES THE COMMISSION – LEAVE TO HAVE REMAINDER OF BRIEF TAKEN AS READ

EXAMINATION CONTINUES: MR STEVENS

Q. Mr Taylor just before you leave the witness box, at paragraph 92, you'd talked about images being sent to Maptek for further enhancement. Whose recommendation was it that that occurred?

A. It was basically my recommendation.

Q. And who did you suggest they contact?

A. I suggested they contact Maptek in South Australia who were the suppliers of the Studio software that we used to further enhance the –

Q. And who at Maptek?

A. Jason Richards or James Moncrieff.

Q. With His Honour's leave could you now come to your computer?

IMAGES DISPLAYED TO THE COMMISSION

Q. We'll start very briefly just with three still photos, have you got those in a single presentation and these are part of the photos you've provided, can you confirm that you have provided to the Commission in a memory stick?

A. These photographs have been included on the memory stick.

Q. The first one, could you confirm that was taken the day before the second explosion?

A. That was taken on the Tuesday as the crew were about to lower the sewer camera down the Slimline.

Q. Yes and can you identify any of the people – I'm sorry, you said before the crew was about to lower the video down the Slimline, where is that photo taken?

A. Fifty metres below this main vent shaft site.

Q. So it's the main vent shaft, do you recognise any of the people in the photo?

A. Yes on the left-hand side of the photograph is Robin Hughes, the person in orange is Gary Bainbridge and the person to the right is Trevor Shepherd.

Q. Could you go to the second photo Mr Taylor, can you confirm that that's –

A. This shows us working on the Slimline on Wednesday the 23rd. You can see that the angled pipe at the top of the Slimline had been unbolted and stripped to one side to allow us to lower the CALS equipment down the Slimline shaft.

1030

Q. And can you confirm the angled pipe you referred to is the duct that you refer to in your evidence?

A. Yes, that is correct.

Q. Could you go to the next photo, sorry? How was that angled pipe secured when you were undertaking your scan on the Wednesday?

A. A couple of bolts were still in place on the far side of it.

Q. Could you go to the third photo please.

A. This is the same Slimline shaft after the second explosion. And in fact very shortly afterwards a third explosion. It blew the duct right off the top of the Slimline shaft and blew it across the fence and obviously is lying against the fence.

Q. Yes. Could I now get you please to turn to the first of your scans to be shown, and it's the Slimline scan taken that day, the 24th of November 2011.

MR STEVENS ADDRESSES THE COMMISSION – IDENTIFY CERTAIN IMAGES ON SCANS

A. Before I zoom into the actual scan positions this is a diagram of the underground workings of Pike River. I've now zoomed into the fresh air base below the Slimline shaft. One thing to notice on this is the scan goes right back to the back edge of the main drift. So we had total visibility, the drift is still open and there's been no collapse within that drift. Because the way this image is represented by a very very large number of single points, some of which are in front of the boxes and some of which are behind, the clarity of the boxes is enhanced a little bit by actually moving the image to actually separate the boxes from the foreground and background points.

Q. Mr Taylor, if you could hand the microphone please to Mr Stiles and Mr Stiles can speak to the objects that he gave evidence on.

MR STILES:

A. As, Mr Taylor, it slowly rotates, what I'm pointing out here is one of the boxes in the Slimline and next to it the box that was mentioned with the open lid, this being the open lid here. Mr Taylor's just rotating it now down lower, and looking at the boxes now more from a side angle, you see the first box in the background now and in the foreground the box with the lid open here, just coming into view behind the box with the open lid, the third box here. Once again maybe just slightly clearer, the third box here. This image is looking from the main drift back towards the end of the stub. We can see here, and when I mentioned something hanging down off the roof of the stub in my evidence, this shape here that I thought may have been the self-rescuer signage that was hanging up in this area here on the 12th of November, my last audit. At the back here along the rib we see an image here that I believed to be the stretcher pod.

1035

A. These lines here, we can see hanging down would've been at the front of the stub. These are the wheel ruts coming up the main stone drive, this heading up towards Spaghetti Junction, this area towards the left looking down the stub. This circular part here was what I mentioned as

being possibly the methane muffler, a large drum-like in shape. This part here is what John was saying about the water coming down from the shaft and the distortion. This is the back of the stub here and the floor of the stub, remember we mentioned, ran downwards from the right to the left and then up as you can see towards the back of the stub. Once again, the box is here, lid open, box 1 next to it towards the back of the stub.

MR STEVENS:

Your Honour, we are now likely to be moving to a matter that was the subject of your prohibition order, and I just forewarn the press on that. I'll get the witnesses to discuss now the object in front of the box.

THE COMMISSION:

Thank you. Proceed.

MR STILES:

A. In reference to the object in front of the boxes here, that's the closed box, the open box, the lid. This area here is the one referred to. It's almost in need of me to say that with this CALS imagery which is representing objects by points, it is very difficult to distinguish anything other than the fact there is an object on the floor there.

MR STEVENS:

Q. Mr Stiles, is there anything more you wish to point out in that scan?

A. These objects here, remember on the ribs we also mentioned that we had oxygen kits, first aid kits, et cetera.

MR STEVENS:

Commissioners, are there any aspects that you would wish to explore before we move to a separate scan?

COMMISSIONER BELL:

Q. Could I just ask a question, Mr Stiles, that the two boxes that contain the self-rescuers, one was behind the other box was it? The two boxes we could see in there, the one with the lid up and then the other box appeared, there was another box behind that box, am I reading that correctly?

A. I guess it appears so in that scan sir. On the 12th of November, I maintain that the boxes were more in a line and why I maintain that is because I focus on rapid access to emergency equipment and in fact made comment in some of my audits about equipment stored in front of emergency equipment and that rationale, it also stands for emergency equipments in front of emergency equipment. If someone wanted to gain access to self-rescuers and it was behind fire box, that's, you know, I wouldn't accept that as being rapid access. If I had of seen the two boxes, one in front of each other on my audit, I would've made an effort to move them so that they were all in line, so that there was rapid access, so that description, that diagram, I maintain was how I saw it on the 12th of November that they were more in that line and the first box was the fire fighting equipment.

1040

THE COMMISSION:

Q. Just to be clear about that, when you say the first box, the one closest to the entrance to the Slimline stub was the wooden one?

A. Correct, sir, yes.

Q. And then the two blue boxes containing the self-rescuers?

A. Yes, sir.

Q. Pretty much as you saw it in a line parallel to the rib wall?

A. Yes, sir that's correct. It might not look as neat as what I drew in schematic, but in that order as you describe, yes, that's correct.

MR TAYLOR:

I will now move to what the Slimline looked when we went down the Slimline shaft the second time.

EXAMINATION CONTINUES: MR STEVENS

Q. Just pause please Mr Taylor before you do, and we'll, just for two matters, do you acknowledge whether these are the images which Mr James Moncrieff enhanced?

A. That is true.

Q. And please, before you leave any scan, make sure that there are no further questions from the Commissioners? Would you go please to the re-scanning of the Slimline shaft after the subsequent explosions and it's your scan of 17th February?

A. Initially I'll bring up the second scan as an individual scanner, then I'll superimpose the two, one on top of the other. For many weeks after the second explosion the Slimline was far too hot. There was active venting from that Slimline and the venting was actually carrying up globules of distillate that actually made conditions very, very difficult to get down the Slimline. Eventually the temperature reduced to approximately 35 degrees and we deemed it feasible to go back down there and actually inspect what we could see. This is the result of that second scan in the Slimline. One thing to note, as I move the image round, there is absolutely nothing recognisable left in there and I'll point to a real slope of collapsed material in that shaft. Just rotating around the image, you'll see that there's absolutely nothing recognisable of boxes or any other manmade material in that area. Also, this slope down here indicates that to the right of that there is actually just a mass of collapsed material and this is the front slope of that collapsed material.

Q. And the area to the right, Mr Taylor, can you confirm that that's out at the main heading or drift?

A. Yes. In a minute, I'll superimpose both images over the other and you'll see that this is well inside the fresh air base and it appears that the entire main heading has collapsed. This is almost certainly part of the original floor. I'll now bring the original image in over the top of this and –

Q. Just pausing please. Are there any matters the Commissioners wish to explore on this before that happens? No. Thank you.

