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

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, D MacKenzie, R Schmidt-McCleave and P Radich for certain managers, directors and officers of Pike River Coal Limited (in receivership)

C Stevens and A Holloway for Solid Energy New Zealand

K McDonald QC, C Mander, A Williams 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 Stead for McConnell Dowell Constructors

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

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

J Haigh QC and B Smith for Douglas White

J Rapley for Neville Rockhouse

TRANSCRIPT OF PHASE THREE HEARING
HELD ON 22 NOVEMBER 2011 AT GREYMOUTH

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COMMISSION RESUMES ON TUESDAY 22 NOVEMBER 2011 AT 10.02 AM

CRAIG LINCOLN SMITH (RE-AFFIRMED)

EXAMINATION CONTINUES: MR STEVENS

Q. Mr Smith, can you continue reading your brief of evidence from paragraph 43?

A. "Matters which can be more specific to hydraulic mining include the planning process. This can differ from, for example, longwall mining as the layout of a hydraulic mine is largely built around the encountered geology. The operation of the monitor can also be different from longwall mining in that the skill, experience and judgement of the operating in adapting his process to what is happening at the mining face is important. By this I am referring to the fact that operation of the monitor is carried out remotely. Visibility is poor due to the environment around the monitor being filled with water vapour. The operator must be able to see the monitor barrel to gauge both the vertical angle and the horizontal angle. He also needs to be able to see the disposition of the jet as it leaves the nozzle. This aids in determining nozzle wear which lowers cutting efficiency. The operator must then rely on the less direct signals he receives to maintain a preferred cut sequence and to maintain good productivity and to carry out the job safely. The signals the operator relies on include, the noise of the monitor jet; the size of the coal lumps in the slurry; changes to the water flow coming from the face; the noise of falling coal and stone and the gas readings he receives from the sensor mounted in the panel return. Using this information, the operator is able to build and maintain a mental picture about what is happening in the face area and is able to maintain the designed mining process. Prior to extraction commencing in a hydraulic mining panel, a series of operational safety reviews are conducted. These include technical risk assessment to ensure all controls are appropriate and in place, and authority to mine is issued, a permit to mine is produced and authorised to cover the immediate week's activities and applicable triggered action response plan, the TARPs and standard operating procedures, the SOPs are reviewed and updated if necessary.

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A. At Spring Creek there are 18 SOPs and a series of TARPs which relate to extraction activities. To assist the Commission I have selected some of the relevant SOPs and TARPs which are attached and marked as indicated below. I've also attached as examples an authority to mine and a permit to mine. One difference between Spring Creek and Pike River that I'm aware of is that Spring Creek is not equipped to drill long inseam bore holes to help determine the structure of the coal seam ahead of mining. Nor do we practice methane drainage. We do, however, get some further definition of the seam by drilling inseam bore holes up to a maximum distance of 120 metres. Our strong preference is to ensure these holes are confined to the planned panel limits. That is we drill in the direction of the panel advance. The principle reason for this is to ensure that we do not create a spontaneous combustion risk by establishing a potential airway between future mining areas. Our procedure is to grout boreholes after drilling to minimise the risk of methane filled holes that may be breached by future roadways, however, this can be very difficult especially if the gas pressure is high and it is not guaranteed that all bore holes can be successfully filled with grout. We have a very prescriptive procedure for advancing in the vicinity of old bore holes that assumes they potentially contain methane under pressure." I've attached a copy of the relevant document *Intersecting Boreholes In Mine Workings*. "Strata control and gas in particular methane are monitored throughout the life of each panel from development through to extraction. Periodically and at the end of each mining panel we would conduct a review of the strata controlling gas monitoring results. Such reviews would consider the original risk assessment and outcomes of mining the panel to review whether their control was sufficient. Should there be any departures from the expected range of conditions then these will be considered and we would also consult with our experts in the relevant fields. For strata control this would typically be a consultant strata control technology, in effect is SCT, and for methane and ventilation issues Andy Self. Further background details – please refer to the hydraulic mining monitor extraction paper produced by Greg Duncan and Chris Menzies, that's attached. The Spring Creek Mine panel design guidelines are also attached. In general terms the design and dimensions of panels will be dictated by a combination of the encountered geology and the performance and cutting

ability of the monitor. At Spring Creek the panels are generally 135 to 150 metres wide and the total pane life is typically nine months.

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A. The extraction sequence is designed to create a relatively straight goaf line and for the retreat operation to be continuous. However, the operation does result in incremental goaf collapses as opposed to a more continuous goaf draping or collapse that may be expected or achieved in a longwall operation. Those collapses which may be in the order of 30 metres by 30 metres by 10 metres in size are unavoidable. The principal hazard of such goaf collapses is a potential for relatively large volumes of methane to be pushed into the panel return over a short time interval. This hazard is discussed in relation to methane gas management below. As I have previously stated the geology determines to a large extent the dimensions of each panel and the mine layout. Within these constraints panels are designed to ensure a safe operation. The length and width of the panels are restricted to ensure proper strata management and pillar loading, relatively fast retreat and good seam recovery. Pillar dimensions are 30 metres wide between centres and up to 100 metres in length. Minimising cross-cuts is beneficial for the monitor operation and a system maximising recovery and continuous goaf collapse. Various experts have been consulted in the determination of the panel, pillar, roadway and barrier dimensions, in particular SCT. The cleat direction in the coal can influence productivity, but it is usually a secondary consideration at Spring Creek, the more important variables being the dip of the seam and the location and strike of the major faults. Ventilation design. Ventilation design is complex. At a basic level it needs to take into account the coal characteristics, in particular the in situ gas content of the coal and the rate at which methane will be liberated during the mining process. A number of mining faces, the planned level of production and the resulting volumes of gas that will be liberated, fundamental inputs to ventilation design. The number of roadways and ventilation infrastructure to ensure sufficient ventilation quantities will ultimately be determined by the size of the mine. Both the production level at which the mine is anticipated to operate and the physical extent of the mining operation. The mine is very expansive, the mine resistance may be proportionately high. Mine resistance is the frictional effect of the roadway on

the airflow and increases as the air velocity increases. The resistance of rough-sided and irregular roadways is also higher. To maintain ventilation pressure at an acceptable low level additional roadways may be required to reduce air velocity. Spring Creek coal is moderately gassy with in situ methane content of approximately four cubic metres per tonne of coal. Methane liberated by the mining process, that is not diluted and taken out of the mine by the ventilation system is allowed accumulate in the goaf.

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While the accumulation of methane in the goaf is not unique to hydraulic mining, how the goaf is managed during the extraction process and the likelihood of roof collapse in the goaf pushing relatively large volumes of methane into the panel return, are different to, for example, longwall mining. The objectives of the hydraulic mining process are to ensure the rate at which methane is admitted into the panel returns within the capacity of the ventilation system to dilute it to a safe level, to maintain the maximum amount of methane possible in the goaf to ensure the goaf atmosphere is inert and to maintain a narrow gas fringe at the goaf edge. The mine design and operation of the monitor is aimed to achieve these outcomes. The objective is to maintain a low resistance airway across the face of the lift to minimise the amount of air entering the goaf. If the pressure across the mining face exceeds a predetermined maximum, a new airway, we call that a split road, is required to be mined using the monitor. To manage the volume of methane being discharged, the monitor uses the gas readings from the panel return sensor. We call that the cab point sensor. The face pressure reading from the face monometer and that's relayed by the surface control room operator and his own sense as in experience to alter the position of the jet. Following a raised emission of methane the operator may order the bypassing of the high pressure water to interrupt coal production. Methane can be driven from the goaf into the panel return via either the anticipated progressive roof collapse or by the action of the monitor itself. The percentage of methane in the return needs to be kept below one and a quarter percent. The operator is not able to prevent goaf falls and the mining method is designed for and requires these to happen. The operator's objective is to recover the design for or the maximum amount of coal before the stone roof collapses and requires the operator move to the next lift in the sequence. The operator is however able to effectively control the action of the monitor to avoid the water jet from displacing large volumes of

accumulated methane. Continuous methane reading he sees on the readout in the operator cab from the cab point sensor, gives him a real time update on how well he is managing this process and allows him to adjust the monitor if the gas level significantly increases. Early in Spring Creek's life some work was carried out to test whether bleeding methane from the goaf through a borehole was useful in helping to control the gas fringe. The test was hampered by an inability to accurately monitor methane levels throughout the goaf to ensure an inert atmosphere was maintained and it was concluded that there was no advantage in pursuing this option as a strategy to control the size and placement of the gas fringe. A further measure to manage methane is that it would be typical or standard practice for Spring Creek to suspend hydraulic extraction and isolate power to the conveyor belt in the return during periods of rapid barometer fall. As with other pillar extraction methods, the hydraulic method of lifting of pillars results in goaf falls. Lifts are designed to best ensure the coal can be fully recovered before the goaf roof collapses. Falls can result in a relatively large quantity of air with an elevated methane content being pushed out of the goaf and into the panel return and potentially into the intake roadways. To provide an additional safeguard in the eventuality of high methane levels being discharged into the panel return, a series of louvers installed in the panel ventilation stoppings are activated to short circuit intake air into the return to dilute the higher methane concentration and to reduce the flow to the face, thereby controlling the rate at which the face is degassed. These louvers are commonly referred to as dilution doors. The schematic plan in figure one shows the indicative location of the multiple sets of louvers and the location of the methane sensors which automatically activate the louvers at preset methane levels. The louvers are constructed locally of steel and operated by a compressed air ram. They are set into ventilation stoppings made from steel mesh and sprayed concrete." And I need to elaborate," some of those stoppings close to the face are made of temporary materials rather than steel and concrete. "The louvers are recovered on the retreat and reinstalled outbye so that a functioning system of three sets of dilution doors is maintained. Just as between the gas sensors and the panel return and the location of the louvers these sensors control, is calculated to ensure the dilution doors open ahead of the raised methane concentration arriving at the relevant crosscut. The system design allows for a delay of up to 10 seconds between methane arriving at the real time monitor and the relevant dilution door opening. I understand this to be

a conservative estimate of the time required for the monitor to process a gas sample. Impact to the development ventilation quantities when all louvers are open has been measured and there is only a very marginal impact. This is the impact to the development ventilation operations elsewhere. In other words, operating the dilution doors, does not adversely affect ventilation in other parts of the mine, or disturb the proper functioning of the ventilation system overall. My understanding of the Spring Creek ventilation –

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Q. Mr Smith, I've had a request if you could please slow down somewhat in your reading speed because the stenographers cannot keep up with you, so while we may be appreciative of the pace, if you could please reduce it somewhat.

A. Certainly. "My understanding of the Spring Creek ventilation bypass dilution door system is that one set of doors was introduced into the ventilation plan around 2005. This system was extended to allow for a secondary set of doors in 2006. The current set up using three sets of doors was established in 2008. This progressive refinement was driven by risk assessments which are carried out routinely and particularly as part of a post-panel evaluation that is conducted at the conclusion of each panel. Between 2008 and 2011 there have been a total of 23 level 3 responses where the gas level and volume has been such as to activate all three sets of louvers. I have evaluated the data as far back as 2008 and confirm that the maximum methane level achieved beyond the panel entry during this period was 2.7% methane. The list of all level 3 response occurrences is attached and marked. The system also trips power to all electrical infrastructure in the return airway outbye of the panel. This trip is set at 2.5% methane.

Q. Mr Smith, if I can just get you to pause at the conclusion of your paragraph 71, and just take you back to, at paragraph 65, you referred to and partly took as read that "hydraulic extraction was suspended, particularly where there were barometer falls of, for instance, 1 hPa an hour." Are you able to say if any of those 23 level 3 responses you just referred to in your paragraph 71 were because of barometer falls?

A. Yes, I can. I haven't got – we haven't got the data to confirm exactly, but I'm advised by the mine manager that approximately half of those were the power had already been isolated as a result of the barometer conditions.

Q. Yes, so that wasn't tripped?

A. No.

Q. It was actually turned off by the appropriate person in the mine?

A. That's correct.

Q. Yes, thank you. Could you continue reading please at paragraph 72?

A. "All mobile electrical equipment is also equipped with methane sensors set to trip power at 1.25% methane. The TARP which describes the activation levels for the movers and the actions required of the various personnel is attached. An indicative location of the primary, secondary and tertiary louvers is shown in figure 1. How these louvers operate can be summarised as follows: Under normal operating conditions the methane level in the return is 0.3% to 1.0%. This reading appears in the operator cab and also in the surface control room.

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A. All louvres are in the closed position. Approximately 25 cubic metres per second of air is passing the operator and 15 cubic metres per second is entering the return through the panel dilution regulator. Together that makes up approximately 40 cubic metres per second entering the panel. Should the cab point sensor register 1.25% the operator will have already seen a rise in the methane level and taken steps to lower the amount of methane being produced. At one and a quarter percent, the first set of primary louvres open. So within the primary louvre position there is two louvres operating independently so at one and a quarter percent the first set of primary louvres open bypassing approximately six cubic metres per second from the face into the panel return. Should the cab point sensory register one and a half percent methane the sensor opens the second set of primary louvres. Should the secondary sensor register one and a quarter percent methane, this would trigger the opening of the secondary louvres, so this is the second set of louvres. Again there's two sets of louvres for these operate as one. The secondary sensor – should the secondary sensor register 2.5% methane this will trigger the shutting off of power to the belts and other electrical infrastructure in the return roadway. The tertiary sensor registers 1% methane and this triggers the opening of the tertiary louvres."

Q. Mr Smith again please just before you go on to paragraph 75, can I therefore get you to confirm that the primary louvres have two doors and those two doors operate independently?

A. That's correct.

Q. And the secondary louvre also have two doors but they operate as, effectively as one door?

A. Yeah, that's correct.

Q. And the tertiary louvre is a single door?

A. It's a single louvre, yes.

Q. Could you please continue at "C Spontaneous combustion control?"

A. "All coals oxidize. This oxidation is an exothermic reaction that produces among other gases carbon monoxide. As the temperature of the coal increases the chemical reaction becomes exponential with an increasing rate of temperature increase culminating an open fire. This process is variously called spontaneous combustion and self-heating. Different coals have differing propensities for spontaneous combustion. These factors can be intrinsic as well as extrinsic. Intrinsic factors include coal rank, particle size, gas content, mineral matter and moisture content, with rank being the most important variable. Extrinsic values include site conditions, geological factors, mining factors with possibly size distribution and air supply being the more important. There are a number of measures used to determine different coals spontaneous combustion propensity. The more common measure adopted in Australia and New Zealand is the R70 self-heating rate developed by Beamish and others. Using the R70 index an intrinsic spontaneous combustion propensity classification for Australian and New Zealand coals has been developed. In this classification coals are classed from ISCP class I for coal having a low spontaneous combustion propensity through to ISCP class VII for coals having an extremely high propensity. Coal from Spring Creek Mine has an R70 of approximately five (this is equivalent to class V and it has a high propensity). Referring again to the extrinsic factors that affect the progress of spontaneous combustion, the conditions at Spring Creek which have the greatest potential to give rise to accelerating spontaneous combustion are within a mining goaf in an extraction panel. Large quantities of broken coal are left in the presence of oxygen and a low airflow. These conditions may allow

the oxidation process to continue, but with an airflow that will insufficiently cool the spontaneous combustion reaction. A recovery rate in Spring Creek hydraulic mining panels is generally a little over 60% including coal sterilised and barrier pillars." That's barrier pillars, a typo there.

THE COMMISSION:

Q. Sorry barrier?

A. Pillars, P-I-L-L-A-R.

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EXAMINATION CONTINUES: MR STEVENS

A. "This means significant quantities of coal are left in the goaf and as already noted the risk of spontaneous combustion needs to be managed. The primary measures to minimise the risk of spontaneous combustion in the goaf are: panel design, and that's designing panels that allow relatively rapid retreat and the creation of an extinct atmosphere well ahead of when accelerated spontaneous combustion is expected to occur. 2, minimising the loose and broke coal left in the goaf. 3, ensuring the maintenance of an extinct atmosphere in the goaf while allowing it to fill with methane and finally, preventing the ingress of oxygen. Continuous monitoring of goaf gases is essential to give early warning of spontaneous combustion trends. The available responses to an accelerating heating occurring in the goaf are limited. Spring Creek is equipped with a nitrogen manufacturing plant that has been found to be a useful aid to quickly inertise mined-out areas, but in most accelerating heating situations, the best and most reliable practice is to immediately seal the area off."

Q. Just pausing there Mr Smith. What preparation do you have for being able to take nitrogen to a panel before you commence mining it?

A. We have a permanent reticulation system from the surface nitrogen generation plant, which is connected to all extraction places, so there's a permanent system which is then expanded to a new place before it starts retreating.

Q. Yes, thank you. Would you continue please at paragraph 80?

A. "Ventilation experts Andy Self and Roy Moreby have advised on Spring Creek's processes for managing spontaneous combustion. Technical

and operational staff are also very experience in mining on the West Coast and working with a coal which has a high spontaneous combustion risk. Gas training and spontaneous combustion instruction have been provided to Spring Creek mining personnel by SIMTARS. Talk about permanent seals. An important safety measure is that the foundation work for permanent seals, we refer to these as prep seals, is constructed before any extraction from a panel commences. Doing this means that in the event of any evidence of spontaneous combustion is detected, the panel can be sealed with permanent fit for purpose seals within one shift. The specifications for constructing permanent seals, ventilation stoppings and other ventilation structures are set out as part of the Spring Creek ventilation management plan. In general terms, Spring Creek seals are made of a gypsum type cement product, termed Pitcrete, it's a proprietary product, sprayed onto a steel mesh to various thicknesses to achieve a set pressure rating. Pre seals involve grouting the ribs, roof and floor to prevent leakage and constructing a steel and concrete frame into which the permanent seal can be built.

Q. Again if you could pause please, at the end of paragraph 81, can I take you please to the authority to mine, or ATM, for panels 7B and 7B extension – that's .008, Ms Basher.

WITNESS REFERRED TO DOCUMENT

Q. Can you confirm that that's the ATM for those panels?

A. Yes, that's correct.

Q. And can we go please to the second page?

A. Yes.

Q. Would you anticipate that those people in those positions would have reviewed that document?

A. Yeah, they're the people that are responsible for the various elements in the authority to mine, that's correct.

Q. And would you expect that there would've been a signed copy within the files?

A. Yes. There should be. This is an electronic copy here and I'm advised that the process has been to have signed copies with the technical manager and we're making steps to ensure that the actual electronic copies of these documents are signed. The technical manager's the only person that has

control of this, these documents, but, and I'm certain that the original has been signed.

Q. Yes, and the authority to mine, do they set out to minimum standards?

A. Yes, they do.

Q. Can I take you please, in light of your paragraph 81, where you talk about "the prep seals involving grouting of the ribs, floor to roof to prevent leakage and construction of a steel and concrete frame into which permanent seal can be built, could we go to 2.4.4 of the document please. It's page 16. And could we highlight 2.4.4 please.

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WITNESS REFERRED TO DOCUMENT 2.4.4

Q. Are you familiar with that paragraph Mr Smith?

A. Yes, yes.

Q. And does that suggest that the frame actually isn't put in at that stage?

A. That's correct, that's what the ATM allowed for, that there was difficulty with constructing the preparatory wing walls as a result of the coal fluming past the wall that's damaging them but we have during the process of panel 7B, we did manage to construct the prep seals which prevented that happening. So whatever, if there is a difference there, it's an improvement that was created during the installation of the newly supplied prep seals.

Q. So returning please to your paragraph 81. Your last sentence at paragraph 81 that you do construct the steel and concrete flame, that is in fact correct?