1045

A. This is a shot looking side-on from the original main drive here, you can see the wheel ruts where loaders actually were driving up the main drift and now the actual front face of collapse of material is well, well within that fresh air base and also it appears there's been partial collapse of the roof. Should mention that there's probably a little bit of registration difference between these two images because the conditions in the Slimline it wasn't possible to measure the actual accurate depth at which the probe unit had been deployed both times. The images are being moved to almost an overlap position but there could possibly be a small amount of offset between the two.

Q. Mr Taylor can you please confirm that the rescanning down the Slimline that the only void is entirely within the stub?

A. That is correct, there is no indication of being able to see outside the stub itself. I should mention at this point, apart from the Slimline all the other scans that we've done at Pike River have been done specifically at the request of Mines Rescue to aid their possible re-entry recovery operations.

Q. Mr Taylor, could you please then go to the scan for borehole 44 taken on the 25th of January 2011?

A. Once again to show the position of hole 44 its right up the western edge of the mine and the coverage of the scan can clearly be seen here. I'll just get rid of the working outline and just concentrate on the scan.

Q. Mr Taylor can you confirm that you've shown this scan previously with Mr Steve Ellis of Pike River Coal?

A. Yes the scans that I'm about to show during this presentation have been shown previously at the Coronial Inquest at which I was actually operating the software and Steve Ellis was describing the objects seen within the images. So I haven't been in this area, but my knowledge of the objects seen has come from Steve Ellis, underground manager of Pike River.

Q. Can I get you based on what Mr Ellis has told you to identify the objects in the scan please, perhaps first with the inseam drilling equipment, we understand that's shown in scan 44?

A. My understanding is that these rectangular objects sitting here are the re-circulate - water recirculation tanks for the inseam drilling. The inseam drilling machine is shadowed out by – from the scan by these water tanks. This image shows that the workings themselves are generally intact but a lot of the service lines, pipes and other equipment has actually come off the ribs and come off the roof. The other thing to note which has been referred to in other evidence, is this pallet, wooden pallet here that is still sitting in its original position on the floor and I believe the video sewer camera video shot of this pallet shows that that surface, the wooden surface of the pallet are unburnt and seem to be unaffected by the blast. You can see there are still mine equipment still on the walls of the drive, but other equipment is obviously come and detached itself. There are some vent pipes up here and there's some more probably vent cubing here, to the best of my knowledge, you can see them lying on the ground.

1050

Q. And based on what Mr Ellis told you, do you know where that tubing previously was before the explosion?

A. That would've been high up on the backs, on the top end of the back, probably on this left-hand side back, but that is information that's been passed onto me by Mr Ellis.

Q. Similarly, can you show please where Mr Ellis has advised you the continuous miner was located in that scan?

A. From my understanding of previous showing this image with Mr Ellis, my understanding that shape up the end of this drive here, which is not clearly visible, is the actual continuous miner. You can see that there is an object which is reflecting the laser light up there, but it's quite a distance from the actual probe position which is almost in the centre of this intersection.

Q. And could you estimate that distance or is that too difficult?

A. It's probably sitting 15 to 20 metres away.

Q. Just pause Mr Taylor.

MR STEVENS ADDRESSES THE COMMISSION – SCAN 44

EXAMINATION CONTINUES: MR STEVENS

Q. Could you go then please to borehole 47, Mr Taylor.

MR STEVENS ADDRESSES THE COMMISSION – SUPPRESSION ORDER

EXAMINATION CONTINUES: MR STEVENS

Q. Mr Taylor, can you confirm please that the scan you're showing is the original of the two scans which you've taken at this bore hole and it was the one taken on the 28th of January 2011?

A. That's correct.

Q. And why did you choose the first scan rather than the re-scan?

A. This scan was done during the summertime and like most Pike River holes when we went back to do the second scan it had been just after a major snow melt and there was a lot of water pouring down the hole and possibly wasn't of quite a good quality as this first one, even though it's a much finer scan increment.

Q. Yes, thank you.

A. I'll first concentrate on the wall of the drive here. This clearly shows the fluming, which is used to flow the coal back towards the pit bottom and the main water pipe still intact on the wall, which was used for that fluming process. There are other objects that appear to have come off the roof, there's objects or a cable lying across here. I'll now look up the side crosscut and this is the object that has been subject to further work by James Moncrieff with Maptek. But once again I should stress that these images were taken – on the floor here you can see a lot of debris lying on the floor, but basically the main drive and crosscut is still totally intact. So I should like to stress that these images were really taken for the purpose of providing Mines Rescue with structural integrity

information with a possible re-entry into Pike River. Once again you can see a lot of water pouring in this hole, bouncing off the probe head.

1055

Q. And from this scan, what can you say about the structural integrity of the mine at this point?

A. It seems largely unaffected by a major blast in that this fluming, I'm led to believe from discussions with Pike River personnel, are built in sections and the sections are just slotted one into the other, they're not actually bolted together so the fact that this fluming is still intact on the wall and the pipes are still intact on the wall, seems to suggest that this is possibly removed from a major blast area.

MR STEVENS ADDRESSES THE COMMISSION

THE COMMISSION:

Q. Mr Taylor, you were saying the first or the second scan you did wasn't as good as this one, did I hear that correctly or?

A. The second one was done specifically at the request of the police and once I had passed the image to the police I was – understood that that would be sent straight to Mr Moncrieff and that he would deal with it from thereon. In fact initially I was instructed that once I'd passed that image to the police I was to destroy it off my machine. So I haven't done any further work on that.

EXAMINATION CONTINUES: MR STEVENS

Q. I think following on Mr Taylor, why do you think this is – could you just say again why you think that this first scan is of better quality even though it's at lower definition?

A. As mentioned previously this was done during the summertime, the second time was done during the winter. Considerably more water was pouring down the hole so much so that we weren't even sure whether we could get the scan completed. We had a number of operational problems with water pouring on to the scanner, but eventually persevered and managed to get that second scan, but in my – from the

limited viewing of that second scan it didn't seem to be as good a quality as the first one.

Q. And can you confirm that water in the atmosphere does tend to distort the results of your CAL scans?

A. The effect of water is that a lot of the laser beams which should be used to map the outline of the underground structures are hitting particles – drops of water and are being reflected off. You can see here that this massive cone of reflections, what that is doing is really degrading the quality of the image of mapping the actual three-dimensional underground structure. So the more water we have the less quality we get out of the scan itself. So the less water the better the image quality.

COMMISSION ADJOURNS: 10.59 AM

COMMISSION RESUMES: 11.17 AM

EXAMINATION CONTINUES: MR STEVENS

Q. Mr Taylor, you undertook a video at borehole 45, could we call that up please.

A. Just before I show the video, I'll show the position of hole 45 in relation to the Slimline. A couple of things to be noticed on this before I show the video, first of all this is the second scan of the Slimline and you can quite clearly see the edge of the collapsed area is within the fresh air base and according to this scan, the entire main drive is collapsed. But the decision was made to drill a hole from the grizzly site on the surface down using an inclined hole into the main stone drive to see – try to determine how wide this collapsed area is. And so this is the purpose of hole 45. I'll show the CAL scan of that hole in a minute, but I'll show a video clip first. This is a clip going down the hole, you'll notice there's a lot of smoke or condensation or something and this explains a little bit. When we get into the drive itself which will be in – move through a bit, this is actually in the main stone drive. This white object is some PVC piping from a previous CAL scanning attempt. You'll notice this is scanning around what remains of the roof of that drive, there's a bent rock bolt there, meshing partially collapsed on to the floor, another rock bolt, more mesh and these roof bolts are bent through almost bent double, or bent to right angles. Another one, bent one there.

Q. Mr Taylor is it just meshing and roof bolts or?

A. In this area which is close to Hawera Fault, there's a combination of mesh roof bolts and grating and this has been referred in previous evidence to the area that suggested should have been steel setting. So this just sets the scene in that area. The conclusion is that the roof is catastrophically collapsed and that even the long lock bolts into the roof have actually been pulled out and bent and all the mesh work's gone.

Q. Why did you take a video in that location?

A. We'd previously – we were concerned about getting our CAL scanner hooked into the wire mesh on the roof of these drives, so we'd actually instructed the drillers to case the hole right in through the mesh into the drive so we wouldn't lose the scanner. The first time we went down this hole, they hadn't pushed the casing far enough, they hadn't even got into the drive itself. So we instructed drillers to go back and carry on drilling and push the casing further into the drive before we did the CAL scan. We did this video just to ensure that we weren't going to endanger or lose the scanner, so it's done as a internal video for our own purpose, but you can quite clearly see the massive damage to the roof of the drive in this area.