A. Yeah that is the standard now and it was what was applied to that panel that the ATM referred to.

Q. Could you continue reading please at paragraph 82.

A. "A tube from a tube bundle is also built into the seal so that the atmosphere on the goaf side can continue to be monitored after sealing. Depending on the circumstances and operational requirements at Spring Creek, a permanent seal will commonly comprise two seals with the outbye seal being designed to withstand 20 PSI of pressure. The cavity in-between the first and second seal is then filled with nitrogen to make it inert and eliminate any potential oxygen source from the goaf as quickly as possible. The goaf beyond the second seal will self- inertinise with methane although the addition of nitrogen will accelerate this process. The operation of the monitor is carried out remotely to

safeguard operating personnel. The operator controls a monitor from a cab that is positioned in an intake roadway at a minimum of 14 metres outbye of the monitor itself. For location of the cab as prescribed in the relevant SOP. An indicative first monitor and operator cab positions are marked in figure 1. The particular risks of hydraulic mining to the operator are from the slurry travelling back from the face and the potential for an irrespirable atmosphere due to methane from the goaf. To mitigate these risks the monitor operator sits in an enclosed cab that has its own communication system. A methane detector is located in the airway adjacent to the cab. A forcing auxiliary fan located outbye of the cab ensures a high velocity of air stream is delivered at the monitor. The cab is also equipped with a compressed air supply to safeguard the operator in the unlikely event a major goaf fall forces methane into the intake as far as the cab. In all the years of hydraulic mining at Spring Creek, the compressed air supply has never been required to be employed. The operator cab is suspended from the roof by chains. This is to guard against the risk posed by large amounts of cold water slurry flowing past the operator. As well as suspending the cab, Spring Creek has strict controls on when work can be carried out in any active flume road. The relevant SOP prescribes that neither the operator nor any other person is permitted to advance beyond the cab while the monitor is in operation, that's when it's at full operating pressure. At some point ahead of the 3rd of November 2010, Matt Cole an engineer working for Pike River contacted staff at Spring Creek. Matt is a contractor and has previously undertaken some work for Solid Energy. Matt used his contacts at Spring Creek to seek some advice about how Pike could improve its cutting rates and coal production from the Pike River trial panel. Solid Energy agreed on an informal collegial basis to observe the hydraulic monitor in operation and see if it could offer any advice. Solid Energy understood the slow cutting rates at Pike were causing particular concern and frustration amongst Pike management.

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A. On the 3rd of November 2010 the following Solid Energy employees from Spring Creek Mine visited Pike. Greg Duncan, the general manager and statutory mine manager of Spring Creek. Thain McKenzie, the hydraulic monitor operator. Ian O'Neill the extraction co-ordinator and Chris Menzies the

extraction superintendant. Each of these people has 20 to 30 years of experience in mining on the West Coast. The Solid Energy group arrived at Pike River at approximately 10.00 am. They were met by Matt Coll. While on the surface they also met with Doug White, George Mason, Terry Moynihan and a Pike geologist. Solid Energy group undertook a standard induction on the surface before entering the mine. They were accompanied underground by George Mason and Matt Coll. While underground the Solid Energy group visited the underground monitor pump station that was near Spaghetti Junction and the trial panel including both the intake and return roadways, the cross-cut, a view into the goaf and the hydraulic mining set out, that's the guzzler and the monitor. They didn't visit any other parts of the mine, such as the main ventilation fan or development areas where the roadheaders, continuous miners and in-seam drill rigs were operating. Solid Energy has no knowledge of the systems Pike had in place for monitoring gas at the extraction phase or whether the operator had access to gas monitor equipment from where he operated the monitor. Solid Energy was not made aware of what training Pike' monitor operators received nor were the systems and processes Pike had in place for managing and carrying out its hydraulic mining operation safely discussed. The purpose of the visit was to see how the monitor itself was being used to cut coal. The Solid Energy group was underground for approximately two hours. The group saw the monitor cutting for approximately 15 minutes. The remainder of the time was spent travelling to and from the panel. A couple of SMV breakdowns I understand and waiting for the monitor to start up. It was while waiting for the water to come that the group walked around the trial panel and looked at the return and cross-cut roadways. A few days after the visit Chris Menzies and Ian O'Neill met with Matt Coll to give their advice about how the monitor was being operated and suggested various changes that could be made to the technique. If the monitor had been pulled back just prior to the visit and during the visit was being used to put a first split into the rib. It was obvious the coal was quite hard and cutting appeared to be extremely slow. Based on their experience the Solid Energy group thought that the cutting technique being used was unsuitable for the conditions. They concluded that technique was the primary contributor to the low cutting rates, rather than for example, coal hardness. Spring Creek has coal that is equally

as hard, if not harder, than coal at Pike River. Specifically the following was observed. There was poor technique for the methodology for the hard coal conditions. In particular Thain McKenzie observed that the operator who was on-shift during the visit and cutting the first split was inexperienced. He moved the nozzle up and down 60 to 80 times within a short period without extracting coal. The water running past the operator was running clear. This does not match Solid Energy's experience about how best to use the monitor jet to cut the coal. The jet should make slow lateral progressions in addition to its vertical movement so that the water hits and manipulates the cracks in the coal. The operator wasn't using the right angle or lateral movement to do this. It appeared that the design of the jet needed to be improved. Thain McKenzie asked to see the nozzle on the monitor, however Matt Coll did not want to show him and gave the impression he did not think it was important. This is contrary to Solid Energy experience and staff at Spring Creek are always trying to improve the design and quality of the jet. There was a large amount of framing and a large support structure around the monitor which obstructed the operator's view of the jet and nozzle. Visibility from the monitor controls at the guzzler was extremely poor. The operator was unable to see the full range of the monitor barrel's movement. The monitor was positioned on tracks which appeared to make it difficult to manoeuvre and probably much slower to pull back. There did not appear to be any mining-induced stress, I refer to this as weight on the coal to assist with the monitor breaking it up. This is not a technique issue, but rather a difference in the conditions at Pike River that Pike was going to have to deal with.

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A. The set up of the hydraulic monitor and associated equipment was materially different to that at Spring Creek. Solid Energy group's impression was that the equipment was larger and more complex in its design than necessary and the Pike staff lacked experience with it. This was likely to make the set up prone to downtime and slow production. The panel was still very much a trial and Pike was not ready to move to full production. Pike was trying to extract coal without fully understanding the conditions or investing in necessary development and infrastructure. For example, at the time of the visit, only one pump was being run, I think this meant that the monitor was at half-capacity,

because the fluming slurry system couldn't handle the full production. The Solid Energy group commented to each other about the following after the visit: lack of stone dust in those places the Solid Energy group visited. High levels of coal dust, poor floor conditions of the roadways, the breaking down of the SMV vehicle, good ventilation volumes in the trial panel, and that the ribs were in very good condition. No dilution doors were observed during the visit. Pike had previously sought and obtained advice from Spring Creek about its dilution door system and was therefore aware of how the Spring Creek dilution doors were designed and their intended purpose. Greg Duncan's read Steve Wylie's statement and notes his comment at paragraph 88 that 'dilution doors were not operational and had no impact on the operations of the hydro panel'. In Solid Energy's view, dilution doors are particularly important when hydraulic mining in gassy mines. They have been developed over a number of years to form a key part of the hydraulic mining operation at Spring Creek. On the day of the visit the door in the stopping in the first cross-cut was padlocked. The Solid Energy group thought it unusual for such a door to be padlocked, but they were not aware of Pike's systems and processes. Solid Energy has seen a copy of the document TR.001.0194, which is an email sent by Peter Whittall to the directors of PRC on the 4th of November 2010. In this email Mr Whittall wrote, 'Main production issue being addressed is the tonnes per hour output of coal from the hydro-monitor. System operation is good and availability higher than forecast. But actual coal output from the face is well down on expectation in these early cuts as the nice hard coal just wants to stay there. We had a visit from the senior Spring Creek management and hydro team yesterday who inspected the face and observed operations. They concluded that our systems and cutting techniques were consistent with their own and had no significant advice to offer at this stage. We are working on techniques and observing roof falls et cetera and learning. Signed, Peter'. The Solid Energy group strongly disagree with these comments. No comment was made on Pike's overall systems. The Solid Energy group was underground for a short time and was focussed on observing how the monitor was being operated. The cutting techniques observed were not consistent with the methods employed at Spring Creek and advice on how to improve the technique of monitor operators at Pike was given. Other observations from the visit. The lack of experience

and qualified staff at Pike River with knowledge about hydraulic mining was apparent. It was clear that Pike needed more information about hydraulic mining and advice on how it could improve production. George Mason appeared out of his depth. For example, one of George's managers told him to go along with the Solid Energy group as he might learn something. The comments in Steve Wylie's statement to the Commission that he was not involved in any risk assessments is also concerning given his position and responsibilities. There appears to be a lack of training and experience. The PRC geologist the Solid Energy group spoke to asked a lot of questions about hydraulic mining and commented that he wasn't used to working in a coal mine. By contrast, the monitor operators didn't ask any questions despite their inexperience."

1045

Q. Mr Smith, can I take you back please to paragraph 68 of your brief where you talk about the louvers being constructed of steel and operated by compressed air ram and they're set into ventilation stoppings made of steel and mesh sprayed concrete. And then you interpose there that some stoppings were temporary. Firstly, could you indicate with reference to figure one where there might be a temporary stopping?

A. Well in our procedures for developing panels we are permitted to have the last six stoppings outbye of the face are able to be temporary. So in this, if this had been the start of the operation, if there hadn't been a goaf edge and that had been the size of the panel, then our procedures would've allowed us to have these four stoppings as temporary stoppings. All the stoppings in the main roadways past the junction of this panel would've had to have been permanent stoppings and this is denoted by this double line here. if this panel had extended say twice the distance before extraction had commenced, then these initial two or three stoppings would've had to been made out of permanent materials before extraction could've commenced, or on development rather. So these procedures are around the development process as to ensure that the number of temporary structures is minimised.

Q. So typically in a panel before you commence mining, you will have permanent stoppings put into that panel?

A. It is as I say depending on the length of the panel there will be only, it's only permitted for the last six stoppings in a extraction panel to remain as temporary constructions.

Q. And all the rest must be permanent?

A. That's correct.

Q. Yes. You, although taken as read you've referred to a number of documents that were attached to your evidence. Particularly TARPs and SOPs and those documents all are dated post the Pike explosion. Were those documents produced only following the explosion at Pike?

A. No they're all existing documents.

Q. So can you explain please to the Commission why those dates would all be after the Pike explosion?

A. We have something like 180 odd SOPs which cover all the activities in the mine and these are regularly updated and every time there is an update, a review, whether or not there's any changes to the content, it's re-dated so we have a continuous updating review process and that would require the dates to change on the current documents.

Q. You've also referred to compliance managers at Spring Creek Mine. Are you able to give the background to why you have compliance managers?

A. Yes, it's a little bit of a long story. We introduced another line of management at East Mine that I was responsible for, prior to my current role, as a result of the large turnover of staff at that operation. We were losing a lot of staff and continued to lose a lot of staff to Australia and so we were heavily into recruiting new miners and tradesmen and training those and putting them into operational roles. And while our training processes is very robust we decided that it was necessary to put an additional line of management in there that were experienced to cover the 24/7 operation with a particular focus on compliance. They were there for their experience, but I experienced to the young teams that were there, but particularly they were focused on compliance and that system worked very well and when I was pointed to this current role late in 2010 I commenced discussions with the mine manager at Spring Creek about adopting the same management structure and we're currently in the process of filling those positions and re-organising mine around them.

1050

Q. And approximately when did you introduce that system to Huntly East?

A. I can't remember its 18 months, two years ago, something like that.

Q. And the proposals to implement the same system at Spring Creek, was that before – was that initiated before or after the Pike River explosion?

A. I can't recall when I had conversations with Greg Duncan. I was appointed to the role in the December 2010 which brought Spring Creek under my wing. But I was having discussions about the mine back as far as August/September, so I'm sure I would've spoken about the logic and the advantage of having that extra line of management.

Q. I previously referred you to the authority to mine of 13th September 2010 and took you to the page of the people consulted in respect of that ATM. The SOPs that you have attached are also on their face unsigned. Are you able to say whether those SOPs in fact would have been signed?

A. I – yes I have checked that with the technical manager and yeah, the hard copies are actually signed.

Q. And a final topic please, I just want to ask you some questions about unannounced visits from the mines inspectors. Do you recall this happening at Huntly East sometime a few months ago?

A. Yes, it happened once.

Q. And how was it brought to your attention?

A. I was offsite and the colliery clerk from East Mine rang me on my cellphone and advised me that the inspector Mike Firmin was onsite and wished to go underground.

Q. And did you speak to Mr Firmin?

A. Yes, I asked – I asked the secretary to bring Mike to the phone and I spoke to him about it.

Q. I think – well we know that he was permitted to go and inspect. How was that inspection facilitated?

A. I had a brief discussion with Mike on the phone about, about his motivation and particularly about the difficulty that the impromptu visit gave us. We arranged for the compliance manager on shift to come out of the mine to accompany Mike on his tour of inspection and I did talk to Mike about the difficulty this posed on mine operation and I did ask for an opportunity to talk to him at some future time to understand what process he wanted to put in place and

particularly so that I could confirm I suppose that inspection visits on – outside of dayshift where there's no senior staff that are able to actually accompany him made it difficult to run the operation.

Q. And I think there was a subsequent meeting, can you confirm with John Kay, Paul Hunt, Bill Cowley and Lincoln Smith and yourself?

A. Yeah, that's correct. Yes. They – the meeting was for another matter, they were reviewing the recent DOL audit and I attended the meeting to sit in on that review and also to have this discussion.

1055

Q. And at that meeting, what if anything did you ask about what motivated the visit?

A. Well I was keen to clarify a couple of things. The first was that I made it clear to Mike and John Kay that it was their prerogative to visit the mine whenever they felt the need to and as frequently as they felt the need to and that we would do our best to facilitate that and make that as efficient as possible, but I did say that we don't have – if these visits can happen anytime round the clock, but if they're unannounced the there would inevitably be a delay while transport and personnel were made available, so that was the first thing I wanted to make it clear was that, it was his prerogative but if it was unannounced there would inevitably be delay for him and he needed to understand that was not designed to frustrate, it was just a fact of life.

Q. And just on that point about delay, would the delay – did you discuss whether the delay might be the same for dayshift as for afternoon or evening shifts or was there some difference discussed?

A. Well I can't recall exactly. I said, "Any unannounced visit is going to create some delay. We don't have people sitting around waiting." The other issue that I discussed and was very keen to understand was what was motivating the visits. Whether it was as a result of this inquiry, a response to the fact that he done any unannounced visits or visits on backshift or dogwatch or whether he had concerns about things going on in backshifts, non-dayshift, I put non-dayshift part of the operation, that he was being made aware of and ...

Q. Why did you want to know what?

A. It's very concerning. You know, we have a culture and a system where we actively encourage and facilitate people communicating any issue they have

either with their supervisor or their supervisor's supervisor of direct to the production manager or direct to the manager or direct to me or if all those fail through the Safety Steering Group. So there's a number of avenues for people to actually raise issues and if they weren't raising them through this process then that was a concern. The second concern was that if there were issues that we weren't aware of, then that was a hazardous situation and we needed to understand confidentially if it needed to be, if there were personnel problems then we needed to battle with those and I encouraged Mike to share with me what his concerns were and I'm afraid I didn't get any sense actually about whether it was any of those reasons or whether it was purely a desire for him to carry out an impromptu inspection for the sake of it.

Q. And on his last few visits, do you know if he's been accompanied on those by the mine manager or has it been by other people?

A. No, unfortunately the mine manager at, both at East Mine and Spring Creek as it turns out are very infrequently accompanied the inspector on his underground visits. They would typically meet Mike and talk about issues on the surface, but the underground visit is more often conducted by either the production manager or the mining superintendent or perhaps a mining supervisor if those more senior people were unavailable.

Q. Are you able to say what if any restrictions whether implicit or explicit are put on the inspectors when they're undertaking those visits and in particular their ability to talk to the men?

A. The only restriction is that they need to be accompanied. They're not licensed or qualified to walk down or drive a machine down in the pit on their own, so they need to be accompanied by a Solid Energy staff person who's qualified to do so, but other than that, we take the instruction from the inspector. We ask him where he wants to go, what he wants to see and it's entirely his call as to who he wishes to talk to. You know, we pride ourselves in the men and the face officials, anybody being free to talk privately or publically to the inspector or anybody else that actually visits the mine, and that's the case. But we had a recent Department of Labour audit that involved Australian representatives. We purposely set aside a time for the union delegate to have a private conversation, contact with the audit team so that he could share stuff that he

may have felt disinclined to share in the company of Solid Energy staff, so we've got nothing to hide from the inspector.

1100

Q. Finally, what would you say in response to Mr Firmin suggesting that the unannounced visits were unwelcome or not welcome?

A. No, it's – the unannounced, as I said, the unannounced visits were, required some re-organisation and on the back shift that would necessarily mean that there would be some interruption to that person's duties, and those were either operational production duties or safety duties, so there was some interruption there, but having said that, we – with that little caveat, I suppose, we welcomed the inspector to visit the mine whenever he wished.

THE COMMISSION ADDRESSES COUNSEL – APPLICATIONS FOR CROSS-EXAMINATION OF WITNESS – ALL GRANTED

CROSS-EXAMINATION: MR WILDING

Q. Mr Smith, you've referred to the importance of having training expertise and experience in hydromining. In your view, is it important that the senior management of the company – so the mine manager or CEO have expertise in hydromining?

A. I think in any method of mining it's important that the mine manager's manager, in our case, I'm the mine manager's manager, has good depth of understanding of the mining method used. So in this case, knowledge of hydraulic mining is important. At a CEO level that depends on the size of the operation, how distant he is from the mine manager as to what depth of understanding he would be able to have to allow him to do his job.

Q. Why is expertise important at that type of level?

A. It's important that the mine manager's managers understand all the hazards that are being dealt with and to satisfy themselves that the mine manager is taking adequate steps to manage those hazards in addition to meeting the commercial drivers of the operation.

1105

Q. In your view should the board have either hydromining expertise on it or else available to it?

A. I think it may be difficult always for the board to have representatives that have either mining experience or experience in particular aspects of it. But, I do think it's important that the mine – that the board has the ability to avail itself of advice, independent advice or otherwise and I guess they'll make the call as to when they need to take that independent advice to balance the advice they're receiving from their management team.

Q. When you say "advice or independent advice", why is it important that that be available at that level?

A. It's one of those – just another one of those steps to ensure that that the hazards are being properly managed and that the mine manager is not – has got the safety expectations embedded in the operation. But it's the – it'll be different for different organisations as to whether they need to go outside of the organisation. A large mining organisation will have lots of points of peer review to allow the board to gauge performance. As the company gets smaller and I

guess in the case of Pike where it's a single mine company, those points of peer review within the organisation are less and in the case of Solid Energy, our board does routinely avail itself of independent specialist mining advice, mine safety advice quite apart from the advice it's receiving from its management team.

Q. And that operates as a check on the advice received from the management team?

A. Yeah, that's correct.

Q. Is there always production pressure in a mine?

A. All the mines I've worked at there's been production pressure.

Q. And does that mean there always tends to be a tension between safety and production?

A. Yes although and there used to be little sayings like, "safety is as important as production," those sorts of little sayings, but you know these days it's – there's not that tension as much, I don't believe, or there shouldn't be that tension. A good practice these days is to have the systems and the people, the processes which describe how we do our work, when we maintain equipment, what ventilation quantities are required et cetera, all those safeguards embedded in the operation, so regardless of the production performance of the mine, those safety critical aspects are and should be embedded. So people shouldn't have to compromise, they shouldn't have to weigh up putting aside some check because there's something more pressing required. The checks – the correct way of doing things should be standard, regardless of how well the mine's performing.

Q. So the tension is managed by having detailed policies and procedures?

A. Yeah, that's one of the legs of the stool, yep.

Q. And ensuring that those are observed?

Yeah the, the responsibility for production and safety rests with the mine manager and general manager, et cetera. The responsibilities of frontline supervisors and the men is to follow the processes, go about what they've been trained to do in that standardised fashion and that if – that process should be a process which delivers the acceptable safety outcomes, and it should be designed to be an official way of operating. If the end result of that is lower than expected production, then that's not a function of the safety process.

1110

Q. Could I just turn to some aspects of hydromining at Spring Creek? You've referred to Solid Energy drilling in-seam. Does Solid Energy drill vertical boreholes into the panels at hydro-mines?

A. Yes, we certainly do.

Q. At what intervals?

A. The rough – very close intervals, from an international basis due to our very complex geology, but typically our places are drilled to a roughly 100 metre grid, so the drill holes are 100 metres apart. That will be, that will determine usually sufficient accuracy or understanding of the coal seam to plan our operations or plan our panels. Prior to the panels commencing, it's quite usual to add in additional one or two holes just to tighten up on any high risk area of where the coal seam attitude might be very critical, location of the outside roadways in particular, and we've got a history of these latest infill drill holes having to make minor adjustments to the panels or sometimes significant adjustments as a result of the information that's detected.

Q. Spring Creek mines the Rewanui Seam, is that correct?

A. Yeah, we mine the C seam within the Rewanui coal measures.

Q. Are you able just to briefly describe this stratigraphy?

A. Yep, bit rough. We have the Rewanui coal measures that we're within, and the coal seam, the seam that we're mining, there's a coal seam below it called the B seam and the D seam exists in the Spring Creek operation, but it sits right at the top of the coal measures, just underneath the Goldlight mudstone which is a reasonably massive group. Above that there's the Dunollie coal measures and within that, there has been a Dunollie coal seam mined above the Spring Creek workings and above the Dunollie coal measures, are the Brunner coal measures, with the Brunner coal seam and that Brunner coal seam has also been mined in this area I think in the past.

Q. What are the caving characteristics directly above the seam being mined?

A. The seam that we're mining is overlaid by usually around about 40 metres of Rewanui coal measures and those are silt stones, sand stones, and before we hit the Goldlight mudstone, so most of our caving is good, caves well within that sort of 40 metre horizon and we typically get – there will be some

fracturing of the Goldlight above it, but typically we get goaf closure within those silt stones in the coal measures above us.

Q. Paragraph 54 of your witness statement you referred to goaf collapses which may be 30 metres by 30 metres by 10 metres in size. Is that generally the case with all of the goaf collapses, or for example is the first goaf collapse in a panel more difficult of a different size?

A. Yes, almost always the – at the start of a panel, some amount of coal has to be mined before we get a goaf collapse. Once we do get a goaf collapse, then it's much more continuous operation, so the 30 metre by 30 metre square that I've used there as a reference point is probably at the larger end of what we would expect.

Q. Can I just turn to the amount of methane being released when hydraulic mining, is it correct that that's dependent upon the gas content of the coal? I'll give you three matters here. First the gas content of the coal?

A. Yes, that's the major determinant of how much gas we need to deal with.

1115

Q. Spring Creek, four metres a tonne?

A. Yep.

Q. Second, the desorption rate?

A. Yes.

Q. And third, the cutting rate?

A. That's correct.

Q. How does the operator know if he's going too quickly?

A. Sorry how does he know what sorry?

Q. How does the operator know if he's going too quickly with the result there's too much methane being released?

A. Well as my evidence details, he's aware of the methane build-up in the return through the remote sensor and his digital readout so he's able to monitor the amount of gas that he's producing continuously, so he will monitor his performance and adjust his performance based on the trend of the methane in the return primarily.

Q. So for example, is there an SOP or other policy or procedure that sets a maximum cutting rate with reference to those factors, gas content, desorption rate and ventilation?

A. The SOP, it dictates when he has to stop cutting and it dictates the ventilation controls. He is trained to work within, below those limits I suppose. His job is not to rely on those. It's an inefficient way of doing things and he's motivated to manage his operation before those limits are reached.

Q. Ms Basher could we please have SOL446723/6 which is the diagram on page 5 of Mr Smith's statement.

WITNESS REFERRED TO DOCUMENT SOL446723/6

Q. In paragraph 12 of your witness statement you refer to maintaining a roughly straight goaf edge, that's the horizontal edge just below the word, "Goaf."

A. This page there, yep that's correct.

Q. Why is it important to do that?

A. It's important for a couple of reasons. The wire to the goaf, the easier it would be to continually cave, so having a nice long straight edge it'll cave more regularly and the second issue is that it doesn't build up concentration of pressure on the pillars that you're working on or behind. So if for example this whole pillar was taken out, there would be concentration of stress on this operation here which is the next target area to be mined, so it's important to take these slices in a roughly – and we can't do it in one line as would be done in a longwall operation, but we approximate that by taking relatively small slices off to give a relatively straight line goaf progression.

Q. Is it important for the sides to be roughly straight?

A. Depending on your layer of your mine, it's very important. Well typically and again, this is a schematic and in Spring Creek situations likely to be a fault running on either side here, but in a general layout the next panel would be to either side of this and you'd leave a solid barrier with no connection between the new panel and this worked out panel or the panel as its being worked out and that's to ensure there's no – there's a solid barrier there to ensure there's no connection for air to flow from one to the other and cause spontaneous combustion issues. So those barriers are designed, defined as to how wide they have to be to resist that stress and to maintain their integrity over the life of the panels and any irregular cutting of the ribs on either side of the panel will reduce the competency of that barrier to withstand that stress and potentially, in the worst situation allow one panel to mine in through that barrier into the other one. So it's yeah, it's really important that the operator knows that he's

not permitted to mine beyond the edge of that pillar to ensure that from a pillar design, pillar integrity and a survey control we know exactly where those, that definition is after – after the panel's been worked out.

1120

Q. Just where the primary dilution door is, there's reference to 15 metres cubed and I presume that represents a constant airflow of 15 cubic metres through there?

A. Yeah we're required to have – I've got it split into 20 metres, both intakes here in the schematic, we're required to have 40 cubic metres of air entering the panel and leaving the panel. We don't really want to have that 40 cubic metres coursing around the face there, it produces higher pressures and potential for air to migrate through the goaf, so what we do is we short-circuit 15 cubic metres of that through a regulator there, allow 25 to course around here and manage the methane, allow that 15 to exit and dilute the methane as it's leaving the place.

Q. Did you say, "required to have 40 cubic metres," how's that requirement set?

A. Set in our ventilation.

Q. Sorry?

A. Set in our ventilation procedures.

Q. And presumably set with reference to the total number of workings in the mine?

A. It's, it's set around what potential gas make we expect to make based on our gas content and our production, our productivity here, so the 40 cubic metres is determined by the gas content to dilute the gas below one and a quarter percent under routine operations.

Q. So we don't rely on these dilution doors to – as a routine operation the routine gas makers determines 40 cubic metres of air entering the place?

A. Spring Creek we have a total of 110 cubic metres of air entering the mine and of that 40 cubic metres goes into the hydraulic place and another 40 to 45 cubic metres is available for the development places. The remainder is the losses that are incurred between the main intakes and these entry points. So, we just – we don't have enough air to run two extraction places.

Q. What's the range of the various methane sensors referred to there?

A. I think they all read a maximum of 5%, generally 5%.

Q. And I take it that the tube-bundle monitoring is operative at the time of hydromining?

A. Yes, it was – there was tube-bundle system, was installed into this mine at the outset.

Q. And I also presume that the sensors and the dilution doors operate 24 hours a day, so regardless of whether hydromining's taking place?

A. Yeah, if there's nobody in this panel the sensors will continue to operate and they report to the control room as well on the surface.

Q. And are those dilution doors capable of dealing with the large slugs of methane that maybe released by goaf collapses?

A. Yeah, the history of the mine has proved that the system, even though it's a self-built system I suppose is, it works well in this environment.

Q. I just want to turn to an aspect of dilution doors and read you part of the evidence of Mr Poynter at page 3100. And he said in response to a question about dilution doors, "The thing with dilution doors is you need distance and space for them to work. It's much easier for larger mines like Spring Creek and that. At Spring Creek that had primary tertiary and secondary doors and they had a long distance where each door can come into play over a period of time to dilute the gases. The distance from the hydro section to the return was quite short. And that latter sentence is with respect to Pike River." Do you agree with what he's said there?

A. Well I agree that you need distance – the minimum distances for them to be effective. The dilution door has to be sufficiently outbye of the sensor to ensure the diluted air is getting into the return either before or at the same time as the elevated level of methane is finding its way there, but I don't think I agree with them in terms of if this was a – you know, we have the same situation as we retreat back to this sort of point here, we'll take and this sort of schematic, we'd take the coal back to this point, leave these barriers intact to support these permanent seals and that would require us to relocate these dilution doors outbye and that would mean installing these dilution doors in this schematic here and these are in the section entries. So that's an issue for other places that are working in this particular area, but there's no reason why though, why this system can't be adopted when the extraction panel is short.

1125

Q. When you say "that would mean", does Spring Creek locate those dilution doors and sensors outbye when it's mining the closest panels?

A. Yes we do, yeah we do, yeah we're forced to. I should say that these dilution doors are you know, they've been as evidence says I think, they have been progressively improved over the life of the mine to where they – I think 2008 I say when they were – well we've got three sets of doors as a very robust system and we've never – that's always been adequate for us, so this amount of air entering the place coupled with those dilution doors is we think is a very safe method for ventilation. If the requirement for dilution doors can be perhaps avoided by having a whole lot more air entering the place, so Pike River may have if they could not have put in dilution doors as Mr Poynter says, they may have had the alternative of increasing the amount of air to manage the peaks of gas that they could expect to make. I don't wish this evidence to say that this is the only ventilation method in a hydraulic mining situation.

Q. The protections that Solid Energy has for example, dilution doors, interlock sensors, do they have to be in place before any hydromining commences?

A. Yes definitely.

Q. Would it make any difference whether it was a commissioning or test panel?

A. Well no, I think hydraulic place and it brings with it all the hazards no matter whether it's a small panel or a large panel.

1128

Q. In other words the risks are still there, regardless of whether it is small, large commissioning, or production?

A. Yes, I mean I suppose the only risk that may be smaller with a smaller panel is the spon com risk because the life of the panel may be a lot shorter and that may reduce that risk, but I don't think it would reduce the methane risk, which is the primary purpose of these dilution doors.

Q. Just finally, would you regard the commissioning of a new main fan as a major matter for a mine?

A. Yeah, it's a major. Yeah, it's a major installation wherever it is.

Q. Requiring presumably a commissioning period?

A. In my experience, you have a piece of equipment like that is complicated and the mechanical commissioning more than anything else can take longer than expected.

Q. Would you regard the commencement of a new mining technique, and hydromining in particular as a major matter?

A. Yes. From go, the hydraulic mining equipment, the pump and system and the mining method itself, managing the production, that's a much more complex method than the process than the installation of a fan for example, but yeah, both are complex processes.

Q. Requiring in itself a commissioning period?

A. Yes, the introduction of the hydraulic mining pump set, pump, motor and et cetera, is a time consuming drawn out process.

Q. Do you have any view on the merits of both the commissioning of a main fan and commencement of hydromining taking place at broadly the same time?

A. It depends on the resources available. I would try hard to avoid those things occurring in parallel.

Q. Why?

A. Both are major drags on resources for one thing, both require major senior management focus and from a safety point of view, I wouldn't be starting up a hydraulic or any sort of extraction place without your ventilation system in place, and well past its initial commissioning period.

Q. Would it be fair to say that to have them both occurring at broadly the same time, potentially compounds the risks?

A. Well, I think there's safety risks. I think – well, there's operational risks. There's pressures on getting those things going together and there's going to be demands for resources that are required on both operations I would imagine, but from the safety point of view, the ventilation system should be put in place and be operating reliably before hydraulic operation commences. That's not to say that the pump system and pipelines and all the infrastructure can't be being installed, but I would not be commencing the commencement of a hydraulic panel, where there is a risk of the ventilation being interrupted and having to suspend operation, unless you're prepared to seal the place off and it would be, add another set of hazards.

COMMISSION ADJOURNS: 11.32 AM

COMMISSION RESUMES: 11.49 AM

MR RAYMOND ADDRESSES THE COMMISSION

CROSS-EXAMINATION: MR RAYMOND

Q. Ms Basher if we could have up please FAM00056/10.

WITNESS REFERRED TO DOCUMENT FAM00056/10

Q. Mr Smith I just want to ask you whilst that's coming up a question or two about the goaf and the size of the goaf at Pike and any comment you might have which might assist. On the screen you'll see a picture of the goaf as it was as at 18/19 November and there's been evidence from Mr Wylie and this diagram is from his brief, where he says that, "The distance between the two returns is 25 metres." On that basis a rough calculation can be made that the goaf had reached the size of about 30 wide by 40. Would you agree with that?

A. Yeah, it looks like about that.

1152

Q. As the goaf increases in size and does not collapse as was the case at Pike, other than the 29 October or 30 October collapse which you can see around the area marked E. Are any special management provisions required to manage a collapse, because as I understand it a collapse is desired. The question is when it gets to that size are there steps which should be taken to ensure that one happens, other than it being spontaneous?

A. No, there's nothing you can do to accelerate it. How large that goaf mined at area has to become before it will collapse depends to a large extent on the immediate overlying strata, the competency of it. So if there's a massively competent stratum above the roof of a coal then it's conceivable that the mined out area has to become much larger before it will collapse and that as I said in my earlier evidence, that does bring with it additional risks with weight being thrown back onto this area, which is going to be mined next and all you can do is to take that into account when you continue to mine. So the process of response is to continue to mine but be very aware of those conditions that exist, that you are actually creating a potential for a large goaf fall that will cause massive over-pressures.

Q. That was very much my next question, you've answered it. As it gets bigger there's potential for a bigger windblast I think is the phrase, is that right?

A. Yes, yeah.

Q. Does that therefore in your opinion mean that you have to have an operator or an extraction superintendent with special skill and expertise to manage that extra hazard or that growing hazard?

A. Yes, I think we would treat it as a non-uniform situation and whether there was – I'm not quite sure whether there's a TARPs to cover that but you would ensure that you had additional precautions in place and you may be able to do things like where the operator's sitting and the skills of the people there, you might put in place some other particular safety measures which I can't list off the top of my head here but you'd definitely look at the growing hazard and what precautions, additional precautions you can put in place to manage those.

1155

CROSS-EXAMINATION: MR HAMPTON

Q. Mr Smith, did I pick up from you something akin to indignation or at least resistance to the idea of impromptu visits by the mine's inspector to Solid Energy mines? Am I correct or incorrect in that?

A. Well no not indignation, I think we are an open book I think as far as the way we practice our mining and Solid Energy's operations and while we understand the need of the Department of Labour to satisfy themselves that everything is going on on all operating shifts and to respond to bits of information they may receive. As a first pass I suppose I am a little bit indignant that the inspectorate does not take account of our record as he designs his visits and shares with us his motivations.

Q. So because you say you've got a good record, that means that in your view mines inspectors shouldn't come on impromptu visits?

A. No I didn't say that.

Q. Well what do you say? What are you saying please?

A. I'm saying that the – my – the bottom line for us is that the inspector's able to do what he wishes to do and that we will take whatever steps we can to facilitate his inspections. We are trying to create – try to create a, an open

relationship with all our staff so that people understand their responsibilities and those responsibilities are to report hazards, report incidents, report non-compliances right through the management team, right through the organisation and if that's not happening then we want to know about it and if people feel that they can't actually report hazards or report non-compliances for whatever reason we want to know about. And it's not just for the inspector to know about it, we don't rely on the inspector to ensure that our place is safe. We rely on our own measures and if he's becoming aware of reports that something is untoward is going on that we're not aware of we'd desperately like to know what it is so that we can actually put in place a remedy.

Q. But, suppose he's not aware of anything in particular, he just wants to make an inspection. Are you opposed to that?

A. No of course not.

Q. So what's the difficulty with Mr Firmin turning up? I don't understand please.

A. Mr Firmin's time is precious and the last thing I want to be accused of is having the inspector sitting outside because he's turned up without any notice sitting outside for one, two or three hours while a machine and a person qualified is found to take him on his inspection. Our purpose is to facilitate his conducting of his job and if that requires unannounced visits then that's his call. My belief is that he doesn't require and our operation doesn't require unannounced visits, but that's his determination.

Q. That's what troubles me Mr Smith, you're of that view that unannounced visits aren't required on Solid Energy, aren't you?

A. Of course, I couldn't, I wouldn't be doing my job if I thought that there was things going on, on any shift that I wasn't aware of.

Q. Is that not a dangerous attitude to adopt in a hazardous industry such as mining Mr Smith?

A. No on the contrary it's a commitment that we have to make, we have to do everything we can to ensure that there's adequate systems, adequate training, the culture is right. That people are empowered to report and to do their job the way they've been trained to do it and to report when things are out of order. And that we'll take whatever steps, whatever steps we need to, to ensure that's happening.

Q. Okay, move to Spring Creek. You've talked today about panel seven, before you moved to panel seven, panel eight was the prior panel that was mined, was it

A. Yeah, that's correct, yeah.

Q. And panel eight was extraction completed by the 12th of May 2010?

A. No I can't remember the exact date, but it'll be something close to that.

Q. Was there some difficulty with then sealing off permanently panel eight?

A. From memory we had a small heating around one of the final seals.

1200

Q. Was there an actual spontaneous combustion?

A. Yeah, there was a small heating in behind close to one of those final seals.

Q. And did it actually catch fire?

A. Not that I'm aware of. There was a heating, we were producing products off the spontaneous combustion.

Q. Was that reported to the inspectorate?

A. I'm sure it was.

Q. Andy Self was one of your Spring Creek ventilation experts. You mentioned him in your brief at para 80, I think it was?

A. Yes, we use Andy Self routinely.

Q. And does he review ventilation and gas management systems for you at Spring Creek from time to time?

A. Yes, that's correct.

Q. The 5th of June 2010, a note from page 31 or 52 of the ventilation and gas management systems review of Spring Creek, "5th June 2010. The performance of those allocated the task of sealing 8 panel has been abysmal. It is crucial that this panel is sealed properly with permanent seals as quickly as possible." Is that the problem we're talking about?

A. Yes, I'm not sure of the document but that sounds right.

Q. Is that the problem? And then 12th June 2010, "The completion of all work associated with sealing 8 panel is urgent. Extraction finished in 8 panel is urgent. Extraction finished in 8 panel on 12 May 2010." Is that the same problem?

A. It was the same issue, I think.

Q. Same issue?

A. Mmm.

Q. When was it finally sealed, 8 panel?

A. I can't recall.

Q. How much delay, do you know in general terms?

A. I can't recall.

CROSS-EXAMINATION: MR HAIGH

Q. Mr Smith, can I ask you please to turn to paragraph 108.3 of your brief on page 31?

WITNESS REFERRED TO BRIEF PAGE 31

Q. You recall this is part of your disclaimer as to the accuracy of Mr Whittall's letter to the directors. And in 108.3, you advise that, or you say that 'advice on how to improve a technique of monitor operators at Pike River was given to PRC.' What was that advice and who was it given to?

A. I'm presuming that the advice was verbally given by the Solid Energy team that visited and observed the monitor operation.

Q. So you don't know what the advice that was given, except in a general sense and you don't know who it was given to?

A. Well, the – my evidence talks about the team of Solid Energy people that visited, four people, and it talks about the Pike River people that attended the visit and I presume that the discussion was had between all of those people.

Q. Discussion, but you see, they were asked along weren't they to assist – and I'm just trying to find the page number. This is at paragraph 86. 'They were asked along on an informal collegial basis to observe the hydraulic monitor in operation and see if it could offer any advice.' Correct?

A. Yes, that's what my evidence says, yes.

Q. And the thrust of the brief from that point on is that these people have collectively told you at some unknown time that there were failings with the hydro-monitor, in their view. Is that so?

A. Well, they observed the operation for 15 minutes or so, and they made as many comments as they could on what they observed and the operation for 15 minutes or so and they made as many comments as they could on what they observed and at the time the monitor was engaged in driving a solid face, a split I think and the best that they could offer was that the action of the

monitor operator was not similar to the methodology that's used by the Spring Creek operators. So whether that was useful or not I don't know.

1205

Q. Well your brief describing what these individuals have told you goes beyond that because if you look at paragraph 102 we can see the group commented to each other about some positive points and some negative points, correct?

A. Yes we asked them when we were preparing this evidence did they make any other observations that might be useful to include in this brief.

Q. Was that information passed on in the advice to Pike River? For example the high levels of coal dust as alleged here. The lack of stone dust as alleged here?

A. I'm sure it wasn't. The Solid Energy group were invited to have a look at the monitor operation because Pike were having difficulties getting their productivity up to planned levels and they were invited, you know, they're visitors from an adjacent mine that have got some experience that they sought to tap into and they constrained their advice to what they'd been asked to observe. I'm sure they didn't comment on, unless very casually on some of these more negative things which would be available to the Pike people directly.

Q. Well obviously they were helping out, I'm not being critical of that. But, I suppose through you we don't really know the extent of the advice given or for example whether it was given to just Mr Matt Coll is it or whether it went higher up the chain?

A. Yes all I know is that the people that attended from Pike were all – received the information or the advice that was given. Yeah the Solid Energy team was not invited to do some informal audit of the coal dust levels or stone dust levels or anything else which would be obvious to Pike.