QUESTIONS FROM COMMISSIONER BELL:

Q. Can I just ask, Mr Taylor that was taken outbye of the Slimline, am I correct there?

A. That's correct. That entire video has been put on the memory stick that I've provided to the Royal Commission.

Q. The date of it?

EXAMINATION CONTINUES: MR STEVENS

Q. 24th of April 2011. Can you confirm it's the date when you were able to take your scan Mr Taylor?

A. That's correct it was done on the day we actually got into the drive itself.

MR STEVENS:

And that sir is from schedule 1 attached to Mr Taylor's evidence, although the videos aren't listed in that.

EXAMINATION CONTINUES: MR STEVENS

Q. Mr Taylor you said it was an incline hole from approximately the grizzly was it inbye or outbye of the grizzly, the angle of the inclined hole?

A. Because of the lack of drill sites around the area, the only area that they could drill from easily was actually putting a drill rig at the grizzly site. To get into the position as far up the stone drive was possible, they

necessarily had to drill at quite a shallow angle inclined hole that actually did hit the drive and this is the CAL scan I'm just about to show. As I bring the scan up I'll mention a couple of things. For some reason which we are still looking at, this is the poorest quality scan we ever got in Pike River. However, inbye it does show the roof and floor coming through together as a major fall, so you can see there's a lack of space between the roof and floor in the inbye position. On the outbye position it is very difficult to see exactly what's happening. This furry nature of the CAL scan we frequently encounter with atmospheric disturbance. It can be smoke, can be condensation, can be water droplets in the air. My feeling is it's actually condensation or water vapour that's affecting the quality of the scans. Hot air inside the drive meeting cold air coming down the hole 45. So you can see the quality of the scan is a lot worse than all the previous scans I've shown. The time that this scan was done was less than optimum. The weather was starting to pack in, to break, it was also a very cold day, so a combination of cold and deteriorating weather conditions affects the atmospheric conditions and we're less than happy with the quality of the scan and there is an intention of actually re-doing it, but it sort of proves the point that from here the inbye, the roof has totally collapsed, can't see any laser beams getting through this area here, and distance from there to the Slimline is approximately 30 metres with an intersection going off to the vent shaft in between, so, in all likelihood this is a continuous collapse from this point right through to the Slimline and how far inbye the Slimline that collapse extends is unknown.

1125

Q. Mr Taylor, is it possible to get back up the shot showing the second Slimline scan in conjunction with borehole 45?

WITNESS REFERRED TO SECOND SLIMLINE SCAN - BOREHOLE 45

Q. And, could you please retain it on the plan that you're showing and perhaps – and you said that, "In your opinion it was likely to be a continuous collapse between the two". Why do you say that?

A. Because in this section point here, this would be a fairly weak spot, we're also in the close proximity of the Hawera Fault, where underground conditions will be less than ideal. From the second Slimline shot which shows a certainly almost, well, obvious collapse and well slope of collapsed material going down into the Slimline and the fact there's this intersection in between that and the clear collapse at this point, the likelihood is that this is almost continuous collapse material, but that's conjecture rather than proof.

Q. Could you just zoom out a little perhaps on that, Mr Taylor? Thank you. Now, are there any matters in respect of those scans Your Honour that the Commissioners would wish to clarify before I just ask one other matter of the witness?

THE COMMISSION:

Thank you, no.

EXAMINATION CONTINUES: MR STEVENS

Q. Mr Taylor, I understand that we're now going to have some of the brief of James Moncrieff read into the transcript. You've seen his brief?

A. That's correct, I saw the brief last week for the first time.

Q. Yes. This touches on the object that is seen in the first of the Slimline scans but we don't need to see the object sir, but I just have one question in respect of that. Mr Taylor, you're aware that Mr Moncrieff offers three possible explanations for the object that you showed in front of the boxes in the Slimline shaft?

A. That's correct.

Q. His third suggestion is that it might have been matters – sorry, that it might be objects that were lowered down the Slimline shaft on the evening of 19th November. Are you able to say anything in respect of that possibility?

A. Yes, on the Wednesday the 23rd, when we pulled the line and the bucket contained on that live back up the Slimline to prevent it tangling with our CALS unit, the bucket was still on the end of the line and all the material put into that bucket by the rescue crew was still in it when we

pulled the bucket out. So the bucket was still on the end of the line and the material in that bucket was still there.

Q. And why did you remove the bucket?

A. As mentioned previously, we were concerned that the line attached to that bucket would tangle in our CAL scanner and possibly cause us to lose the scanner.

MR STEVENS ADDRESSES THE COMMISSION – QUESTIONS

1130

THE COMMISSION ADDRESSES COUNSEL – MONCREIFF BRIEF

THE COMMISSION:

Q. Mr Taylor, Mr Stevens, in the interest of time, has had you read only portions of your brief and he took your qualifications and expertise as read. Without going through it in detail, can you just tell us, your working life has been involved to what extent in CAL scanning?

A. I'm a mining engineer by background. I've been in the mining industry for 40 years, worked all over the world. For the last 10 years, I've worked for Solid Energy and the Stockton Alliance first as a contractor then full-time staff. Previously back in about 2006, I led and was put in a position of underground investigations manager for the Solid Energy, then the Stockton Alliance up at the Stockton and Millerton Mines. We spent a number of years progressing in underground surveying and scanning into old coal mine workings so I've got a lot of expertise in working in coal mines and using this high technology scanning equipment. After Stockton Alliance came into existence, they required us to do the same type of work of investigating the integrity of mine workings but from the surface by drilling and CAL scanning down drillholes rather than doing this work underground. So, Stockton Alliance and the Stockton Mine are the biggest user of CAL scanning equipment in the world. In one day we do more CAL scanning than most companies do in a month and we've been doing this for, as I said, up to six years. So we are recognised as probably the most

experienced CAL scanning crew anywhere in the world and we actually work with the CAL scanning vendor company to actually help develop their equipment further, so this is where we've built up our expertise.

Q. Thank you. Now, the evidence that's to be read from Mr Moncrieff, he's known to you obviously?

A. Yes he is known to me. He actually trained me to use the studio software that I've displayed this morning.

THE COMMISSION:

And just to explain to people, Mr Moncrieff is presently, Mr Wilding, is he in India or somewhere but unavailable to appear?

MR WILDING:

Yes, that's correct sir, he's overseas and not available.

THE COMMISSION ADDRESSES MR STEVENS – READING OF PARAGRAPHS 36 TO 57 OF STATEMENT

BRIEF OF EVIDENCE OF MR MONCRIEFF READ BY CONSENT

A. "For the purposes of my review of the CAL scan, I have been asked to assume that on 24 November 2010, there were two blue plastic containers and one wooden locker box of the same dimensions as measured by Ms Savage in the Slimline fresh air and Ms Savage is assigned from ESR who has provided a brief containing photographs, dimensions of the boxes and their ability for the lids to move to an open position. The shape and position of any boxes visible in the Slimline fresh air base including any distinguishing features whether any such boxes are open or closed and their contents, if any. There are three boxes able to be distinguished in the scan data. Two large boxes are clearly visible resting on the ground in the foreground of the scan with a smaller box that appears to be behind and only partially visible in the cap between the front boxes. Boxes 1 and 2 appear to be set forward and at an angle from the rib and they are located towards the drift end of the fresh air base.

1135

A. “I have calculated that, measured from the centre of the front of each box they are at 1.8 metres and 2.4 metres from the rib respectively, plus or minus 0.1 metre, or put another way 10 centimetres. The front of box 3 is approximately 1.3 metres from the rib, plus or minus 0.1 metre. In the image below it is possible to see the boxes in profile, looking from the back of the stub towards the drift. In the image below I have edited out part of the water spray in the left-hand side of the image. Box 1, shape and position, distinguishing features and contents. Looking at image 6 on the preceding page box 1 is slightly further away from the drift end of the Slimline fresh air base than are boxes 2 and 3. Box 1 is clearly closed. The box lid is clearly identifiable by a rounding of the points at the lip and a slight gap at the join between box and lid. There is insufficient detail in the scan to determine if the box is ribbed or flat. The back of the box is not clearly visible. Assuming the box 1 lid is flat the last observed points are assumed to be the back of the box. There is a small object red donating a highly reflective surface to the object that appears to be resting on the lid. However, there is not sufficient detail to identify the nature or characteristics of the form showing as a red-coloured on top of box 1. It measures approximately .1 of a metre, plus or minus 0.02 of a metre. Moving to box 2, shape and position, distinguishing features and contents. Again, looking at image 6, box 2 is to the right of box 1 and slightly closer to the drift end of the Slimline fresh air base than box 1. Box 2 is clearly open. The box lid appears to be hinged at the back of the box and I have assessed this as resting at an angle of 24 degrees up from the horizontal (156 degrees from closed). The lid angle were measured by fitting flat planes to the scan points and lines to the top edges of the box. This enables measurement to the average position of points and improves the accuracy. It is possible that the lid is resting on an object behind the box, but if so that object is not visible, consistent with the way the CAL scan laser collects data. The field of view from the scanner into the box is limited and only about 20 centimetres of the back of the box is visible. The visible

portion of box 2 appears empty, apart from the red-coloured object in the back left corner. However, 75% of the box volume is not visible from the position of the scanner. Because of this I do not have sufficient information to be able to offer an opinion on whether that 75% volume is empty or otherwise. At the back left-hand corner of the box is an object of higher intensity than the sides of the box coloured red, using the intensity colouring system. The high intensity of the points indicates a reflective object, shiny or bright. The object appears narrow in width, no more than 0.1 of a metre wide and appears to be resting against the back corner of the box. It is not clear whether the object is resting on something or extends from the bottom of the box. The object would not obstruct the lid if it were closed. The definition of the scan is not sufficient to identify the nature or other characteristics of the object.

1140

A. Then moving to box 3, "Shape and position, distinguishing features and contents. The laser has captured box 3 only to the extent that there has been a line of sight between the position of the laser and box 3. Box 3 is behind boxes 1 and 2 and is only partly visible through the space between them. Refer the image of the boxes at image 6. The lid of box 3 appears closed and it appears to be noticeably smaller than the others but there are insufficient points on the box to be able to measure the length. In relation to all three boxes, there is not sufficient detail in the scan data to determine the presence or absence of latches or handles. The scan lines are collected at a spacing of .5 degrees. This means that at boxes 1 and 2 the points measured are 2.4 centimetres apart, at the rib 4.4 centimetres apart and at the drift 13 centimetres apart. Even with a measurement every two centimetres it is not possible to identify small features like handles, diameters of less than .5 centimetres. The intensity colouring can intensify materials based on the different reflections given by each material and colour, however, with points every two centimetres or more it is very unlikely that the laser would hit a fine handle or clasp more than a couple of times, making identification

of latches and clasps impossible." Next heading, "The extent to which it is possible to determine the relative sizes of the boxes in the Slimline fresh air base. I have attempted to measure the three boxes to determine whether the open box is likely to be the blue plastic box, 1100 millimetres long, 550 millimetres wide and 450 millimetres high with a lid opening to approximately 105 degrees from its closed position or the wooden box being 900 millimetres long, 500 millimetres wide and 450 millimetres high with a lid opening to approximately 190 degrees from its closed position. In order to take measurements using CAL scan data, it is necessary to identify the dot points in the CAL scan data that appear to be related to the object and distinguish those dot points from surrounding data. I fix the measuring points and measure between them. In order to maximise the accuracy I measure the distance at least twice from different points on the object to provide the greatest accuracy. The noise range (fuzziness) in the scan data adds uncertainty to the measurements and therefore my results are reported to a resolution of 0.1 metres. To minimise measurement error points used for measurement have been selected from single scan lines where possible. This means that the points measured were collected in one vertical pass which minimises angular error. The greatest uncertainty is in the distance from the scanner (depth measurements) and between scan lines due to the angular uncertainty. In relation to the height measurements I have needed to fit a flat surface to the ground points in front of the scanner. The angle measurements were taken between plains and lines fitted to the available points. The use of fitted plains and lines increases the accuracy of the measurement by measuring to an average position. Measurements were taken twice at each end of the boxes to ensure consistency. I have set out in the following table the measurements provided by Ms Savage and those that I have calculated based on the scanned data relating to the Slimline."

1145

A. I'm just wondering whether there's any – I don't know that can usefully read in that table, but it shows a fair measure of consistency between

the ESR measurements and those obtained by Mr Moncrieff although as he said, his measurements are subject to a plus or minus margin of error. I think the table needs to be read for itself. "As above, I have assessed the opening angle of box 2 as 24 degrees up from horizontal or 156 degrees from closed, noting that the lid could be resting on an object behind box 2. I have created images in which I have overlaid the dimensions and opening capacity of the blue plastic box and wooden locker box on the basis of the information in Ms Savage's report." And image 14, that's obviously the plastic box and then the next one, image 15 is the wooden locker. "Assuming the boxes in the Slimline are the same as the plastic and wooden boxes Ms Savage has measured, neither the blue plastic box, nor the wooden box, are perfectly consistent with the measurements I have calculated based on the CAL scan data. Box 2 is open further than the reported maximum opening of the blue plastic box, but not to the maximum reported opening capacity of the wooden locker box as images 13 and 14 indicate. As I have noted in paragraph 39 above, it is possible that the lid is resting on an object behind box 2. Possible explanations, assuming that the boxes in the Slimline were the same size as Ms Savage measured, is that the difference between the actual dimensions and my measurements, taking into account the margin of error include, (1) That one of the sensors in the CALS equipment malfunctioned and distorted the data. While I consider this unlikely, it is a possibility. (2) That one or other of the boxes was sitting on something, which although I cannot see anything in the data that would support this being the case, I cannot rule it out. Alternatively, the boxes in the Slimline on the date of the CAL scan are the size I have measured, taking into account the margin of error. I have reviewed the CAL scan of the Slimline taken in February 2011 and observed a rockfall in the area. There was no sign of the boxes in that subsequent scan." And that was the first portion of the brief.

MR WILDING ADDRESSES THE COMMISSION – PARAGRAPH 66 TO 73

THE COMMISSION CONTINUES READING BRIEF OF EVIDENCE OF JAMES MONCRIEFF:

A. The heading being, "The object in front of the Slimline boxes. I have also been asked to review and comment on an object in front of the boxes and I am aware that there has been interest in whether or not this object could be a body or whether it could be something else. The section of scan repeated referred to earlier in this report as a discontinuity in the data, begins immediately to the right of the main part of this reflective shape. The data quality is much lower and a large percentage of the points are missing after the discontinuity. Because of this, it is not possible to identify any more detail on the pipes or the area. The colour intensity feature has been applied to images 22 and 23.

1150

A. "There appear to be two pipes or beams lying on or close to the ground and finishing just before the open box. It is not possible to determine whether potential beams are round or square in profile but the direction of travel can be determined. The larger potential beam or pipe has a diameter or width of approximately 0.15 metres, plus or minus 0.05 of a metre. The potential beam begins closer to the Slimline but is obscured by the cone of false points beneath the scanner. It extends towards the open box but appears to stop before it reaches the box. There is not sufficient detail to determine the exact end point. Close to the Slimline the top of the beam is approximately .015 of a metre, plus or minus .05 of a metre from the floor. At a distance of about one metre from the front of the box and it appears to be approximately .2 of a metre, plus or minus .05 of a metre from the floor. The second beam or pipe is smaller in size and runs parallel to the larger. It is positioned 0.1 of a metre, plus or minus 0.02 of a metre from the large beam on the side away from the drift. The diameter or width is 0.1 of a metre, plus or minus 0.05 of a metre. The angle of the potential pipes increasing as they approach the object suggest to me that they are resting on something. The shape coloured red, yellow, orange to the right of the beam or pipes has more reflective properties than surrounding objects or the floor of

the stub. I have isolated the object and taken still images from above and the side. The shape consists of a large portion which I have measured as 0.3 metres high and 0.4 metres wide, plus or minus 0.05 of a metre, with a smaller shape at the left of the image above and a section extending towards the boxes. The size, shape and intensity changes appear to me to be consistent with that of an upper torso shape. However, the shape is not consistent with it being a complete body. While not my area of expertise I have considered other possible explanations for the combination of shape and reflective qualities. One, fallen coal or rock. However, I would not expect coal or rock to show as red, using the intensity colouring system. In addition, the roof of the Slimline in the scan image appears intact above the object. Two, brattice on the floor in front of the boxes, as I am advised that Mr Stiles has said in his evidence that brattice was seen on the floor of the Slimline on 12 November. The sample of brattice I have been shown would likely appear in scan images with an intensity similar to what was seen in the Slimline scan. The size and shape of the object are smaller than I would expect to see if the object is brattice. Third possible explanation, object which might have been put down the Slimline on the evening on 19 November, as I am advised there is evidence before the Royal Commission that water, radios and/or phones were put down the Slimline shaft. The floor of the stub in the Slimline scan shows many small objects that cannot be identified from the detail available. These small objects could be water, radios and/or phones. The dimensions of the objects would probably fit down the Slimline. If the items had been bundled then it is possible that this explains the object. Without further evidence of the objects put down the shaft, I can't comment further on this possibility." But that possibility is effectively disposed of by Mr Taylor's evidence.