Q. I suppose there's no point in my asking further to comment on some of the other matters which have been referred to as observations by the group, simply because as Mr Raymond commented earlier, you weren't there?

A. No I haven't visited the mine, no.

CROSS-EXAMINATION: MR RADICH

Q. Mr Smith, there's no question is there as to the appropriateness of hydromining as a method of mining at Pike River Coal? You can take that as a given?

A. No I'm sorry I can't take it as a given because I don't know the evaluations that were undertaken at Pike. All I can say is that in my evidence covers some of the characteristics, scene characteristics that lends itself to hydromining, the thickness of the coal seam et cetera.

Q. And as you've said in your evidence haven't you that the West Coast doesn't lend itself well to longwall or continuous miner type extraction?

A. Yeah that's correct, yeah.

Q. And of course you've used hydromining at Strongman in 1992?

A. Yes we trialled the hydraulic mining at Strongman.

Q. And at Strongman 2?

A. Yeah, Strongman 3 was set out as a hydraulic mine.

Q. Yes and at Terrace?

A. Yes, although Terrace uses a lower pressure water system so it's not the same sort of order of magnitude.

Q. No, because each mine's different isn't it and needs different equipment and characteristics?

A. As (inaudible 12:09:55) the case, yes.

Q. And of course you've used it at Spring Creek since 2004?

A. That's correct.

1210

Q. And am I right in understanding from your evidence that hydraulic mining does have some advantages in terms of safety generally, one of them you've mentioned I think personnel are remote?

A. Yes I think there's some distinctive safety advantages over hydraulic mining.

Q. And there are no ignition sources at the face are there, where is a good thing?

A. Yes I've said that, yes.

Q. And the coal is dust-free and you can get your equipment out quite easily if there's a fall?

A. That's what I've said, yes.

Q. Now that you've said before commencing extraction at – of a panel at Spring Creek you'd carry out a technical risk assessment. That's what happens yes?

A. Yes.

Q. And you refer in your evidence to "authorities to mine" being issued at certain relevant points?

A. Yeah, authority to mine at Spring Creek is required to be approved prior to the commencement of another panel.

Q. Am I right in understanding Mr Smith that you don't know whether there were any such risk assessments carried out at Pike or authorities to mine completed?

A. No I have no idea of their system.

Q. No. And equally you refer to your standard operating procedures and triggered action response plans, you had no knowledge of the existence or otherwise of such things at Pike, do you?

A. No I have no idea.

Q. And you've emphasised monitor training and the importance of that and you have no knowledge or understanding of monitor training at Pike do you?

A. No I have no idea of what they've trained or what their systems are.

Q. And so I'm assuming that your answer would be the same if I asked you if you had any knowledge about Pike's other documents like its response management plan or its risk assessment documents?

A. I haven't seen any Pike River documents.

Q. Are you aware of its "I am Safe" handbook system?

A. As I say I haven't seen any of Pike River's documents.

Q. Now talking about the panel, the dimensions Mr Smith, are you aware that George Mason has given some evidence or will give evidence and has filed a brief in this Commission?

A. Yes I've read his brief.

Q. You've seen that, okay. And you see – you would've seen there that he talks about the width of the panel at Pike being approximately 45 metres. Do you remember seeing that?

A. Yes.

Q. And that he talked about the depth of the panel being no more, in his words, than 41 metres?

A. No I can't recall the exact dimensions but I'll take it as read.

Q. You would expect, wouldn't you, Pike to have sufficient technical expertise to understand the size and management of its goaf?

A. I don't know what I expect. I would hope that the operation has that facility.

Q. Yes, you would expect there to be advice taken in managing the size and dimension of a goaf, wouldn't you?

A. That would be standard practice.

Q. Now you've said in your evidence at paragraph 10 that the panel at Spring Creek is typically 135 to 150 metres wide, haven't you?

A. That's correct.

Q. And about 300 metres to 500 metres long?

A. That's correct again.

Q. And you said that these dimensions are in fact restricting the panel to ensure strata management, is that right?

A. No the dimensions at Spring Creek all right determined – the maximum dimensions are determined by the method, by our design, preferred operating procedures, but the actual dimensions are largely determined by the localised geology.

Q. Yes well if you look at paragraph 55 of your brief of evidence Mr Smith, in the second sentence having referred to the Spring Creek panel you're making the comment there, aren't you, perhaps more generally that the length and width of panels are restricted to ensure strata management and the like?

A. Yeah that's what I attempted to say before.

Q. Have you seen the evidence of Stephen Wylie that's been filed in this proceeding Mr Smith

A. I think I have but I can't recall the detail of it.

Q. Are you familiar with Stephen, he worked at Spring Creek didn't he from 2005 to 2009?

A. Yes I understand he did, but I don't know Stephen.

Q. Are you aware of the fact that he operated the monitor at Spring Creek for a year?

A. Yes I'm aware of that.

1215

Q. And that he has about 21 years experience as a miner, and you generally understand that he's experienced?

A. Yes, I understand that.

Q. Now in his evidence he said that 'there are no significant differences between Spring Creek and Pike in terms of the operation in the hydro-mine and that there was nothing in the Pike sequence that concerned him'. Would you agree with me that he's in a reasonably good position out of any of us here to make that comparison?

A. He's in a better position than me to make that comparison. I won't speak for anybody else, but I don't know how good a comparison he's made.

Q. All right, well, if he's operated the monitor for a year at Spring Creek and he's operated the monitor from time to time at Pike, then there is a comparison to be made, isn't there, at least that?

A. There's a comparison to be made, but whether the comparison was a good one, I've got no foundation for saying it was or not.

Q. Well, we'll talk to Mr Wylie about that in due course. Ms Basher, I wonder if you were able to put up the evidence of Mr Wylie?

MR RAYMOND ADDRESSES THE COMMISSION: TWO BRIEFS

CROSS-EXAMINATION CONTINUES: MR RADDICH

Q. Well, perhaps on that basis Ms Basher, I'm looking at the initial brief which is WYL0001.

WITNESS REFERRED TO DOCUMENT WYL0001

Q. And could we go please to paragraph 65 of that brief? Mr Smith, just to explain what Mr Wylie was doing in this brief in paragraph 65, was talking about the fact that there was less ground stress at Pike than was the case at Spring Creek, do you see that there?

A. Yes, I do.

Q. And would you – do you understand the point that he's making there that by 'ground stress' he's meaning stress on the coal seam that's being mined?

A. Yes, I understand that.

Q. And so that would be a significant difference between the mining conditions at Spring Creek and at Pike, wouldn't it?

A. Yes, yes. Pike River is much shallower than Spring Creek, I understand, and that fact would've been known for some time, I guess.

Q. Yes. And at paragraph 66, Mr Wylie's talking about the direction of the cleat and what he's saying there is that 'the direction of the cleat ran parallel to the intake roadway." This is at Pike, so he was effectively cutting as a monitor operator across the direction of the cleat and he's saying that's like cutting timber against the grain and only very small particles were falling off. You're familiar with the point that he's making there?

A. Yes, yes, I am.

Q. So that's another significant difference really, isn't it, to the conditions that are operating at Pike and at Spring Creek, I understand at Spring Creek the direction was not that way oriented?

A. Well, cleat direction varies and the panel layouts at Spring Creek meant that on occasions the cleat would be end-on, another occasion it would be side-on, so it's a variable that you need to deal with.

Q. And your operating systems would differ wouldn't they, depending on the type of grain, cleat and conditions that you're dealing with?

A. No I don't know whether the operator conditions, operating system would vary. The forecast productivity might change depending on the direction of cleat and the operators may be trained slightly different techniques depending on the direction of the cleat with regard to the water stream but the actual standard operating procedures for the design of the panel I don't think would change very much.

1220

Q. Well certainly there's a different means altogether of operating the monitor isn't there in the sense of having different coal faces facing you?

A. Yes well I'm not an experienced monitor operator. Thain McKenzie gave evidence here, observed that the technique being used was possibly not very efficient.

Q. But you can't say in your words that that's the case, you've never seen it have you Mr Smith?

A. No, no I haven't.

Q. And other differences, just to be clear on this for the record, the pipe monitor you understand was on a crawler?

A. Yes I haven't seen it but I understand it.

Q. Whereas the Spring Creek monitor was suspended by chains wasn't it from the ceiling?

A. Are we talking about the monitor or are we talking about the monitor's cab?

Q. Oh the cab, in fact's suspended isn't it?

A. Yeah the monitor cab is suspended, the actual monitor at Spring Creek is braced on the floor.

Q. Yes and you understand that with the crawler, it just meant that the monitor could be brought back more easily?

A. I presume that was one of the designs.

Q. And there's no guzzler at Spring Creek is there at the hydro-panels?

A. No, we flume the coal at Spring Creek all the way through to a permanent crusher station.

Q. Yes. And so just so we can understand it, that means it's flowing, the coal and the water is flowing along the panel floor towards effectively a crusher further down?

A. That's correct.

Q. And at times that mixture of water and coal can be knee deep?

A. Yes.

Q. Ms Basher could we please have document SOL446723,002

WITNESS REFERRED TO DOCUMENT SOL446723.002

Q. This Mr Smith is the organisational diagram attached to your evidence, do you recognise that?

A. Yes.

Q. There are a number of positions aren't there that aren't filled in your organisation at the moment. For example at the top left "Production manager". that's open at the moment isn't it?

A. We have a temporary appointment. We've seconded the mine manager from East Mine to fill that while we fill that position.

Q. And your health and safety manager vacancy three boxes along remains open doesn't it?

A. Yes, there are staff underneath that role there that are carrying out those duties in the meantime.

Q. And the HR manager is vacant?

A. That role is being filled temporarily while we recruit somebody. It's been filled by the, that person's superior in Christchurch who is carrying out that function.

Q. Yes and across to the right and down one, these are the compliance managers that you were speaking about in your evidence I presume, four of them?

A. That's correct.

Q. That you're looking to fill, yes?

A. Well we've appointed three of them. They'll take up their roles in December. We've re-advertised for the fourth one.

Q. And just for completeness then, just diagonally down from that the, engineering projects manager, is wanting?

A. No we've made an appointment there. I can't remember the person's name, that position's filled as is the mechanical compliance co-ordinator, that position's filled as well since the drafting of this document.

Q. And the mine's services co-ordinator, just down on the third train on the left-hand side of the page, that's open at the moment?

A. Yes we've – G Forsyth was in that role, he was promoted into the superintendent role on an acting basis while Kevin Patterson on the top right-hand side was put in place as a senior compliance manager as an interim appointment.

Q. Now looking at the issue of methane in the goaf, of course you've said in your evidence that you're really looking at having the maximum amount of methane at the back of the gaof to keep the atmosphere inert, that's the case isn't it?

A. Well I wouldn't say the back of the goaf but the majority of the goaf beyond the fringe area that's being mined.

1225

Q. Because you need what you've termed I think an extinct atmosphere in the goaf?

A. Yes that's one of our safety controls.

Q. And that means that the atmosphere had such a high percentage of methane as to be effectively beyond the explosive range, doesn't it?

A. Yes methane has an explosive range of five to 15% roughly and an extinct atmosphere is beyond that.

Q. And then when you've finished with the panel you want to self-inertise it with methane and seal it up as quickly as possible?

A. That's the desirable outcome, yes.

Q. You've referred to occasions of elevated methane and returns and you've said that there is of course the potential for higher gas volumes to come back down the return from time to time, is that right?

A. Yes, that's my evidence, yes.

Q. And that the monitor you've said can manager that by the various means that you've given in evidence?

A. Well the monitor and the ventilation set up.

Q. Yes. And that of course incremental goaf collapses are to be, as my learned friend has asked you and you've answered, expected?

A. Desired.

Q. Desired. And they can be as large, you've said in your evidence at 54, is 30 metres by 30 metres by 10 metres?

A. Yes I wouldn't turn that as an incremental goaf collapse, but yes I've said that that's the – potentially the largest, larger end of the collapses, yes.

Q. And these collapses don't always occur do they when the monitor jet is being used to cut coal?

A. Yeah, goaf collapses can occur at any time.

Q. Any given moment whether someone's there or not?

A. Yes they're not – well they're not strictly a function of what's actually happening although the process of the monitor jet is - changes the stability and at some point sufficient coal will be cut out to trigger a smaller or larger collapse.

Q. Yes.

A. That's not to say that the goaf can't collapse when the monitor is not in operation.

Q. Sure. And certainly Solid Energy has experienced goaf collapses, there was one I think that actually buried the monitor at Strongman 2, wasn't there?

A. I don't know what you're referring to. It's a – the monitor is situated effectively under what we call the lip, so that's at the outbye side of what is going to

become the goaf, so it's exposed to goaf falls and it's also exposed to rock material from the goaf drilling down and covering the monitor.

Q. But do you agree with me, certainly at Strongman 2, is just one example of one of those unexpected goaf falls that go so far as to bury the monitor itself. Do you recall that?

A. I don't recall the exact incident you're referring to, but it's not, it's not unexpected. The goaf falls are not unexpected. They are expected and they are planned for and we plan to have – you don't necessarily look forward to it, but we plan for monitors to be buried and they are frequently pulled out of – from underneath rock fall and that's why they're remotely operated. It's one of the advantages of the system so it's not unexpected, it doesn't always happen, but its part of the process.

Q. Ms Basher could we please have document SOL446723.012.

WITNESS REFERRED TO DOCUMENT SOL446723.012

Q. And if we could go to page 5 of that document please. Did you recognise and I should've paused for a moment Mr Smith, the front page of that document which was called –

A. I saw the front page.

Q. – hydraulic monitor extraction at Spring Creek. And do you see on this page in talking about factors that impacted negatively on the monitor system availability number 3, face monitor units buried and damaged by goaf falls. So that's certainly something that you have experience of, isn't it?

A. Yeah, that's correct. Yes.

1230

A. Yeah, that's correct, yes.

Q. And of course, some other things that affect potential goaf falls are geological, geotechnical features of the environment in the panel itself, aren't they?

A. Yes, the geotechnical environment will influence how the goaf behaves.

Q. Each environment differing from the next?

A. Yes, nothing's ever quite the same.

Q. Now you said in relation to the dilution doors that Spring Creek of course, had three sets of the doors and you've referred to that as being an additional safeguard, correct?

A. Yes, I have, yes.

Q. Now, Spring Creek started hydraulic mining, am I right, in mid-2004?

A. Yeah, that's correct.

Q. And it introduced the first set of dilution doors into hits ventilation plan and panels in 2005?

A. Yes, I'm not quite sure exactly of the time, but it was some time either at the start or during that panel 1, first extraction panel.

Q. And the second set were added in your evidence at 71, in 2006, weren't they?

A. Yes, that's correct.

Q. And then the third set of dilution doors were added in 2008?

A. That's right.

Q. So, Spring Creek was in fact using hydraulic mining for at least six months before it introduced any dilution doors, wasn't it?

A. In panel 1, the system for managing methane was a bleeder system, bleeding out through the back of the goaf and that proved to be not sufficient, not perfect, and the dilution door concept was adopted.

Q. But my question to you Mr Smith was that Spring Creek was hydraulic mining for at least six months before it used any form of dilution door system?

A. Yeah, I'm not quite sure of the actual, how many months, but I think that's the case.

Q. Ms Basher, could we please have SOL446723.011?

WITNESS REFERRED TO DOCUMENT SOL446723.011

Q. This, Mr Smith, is a table that you've referred to in your evidence at 71. Do you recognise that document?

A. Yes, I do.

Q. So these are the gas spikes and extraction sections at Spring Creek?

A. Yes.

Q. And would you take it from me if my maths is at least average and having added them up, there are 15 level 1 responses across that table?

A. Yes, that looks about right.

Q. Between 2008 and 2011, and in fact having added it, I can tell you, if you'd accept it from me, 192 level 2 responses?

A. Yes.

Q. And 24 level 3 responses?

A. Yeah, that's about right, yep.

Q. So, more than 90% of those events at Spring Creek have, on your evidence, required the activation of more than one set of dilution doors, haven't they?

A. That's correct.

Q. But Spring Creek didn't in fact add it's second set of dilution doors until 2006 on your evidence at 71, did it?

A. No, that's correct.

Q. And that's about 18 months after it started hydraulic mining, isn't it?

A. Yes, but we should clarify that the second sent being activated did not necessarily – without the second set, activate again, those circumstances did not necessarily carry with it an unsafe condition, so it's just an additional safeguard.

Q. But your evidence about the use of the three sets of doors, is evidence about the gradual progression and gradual development of the dilution system, rather than something that happened from day one, isn't it?

A. Yeah, they're just additional layers of safety that were put on.

Q. And you understand that hydromining commenced at Pike River in late September 2010? You aware of that?

A. From the evidence, yes.

Q. Now you've accepted quite openly that you've never seen Pike hydromining in action. You've never been down there at all, have you?

A. No, I haven't.

Q. So you can't talk yourself about the nature of the hazards there or the management systems, as I think you've already said, yes?

A. Yes, I've already said that.

1235

Q. Now are you aware of the fact that representatives of Solid visited Pike River on 22 October 2010? Daniel Pyson and Robin Hughes, are you familiar with that visit or recall it?

A. Yeah I've been made aware of that.

Q. And were you aware of the fact they went there at the invitation of Terry Moynihan to look at the main fan commissioning?

A. Look I can't recall the exact purpose of their visit but I'm aware of the visit.

Q. Well just for the record, the Solid Energy institutional evidence which has been filed refers to that at paragraph 9. I needed take you there I don't think Mr Smith if you'd accept that from me.

A. Okay.

Q. And you say of course in your evidence that four Solid Energy personnel visited the mine on 3 November 2010 at Pike's request, yes?

A. Yes.

Q. And you didn't go with them?

A. I don't know whether I was invited, I don't know where I was.

Q. And to be clear there are no other statements filed in relation to that visit apart from your own statement are there?

A. No as far as I'm aware that's the case.

Q. Did you see whether there were any notes taken by those four people at the time they made the visit or soon after?

A. I don't think there were notes taken, I think they dredged their memory to produce this evidence.

Q. So your evidence is based upon that dredge to use that term of their memories sometime after the events occurred and you have related then in your own words in this evidence haven't you?

A. As accurately as possible. I think the observations were that they were asked to look at the monitor operation to see whether they could provide any guidance as to why the monitor was not producing at a highly productive level. That was what stuck in their mind and I think from a 15 minute observation, I think the record, their memory of what they observed is probably accurate.

Q. And Mr Smith, you've got to accept thought don't you that what we're talking about here is one year after the event you are recording –

THE COMMISSION ADDRESSES MR RADDICH

CROSS-EXAMINATION CONTINUES: MR RADDICH

Q. Now you say that the Solid Energy group, and this is a point my learned friend Mr Haigh referred you to, gave advice to Pike at the end of their visit. If you look at paragraph 108.3 of your evidence again and that's the point there in

your words, “Advice on how to improve the technique of the monitor.” Is that right?

WITNESS REFFERED TO PARAGRAPH 108.3 OF EVIDENCE

A. Yes.

Q. And you say that Chris Menzies in your paragraph 98 and Ian O’Neill of Solid then met with Matt Coll and he’s a contractor at Pike isn't he a few days after the visit and your words, “To give their advice about how the monitor was being operated and suggested various changes that could be made to technique.” So that’s your understanding of the advice that was passed on Mr Smith?

A. Yes. As far as I’m aware the advice they passed on is what’s been produced here.

Q. And you're not aware of them having raised any other concerns of any other nature apart from having passed on the advice that you've recounted are you?

A. Raised concerns with Matt Coll you mean?

Q. With Matt Coll, yes.

A. I don’t know what they might’ve spoken about with Matt Coll other than what’s been reported here.

Q. Certainly they didn't pass on the ringing of an alarm bell on any particular issue did they?

A. Not that I’m aware of.

1240

Q. So you’re not aware, are you, of circumstances subsequent and whether any of the advice that was given was taken on or acted upon?

A. No, I’m not aware of any subsequent actions.

Q. And are you aware of the fact there was a subsequent visit to the mine by Mr Jones and Chris Lee, this is Gary Jones in his statement, on 17 November?

A. I think that was in-seam drilling, was it?

Q. Yes, that’s right to observe in-seam drilling, yes. You’re aware of that visit?

A. Yes, yes, I am.

Q. Now, you’ve said in your evidence that at paragraph 100, that the Solid Energy group concluded that there were some issues with the ‘cutting set up’, in your words. See that there?

A. Yes.

Q. And that the operators were moving the nozzle in the wrong way and there were some issues with jet design, that sort of thing Mr Smith, yes?

A. Well, yes, there's definitely reported about their cutting technique or the controlling technique. The nozzle design was, has been, there's some disagreement between Matt Coll's recollection and what was stated in this evidence. I don't know whether the nozzle design contributed to their poor performance or not.

Q. No, but the idea was that these sorts of things were potentially contributing to the slow cutting rates at Pike. That's right, isn't it?

A. It's possible. That's was what we would look at if we were suffering low productivity we'd look at nozzle design. It's one of the only variables you have at your disposal.

Q. You certainly can't say though Mr Smith that any of these things had any causal connection whatsoever with an explosion, can you?

A. No, I'm not suggesting anything like that.

Q. But you've said in your brief at 101.2 that Pike was trying to extract coal without fully understanding the conditions or investing in the necessary development, or infrastructure. Now, based on what you've told us, you don't have any direct evidence to base that statement on, do you Mr Smith? You'd need to accept that?

A. Well, no, I don't know. The – it's a trial panel. They were obviously having difficulty cutting the coal to the design that they were expecting so I don't know whether they did understand the conditions or –

Q. Well, see that's the point Mr Smith, you don't know, do you?

A. This is a comment that's made by the conclusion of the team that visited, based on what they observed, so…

Q. Yes, so when you're saying in 101.2 that PRC was trying to extract coal without fully understanding the conditions, that's not a conclusion that you can draw yourself based upon your own observation, is it?

A. No, I've stated that. I have not got any personal – have made no personal observations of the Pike operation.

Q. And the same would need to be said then, wouldn't it, when you make the comment in paragraph 109 that 'George Mason appeared out of his depth'.

Again, that's not based upon anything you've experienced in terms of dealing with George Mason, is it?

A. No. It was the observation of the team that visited.

Q. And you don't have any knowledge, do you of the members that comprised the Pike River hydro-team, the individuals?

A. No, I didn't know – I don't – I know Terry, subsequently, but I have got no firsthand knowledge of the other people, other than Matt Coll that were involved. And other than Oki, but no, none of the Pike team.

Q. So you knew that Oki Nishioka was part of that hydro-team?

A. Yes, I do now, and I think I was vaguely aware at the time that Oki was giving Pike some advice.

Q. And are you aware for example, that there were other engineering experts that were used as part of their panel team from a company called Comelec Electrical Engineering Contracting, is that something you were aware of?

A. No, I'm not aware of who they used for advice.

1245

Q. Or of other engineering or slurry operators such as KSB or Switch Build Limited, do you know those names?

A. No.

Q. i.Power Solutions are you familiar with that company?

A. No. That's not to say it's not a good company, I just don't know, don't have any personal knowledge of them.

Q. And Bilfinger Berger is a company you've heard of Mr Smith?

A. Vaguely yes.

Q. Designer of hydro equipment?

A. I don't know what they do.

Q. And so I needn't go on, I think by the nature of your answers but from the list of other companies that were involved in advising on designing and operating the hydro-panel you'd not seen anything about the involvement of organisations of that sort, have you?

A. Look I've got no knowledge of whose advice they took. I think the names of the people that you've quoted me were involved in the mechanical side of the

installation rather than the mine design, so, but still the answer is that I don't know who they used for the various elements.

Q. No so you don't know how Pike went about building up its hydro team and consultants in short?

A. No I have no idea.

QUESTIONS FROM COMMISSION HENRY:

Q. Mr Smith I've got to two areas, one is ventilation officer if you could help me with that and the second one is the involvement of the Solid Energy board, both directed to Spring Creek essentially. At Spring Creek the ventilation officer, or ventilation engineer, is that a full-time position?

A. Yes it's a full-time dedicated job. Yes.

Q. And typically how often would he go down the mine?

A. Daily. Most days he would be, at Spring Creek he would be down the mine.

Q. And in addition to that person, that specialist person, I understand you have from time to time ventilation advisers independent or consultants?

A. Yes we use Andy Self particularly for advice.

Q. Does it make any difference whether the mine is as developed as your mine or when you were starting off did you still have a full-time ventilation officer with consultants as needed?

A. Yes we've always operated that sort of basis a full-time ventilation officer and each bit of advice on ventilation.

Q. In relation to the board, does the board have a health and safety sub-committee?

A. Yes they do.

Q. Does the board – does that sub-committee receive special briefings on areas including, for example, particular risks associated with hydromining?

A. Yes the health and safety board, or the subcommittee of the board, comprises three members, they may have added another one more recently, they meet monthly, separate from the board meetings, they – those meetings are routinely moved around the country so that they sit and – either at Huntly or at Spring Creek, Ohai sometimes and receive presentations of recent incidents or investigations or audits that have been carried out. So they receive – the board receives routine monthly advice on health and safety performance on

high potential incidents and on the various KPIs such as injury frequency rate et cetera and they are particularly focused on the serious investigations into potential incidents. So the ventilation issues are heating occurrences at Spring Creek would occupy prime time as would any other high potential risk or incident that's occurred around the company. They also – the board have engaged and have had engaged for some years Professor Jim Galvin who's an Australian ex mine manager, mining professor who spends a lot of his time sitting on Commission's such as this, investigating incidents in Australia or accidents in Australia. The board have engaged him to provide advice to the them on mining, mining hazards and what happens around the world, what happens in Australia in particular to help us benchmark ourselves and identify areas where we should be focused on and Professor Galvin is, he's an employee and advisor to the Board, not to the management team. We often will – (inaudible 12:50:30) often, most commonly sits with the health and safety sub-committee and will receive those management reports and is a strong voice of that sub-committed even if it's not a Board member in critiquing those investigations and the conclusions.

1250

QUESTIONS FROM COMMISSION BELL:

Q. Mr Smith, I've just got a few areas. First one, why doesn't Spring Creek methane drain? You mentioned earlier in your evidence that you don't use methane drainage, why is that?

A. I've said the methane content is moderate. We manage it with our ventilation system and I think the principal reason is that we wish to retain high levels of methane in our goafs as spon com is a major issue for us and we you know, we require the goaf to be inertised and we use methane to do that.

Q. Paragraph 47 of your statement talks about the 18 SOPs relating to operators of the hydro-monitor. How long does it take to get your people up to speed with all those? What's the sort of timeline from when they first join with no knowledge to when you let them go on their own basically?

A. You mean mine trainees?

Q. Yes.

A. Yeah we have a system at Spring Creek where people are employed into a particular area so if we're looking for recruits into the extraction area, they are trained specifically on those, some standardised unit standards and then their training is focused on the extraction SOPs or if they're going into development, the same applies there or if they're going into belt attendants, they'll get the general training and they'll receive specialised training in the SOPs of that particular area. We are in the process of altering that so that all trainees receive the same training across the board, so they're able to be moved around those various outbye and development and extraction areas. Typically, it's a 12 month to two year training process at Spring Creek. At East Mine it's a bit more intensive and it's 12 months to 18months to get a trainee through all the unit standards to a mine operator's certificate and we're attempting to consolidate and align both of those training schemes.

Q. And just finally is a regular – I still have to ask you a couple of questions about the inspectorate. I noticed Mr Stevens used the word "permit", or "permit the inspector to go underground", would you subscribe to use that word in terms of an inspectorate?

A. Permit –

Q. No I mean Mr Stevens said that you would "permit", the inspector to go underground. I just wondered – an unusual word to use in terms of an inspectorate. He might facilitate but you wouldn't permit them to go underground?

A. No I think any person that comes on the mine site has to be permitted by the mine manager to go underground from a responsibility point of view. The mine manager is responsible for the inspector's safety so from that regard it's a permit, but in terms of his access to the mine he's got open access subject to a qualified person accompanying him.

Q. Are the inspectors inducted in – do they go through an induction at your mine or?

A. Everybody goes through a visitor induction I think providing that induction is, I can't recall, I think six months, providing he's visiting within that sort of six month frequency. He doesn't have to go through the roughly two hour long induction process but I think our induction is, unless the person has the unit

standards is common to everybody. The CEO of the business all the way down, so it's a frequency thing.

Q. In other jurisdictions a mines inspector with a first class underground ticket who had completed a reasonable induction at the mine would not be required to be accompanied in the mine anyway

A. Yeah. Yeah we've got a rule that there's a unit standard that's required to be passed to – for a person to proceed around the mine unaccompanied and Mr Firmin hasn't got that unit standard. If he was able – if he wished to pass that unit standard then that would likely be – for him to be unaccompanied, I'm not quite sure.

1255

Q. Even with risk-based inspection protocols?

A. Well it's a familiar – our concern I suppose is the familiarity of the – familiarity with the mine and his own safety.

Q. Yeah, no I understand that. But I'm more thinking to the argument that you were saying before that you didn't think the mine should be inspected very often because of your good record. Is that a fair statement or?

A. No I wasn't intending to say that. I think I was responding to the unconfirmed reason behind the impromptu visits. I'm open to the inspector inspecting as often as he likes. We don't at all rely on the inspector visiting to satisfy ourselves that our miners – our mine's operating safely. We take whatever precautions, inspections, audits, independent audits internal systems, we ensure that those are sufficient to satisfy ourselves that we've got a safe operation. Inspector –

Q. No I accept that, but I mean on the other side of that coin the inspector needs to satisfy himself that things are in fact proceed in that way?

A. Yes.

Q. And a mine with a high propensity for spontaneous combustion as you've stated, would come up on a risk-based inspection protocol as requiring visiting from time to time?

A. Yes I understand that.

Q. So that's the point I'm trying to make, I mean I just think inspectors need to regularly visit mines that pop up on the risk-based system for a variety of reasons and sometimes, and I'm saying rarely or not very often, that those

visits would be unannounced. And the point I'm trying to make is if the person was more inducted at the mine, there wouldn't be such a problem for you anyway because you wouldn't have to withdraw resources to go and get him and take him round. He could jump in the first vehicle he saw with somebody else and get taken down to the place anyway?

A. Yeah if the inspector wishes to establish some sort of process like that, then we'd be happy to facilitate it.

QUESTIONS FROM THE COMMISSION:

Q. Mr Smith, when Mr Radich was questioning you a moment ago about Spring Creek having started hydraulic mining for a period without dilution doors, you responded, and if I heard you correctly, you said in that initial six month period or so, you were using was it a "leader"?

A. A bleeder.

Q. A bleeder, right. Is this when you were drilling into the goaf as described in your written evidence?

A. We had a system where the back of the goaf, the top end of the goaf was connected to the return through a borehole and that allowed – that was throttled with a valve and it was – allowed methane to be drawn into the return to maintain the level of methane in the goaf at an appropriate level. Lower level than it would otherwise be. It didn't work particularly well and we abandoned the concept later on.

Q. You've told Mr Wilding that collapsing of the goaf area is to be expected and you've also I think explained to him that at Spring Creek your geological conditions are such that as I understood you the collapsing occurs in layers which are above the mined out seam, is that the effect of what you told him?

A. That's correct yes, the roof above the seam collapses. Yes.

Q. Right, what I wanted to ask you was do you get subsidence which extends up to surface level?

A. Yes we do. We – for the thickness of the coal seam we – the subsidence is modest, I think maximum was around about two metres, typically more like one metre subsidence. That's permitted under our coalmining licence.

1300

Q. And do you have, as was the case at Pike, the complication of mining in DOC land anywhere at Spring Creek?

A. No, we're not under DOC land. We're under – I'm not quite sure of the definition how it's designated as a coalmining area and we have a CML which allows us to interfere with the surface, subject to monitoring and some other precautions.

Q. What's the depth typically that you're mining at, at Spring Creek?

A. I think we're at around about 300 metres.

Q. I'm struggling a bit to relate some your written evidence to the indicative diagram that has been on screen during a good deal of your evidence. Can we have that back please Ms Basher?

WITNESS REFERRED TO SOL446723/6

Q. I think you have termed that an indicative diagram?

A. Yes, it's highly stylised.

Q. And am I to take it that – or are we to take it that in reality your typical panel is a much more complicated entity than this diagram suggests?

A. It looks on paper a little more random. The roadways are not straight and the number of roadways might change from three to four, and it might change direction slightly. There's no conveyor belts in this system of mining, so you can follow the floor of the coal seam and because the coal seam is irregular, it's typically a little bit, yes, not geometric –

Q. Well, I think we appreciate that. What I was getting at more is just the size of a panel. You've said that some of your panels have five roadways?

A. Yes, that's the case.

Q. And they can be up to 150 metres wide and as much as 500 metres in depth?

A. Yeah, the width – that's the width there I'm talking about.

Q. Yes.

A. And the length of that distance there to it's extremity.

Q. Right.

A. And so that can be 500 metres and this can be up to 150 metres wide across there and yes, there's three roadways in here and we typically have three or four roadways in a panel. I've kept it simple for clarification, but yeah, it can be five if that area is wide enough.

Q. Right. What I was wanting to get a feel for is if you had a depiction of a 500 metre long panel, how many mining panels are you going to have then, approximately in that depth?

A. Well, if it was 500 metres long, that's the distance from the start of mining, so there's still the same number. This is one panel regardless of how many roadways and regardless of its dimensions. It's one panel. If it's larger, it'll contain more coal obviously depending on the depth of the coal. It'll take longer to extract. The mine is set up just to operate one extraction panel at a time, so while this extraction panel is being extracted back, which might take six to nine months, 12 months if it's a larger panel, another panel, or another panels are being developed.

Q. Well, what I'm trying to get at is how many extraction panels, like here we have five, if you have a depth or a length of the mining panel as much as 500 metres, how many extraction panels might there then be?

A. When you say "Here we have five", what do you mean?

Q. I'm obviously misunderstanding.

A. Yes.

1305

MR WILDING:

Sir I'm not sure if I can assist at all, but on my understanding Mr Smith might be able to confirm this, the numbers 1 through to 6 represents what are called "lifts".

THE COMMISSION:

Yes I appreciate that.

MR WILDING:

The boxes underneath the 10 of them are called pillars.

THE COMMISSION:

Yes, I've called them an extraction panel.

QUESTIONS FROM THE COMMISSION CONTINUES:

A. Yes the panel is this whole mining block.

Q. Yes right.

A. That's that whole section with maybe 100 or 200 pillars is one panel. So it's got its own independent air supply intake and return and it's one – but its one mining panel. One place.

Q. We're obviously confused with terminology, but what I'm trying to understand is how many mining pillars might you have if you've got a depth of 500 metres?

A. Well we can do the calculation I suppose. If there was – if these were 100 metres long and the panel is 500 metres, it's going to be five of those.

Q. So you'd still only have five?

A. Yeah.

Q. So you can lengthen them considerably?

A. It depends on the ventilation and the development process but I said in my evidence that it's desirable to reduce the number of cross-cuts as much as possible, reduce these connections. Those roadways there are five to six metres wide and they interfere with this extraction process. So we have to have sufficient of those to ventilate the place on development, but minimising them is desirable for the extraction process.

Q. Thank you, that's what I was trying to get a sense of, just once you have the full length of the panel, how do you set it out then by comparison to what's in the diagram? That's what I was struggling with. Turning to a lift, what depth is a typical lift as depicted by your one, two, three, four and so on?

A. Well if the – yeah, number one's the first lift here and that might be 30 metres between centres, so the length from the monitor to the back edge of the pillar might be 25 metres and that's determined by the cutting productivity of the monitor itself.

Q. I was meaning the other way.

A. Yeah, so that's –

Q. How much are you taking off each lift?

A. That's likely to be 10 metres, that dimension and preferably the full height of the coal seam providing – provided we've managed to drive these roadways on the floor he'll cut the full height.

Q. And the sort of cutting conditions you've described at Spring Creek, what period of time to take out a typical lift?

A. Our productivity's around about 2000 tonnes a day when it's operating. So sorry I haven't got that – couple of tonnes a minute something to that sort of order.

Q. So a 10 metre lift, I'm just trying to get a sense of how often the monitor has to be repositioned?

A. Well it's not a big job the monitor gets from – there's another monitor sitting in here ready, so when that lift has been taken out and that might take some shifts, there's another monitor so the water supply can be redirected to the – to this monitor here and the crew just moves from there to there and another crew comes in and moves that back to the next position. It's a relatively continuous process.

Q. So the removal of a lift might take a shift or so?

A. It took a bit longer than that I'm sorry I have to do the mental arithmetic.

No doubt we'll have others who know better than – who do it as a matter of routine I guess. You've talked about and been asked about 'cleat'. Can you just define cleat for us?

A. Yep, there's probably some geologists in the audience that can do it better than me but –

1310

Q. Well, let's have 101 level if you don't mind?

A. The cleat is, there's the dominant joint direction in the coal seam, so coal's a sedimentary material and subject to its formation, it'll have cleat in a dominant direction, so –

Q. As it, from when it's laid down?

A. Yes, and when it's formed, subject to the stressors under, during the qualification process and that's typically a continuous, typically standard for the area, so the dominant cleat direction will be relatively consistent throughout the mine.

THE COMMISSION ADDRESSES MR HAMPTON: ANDY SELF

RE-EXAMINATION: MR STEVENS

Q. Just one matter Mr Smith, at paragraph 101.2, Mr Radich put to you in summary that really yourself and those that visited Spring Creek on the

3rd November visit – sorry, Pike River, weren't able to say whether Pike was trying to extract coal without fully understanding the conditions or investing in necessary development and infrastructure. Before you develop a panel for hydromining, would you invariably have above ground boreholes into that panel?

A. Yes, yes, we do.

Q. And what information would that give you in terms of things like methane content and matters relating to stressors anticipated?

A. We probably wouldn't determine, we wouldn't attempt to determine the stress conditions. The boreholes that we use for infilling prior to panel development are predominantly aimed at identifying in detail the structure of the seam, presence of faults, elevation of the coal seam, roof and floor and we would typically also do a gas content assessment and also do an R70 on the spon com, just to maintain our database, but primarily we would be confirming the structure. We would also be logging the depth of sediment, particularly from the roof of the coal seam to the Goldlight mudstone interface and that would identify whether the extraction system design needed to be modified.

Q. From your discussion with the team that went to Pike on the 3rd of November, are you able to say whether there were any above ground boreholes into their trial panel?

A. No, look I'm not aware of what was there in the way of boreholes.

Q. I see. And just lastly, and madam registrar, if you could show the witness this document please?

WITNESS REFERRED TO EMAIL

Q. We discussed Mr Hughes visit about a week before the hydro-miners from Spring Creek went to Pike?

A. Yes.

1315

Q. Would you have a look at the email I've just given you please.

A. Which? The one from Robin to Terry or from Terry to Robin?

Q. From Terry to Robin. Would you look at the second paragraph of that where he says, "I've an ulterior motive here and that I would like someone to provide N check on airflow and pressure from the underground fan in operation. Pike

still does not have a handheld electronic manometer and a good quality anemometer."

A. Anemometer.

Q. Anemometer. That was about two or three weeks before the visit by the hydro-monitor team from Pike to Spring Creek – sorry, from Spring Creek to Pike?

A. Okay yes.

Q. Would you expect the equipment referred to by Mr Moynihan in his email to Mr Hughes to be typically held by an underground coal mine?

A. Yes it should be.

Q. Yes. Would you produce that document please?

EXHIBIT 36 PRODUCED – EMAIL FROM TERRY TO ROBIN

WITNESS EXCUSED

COMMISSION ADJOURNS: 1.17 PM

COMMISSION RESUMES: 2.18 PM

MR MOUNT CALLS

MASAOKI NISHIOKA (SWORN)

INTERPRETER (AFFIRMED)

Q. Can you confirm please, your full name is Masaoki Nishioka?

A. Yes, it is, that's correct.

Q. Do you live in Tokyo, Japan?

A. Yes, I do.

Q. Mr Nishioka, you have filed a statement with the Royal Commission dated 25 October 2011?

A. Yes, that is correct.

Q. For reference we have that as NISH0001.

A. Yes, that is.

Q. Mr Nishioka, obviously your first language is Japanese?

A. Yes, that is correct.

Q. Can I just confirm that you are happy to give your evidence in English?

A. Yes, I do my best.

Q. Yes. There is a court interpreter available by your side. If you have difficulty at any stage, please feel free to let us know and the interpreter will assist.

A. Yes, thank you very much and I will.

Q. Mr Nishioka, do you have a copy of your statement with you?

A. Yes, I do.

1421

Q. And do you also have available to you a document that you created at the time that you were at Pike River which is I think your work record?