1155

THE COMMISSION ADDRESSS MR WILDING – DISCUSSION ORDER OF WITNESSES

THE COMMISSION ADDRESSES COUNSEL - APPLICATIONS

MR DAVIDSON:

Sir, I have an application. There is a good deal in Mr Taylor's evidence, which goes beyond the images just shown here involving the circumstances in which the scan was first taken, recorded and then shown and I want to develop some questions around that in sequence, including the latest showing to the families, communication issue, and there are one or two matters around the events of the 24th of November, the day of the second explosion and the day before which are relevant to this Phase in his evidence.

THE COMMISSION:

How long do you think you might be?

MR DAVIDSON:

Fifteen minutes.

CROSS-EXAMINATION: MR DAVIDSON

Q. Mr Taylor, good morning. I just want to first of all pick up some events and I'll try and do this chronologically from your evidence. You refer in your evidence to an issue which you heard debated regarding risk assessments being completed when you were up at the site after the first explosion?

A. That's correct. I was up in the internal task room at the Pike River offices for the afternoon, well, late morning and afternoon of the Tuesday.

Q. Yes, that's Tuesday 23rd of November, and the issue was really whether the risk assessment should be, what you call, static documents, or dynamic documents?

A. That's correct.

Q. And that was the contest between, presumably, the department and other people you named including is it Boart Longyear?

A. Boart Longyear, that's a drilling company.

Q. Did that concern you at all from your perspective?

A. No it doesn't concern me at all, I was actually in the background of that room waiting for our team to come back from the Slimline.

Q. And the issue was included the assessments going up to Wellington for sign-off?

A. Yes, previously our team, helping with the videoing down the Slimline were held up on site waiting for clearance to go ahead with the work and it was also of delay with some of the drilling clearances and there's concern that people wanted to get on with the rescue and we'd been delayed unnecessarily by long delays from getting clearance from those risk assessments.

Q. Now, you've referred to the problems in putting cameras down these holes and in particular what you call the sewer camera, which was in fact used in this case in the first stages?

A. That's correct. The sewer camera's deployed because of its intrinsic safety.

Q. And one of the problems with cameras of this kind is the lighting effect from it and you referred to this in your evidence, they basically run out of steam in terms of the light into which the camera may take an image?

A. Certainly with the camera you can get good clarity in the exact beam of the light but a lack of three-dimensionality and obviously lack of the context of an image in relation to the surroundings.

Q. Your expression at paragraph 41 is that, "Outside the direct line of view, the light simply dissipates into an immense void."

A. That's correct, even more so in a void that's actually got a lot of coal in that void.

1200

Q. Potentially of relevance to this Commission is the possibility of a camera being obtained in the next week or so which has a high illumination factor, this camera from Australia, are you familiar with this?

A. I am, we actually have it – the identical camera, but not necessarily the additional lighting and in fact there's additional work we are being proposed to do that work with our camera and the lighting from Australia.

Q. The intention being that this will go down the existing boreholes or perhaps even another borehole to get a much better camera picture?

A. That is correct. You've seen from the CAL scans that CAL scan reference things by points which are, in the previous evidence, can be up to from two centimetres to 13 centimetres part, so an image is much better, a photographic image is much better or video image is much better than the CAL's image for fine detail.

Q. Have you used that camera?

A. We use that camera all the time, yes.

Q. Now you've referred to the depth of the Slimline shaft, you refer to depth or the depth of the boreholes into which the camera or the CAL scan was lowered, at 80 metres for the Slimline shaft and the other boreholes, the depth?

A. The maximum we've been down is about 155 metres on hole 44 and all the other holes have been roughly 130 to 140 metres depth.

Q. Whatever problems that posed, you obviously overcame them?

A. Yes, CAL scanning is, has been in the past our daily bread and butter work, so we're highly skilled even though the work we do up at Stockton is maximum 55 metres so going down 155 metres at Pike River in addition to which large volumes of methane are venting out of the holes as we're deploying is actually creating a number of obstacles which we've succeeded in overcoming with the help of Mines Rescue.

Q. You refer there to a problem which occurred as you tried to get the scan or the camera into the ground with the direction of the air either coming out of the shaft or reversing?

A. Yes I mentioned in the scanning of the Slimline in February this is obviously after the second explosion, there was a lot of heat and obviously you've seen images in the press of flames coming out the main vent shaft, the area around that – the vent shaft and the Slimline

had been extremely hot and for many, many weeks the up-flowing venting from that Slimline shaft was containing little globules of distilled oil which I believe is due to water getting into very, very hot coal and actually distilling the oil out and that was being picked up by the venting airflow and coming up the shaft. So much so we were very uncertain as to whether we could get that second CAL scan. But we did manage to get it even though our equipment got covered in tar and oil and everything else.

Q. Now just a discrete issue, you're up on the – or you had people up on the site for the purpose of the CAL scanning and just completed it before the second explosion, they were waiting for the helicopter to come down and by the evidence that people were really within 10 metres of the borehole?

A. That is correct. We were being advised from the control room and from our site controller and we actually received no indications that anything untowards was happening within the mine itself.

Q. Your evidence is that you heard effectively two separate explosions which came almost you say, simultaneously I think, but back to back?

A. That is correct, there was the main explosion affected both shafts, but less than a minute afterwards there was a second explosion, very short, sharp one almost as if the first explosion caused an implosion of air into the workings which then reignited and blew the second time. That was probably only detectable by ourselves because we were on the site and I'm not too sure whether it's been picked up by people further afield. There was definitely clearly two explosions at that point.

Q. Now I'll come to the scan that was taken on the night or the afternoon of the 24th and when it – it was viewed in the evening of the 24th, wasn't it?

1205

A. That's correct, quite late in the evening because we'd had to walk out with all the equipment.

Q. And your evidence is that when it was viewed there were quite a few people in the room, this is from paragraph 86 of your brief, and there

was a debate about what could be seen about the two large boxes, or the two boxes, with one with the lid open, there was debate?

A. Correct.

Q. And you've got two lines here which reads, "We were told by the PRC personnel present that the boxes contained backup self-rescuers." Do you remember who said that?

A. I'm not totally clear on that. There were a number of people around. I'd never been into that Slimline so this comment definitely didn't come from me, but it was actually mentioned. The concern more at that time was interpretation of the box being opened could be subject to a number of explanations. And obviously Glenville Stiles was the person who'd been there and done an audit obviously within days of the first explosion. So it was almost decided that further advice should be obtained before any further discussion was made on that open box.

Q. Now I think you in fact did do a further presentation, or assisted with a presentation, of that particular image not long after the night of the 24th. Is that right?

A. That's correct.

Q. And was that a presentation you made to police and Pike River personnel and Mines Rescue Service?

A. Yes, Mines Rescue Service saw that, in fact Glenville Stiles first saw that image at Mines Rescue building and I also gave a presentation to the police here in Greymouth at the police station.

Q. Was that shortly after the image was taken or was that after the inquest?

A. Almost certainly the - well showing that image at Mines Rescue was done probably one week after the image was taken. But the display to the police was almost certainly after the inquest, where a number of policemen came down from Wellington and called me back down from Westport to give a presentation to a room full of policemen.

Q. Now not so long ago you were spoken to by Mr Stokes on behalf of the Commission, and some of these events were revisited by you and a statement was prepared. Is that right?