A. Yes I do.

Q. That document has been filed with the Commission now and its reference is NISH0002?

A. I don’t have that number on my paper, on my copy I should say.

Q. Just for our benefit, the work record was that a document you create day-by-day while you were at Pike River?

A. That is correct.

Q. From time-to-time if I ask you questions and you want to refer to your work record, please just let us know and I will check with the Commissioners, I imagine there will be no difficulty with that.

A. Mhm.

THE COMMISSIONER:

Q. Mr Nishioka if you need to look at your record in order to check your answers, you do that as you go along.

A. Yeah thank you very much.

EXAMINATION CONTINUES: MR MOUNT

Q. Mr Nishioka if we put up on the screen pages 3 and 4 of your statement we can see a summary of your qualifications and experience. Do you see that

A. Yes I do.

Q. I won't go through all of that in detail, but can you confirm you have around 40 years experience in the underground mining industry?

A. Yes.

Q. Is your particular area of expertise hydraulic mining?

A. Yes that is correct.

Q. In which countries of the world have you had experience of hydraulic mining systems?

A. Well mainly Japan and Canada and I have also involved in the development and construction of Pioneer Mine which is located in British Columbia in Canada.

Q. And can you just confirm for us your current position?

A. Well at the moment I'm with SEIKO Mining Company Limited and I'm a general manager engineering department.

Q. Did you previously work for Mitsui Mining Company?

A. That is correct.

1424

Q. What were the different roles you had with Mitsui Mining?

A. Well when I belonged to Mitsui Mining it's more like overseas investment work, you know engineering work but after training at SEIKO Mining, it's more like a

productive work site like engineering or equipment supply, that is a major you know, responsibility for me.

Q. Can you tell us about your first contact with the Greymouth area?

A. Well I came into Greymouth area in 1988 when Coal Corporation announced private sale of their property and we had, we wanted to take over Solid Energy's property because we had a project Greymouth coal project in this area.

Q. Coal Corporation of course is the predecessor of Solid Energy?

A. Yes that is correct.

Q. When you say "we", at that time it was Mitsui Mining?

A. Yes I was with Mitsui Mining and we had a consortium with Japanese trading house (inaudible 14:25:15) and also Cyprus Mining Company in the United States.

Q. You referred to the Greymouth coal project, did that later become Spring Creek?

A. Yes that is correct.

Q. So on that first visit did you travel through various Coal Corporation properties in New Zealand?

A. Yes.

Q. And when you were considering the potential for the Greymouth coal project at Spring Creek, did you raise the potential of hydraulic mining?

A. Yes we were planning to open that Greymouth coal project by using hydraulic mining method because geologies were suited for hydraulic mining method.

Q. Did you suggest a test of hydraulic mining at the old Strongman Mine?

A. Yes when I tested all the Strongman Mine, which was owned by Coal Corporation at the time we went into underground of all the Strongman Mine during the course of asset takeover investigation and I found you know, that mine is well suited to introduce hydraulic mining method because the geology is so well suited for hydraulic mining and that's what they were using, hydro transportation system already.

1427

Q. Was it in 1991 and 1992 that the trial of hydraulic mining at the old Strongman Mine took place.

A. Yes, that is what I proposed to our board, because we had Greymouth coal project and everybody concerned was, if you know high pressure water jet can cut coal seam of Greymouth coal project and all the Strongman Mine was adjacent to Greymouth coal project, so if (inaudible 14:27:37) has that concern, why not doing, you know, this mining to demonstrate how water jet cutting performs. That's why, you know, I proposed this mining to our board, and also, you know, the partners of joint venture of Greymouth coal project and it took a couple of years to convince everybody and raise funding and we decided to carry out this mining in 1991.

Q. Did that take place with some second-hand equipment from Japan?

A. That is correct. (inaudible 14:28:19) our hydraulic mine up North Island is not coal mine. You know, that mine was closed and a lot of second hand equipment is left over and we thought, you know, we should utilise, you know, that second-hand equipment. Then we shipped out in all necessary equipment down to Strongman's Mine site.

Q. While you were here for that trial at Strongman No 1, did you have a discussion with Roger O'Brien from New Zealand Oil and Gas around 1992 about the Pike River Mine?

A. Yes. At that time I was sitting at Ashley Hotel and setting up the office and somebody, I don't remember the exact date, but Roger O'Brien, he belonged to New Zealand Oil and Gas, came to my unit and he started explaining about, you know, Pike River Coal, you know, property and asked me if hydraulic mining method can developing on that property. And I asked of so many questions regarding, you know, coal structure, and he said, Brunner coal seam is running 15 to 20 degrees. Coal seam is (inaudible 14:30:01) and I was not – there was (inaudible 14:30:06) as well, but conventional mining method cannot really mine that property efficiently, so I told him, you know, okay, hydraulic mining could work in that property. However, we'd like to confirm geological condition by ourselves. Then I propose some funding to our board but in Japan, and successfully –

1430

Q. Just pause there. Roger O'Brien, was he a manager from New Zealand Oil and Gas with some responsibility for the technical area?

A. I understand he was a head of technical department of New Zealand Oil and Gas.

Q. Now you proposed a series of drill holes, is that right, to further understand the pipe field?

A. Yes that is correct.

Q. We've had some discussion in this Commission about whether Pike River could have been an opencast mine, based on what you know about Pike River, do you think opencast mining was a realistic potential for Pike River?

A. Well speaking only of opencast mining, looking at the topography of that area, there was no rainfall which is seven millimetre per year, it's correct rainfall and I thought, you know, opencast mining is really difficult to do. That area is fairly close to National Park and obviously there are much area of that property belongs to DOC land. So I thought it's very difficult to use in an opencast mining in that property.

Q. Is it fair to say that the technical challenges of opencast mining were part of the reason – so was it not just the conservation concern? Were there also technical problems with opencast?

A. Well it's probably the mining practice concerns we could operate the opencast mining, but considering the habitation and also the water management which usually in opencast mining contaminate drinking water so infestation after finishing opencast mining, vegetation might be very, very difficult because of that heavy rain and obviously I thought there was not enough topsoil available to rehabilitation of that area.

Q. Now you told us you proposed a programme of drilling exploration?

A. Mhm.

Q. Did that receive funding from the Japanese government?

A. Yes partially Japanese followers (inaudible 14:33:29) Japanese core company to carry out some drilling exploration overseas. So I applied for that fund, understand how we spend our money getting approval from our board.

Q. Now we've heard already that there were seven drill holes in 1993, is that correct?

A. Yes that is correct.

Q. Now based on the information from those drill holes, were you involved in making a recommendation to the board of Mitsui Mining?

A. Yes we did.

Q. What was your recommendation?

A. Well first it went okay. The purpose of the drilling or what you call it exploration there is to decide – it's viable for our company to invest any money into the project and the key issue was what sort of coal are you seeking in that property. I mean the coal quality and also so how much coal is expected to take out from that coal property and according to our estimation several coal could be around 6 million tonnes or it could've been 5 million which is not quite enough, significant tonnage and also the access to that property was very difficult because western side, ocean side it was steep cliff belonging to National Park so we are not allowed to step in that area and also if we approach from the other side you know, that is a (inaudible 14:35:23) port and so the access has to go through DOC land so we (inaudible 14:35:30) quite a long time to get approval and so even if we construct access road, that would take you know, a huge capital cost and so if we put in a stone driving that could be a long, long way before reaching to the coal seam. So looking at predicted tonnage and expected you know, capital cost we thought that project is not so worthwhile for us to be involved.

1435

Q. Were there any other factors about the coal itself that led you to that view?

A. Well looking at you know, that whole quality of Pike River, that coal has really good fluidity, that is you know, certainly not characteristic to bind all you know, other coals when we're making a (inaudible 14;36:31) and one of the particular characteristic of Pike River Coal is that fluidity doesn't come down even after getting oxidation. Usually a high fluidity coal, you know, fluidity comes down to very low within three weeks or a couple of months and when we using all that high fluidity coal, I mean actually putting into the coal (inaudible 14:37:02) you know, fluidity is not so much. However, in the Pike River Coal you know, that coal maintains that quality for a long, long time even after not getting oxidation. That's all we really had in our interests to taking on Pike River Coal. However, you know, the top part of that Pike River coal seam which is (inaudible 14:37:30) you know, the top side is really high sulphur core and the sulphur content is partly 3%, 4% and sometimes was up to 7% which cannot be used

for coking. That is another reason we decided not to be involved in this project.

Q. Did your exploration in 1993 tell you anything about the methane content of the coal at Pike?

A. Yes what we noticed here is below the coal seam contains you know, a really high methane gas and the drill holes we put in close to Hawera Fault where we take the river coal out. methane gas was bubbling out and we had really no experience, no choice for what used to be a chief (inaudible 14:38:36) you know, company and he said he have never seen that much out of coal seam in his life, in his 45 years or 40 years experience. So we knew you know, but on a (inaudible 14:38:52) Pike River Coal contains a lot of methane gas and when we developed underground mine we have to very careful to handle you know, methane gas.

Q. Those very high levels of methane you've described, would you expect them to be worse in the area of the Hawera Fault?

A. Sorry I missed it?

Q. Would you expect there to be more methane in the area of the Hawera Fault?

A. Yes this is just to a general rule but whenever we extract you know, close to any fault we expect high methane emission. This is general rule, not only for Pike River but also any coal property.

Q. Did you say a moment ago that your estimate was that Pike River might produce five or six million tonnes of saleable coal?

A. Yes.

1440

Q. And can I ask you to look at NZOG0056, and we'll start with page 1.

WITNESS REFERRED TO DOCUMENT NZOG0056

Q. This is the prospectus that was issued to the public in 2007 and if we look on page 12, and perhaps if we highlight number 1 towards the bottom of the page – Mr Nishioka you have the screen in front of you which might be easier for you to see.

A. Okay.

Q. Do you see there that it was said that total production of 17.6 million tonnes was projected for Pike River?

A. Yes, I see it.

Q. What is your view of that estimate?

A. Well, (inaudible 14:41:18) call me and say, okay, the coal which can be used for (inaudible 14:41:24) making or even burning coal, it means high sulphur coal is not counted in that, you know, saleable coal. (inaudible 14:41:33) before designing, you know, mine structure, we never know, you know, how much coal appear we have to leave behind and employ, you know, this (inaudible 14:41:45) is not considering the coal quality and there is, you know, mine structure, how to develop it and how much, you know, or how many, you know, coal (inaudible 14:41:57) should be left, you know, behind and if we are taking all that, you know, reserve out, I don't think that totalling of saleable coal can come up to, you know, 17.6. That is way too much.

Q. Earlier in this Commission we have had evidence about the number of drill holes that were carried out at Pike. Obviously Mitsui was involved in seven drill holes in 1993?

A. Yes, that is correct.

Q. Do you have any comment about the number of drill holes that you would expect would be required before developing Pike River?

A. Well, you know, of course, you know, more drill holes is better for understanding, you know, geological structure and the coal content (inaudible 14:42:58), but if we put, you know, too many drill holes in, you know, we have to spend, you know, correct money for exploration, and that is making project viability, you know, very low, so somebody or to some extent, you know, we have to decide how many drill holes we putting, based on, you know, business decision. And (inaudible 14:43:27) New Zealand coal seam around this area. Geology is quite a bit, you know, complicated and no matter, you know, how many drill holes in, still we cannot improve the understanding of geology, you know, very much.

Q. I take it there's a balance to be struck then between probably the desire of geologists to have many more drill holes and –

A. Yeah, that is correct, you know, geologist is responsible to make accurate, you know, geologist interpretation, such as structure and (inaudible 14:44:14) and also, you know, coal quality, but business people doesn't want to spend, you know, that sort of money for geologist to put, you know, drilling, so that is always the arguing between, you know, geologist and technical people, and

the financial people, so we try to minimise drill holes, as long as we can get to reasonably good, you know, geologist (inaudible 14:44:44) interpretation.

1445

Q. Do you want to make any comment about how adequate the understanding was at Pike before making the decision to mine?

A. Well if how we look at the area close to the outcrop, we can get pretty good with the geological application in based on the existing drill holes or adding up drill holes because we can see no outcrop on getting the correct information from outcrop which is coal seam is exposed, but once we get close to the deeper part which is close to Hawera Fault, it is very difficult to estimate to (inaudible 14:45:42) geological structure of that area is very, you know, disturbed by big fault such as Hawera Fault. So it is very difficult to get geological positioning in that area.

Q. So in short, in 1993 or thereabouts Mitsui decided not to proceed with the Pike River project?

A. Mhm.

Q. Over the years ahead, were you occasionally asked for your advice by people involved in Pike River?

A. Mhm, yes that is correct.

Q. I just want to show you one file note from the Department of Conservation of a meeting in September 1994, this is DOC0010020018.

WITNESS REFERRED TO DOCUMENT DOC0010020018

Q. This refers to a meeting which appears to have been around the 5th and 6th of September 1994 to discuss Pike River. At that stage it is recorded that the company propose to use underground hydraulic techniques and that access to the coal would be via two portals in the forest.

A. Yes. Well I don't really remember you know, about this meeting, but it looks like a meeting held over two days. Is that correct over 5th and 6th September. I cannot really recall you know this meeting.

Q. To your knowledge you were not, at that stage, retained as a formal advisor to Pike, is that right?

A. Well I don't think I was formally involved in that Pike River (inaudible 14:47:54), just based on what I already know our association with Roger O'Brien, you

know, he asked me so many questions and I gave, you know, all sort of information based on our friendship.

Q. Five years later in 1999 were you asked by Mr Graeme Duncan to respond to some questions to assist with the pre-feasibility study for Pike River?

A. Mhm.

Q. Can you recall what in particular you were asked to help with?

A. Well I received so many questions regarding hydraulic mining and I think, you know, answer that questions through email.

Q. What sort of topics were you asked about?

A. I don't really remember but – for instance, you know, how many cubic metre of high pressure water jet they are supposed to use or how many faces should be prepared and so what are the roadway angle you know they are supposed to use to develop the mine structure. I gave him, you know, all the information about it all depends you know what they want to do, but they didn't give me any such information regarding Pike River and just emailed me the questions.

Q. In June 2000 the pre-feasibility study was completed. If we can look at DAO.004.10174 at page 9.

WITNESS REFERRED TO DOCUMENT DAO.004.10174/9

1450

Q. This is a page from the June 2000 pre-feasibility study. Do you see your name listed under the statement, "The key members of the study team include -"

A. Yes I do. Well I shouldn't have actually, this is always happening not only at Pike River. (inaudible 14:50:31) these you know, start asking me questions on the feasibility study, they tend to use my name like this and actually no, I didn't have any formal engagement in this study team.

Q. So you would not have described yourself as a key member of the study team?

A. Well again you know, what as in of, "Key," means but I'm not deeply involved in this study team. I wasn't – I gave them some idea if I was asked.

Q. If we move forward now to 2005, were you contacted by Grame Rigg to update some estimates in relation to the electricity costs for Pike?

A. Yes.

Q. Can you remember what other involvement you had in 2005?

A. I think they ask me to review (inaudible 14:51:48) capital cost related to hydromining equipment and also he asked me what is appropriate to (inaudible

14:52:08) the roadway. And the (inaudible 14:52:13) based on that you know, figures I gave him and he developed my structure designing.

Q. If we can look at DAO.012.03499 page 56.

WITNESS REFERRED TO DOCUMENT DAO.012.03499

Q. This is a page from the final mine plan and financial model in July 2005 and half way down the page do you see that your name is mentioned and it is said that you were retained by Minarco to complete the design of the water supply and slurry systems.

A. I think they asked me to estimate the capital cost on the – ideally based on my experience, past experience but at this time they haven't operated any you know, mine design. That's when I estimated this costing based on just general knowledge.

Q. If we can also look please at DAO.012.03498

WITNESS REFERRED TO DOCUMENT DAO.012.03498

Q. This is a page that I think comes from the project update by Minarco in 2005.

A. Well I'm not, never belong to the organisation of Pike River, never.

Q. I see your name there as, "Hydro-monitor consultant."

A. Yes, yes that's right.

Q. Do you think that reflects your role in 2005?

A. I don't think the reason of showing is (inaudible 14:54:24) they asked me questions so many times and I answered to their questions. That was what I did and I didn't know you know, I was doing hydro-monitor consultant. Well actually I was not in this organisation at all.

1455

Q. If we look at the period 2005 to 2007, you did I think have some involvement in the design and supply of the coal slurry pipe, is that right?

A. Mhm, yes, that is correct. That was the time they issued, you know, hand out document to procure all necessary equipment, such as, you know, slurry pipeline, slurry pipeline joint, such things.

Q. And did you also have involvement during that period with putting forward a proposal for fluming and water supply parts?

A. Mhm, yes. We issued an offer, yes.

Q. And in fact if we look at DAO.025.55328?

WITNESS REFERRED TO DOCUMENT DAO.025.55328

Q. This is a document from March 2008, from SEIKO Mining, setting out equipment and material specifications for many different components of the hydromining system, is that right?

A. Yes, yes. Well, you know, they ask me what sort of, you know, material or equipment we can possibly supply to Pike and they wanted me to decide, you know, that's specifications which can meet with Pike River hydromining system. That's why, you know, I summarise, you know, all of the required specifications, even though I was not provided, you know, proper design criteria.

Q. Did you also give a quotation to Pike River for supplying all of that equipment?

A. I think we, you know, we issued a quotation to supply these equipment.

Q. Now, of all of the different components of the system, which parts did Pike ultimately obtain from SEIKO?

A. Well, you know, we got contract to supply slurry pipeline, slurry pipeline joint and (inaudible 14:57:21), you know, we've got order to supply water gun which we call, you know, hydraulic monitor.

Q. So just those three things and everything else was not obtained from your company, is that right?

A. That is correct, yes.

Q. And if we can look at PW35 please, which is a photograph of the hydro-monitor unit.

WITNESS REFERRED TO DOCUMENT PW35

Q. You've talked about the water gun, can you just point out with the laser pointer, which bit you supplied?

A. This hydraulic monitor is a water gun up to here and we didn't supply, you know, this nozzle, because they didn't know what sort of, you know, high pressure (inaudible 14:58;17) system they are going to use, (inaudible 14:58:20) and we couldn't decide the size of the nozzle, that's why we didn't supply this nozzle. But we supply, you know, this unit and this structure or, I don't know, who designed and who supplied, I don't really know.

Q. You had no involvement in the design of the –

A. No, not at all.

Q. Do you know where it was built?

A. I don't know, probably in Australia, because quite a few, you know, equipment came from Australia.

Q. In your opinion, were there any difficulties with the design of the rest of the unit?

A. What do you mean by 'difficulties'?

Q. Was it a good design?

A. Well, I don't think so, you know, that is – well, if you know, a monitor, water gun is mounted on this (inaudible 14:59:14). Everybody thinks it's easy to move, but once, you know, pressure is applied, you know, hose becomes solid and so, you know, this area will be buried with coal and rock and we cannot get anymore (inaudible 14:59:33) or if we want to, you know, move these trucks, we have to supply hydraulic oil, which need, say, 16 hydraulic hoses, and once pressure is applied, hydraulic hoses are not flexible anymore. Understand that we have to hydraulic pipeline or hose, well actually, no Pike River had rubber hose, but once, you know, pressure is applied, hose is just as solid as a steel pipe, so you know this truck mounted monitor cannot give us any mobility, that is actual fact. That's when we don't use, you know, this system. But of course everybody has to use any equipment, but we don't recommend you do that.

1500

Q. Now I think you supplied the water gun units that you've described in about February 2009?

A. I think well I don't remember clearly that date, but around that time, yes.

Q. Did you have any contact with Pike between early 2009 and the middle of 2010?

A. No, not at all.

Q. On the 22nd of June 2010 I think you were working in Saudi Arabia, is that right?

A. Yes, that's correct.

Q. What were you doing there?

A. I was involved in oil plant construction project.

Q. The email you received, was that from Peter Whittall inviting you to come to Pike?

A. Yes the email I received.

Q. Did Mr Whittall ask whether you would assist with a final critique of the installation and also development and implement of workforce training?

A. Mhm.

Q. And were you happy to go to Pike?

A. Well I had really curiosity what was going on at Pike. It's just, you know, they kept on asking me so many questions and it during that period and 2010 the timing Peter sent me email, not much communication going on.

Q. So you agreed to go to Pike?

A. Yes I thought you know Pike maybe better environment than Saudi Arabia, it was so hot.

Q. Now I think you arrived in Greymouth on the 25th of July last year?

A. Yes that is correct.

Q. At that stage the hydro-monitor panel was still in very early stages of development is that right?

A. That is correct.

Q. Were they possibly only as far as the first cut-through, something like that?

A. Yes, that's what I aware of.

Q. When you arrived, who was in charge of the hydromining project?

A. Really I don't know. It was Peter Whittall come to the mine site maybe one day per week and the rest of the time he was staying at Wellington and he told me I should report to Terry Moynihan.

Q. Moynihan?

A. Yes, that's what he told me. Really and I couldn't find any key person who was leading, you know, this construction, this (inaudible 15:03:41) task.

Q. What was Mr Moynihan's role at that stage?

A. Well I understand from (inaudible 15:03:52) he was project manager.

Q. Was he doing anything else apart from being concerned with the hydro-monitor system?

A. Well actually he was busy to prepare all the timesheet for contractors and I haven't seen anything he was doing (inaudible 15:04:22) at the site and he was not always staying in the office, and I don't know where he was, but I saw him maybe every – well let me see every morning when we had a meeting, yes.

Q. Do you know whether he had previous experience with hydro-monitor system?

A. I don't think he has had hydromining experience.

Q. I want to ask you now about your first impressions of the hydromining project when you arrived.

A. Mhm.

1505

Q. So I'm asking now about your first impressions, when you arrived and over the first week or so if that's okay?

A. Well first of all you know, what I felt was that organisation was not well functioning because I couldn't find anybody particularly responsible to a particular area. Like what I did is I really wanted to know what sort of ventilation system they are using and there was a (inaudible 15:05:42) that design of ventilation and I started asking around who did this design and who was responsible for this ventilation system and who was supervising daily ventilation system or ventilation (inaudible 15:06:02). What I received is ask to somebody else, ask to somebody else and ask to somebody else and finally the last guy said, "Why not talking to Doug White." Well obviously what I found was nobody really taking care of ventilation survey, ventilation system construction or you know, ventilation system in a commissioning.

Q. In your view is it important at a mine to have someone who has that responsibility?

A. Oh sure you know, ventilation is the most important part for underground mining, particularly for the mine which is emission and a lot of methane gas and I noticed so many other things but if you ask me I could speak.

Q. Well let's just stay with ventilation for a moment. What was the state of the ventilation system when you arrived?

A. At that time only emergency fan, there's two on the top of the ventilation shaft, that was running.

Q. So the main fan hadn't started working yet?

A. No they haven't, no that fan hasn't been installed yet and that was sitting outside of the mine.

Q. In your view was that a satisfactory situation for the commencement of hydro-monitor operations?

A. Well when I arrive at Pike River site well the site was not quite ready to install hydro-monitor system because they haven't changed to the electric gears

underground yet to drive high pressure pump system and everything still not at a stage of construction as far as the monitor operation concerns.

Q. If the panel had been ready, in your view would it be appropriate to start extraction before the main fan was working?

A. Well really not – be first talking about a ventilation, the area they set up monitor panel is not appropriate to area for monitor extraction and first what I told Doug White is, I wouldn't send anybody underground before (inaudible 15:09:11) ventilation system is established and there was no second means of egress ready. This is clearly what I told to Peter Whittall as well as Doug White. And usually we don't prepare monitor extraction panel close to the pit bottom which is to stay for the life of the mine because it's very difficult to manage the mined out area.

Q. Before we talk about the location of the monitor panel I want to come back to your comment about not sending anyone underground until there's robust ventilation and a second egress. That's what you said?

A. Yes.

1510

Q. Did you have any response from either Doug White or Peter Whittall when you said that?

A. Nothing. Nothing, but one thing you know what Doug has started to do is well he started to press for the construction or installation of main fan but that didn't go very well and there was Peter Whittall started to talk to mine planning guy to get second egress ready, but it's not so easy task to climb egress, because I mean you need to be quite (inaudible 15:10:45) to the surface.

Q. Now you made a comment about the location of the hydro-panel and said you would not have recommended it to be so close to pit bottom or to the Hawera Fault. Is that right?

A. Yep, that is correct.

Q. Why is that?

A. Hydromining is a regulating mining method and if we use you know that mined out area close to the vital facilities of underground operation we have to live with that mined out area for the life of the mine. And mined out area is potential heating area. I realise that mined out area could be a potential gas pocket. So we don't want to have that risky item close to the vital area.

Usually we starting monitor extraction further in of the mining property than retreat back down to you know (inaudible 15:11:55)

Q. The panel that Pike was beginning with was I think around 25 or 30 metres was the proposal, when you saw that proposal what did you think about the width?

A. Well width is okay, when we start cutting coal pillar by water jet, initial cut was very difficult part. I mean low productivity, we also – there is no grunt pressure working on the coal here, that's why okay a 30 metre cutting seems too much and we usually prepare coal pillar with smaller than standard of size. So I would make that pillar size somewhere around 15 to 20 metres at most for that you know initial cutting if we look at the production side.

Q. So on looking at a trial panel you would've suggested a narrower panel?

A. Yes, that is correct.

Q. Is it correct that in general the wider the panel the greater the risk is of large roof fall causing a large wind-blast or similar?

A. Well not necessarily because we need these opening to start or induce a cave-in and in any retreat to mining we should have decent, you know cave-in (inaudible 15:13:55) in the goaf but in case of Pike River they intentionally stopping of cave-in because they didn't want to have any surface subsidence and that is the mandate from DOC so it's sort of okay looking at good mining practice we should induce cave-in in the goaf but in case of Pike River they are trying not to induce a cave-in. That is sort of a counteract.

Q. Was that one of the first things you learned about the trial or bridging panel that contrary to normal practice Pike was planning to leave the roof up rather than have it collapse?

A. That is correct.

Q. In your view is that not good mining practice?

A. No not at all. We try to induce cave-in and we try to pack up the mine out area to avoid a methane build up in the goaf.

1515

Q. We're staying now with your first impressions when you arrived at Pike. Did you form a view about how suitable the equipment at Pike was?

A. Well, equipment was okay. Their design is not worth (inaudible 15:15:28) for hydromining application and equipment to selection really was no good at all.

Q. Perhaps we'll start with the guzzler and I think we've got a picture of that. It's CAC0130, page 6.

WITNESS REFERRED TO DOCUMENT CAC0130

Q. That's the guzzler?

A. Mhm, yes.

Q. How suitable was that piece of equipment?

A. Well, in case of in hydromining we try to simplify the face equipment, because everyone will say, maybe in a couple of days or a couple of weeks, depending on the production rate, but we have to retreat, you know, all gears back, maybe 10 metres or 50 metres, or Pike was planning to retreat 18 metres, and if you use, you know, that heavy gears at the face, that is taking all, you know, advantage of hydromining because in case of hydromining if we retreat monitor quickly, you know, we can resume next cutting, you know, sooner. So really, you know – well, this is my personal view, you know, I really don't want to have, you know, this heavy gears at the face.

Q. And I think you've already referred to basically the same problem with the hydro-monitor unit itself?

A. Mhm.

Q. In paragraph 22 of your statement, which we'll just put up on the screen, you have listed nine separate problems with the high pressure water generation system?

A. Yes.

Q. Now, I think they speak for themselves and I'm not going to ask you to read them out or go through them one by one, but is there a way that you can just summarise what your concern was with the high pressure water system?

A. Okay, first of all, you know, that pressure rating is not quite consistent and we usually don't use, you know, ANSI 2500lb, which is, pressure is high and if we make, you know, the pressure too high, that is increasing the risk of, you know, rupturing of the equipment and also, you know, there's decided to use the two pumps in parallel instead of one unit, but if you use, you know, two pumps, sure we could use them, but it makes control more difficult. That is (inaudible 15:18:32) pump per unit and they only supplied, you know, driving system for only one unit, you know, that is not VSD, variable speed unit. They've got one driving unit and two pumps and if they want to operate on two pumps, you

know, together, they have to run (inaudible 15:18:54) one unit to synchronise speed then switch to the second one, then they ramp up the pump speed, but somehow, you know, power supply was weak and the voltage, they couldn't get, you know, high enough voltage and the VSD system couldn't ramp it up to synchronise speed. It means they cannot start up second pump, so really, you know, there is no consistency in this, you know, high pressure pump system design. I'm noticing that this pump, ring type pump, and we found, you know, through our years of experience, you know, this ring type pipe is not well suited to (inaudible 15:19:40) water, which (inaudible 15:19:43) can get in hydraulic mining operation.

Q. Just pause there. I take it you had recommended a different type of high pressure pump?

A. Yes, I did.

1520

Q. How sophisticated are those pumps?

A. Well sophistication wise well both pumps have pros and cons but we usually using the horizontal split pump, much (inaudible 15:20:16) because when we doing maintenance work, if we use horizontal split pump just open up at the top of the casing and the replacing of rotary assembly and put in spare rotating assembly in and put the lid back on. So we can do all the maintenance within say two shifts or even one day and we can go back to the operation. But in case of a ring type pump, if you want to do your maintenance we have to take whole pump unit out and send it out to somewhere and obviously after assembling all three stages of a ring type pump there is no way to taking (inaudible 15:21:03). But in case of even a horizontal split pump if you take the rotating assembly out we can usually take (inaudible 15:21:13). That can make pump operation smooth.

Q. The type of pump that you recommended, are those pumps used in any other applications?

A. Well which one you know, horizontal split pump? Yeah this pump is commonly used in (inaudible 15:21:33) pump, there is say water supply.

Q. The type of pump that Pike ended up using, have you seen that used in hydraulic mining before?

A. Sell in China yes, they are replacing the pump unit every two months.

Q. So can we summarise your nine points there by simply saying that in your view the equipment that was selected for Pike was not suitable for hydromining?

A. No it's not suited and the high pressure pipe you know, that pipe is not quite round and they cannot sit in a joint to connect in a pipeline, that's why they trim it down, the end of the pipe which it used (inaudible 15:22:28) that thickness of the pipeline, (inaudible 15:22:31) pipe that could be safety hazard because they are taking all strength away from the high pressure pipe. And so the high pressure joint is very important component for high pressure system but they introduced prototype high pressure joint which kept on leaking every day, even if replaced the gasket still leaking and the leakage is the one after another and you know, we're not supposed to use equipment which doesn't have past performance, experience I should say.

Q. If we move on to another piece of equipment, variable speed drives. Pike as I understand it had a number of these underground, is that right?

A. Yes after all equipment has (inaudible 15:23:26)

Q. In your view is there any concern about locating VSDs underground?

A. Yes VSDs is you know, a good system to control (inaudible 15:23;39) but that VSD system has to be placed in very clean environment and a consistent temperature and dry, dust free but it's not so easy to find that environment underground so you know, if we could avoid using a VSD system I like to go that way but I don't know why, but all (inaudible 15:24:10) has no VSD underground and gas of Pike River.

Q. Were the particular VSDs used at Pike flameproof?

A. No I don't think so.

Q. Is that potentially an issue as well?

A. Well based on New Zealand regulation which I understand we don't have to use a flameproof type equipment 100 metres outbye of the last crosscut. That is what I was told. That why they could've used non-flameproof equipment, every angle in that area, besides you know, that restricted area.

1525

Q. Was there any issue about the power supply to the VSDs?

A. Yes if you want to use VSD (inaudible 15:25:19) you know, we should have been enough of power supply, otherwise we use the sometimes 'cos there's (inaudible 15:25:30) vibration, but I don't think well this is just my guess

because I'm not (inaudible 15:25:39) engineer. They have generating a power supply through underground cable and the reason why you know monitor feeder pump VSD couldn't ramp up the speed to the synchronised speed is because power supply was weak and when they increased the speed the voltage came down, (inaudible 15:26:05) they couldn't put it out you know full capacity, that is what happened then. That's my you know – that's what (inaudible 15:26:19) malfunction.

Q. Obviously the main fan was also underground.

A. Yes.

Q. Does that raise any concerns in your view?

A. Yes, if you are using your main ventilation fan underground getting power through underground cable, that is subject to the methane content and the main fan is supposed to be no pressure at any time what happened in underground, but if you installing a underground fan – sorry main fan underground, you know, the power supply could be cut off because of the methane content, so it's not so reliable.

Q. Do you understand that the motor for the main fan underground was also not flameproof?

A. Well I didn't possibly check because I didn't have not much time and so I was not in charging of that area, but what I found was motor and electrical gears for that main fan is not flameproof. But in fact you know when they did the commissioning something you know get a rotating shaft and casing touched each other and making it a spark. That is what reported to me. It means underground fan was not where be able to – or somebody damaged when they brought that fan into underground.

Q. I think that was the 4th of October was it that the main fan was switched on?

A. I have to go back my you know –

Q. That's all right, but your understanding is that when the fan was switched on there were sparks that came from it?

A. Yes, yes that's what…

Q. Just staying with your first impressions for a few more minutes before the afternoon tea break, what was your impression about the way in which equipment had been installed at the mine? Was equipment properly installed?

A. Well from where I was standing installation was not quite tidy.

Q. Not quite?

A. Tidy.

Q. Tidy.

A. Not properly installed and if so the rotation of the pump room where pumps were installed, that area was dripping in water from the roof and there was in the goaf seam so it was not really good environment for that you know major equipment to fit.

Q. Were there any other examples of equipment that was not installed in the way that you would expect?

A. Well the installation there is sort of temporary (inaudible 15:29:50) pipeline was hanging by chain, hung by chain from the wall and I don't know from our standard it's not for neatly installed.

1530

Q. Were you able to form an impression of the financial position at the mine when you first arrived? Did it appear that the mine was able to spend money as required, or was money tight?

A. I don't think, you know, they could spend any money because they haven't sorted, you know, well they sorted in only one shipment, or two, and why possibly they can generate, you know, cashflow and from my personal estimate, I thought, you know, they were running out of money in November or even in December last year. Well, it's just my personal view.

Q. And then lastly in terms of your first impressions, what assessment did you have of the morale of people at the mine?

A. Well, you know, many contractors were working underground or even surface, but I really couldn't find out who was controlling or supervising that contractors. Contractor goes in underground do some, their own work, they don't care any other, you know, work, concentrate, you know, their own work. Well, it's natural for the contractor, then comes out. The other contractor goes to some (inaudible 15:31:36) and I really didn't see in a total picture how the construction was moving ahead. That's my impression.

Q. Did you have a sense that there was strong leadership giving people direction?

A. Well, I didn't see any strong, you know, leadership, neither, you know, strong, you know, (inaudible 15:32:01) and there's, you know, some people, not quite,

you know, moving round, them around and well, somebody, well sitting down taking easy. But, well, that's okay, you know, it's not my concern anyway.

COMMISSION ADJOURNS: 3.32 PM

COMMISSION RESUMES: 3.50 PM

EXAMINATION CONTINUES: MR MOUNT

Q. About a week after you arrived on the 2nd and 3rd of August did you attend a safety training course at the Mines Rescue Station in Runanga?

A. That is correct.

Q. While you were at that course did you talk to anyone about any concerns you had about Pike River?

A. Yes I did I talked to Rob Smith who was giving lecture for us for safety course. There was accident you know, Robin Hughes came in to that you know, training session and I talked to Robin Hughes regarding Pike River mine planning and this other plan they've set up, they did.

Q. If we just deal with what you said to Mr Smith first. What did you tell him about Pike and your concerns.

A. Well what I told him was the trial panel on that mine plan yes, not quite appropriate because that was too close to the area of pit bottom for safety and also if we extract coal that the area (inaudible 15:51:51) goaf where we put (inaudible 15:51:53) as well as methane pocket.

Q. Did you also talk about Pike's plan not to allow the goaf to collapse?

A. Sorry?

Q. Did you also talk about the fact that Pike wanted the roof to stay up in the goaf?

A. Yes that is what I was told by Doug White and that was (inaudible 15:52:28) and Pike was not supposed to have any caving and any subsidence, well sorry you know, Pike was not supposed to get (inaudible 15:52:41) subsidence, that's because they cannot have caving underground.

Q. Did you talk to Mr Smith about that?

A. Well at that time I hadn't known that it was the DOC order because after finishing of that safety course I went back to Pike River office and started doing some work and when I was doing some work I had a chance to talk to Doug White and he told me that Pike was not allowed to have any subsidence on the surface. That's why underground is not supposed to having cave-in in goaf.

1553

Q. Did you raise any other concerns about Pike?

A. Well there was a time I raised only that concerns yes.

Q. What about Mr Hughes, what did you talk to him about?

A. Well he reading on what I said he also said in Spring Creek was getting ready to roof hanging up, about 30 metres or 20 metres I don't remember the figures, but I told him to be careful if roof is hanging it comes down quickly and suddenly you know that would generate a air blast which is fairly dangerous and a safety hazard. And he said, you know, he will keep his eye open and be careful.

Q. Is there a measure called “RQD?”

A. Yes when we assess the cave-in (inaudible 15:54:42) of the roof we usually measure an RQD which is rock-quality designation showing some factor how the roof or you know, top strata was getting crack or a fracture.

Q. How is RQD measured, is that a percentage or what is it?

A. I think varies how many pieces are sorted to when they taking out of the coal and if all the enquiries – I don't remember anything of that – (inaudible 15:55:21) but not in a separate bit, on the one big math, that is RQD of 100%.

Q. So 100% would be roof that stays intact in a large section?

A. Large massive rock, yes.

Q. At the other end of the spectrum I suppose would be crumbling tiny bits of rock or sand almost, would that be the other end of the spectrum?

A. Sorry I don’t understand.

Q. If you have one large piece as 100% would the other end of the extreme would be –

A. Well if RQD is (inaudible 15:56:03) you know, it’s completely fractured, yes.

1556

Q. Did you have any information about the RQD figures for Spring Creek?

A. I think ‘cos some area in the Spring Creek mine, they had RQD100, yes. I don't know which area, and I don't remember.

Q. Is that why you suggested that Spring Creek also needed to be careful about this issue?

A. That's right, you know, when they had her roof was hanging (inaudible 15:56:35) you know, long distance, says 30 metres or 20 metres, which I don't

remember, but I knew, you know, there was the area RQD was 100, so I just came to my mind, you know, they have to be very careful.

Q. You talked about the risk of air blast when sections of the roof come down forcefully. Can you just explain in a bit more detail what that risk is? What could occur as a result of a roof fall like that?

A. You mean, if, you know, much rock caves in, in the goaf?

Q. Yes.

A. Well that, (inaudible 15:57:22) where it generate or not, a blast and those we know air gushes out and blow everything away and also know if there is methane sitting in the goaf, that rock, you know, coming down from the roof, will push the methane gas out towards the monitor face.

Q. So is it those two risks, one the air blast might injure people or equipment just from the force of the air?

A. That's right, that's correct.

Q. Secondly, it might release a large amount of methane?

A. Yes, large amount of methane comes out, but – (inaudible 15:58:00) you know, the (inaudible 15:58:03) should assist him (inaudible 15:58:04) 100, you know, that methane, that is, I would say that is okay, but the risk is not so much.

A. I just want to refer you now to a document DAO.003.08590 and if we pull the first page for a start, can you see that this is a risk survey draft report dated July 2010 by a company called Hawcroft Consulting International?

WITNESS REFERRED TO DOCUMENT DAO.003.08590

Q. And this document, Mr Nishioka, is a report prepared by a consulting company for insurance purposes to assess the risk of the Pike River Mine. Do you understand that?

A. Yes, I do.

Q. And you can see on the title page that this particular version was a draft with some comments from Pike River Coal Limited?

A. Mhm.

Q. If we turn to page 28 of the report, and perhaps if we zoom in on the top half of the page, to begin with. Do you see the heading is “Mining risks” and the first subheading is a number and then “High, section 8.9 windblast.” And the author of the report has said that the risk of windblast is yet to be assessed at the mine, but based on a review of the stratographic model and the mines

extraction plan, the potential for windblast exists in the monitor panels. So do you understand the issue that is being raised by the report writer?

A. Mhm.

1600

Q. Is that effectively the same issue that you raised namely the issue of a large section of the roof coming down in one go?