A. Sorry could you repeat?

Q. Mr Stokes saw you and asked you about the events regarding this CAL scan image of the open boxes?

A. Yes, that's correct.

Q. And in that you referred - I needn't produce it to you, I'll just ask you the question - you assisted, of course, with a demonstration of the CAL scan at the inquest?

A. Yes I did. At the inquest I actually worked the software but the interpretation of things seen in the image was given by Steve Ellis, the underground manager of Pike River.

Q. And is it correct that the demonstration at the inquest did not show the open box in the way that it's been shown to this Royal Commission?

A. That's correct. I showed what images I was asked to bring up at that inquest.

Q. Now just reverting for a moment to the circumstances in which the CAL scan was first seen by you, or shown by you, on the night of the 24th of November last year, was there a discussion about what it meant in terms of rescue or recovery that you recall?

A. I don't believe that discussion actually came up that night, this is obviously getting late in the evening, most personnel, including Pike River personnel, had already left site and there was only almost a skeleton team still there. So it's almost decided that I would pass the image across to Pike River formally to Jason Bevington and a copy would be passed onto the police, and that any discussions would come up the following day or thereafter.

1210

Q. Do you remember having a discussion with Steve Ellis about whether this was a rescue or recovery operation, or hearing comment by him about that?

A. There was a comment made to that effect.

Q. Could you just say what you remember being said?

A. Could I confer?

Q. Yes, certainly it's not intended to put you in a difficult position, it's just seeking evidence. Who do you wish to confer with, your counsel?

A. Yes.

LEAVE GRANTED FOR MR STEVENS TO APPROACH WITNESS

CROSS-EXAMINATION CONTINUES: MR DAVIDSON

A. Steve Ellis did come into the room and made a comment, as I clearly heard, that outside the room it was still a rescue operation, but within the task room it was clearly a recovery operation.

Q. Just to complete that set of questions and to be fair to everyone involved in this, at the inquest when you showed the CAL scan you were not instructed not to show the open box, were you?

A. That is correct. I wasn't instructed not to show it. I was instructed to bring up the images as required.

Q. Now lastly, in relation to borehole 45 you have referred to the two scans that were taken and the second scan –

A. Sorry, that's probably hole 47.

Q. Sorry. I'll go to your evidence.

A. Hole 47 is the only hole that we scanned twice other than the Slimline shaft.

Q. I'm referring to your paragraph 103, where you say, "The conditions we went down hole 45 the second time were not ideal. I was in fact in Melbourne at the time." So, I'm talking about hole 45?

A. Oh, sorry, yes. The first attempt on hole 45 failed completely. We didn't get a CAL scan out of it. We had to back off because the drillers hadn't completed their task, so I had to go up to Melbourne, but our team went back a couple of days later after the drillers completed the hole to our satisfaction and completed the scan of hole 45.

Q. After you've explained the problems on that day, in your paragraph 105, you refer to discussing the scan results with Steve Ellis and Doug White and you conclude, "We'd like to re-scan the hole in more stable weather and use the last hit function to try and get a more definitive picture. However, to date this is on hold."

A. The intention is to re-scan that hole with certainly stable weather conditions which for the last few months we've actually battled to get that stable weather pattern. Instead we actually went back and re-scanned hole 47 in a small weather opportunity, but hole 45 will be re-scanned.

Q. You refer then to something called bore track, B-O-R-E-T-R-A-C-K?

1215

A. Yes, one of the issues we have at Pike River is orientating the scans from the surface. With our work at Stockton we orientate scans by using a series of interconnected stiff carbon fibre rods that are set up on a known orientation on the surface and the probe unit is lowered down on those rods maintaining the orientation until the probe enters the void. The scan, thereafter, is orientated with relation to that rod orientation. Pike River, we are lowering much, much deeper than we do normally and as such we don't have enough bore track rods, and so in the case of Pike River we have lowered the CAL scanner into the void, we've scanned, accepting whatever orientation the scan is, I then rotate the scan around to best fit the outline, the workings that I showed on my scans. At the start of each scan I showed the outline, the mine workings. Those are supplied to me by Pike River and I'd rotate the scan we got to best fit that outline.

Q. So in combination, you still would like, were it your decision, to go back and re-scan at 45 and to have the bore track rod mechanism to fix the position of the scan better?

A. There are two mechanisms for orientating the scanner in a void, one is with the bore track rods, secondly with the internal compass system. The only thing compass can be affected by metal, and with a lot of meshing and rock bolts around we were uncertain of whether we would sort of use a compass. One concern that's been expressed to me, and I've got no evidence whether this is correct or not, is that some of the survey information in Pike was less than, well, subject to some uncertainty. So, if you like, I've been asked whether our CAL scan have confirmed that there's any survey inaccuracy. I can't confirm that

because we actually use what I'm given by Pike to actually orientate my scans.

Q. Well, just to conclude, do you consider that further scanning with the assistance of whatever the directional mechanism you've described being employed will assist this Commission potentially in producing a more detailed or better imaging and identification?

A. Not in terms of the quality of the scan itself. The holes were drilled where they were for, as I mentioned earlier, for Mines Rescue purposes, however, the position at which the probe enters the void, or enters the drives or intersection of those drives, is actually supplied to me by Pike River. I can't calculate them from our own equipment which we would normally do ourselves. So I'm relying on breakthrough co-ordinates where the hole is broken through the roof of the tunnel and then information's supplied to me by Pike. In some cases I don't think that information was quite right. I think those are design breakthroughs, not the actual breakthrough position of the hole.

Q. I understand thank you.

CROSS-EXAMINATION: MR WILDING

Q. Mr Taylor, just briefly, at paragraph 56 of your witness statement you refer to a re-dated copy of the risk assessment used on 23 November.

A. That's correct.

Q. I take it that was a risk assessment for the use of the CAL scan in the Slimline?

A. The original risk assessment was done to lower the sewer camera down on the Tuesday and then when we were given the go-ahead to do the CAL scan on the Wednesday, the same risk assessment was used from the previous day and re-dated and approved.

Q. Thank you. I just want to turn briefly to the sizes of the boxes shown in the CALs image of the fresh air base, the Slimline. Do I take it that determining the sizes of images from a CAL scan is a complex matter?

A. It is the complex matter and that's why I deferred the enhancement in the measurements of that imagery to an expert in Maptek.

Q. Mr Stiles gave evidence that on the 26th of April 2011, there was a viewing of the images between you and Detective Superintendent Fitzgerald, do you remember that?

1220

A. I remember that clearly.

Q. And Mr Stiles says at paragraph 27, "We discussed dimensions and agreed that the open box appeared smaller than the closed box directly behind it." Do you recall whether you expressed a view about that?

A. I was probably doing the measurements of that box.

Q. Would you defer now to the subsequent evidence of Mr Moncrieff about the sizes of the boxes?

A. I would definitely defer to Mr Moncrieff. In doing those measurements he stripped away a lot of the extraneous points in doing those measurements because I was actually confronted there and then in the office by Mr Stiles and Detective Tom Fitzgerald. I was doing that on the spur of the moment I didn't have any pre-warning that that's what they wanted me to do.

Q. Understood.

QUESTIONS FROM COMMISSIONER HENRY:

Q. Mr Taylor you mentioned in your evidence that there was a risk assessment done and Mr Wilding's referred to it just now in regard to the task that you had to undertake of lowering down the CAL scan and I think you said that you hadn't actually seen that risk assessment, is that right?

A. As mentioned in my evidence earlier today, my tasks that morning was to pick up the 105 metre cable from Crofts and to get that to site as fast as possible ready to move up to the Slimline shaft. When I arrived at the site I was told by our surface – our co-ordinator Steve Bell that the risk assessment had been approved. I didn't formally see it, but we were approved to go ahead with the job. Now it's only later that I actually found it that a new risk assessment hadn't been done, it had been re-dated from the previous day.

Q. Regardless of not seeing it, did you – were you given any special advice on precautions to take given, as I understand your evidence, you only just missed a very dangerous situation?

A. We were, as part of the risk assessment we were led to believe that the team in the control room would have the monitoring brief looking at the mine conditions at all time that we were on site and we also had our co-ordinator there and then down at the Pike River offices and our clear understanding was that if things – if the conditions in the mine started to deteriorated we will be advised by radio to terminate our work and actually move away. Now from the first explosion to the second explosion there's been no previous explosions from the photograph I showed earlier today, there was obviously venting coming out of the main vent shaft, but I don't think up to that point there'd been any concern expressed anywhere around that the mine was about to blow up.

Q. Was there any mention to you of the possibility of a second explosion?

A. Not specifically.

QUESTIONS FROM COMMISSIONER BELL:

Q. Mr Taylor just carrying on from my colleague Commissioner Henry, when your people were near the main vent shaft, were they ever advised to wear any sort of breathing protection because there'd still be gasses coming out of that vent shaft?

A. There's venting coming out of the main vent shaft, but the Slimline was down-casting which is – and that had been clearly determined the previous day that all around the Slimline shaft where we were going to work was actually down-casting and fresh air.

Q. One of the photographs we saw had people standing near the vent shaft?

A. That's the main vent shaft, so we'd gone in – been dropped off at the main vent shaft but we immediately walked down 50 metres to the Slimline, so the Slimline was down-casting but the upper shaft was

obviously venting. So down at the Slimline itself where we were working for three hours there was no gas problems at all.

QUESTIONS FROM THE COMMISSION:

Q. Just one thing Mr Taylor with reference to the two remaining possible explanations for the object in the Slimline shaft and forward of the boxes, do you hold a view about that, or is again a matter where you would defer to Mr Moncrieff?

1225

A. I would have to defer to Mr Moncrieff. With the CAL scanning I'll emphasise again that the objects we see are defined by a series of points, and a limited number of points at that. It is very very difficult to even venture an explanation of what those objects on the floor, they could be brattice, they could be roof-fall, I wouldn't like to really venture an explanation of any object on the floor with just this CAL scan. We can measure dimensions, which obviously photographic images can't do, and in the case of hole 47 the visit I had from Glenville Stiles and Tom Fitzgerald was on the basis that they had obviously had some enhanced video footage of hole 47 that suggested the object in there might be a body and they came to see me to actually measure the dimensions of that object. So we can't really identify objects from CAL scanning. We can give dimensions and widths and lengths but not actually express really a conclusive or distinctive explanation of what that object might be.

QUESTIONS ARISING: MR STEVENS

Q. Mr Taylor, you had some questions put to you about CAL scans shown at the inquest.

A. That's correct.

Q. Can you confirm that you were not a witness at the inquest?

A. I was not a witness at the inquest. I was purely there to use the software to display whatever images I was asked to bring up on the screen.

Q. Did that occur during the inquest or at other times?

A. I was asked to display those images at the closed session at the inquest.

Q. Just pause there. "At the closed session at the inquest," had the inquest formally concluded?

A. I've no idea on that.

Q. Was anyone sworn in at the time you gave that demonstration?

A. I'm not aware of that. There were only two of us who were not legal counsel within the room at the time.

Q. Are you able to say whether the Coroner was present?

A. The Coroner was present and the Coroner had actually seen those images the previous night. I got a phone call to say the Coroner was flying into Greymouth and would I please come down and meet him at the police station.

Q. Can you recall whether he was present when there was the images shown to the families, or can't you say?

A. After the closed session I was asked to wait around in Greymouth to see whether we were required to show those images again. Chief Inspector Knowles rang me to say that we weren't and we started heading back to Westport, got as far as Mines Rescue and I called in there to speak to the Mines Rescue people and we got a phone call saying could we please immediately return to Greymouth and show the images to the family, which we did. But the question, I can't remember whether the Coroner was there, I don't think he was but I can't be certain on that.

1230

Q. And who selected what you displayed at those demonstrations?

A. I can't actually recall who made the selections.

Q. But it wasn't you?

A. It wasn't me. I was just the mechanism for driving this very specialised software that we have.

Q. And just the last topic of the risk assessment for the video image and then the CAL scan at the Slimline, are you able to say whether the risk

assessment done on the Tuesday, that's the day of the video assessment, was that seen and signed by any of your team?

A. Steve Bell was involved in that and I believe our team did actually see that.

Q. And sign it?

A. It would've been signed by either Steve Bell or a member of our team, but I'm not too sure who did sign it. As I mentioned, I wasn't on site that day, I was actually in Greymouth.

Q. I appreciate you weren't on site for the first day, but are you able to confirm that on both occasions the Slimline was always down casting?

A. Yes, that's clearly mentioned in evidence that both days a bit of ribbon was hold over the Slimline shaft to actually see the directional flow of the air and also gas readings were taken at the top of Slimline, both times, showing fresh air just below the base of the Slimline.

WITNESS EXCUSED

THE COMMISSION ADDRESSES COUNSEL – APPLICATIONS FOR LEAVE TO CROSS-EXAMINE

GLENVILLE MCKENZIE STILES (RE-CALLED)

CROSS-EXAMINATION: MR DAVIDSON

Q. Thank you Mr Stiles, this is all about of course, what is the open box and can we just have up on the screen please, SOE.002.0038? And there are, this is your drawing that you provided to Mr Fitzgerald?

A. Yeah, correct.

Q. And if we look at it in a linear sense as you've drawn it there, we have the two self-rescuers lying as it were side-by-side, same direction, and the, called the foam – what does it say, there foam man –

A. Foam man branch.

Q. Foam man branch box jutting out slightly forward but to the right of those two boxes. That's your recollection. Is that partly the reason that you consider that the image we see, have seen on the screen – I don't need it up now – of the open box is that fire and branch box because it is that right-hand box?

A. Yes, the first one as you went to the stub, it was the first one you'd come across, correct.

Q. Yes. And then today when you saw the image again and we had the several perspectives as Mr Taylor manipulated it, we saw a box in behind?

A. Mhm.

Q. So if that was the firebox that had moved in behind, obviously the open box became one of the other two self-rescuer boxes?

A. Yes, I cannot explain the image on the CAL scan. When I was asked by Detective Superintendent Fitzgerald to draw this sketch, I said it was a best recall, and that's exactly what it is and I still maintain that.

1235

Q. Yes, it's an April recall of events on the 12th of November last year as you saw it?

A. Correct, yes. As I said, too before, if during that audit on the 12th if I had've seen boxes, one behind each other, I would've shifted them.

Q. The inference seems irresistible that between the 12th of November and when that CAL scan image was taken, the boxes had been moved or something or someone had moved the boxes, is that right? Seems fair?

A. Yes, it does seem fair.

Q. You've referred to about 40 self-rescuers, Mr Couchman, who is to give evidence as I understand it before the Commission, looked at these boxes on the day before, the 18th of November, so six days after you, do you recall? You've read the evidence have you? You've been shown his evidence?

A. Yes.

Q. And he refers to there being 108 self-rescuers in the two boxes, about 60 of 30 minute duration and 48 in the 40 to 60 minute category, is that right?

A. Yes.

Q. And you wouldn't disagree with that, I presume, because you didn't actually count the self-rescuers in the audit?

A. No I did not count them.

Q. Did you have a look in the boxes?

A. Yes, yeah, at least one of the ones I did and it was just – my extent of, if you like the audit, it wasn't, it was just a check. My audit, true, was of the medical. My check was of the other rescue equipment so I opened the lid, were they in there? Yes they were. Put lid down.

Q. Mr Moncrieff's evidence, which His Honour's read part of, refers to the extent of the 25% of the box being visible in the CAL scan and nothing being in that but being unable to say, therefore, what's in the other 75% which is not visible in the CAL scan. When you checked the box, was it both boxes or just one?

A. I cannot recall, it was at least one.

Q. And in relation to how full the boxes were of the self-rescuers, can you assist the Commission?

A. I think I'll just commented and it's in the brief that it didn't appear to be any open space, you know, there was no – I would've thought if I looked in there and there's an open space there's something missing. I didn't come to that conclusion.

Q. So reasonably full up towards the top of the box?

A. When I say, "There was no space," there was no space within the stacking of the self-rescuers, rather than vertical dimensions above its space.

Q. You don't recall anything about the height of the stacked rescuers in the box?

A. Negative, no.

CROSS-EXAMINATION: MR HAMPTON

Q. Have I got it right, Mr Stiles, you'd been going in to Pike Mine over a period of about a year before the explosion?

A. My first audit I believe it was May.

Q. May, right. So how many times would you have been in to the mine itself, down into it?

A. Well, they were monthly audits, so every month. Around about mid-month.

Q. So maybe, six or seven times you'd been down it?

A. Correct.

Q. I have noticed in one of your interviews with, I think Department of Labour, subsequent to the explosion, reference to your expressing some concerns about smoke lines and the state of smoke lines within the mine. Did you make a report on that at some stage or mention it in way of a report at some stage?

A. No I didn't, not as a report but you'll notice in, I think in one of my audits, I just mentioned the smoke lines as I had mentioned in, you know, some of the other parts of the rescue equipment remembering that I am not a coalminer, I am not trained in smoke lines, they are not my expertise, I was there to audit the medical equipment and if I saw, I think in one of my audits I mentioned, I saw a smoke line that had broken, I repaired it

and mentioned it in my report. And that was the extent of my involvement with smoke lines.

Q. Had you made any observations yourself as to the extent of smoke lines within the mine?

A. No because I'm not qualified to make a judgement call on that. If I saw one broken, that's fair enough because I know what it's meant to, at least what it's meant to do, and it was broken.

1240

Q. In the course of that interview with the Department of Labour inspector didn't you say something about saying, "Seeing smoke lines and saying to yourself, 'heck if you know, how do I get out when I can't reach a smoke line,'" do you remember making a comment like that?

A. Yes because in the audit, I think if you read one of my audits, I said that the smoke lines were high. Again I'm not an expert on these, but of course access is a problem if you can't reach it and I think I mentioned about droppers. You know, droppers.

Q. And do you know whether you having mentioned it in your report, I think that was a June audit report but we may have to find it in due course, do you know if – next time you were under there was any remedial work done in relation to that?

A. Usually in my audits I take the one of the month previous underground so I could look what I'd mentioned a month before, so I'd have to look at – if that was June, then I'd mentioned something in July I may have actioned something, but once again it was not part of my audit process – the medical equipment was.

Q. Ms Anderson has given me reference to your August audit and the document number is DOL7770030096 and then at page /2 of that there's a reference in this way. Fourth paragraph down if that could be highlighted please? It's the one that starts, "The smoke lines," would that accord with your recollection?

A. Yes, yeah, that was the one I was referring to before.

Q. "Smoke lines underground cannot be easily accessed because they are so high, a possible solution might be high vis droppers or streamers at

each crosscut. Smoke lines that cannot be reached defeat their intended purpose as an emergency response capability. Broken lines found were repaired during this audit." That's your reference.

A. Yes, well I once again stress I'm not a qualified miner but I saw something and I noted it.

Q. Can you remember the extent of the lines that you repaired yourself on that occasion?

A. No I, I just assumed a loader or something had hooked on smoke line and it broke, so I just repaired it.

Q. Just one line or more than one line that you had to repair though, that's what I'm asking?

A. No, sorry, yeah, it was that one particular line was broken in a couple of places.

CROSS-EXAMINATION: MR WILDING

Q. Mr Stiles, Ms Anderson and also now Mr Hampton have taken you to some of your audits. As I understand it, you gave those to Mines Rescue?

A. They would go to Neville Rockhouse and to Mr Trevor Watts.

Q. To both. The audits that you've conducted all seem to be dated between about the 12th and the 14th of each month. Is there something about that timing?

1245

A. Yes, that was an agreement that Neville and I came to. I think that Mr Rockhouse had some sort of safety or management meeting mid-month or somewhere, and so it was agreed that I would do the audit in advance of that so that he could have a copy of that audit to table at the particular meeting that he had on a regular basis so that if there were any issues I guess.

Q. Mr Rockhouse gave evidence yesterday at page 1472 of the transcript that if you had serious concerns you would see him and, "If Glenville came to see me and said, 'Neville we need X, Y, Z' then I'd say, 'Order X, Y, Z.'" Do you agree with that?

A. Absolutely so. An example of that was the signage for the self-rescuer caches in that a lot of those boxes underground are very similar and I wanted to ensure that the self-rescuer cache ones had signage that identified them as such. And we talked about that when I came out of the mine and said, "Neville, shall we get some signs for this?" And he, you know, he just said, "Yeah, we just do it," and it was done. So issues like that, that I guess that he had the capability of an actioning on the spot and I never had a problem, ever.

Q. Just turning briefly to the content of the trauma kit, and you outlined to Ms Anderson what it contains, do I take it that it didn't include food?

A. No, there was no food in any of the kits.

Q. Nor lights?

A. Negative, no lights.

Q. Nor any source of oxygen inside the trauma kits?

A. Not inside the trauma kits.

Q. And you've referred to an, "Oxygen kit," are they portable?

A. Yes they are. The trauma packs and the oxygen packs have back-straps on them so that if they had to be deployed, I guess in an area, or an event had occurred which meant that the rescuers had to be hands-free, the packs could be put on their back and the rescuers could access the area hands-free.

Q. Are you able to give a range of time for how long one might last, one oxygen pack, if used as the sole source of oxygen by one person?

A. I can do, but this is for medical oxygen for an injured person rather than, it is not a rescue piece of equipment, it is only medical oxygen, okay. So it has a regulator on it so you can alter the flow rate. If the flow rate, and it's a 200 litre cylinder, 200 litres medical oxygen, 100%. So dependent on the flow rate dialled in. So with, say a five litre, it's just mass, five litres per minute, or 10 litres per minute, you know, you've got 20 minutes say. What I'd done to make sure that the use of this equipment was appropriate, I put high vis labelling on each of the pouches within the oxygen kit, and actually stating the flow rates, stating their purpose and their application. So that even though we trained with

this equipment, when they open the kit it was sort of like a mental refresher for them. Likewise, in the trauma kit we put an insert just to remind them their organisation of their emergency, there was a folder, a patient assessment form, and on the outside of the folder I had written, "Scene management, ensure delegated tasking," and I'd written, "Leader, medic scribe, comm, safety, logistics et cetera," so that it'd help remind them to organise their rescue event.

Q. Without going into any other detail, does that mean that if it was the sole source of oxygen for one person a canister might last about 10 to 20 minutes?

A. Yes.

Q. Are you able to say whether the mouthpiece was a type that formed a seal around the mouth and nose so as to -

A. No they're not.

Q. So it couldn't be used in an irrespirable atmosphere?

A. Negative.

Q. Do you know whether there are any other self-rescue caches underground aside from those at the Slimline fresh air base?

A. None that I'm aware of, otherwise I would've ordered the signage for the lids of those too.

1250

Q. From your audit report it appears that the telephone at the fresh air base was not working. Do you know if it was connected?

A. From recollection there was three phones at the fresh air base, two disconnected, one connected but not working.

Q. Do you know whether at the time of your last audit the DAC at the fresh air base was working?

A. Yes, I believe it was.

Q. Are you able to say whether the DAC could be utilised in such a way so as to sound an alarm up at the main headquarters?

A. Again, I'm not an expert on the DAC system, can't comment on that.

Q. If I could just take you finally to document DOL7770030095/4?

WITNESS REFERRED TO DOCUMENT DOL7770030095/4

Q. And this is your audit report for 12 August 2010 and the third to last paragraph reads, “Neville has asked for selection of scenarios suitable for desktop exercises during training. These will be supplied as soon as possible. This has been done.” Are you able to recall what scenarios you gave him?

A. Yes, I do. In actual fact they were copies of the scenarios that I’d built up as part of the first aid courses and remember I said that the courses I run are mine specific, so the ones for Stockton I have opencast type situations and I have also developed some underground ones so I gave copies, some copies of this email through to Neville.

Q. Did they include any scenarios that involved a fire or explosion underground?

A. I think not to the extent obviously had occurred, has occurred. These were, I think I had one where a transformer had exploded so it was more, they were designed more, these ones to test the ability of people to respond to a medical emergency.

Q. Are you aware of whether there was any testing of those scenarios?

A. No, I’m not aware.

RE-EXAMINATION: MS ANDERSON – NIL

1253

QUESTIONS FROM THE COMMISSION - NIL

WITNESS EXCUSED

THE COMMISSION ADDRESES THE COUNSEL - WITNESSES

MS LUMMIS ADDRESSES THE COMMISSION

MR WILDING ADDRESES THE COMMISSION

THE COMMISSION ADDRESSES COUNSEL – DISCUSSION PHASE THREE

COURT ADJOURNS: 12.55 PM

INDEX