A. Yes any of (inaudible 16:00:36) relate to mining even longwall mining method. We have put potential risk of big roof fall particularly that happens when – before you know we get (inaudible 16:00:53) caving and until we get you know, (inaudible 16:00:59) you know, we operate the mine very carefully because we never know when the first one is coming and after you know, getting first caving, the less of the caving we are (inaudible 16:01:13) so the risk to get you know, (inaudible 16:01:20) is pretty remote.

Q. If it is well managed?

A. Yes, that's correct.

Q. Now do you see at the bottom of the highlighted section that there is an underlined paragraph in a different colour?

A. Mhm.

Q. Now that has been added by Pike River as part of their response to the draft report. And do you see that in response, Pike River has said that, "It will monitor the goaf for hang-up and log goaf caving."

A. Mhm."

Q. And it also says, "Pike River has also engaged an internationally prominent hydro expert Mr Oki Nishioka of SEIKO Mining," and so on. Now do you have any comment about the connection between your name used there and the risk of windblast?

A. Well I don't feel in a very comfortable you know, my name was used you know, like this. And I didn't know you know, they used my name in this report. And even if you know, I was with Pike River I wasn't watching you know, 24 hours (inaudible 16:02:41) at the face.

Q. Had your advice been specifically requested about how to deal with the risk of windblast?

A. Well as far as what they were talking about having an risk assessment but I didn't (inaudible 16:03:04) on that risk assessment, I did not or I was not invited to that risk assessment or possibly I had you know, some other work.

Q. So it's not a situation where Pike River had sought and was following your specific advice on the issue of windblast?

A. I don't think you know, Pike River did anything particular regarding this roof fall or windblast I should say.

Q. Now you mentioned risk assessments and I want to turn to that topic now because I think from counting up your references to risk assessments in your work record, that you participated in at least 10 events that were described by Pike River as risk assessments, is that right?

A. Yes that is correct.

Q. Before I ask you about any of the particular risk assessments, did Pike River to your knowledge go through any process where they effectively paused and asked whether they were ready to start hydromining or from your knowledge was it more a case of just pressing on as quickly as possible to start hydromining?

A. Yes (inaudible 16:04:54) when we had in our risk assessment hydro-monitor system hasn't been real established yet and it was pretty much (inaudible 16:05:09) to having a risk assessment. Usually (inaudible 16:05:12) risk assessment should done after establishing all the procedures, all registration and all working practice, then getting to risk assessment to find if there is any risk, you know, hiding behind these procedures. That is a way you know risk assessment is supposed to go. That is my understanding, but sure you know we had a risk assessment meeting, but that was more like establishing, you know, the procedure how to operate the mine, how to set up you know the monitor extraction system and not quite getting to the, you know, action of risk assessment.

A. 1605

Q. Before I ask you a little bit more about those risk assessments, was there a process that Pike had to see whether they were ready, whether the mine systems were ready for hydromining or was the pressure more just to start that hydromining as quickly as you could?

A. Yes that is what we are fearing to do. It was you know who was pushing, but every time when we started talking about you know commissioning the management was asking you know how many tonnes coming out, when is it coming out, you know, that was a question to me.

Q. Were you aware of any process that stood back and looked at the overall risk of the hydromining operation and assessed whether it was able to be commenced safely?

A. Well I really didn't have time to go through, you know, totally you know risk potentially contained in that in Pike River hydromining operation, but what I knew – what I noticed was their system was not quite really engineered and what sort of system was not well suited for hydromining operation and the mine design or mine planning or mine layout was not properly fit to hydromining operation. Like as I said, the location of hydro-panel is not quite you know safe location and there is you know high pressure monitor system. That was not designed well and equipment they put in that was wrong equipment and on the other hand you know we had to start it up. We had to commission it. So, that wasn't a really agony you know I had.

Q. You said earlier I think, that you told both Mr White and Mr Whittall that you didn't think men should go underground until robust ventilation was established –

A. That's correct.

Q. – and a second means of egress? And you said there was basically no response to that, is that right?

A. That's correct.

Q. So do I take it that there was no formal meeting to decide whether the mine was ready to start these new procedures?

A. Well actually there was no meeting and – this is what I really didn't understand, you know, who was really leading you know this project and everybody was getting together and if we come to the time to send (inaudible 16:09:37) you know everybody get together and (inaudible 16:09:41) but I don't think there was any big commander of the project in Pike River.

Q. I don't mean any disrespect with this question, but obviously you did go underground yourself?

A. Yes, because all workers asking me to do. I'm sorry.

1610

Q. Why were you willing to go underground when you held this view –

A. I was not willing to go underground, but I have said I accepted advisors work, and at least, you know, I have to do something, you know, I cannot stay in the office sitting back on the chair and everybody was coming to me and when we can produce coal, and I was getting, you know, that sort of pressure every day. On the other hand, (inaudible 16:10:45) was not going, you know, quite fast enough, because of, you know, lack of staff and lack of, you know, experienced people, (inaudible 16:10:57). The thing is, you know, I'm staying at Pike River proper, you know. I cannot refuse, you know, doing any work, and I cannot stop, you know, people going me underground, even though I don't feel, you know, very confident.

Q. So back to the topic of the risk assessments, I think you started to tell us what, in your view, should be known before you can have an effective risk assessment process, and did you say that to be effective, the risk assessment needs to happen once you know what your systems will be?

A. That's correct, you know, that risk assessment we had with the Australian consultant. That risk assessment – well, they call it, you know, risk assessment, but that meeting was more like listing up, you know, what sort of work we have to do before commissioning and those, you know, after commissioning. What sort of procedure we have to follow, you know, and that in the meeting we, they listed up, you know, what we are supposed to do and what sort of, you know, action we have to take, you know, then we established, you know, all the procedure in that risk assessment. And we really didn't, you know, discuss where the risk is sitting, or you know, and that is more like one step, you know, before a risk assessment.

Q. In your view, is it important to have someone in control of the outcome of the risk assessment to make sure that any controls actually happen?

A. Mhm.

Q. Sorry, I didn't think you answered.

A. Sorry?

Q. Did you say yes? Did you agree with that?

A. Sorry, could you repeat your question again?

Q. In your view, is it important to have someone in control of the process after the risk assessment to make sure that any controls actually happen?

A. Yes, that's right, that is a part, you know, we really need.

Q. After the risk assessments that you were involved in at Pike River, did you receive any final documents that had been completed and signed off?

A. No, I didn't.

Q. Did you see any concrete or real outcome from the risk assessments that changed the way things were done underground?

A. No, I didn't receive any formal document.

Q. I want to ask you about just some of the risk assessments that you were involved in. There was one on the 6th of August that was related to the monitor feed pump system?

A. Mhm.

Q. And feel free to look at your notes here Mr Nishioka, if you want to refer to them. We do have a document for this one, DAO.011.00082.

WITNESS REFERRED TO DOCUMENT DAO.011.00082

Q. This was emailed to a number of people including you by Mr Sanders, on the 25th of August, so if we move to the second page, you'll see the title of the risk assessment, "Start up and operation of monitor pump station."

A. Yes in this risk assessment meeting it's more like in a forecast to how not to damage the equipment. That is the main port.

1615

Q. If we turn over to the next page, page 3, we'll see a list of the participants. Can you just tell us who KSB...?

A. KSB is the pump manufacturer who supplied the high pressure pump units.

Q. Now the remainder of this document has stayed in draft I think. Were you given the document to sign at any stage?

A. No I don't think I sign it.

Q. And at the time you did this risk assessment on the 6th of August, can you give us any comment as to whether it added any value to the safety of the system?

A. I don't think recording to that you know, safety part of monitor (inaudible 16:16:46) pump operation, it's more like how to protect to the pump damage. Your – that's sort of you know, issues we discussed and at this point in time we haven't really decided how to make the pump operational and ready you know,

(inaudible 16:17:21) pump was not ready to operate on this day. Simply you know, we received or keep on asking so many questions to the engineer came from KSB.

Q. So in your view was it really premature to be doing a risk assessment exercise when the system was not yet finalised?

A. Yes this meeting is more like getting and (inaudible 16:17:55) information from the engineer, came from you know, KSB pump manufacturer.

Q. The next one that you have referred to in your notes was on the 13th of August 2010 which was a full day exercise and we have a document headed, "Mining process sequencing workshop," from that same date, DAO.025.49864.

WITNESS REFERRED TO DOCUMENT DAO.025.49864

Q. Did you participate in that exercise?

A. I think I did.

Q. And if we move on to pages 6 and 7 of this document, there are a series of bullet points in what is headed up, "Systems to be in place before coal cutting," and hopefully they will come up on the screen in just a moment. Perhaps while they're coming up, can I just ask whether you saw a final version of this document?

A. I don't (inaudible 16:19:46) that it was in a final version but I receive you know, some papers, yes.

Q. Right it may be a bit difficult to get the exact sections of the report in a way that you don't need to turn your head on its side. So if we start with page 6 and just zoom in on the box, "Systems to be in place before coal cutting." Hopefully we can spin that round so you can read it. Do you see that list, it starts off with the ventilation management plan and TARP I think stands for trigger action response plan, are there we are there's the full list. Now take your time in going down that list and can you tell us which of those things were actually in place before coal cutting, to your knowledge?

A. Well what have to be completed before starting the coal extraction?

1620

Q. Well no, I suppose I should just ask you this first. Do you know how that list was created? Where did those bullet points come from?

A. Well I think we sat together and released it up, you know, all ideas what we should do before extraction – starting you know for the extraction.

Q. So it was a group exercise to come up with the things you would want to be ready before you started coal cutting

A. Yes, that's right, that's correct.

Q. Now of course you would not be expected to necessarily know about all of those documents, so it may not be surprising that you're not aware of all of them, but can you just tell us which ones you did know were actually in place before coal cutting?

A. Well ventilation management plan.

Q. Did you ever see that or were you aware of that?

A. No I didn't. Extraction plan, cutting sequence, that is what I generated, yes I did. Well we just set up all those items, but I don't know what sort of an outcome we got.

Q. Did you ever see TARPs for gas out, gas plug or wind blast?

A. No, no I didn't.

Q. Now the next two things you might not necessarily know about I think, the conditions of the lease or subsidence monitoring, but were you aware of a spontaneous combustion management plan? Did you ever see that or have input?

A. No I didn't.

Q. Now this is not to say that it didn't exist, but it's just whether you had any contact with it Mr Nishioka?

A. Well they didn't ask me anything about spontaneous gas combustion management.

Q. And what about any of the other items on that list that you actually had contact with yourself?

A. Well ideally is extraction plan, cutting sequence. That is what I generated.

Q. That's all?

A. Yes.

Q. So nothing else off that list that you had contact with?

A. No.

Q. Do you see in the top left-hand corner under the heading, "Machine control medications required, consider installing a wind blast switch in the section." What does that mean do you know?

A. I don't know probably they're thinking of setting up sensor system when they got, you know, wind blast to detect, but it doesn't work in many ways. When they found – you know, when the blast, it was too late to evacuate.

Q. If we move on then to the diagram on page 7, do you see down the bottom of the diagram there's a box that says, "Minimum ventilation requirements," and then some question marks?

A. Yes this is time when we didn't know what sort of methane gas emission we are going to have. Though that's why I know I guess the guy did risk assessment putting question marks on – probably they ask me what sort of ventilation volume would shift sand to the monitor face and I said, minimum 1000 cubic metre per minute, you know, when the – I would like to have, you know, that is what I remember.

1625

Q. Now, if my maths is correct, 1000 cubic metres per minute, would that be roughly 33 cubic metres a second?

A. Wait a second – well, no, probably half of that.

Q. Okay, well we can check the maths, but –

A. Yeah, if you have a calculator, can –

Q. No it's all right, but your figure that you're confident of is 1000 cubic metres a minute, is that right?

A. Well, that is a minimum we need, and if you have, you know, less ventilation air through monitor face, you know, no matter how we reduce, you know, cutting rate, still no – I didn't feel confident of.

Q. Is the process of establishing the ventilation requirement for a particular monitor face something that can vary with conditions?

A. Mhm, that's correct.

Q. Can you tell us how you would normally go about establishing the minimum ventilation requirement?

A. Well, depending on which area we are going to mine, and usually, you know, we do methane desorption test, you know, when we put into reading, we take a core out and put it into the tube and measure how much methane coming out from say, (inaudible 16:26:43), whatever, you know, the (inaudible 16:26:44), and if we estimate, you know, how many tonnes per minute we are going to cut by monitor, then we can automatically estimate the amount of methane gas

coming out when we operate the monitor, but that isn't, you know, just, you know, rough guideline and we should prepare required ventilation air volume based on that guideline and usually, you know, we prepare much more, you know, ventilation air than calculated volume.

Q. To your knowledge, was that exercise carried out at Pike to give a starting point for the ventilation volume?

A. I don't really know, because I was not involved in their ventilation study and I didn't even know who did, you know, this ventilation study and who'd decided the capacity with a fan, I really didn't know. I wanted to find, but I didn't get any answer.

Q. So, once again, if there had been a ventilation officer, or a ventilation engineer, is that something that they would have overseen?

A. Sure, you know, they should have, you know, ventilation staff who measures all ventilation, by air volume pressure, underground and that measurement should be done every day. That is a normal practise for underground coal mine operation.

Q. Is it also the case that depending on the results of the testing of the coal in the panel, it might be necessary to drain methane in advance?

A. Yes. If, you know, we cannot wash out all methane by using ventilation, that is a time we should drain out methane from the coal (inaudible 16:28:57), prior to starting monitor extraction.

Q. I think we've already heard there was no pre-drainage of the bridging panel at Pike, is that right?

A. What do you mean by 'bridging'?

Q. The first panel for monitor extraction at Pike, had not been pre-drained for methane?

A. I think there was some holes, one or two, but I don't remember, you know, how many, but I think at least, no, I saw one or two holes. (inaudible 16:29:44) that hole was really discharging methane gas. There was, they didn't have any gas extraction system. Well, really, you know, they should have, you know, gas extraction system on the surface.

1630

Q. Is there anything else you want to tell us about the exercise you did on the 13th of August that led to this document?

A. Well what do you mean exactly?

Q. Was there anything else that is important about the meeting on 13 August?

A. Well you know, in this meeting we just (inaudible 16:30:34) in what we are supposed to do and what we have to do and actually you know, what we did is completely different you know, I didn't know what they did. I was not informed of anything after that.

Q. And to your knowledge was there anyone at Pike who took responsibility for making sure that the things that were talked about at this meeting actually happened?

A. Actually you know, that was a problem you know. That's why I'm saying you know, Pike River management was not really functioning. Well even after deciding you know, what sort of procedure we have to follow then we started not doing you know, actual action and the report to the management but I don't know who reported or who did anything or who pushed to do you know, actual work, I don't know anything about it.

Q. Now your written notes which we have indicate that you participated in further risk assessment exercises on the 14th, 15th and 16th of August and I don't propose to ask you about them unless there's anything that you want to say about them?

A. Well this risk assessment (inaudible 16:31:56) saying you know that it's a risk assessment but it's more like getting you know, information how hydromining is going to be operated and there was you know, when we operated hydromining was (inaudible 16:32:15) easier to, we should expect and that we have to cope with you know. That is what we discussed.

Q. There was another risk assessment on the 30th of August last year or in fact two risk assessments that day, one related to the guzzler and one that related to the monitor pump system. Did you have any comment about the process on that day, 30 August?

A. I think we discussed how to operate (inaudible 16:33:23) system. Additional safety protection system we should put on. That is what we discussed.

Q. And from your recollection, was there anything of value that emerged from that risk assessment process?

A. Was there any?

Q. Anything of value that emerged from that process?

A. (inaudible 16:33:51) what do you mean by value?

Q. Did anything practical come out of the process that improved safety?

A. Well I would say you know, we had to put on the more on you know, safety features on the (inaudible 16:34:18) which we may not need. I think its general things and well it's hard to say, it's, it was a (inaudible 16:34:53) or not but (inaudible 16:34:54) on there was no risk assessment, you know, we could operate to the assessment safely.

1635

Q. I'll move on from the topic of risk assessments unless there's anything else you want to say about them?

A. Well actually you know there were too many risk assessments done. If we do risk assessment based on all kinds of ifs, that is just wasting time and this time nothing has been established, you know, hard to operate the monitor and the monitor, I assessed is not quite ready to operate and if we start saying, if, if, if, you know, we may end up not to operate the mine. That was the safest way. The risk assessments should be done after getting some sort of experience or knowledge or some established system then we get into a risk assessment and the (inaudible 16:36:08) this process or procedure is safe enough or not and how to prevent any risk associated this particular area. That is how a risk assessment should go and before establishing you know other procedure you know, preferred method even if we have all this risk assessment, it's not quite invaluable.

Q. I'll move on to a new topic now. George Mason began as the hydro co-ordinator while you were at Pike. When did you become aware of his role as the hydro-co-ordinator?

A. Well that was a time he dropped in my office. I don't know exactly what date, but sometime in early September.

Q. What did you understand his job was as the hydro co-ordinator?

A. Well that is what I really couldn't understanding very well, but apparently his role was, it's my understanding, say collecting all the information such as production rate and who was at the monitor face and summarising all shift report, what happened at the monitor face. I thought that was his role.

Q. So it sounds as if that was substantially a desk role, was it?

A. Well it depends on the person, if he – well one day he wants to gather more information accurately and more realistically establish operating procedure the guy should go underground every day, but eventually you know I found his role was preparing the report and the statistics.

Q. Did you give any training to George Mason?

A. Well he ask me you know so many questions and I answered you know his questions, but training I don't really understand what you know "training" means, but I didn't tell him you know how to operate the monitor – I gave him that information with you know the document and also I gave him you know cutting pattern when we started the monitoring which area cutting first or second or third. Also they – if he asked me you know how to operate the monitor feed pump, sure I gave him all the information just like (inaudible 16:39:48) over the monitor feed pump system and I gave him you know those sort of information, everything, yeah. But I don't know if he was understanding it.

1640

Q. How easy or difficult would you say it was for someone to come in with no previous experience of hydro-monitor and take on the role as co-ordinator of that system?

A. It's a very, very difficult.

Q. Why?

A. It's, you know, hydromining system has to be learnt through experience because we are dealing with, you know, ground pressure, hardness of the coal, and the monitor feed pump control system is quite complicated and – well, of course in a hydro co-ordinator doesn't have to know, you know, how the system is designed and how the system was running, but, you know, if – what I want to say, you know, I go, you know, hydraulic monitor face co-ordinator, you know, they should know all sort of engineering information. But, you know, it takes, at least, you know, three, four years to learn.

Q. Three or four years?

A. Yes.

Q. I want to move forward now to the 19th of September. Was that the first day that the monitor actually cut coal?

A. Yes, that is correct.

Q. Referring to your notes, if you would like, can you tell us about what happened on that day?

A. Well, actually this was that day to try out the hydro-monitor high pressure pumping system, and, you know, coal cutting is not the major part and we tried out, you know, how to open it and monitor feed pump which is generating a high pressure, and the switch gears on the (inaudible 16:42:42) is starting up the monitor feed pump and if, you know, the monitor feed pump is properly, you know, putting out enough capacity under some pressure. (inaudible 16:42:56) we put in a more (inaudible 16:43:01). And the pressure was just, you know, coming when we shooting a coal seam by water jet.

Q. The next day, the 20th of September, your notes refer to the methane content coming up to 5% and kicking out the power and after waiting methane is washed away. There was then another attempt to cut, but the methane sensor again tripped out the power. Is that right?

A. Yes, that is correct. We really didn't expect, you know, that much methane gas was coming out, and that is what we found, yes.

Q. Your notes then say that it was decided to stop the operation and check the ventilation doors to find that all ventilation stopping is loose. Can you tell us about that?

A. Yes, sir. You know, we all started to check, you know, the ventilation system around the monitor cutting rock area. And there is no sealing stopping, you know, air leak, through, from fresh air entry to (inaudible 16:44:34) air entry, and that sealing was only using a brattice and probably not using (inaudible 16:44:43) the brattice and that sealing was not quite, you know, strong enough to shut off, you know, all the air leaking through that to, you know, stopping and those who were (inaudible 16:44:55) you know, the door system which people can (inaudible 16:45:01) out, and that door was not well repaired. Of course it's you know, it's made by plastic so it cannot be you know, robust and what we found was air was leaking through that sealing.

1645

Q. Was the result of that leaking in the ventilation control devices, the stoppings with the result that the ventilation was not enough to wash away the methane from the monitor area?

A. That's correct you know, if we are getting a you know, a leak through that sealing, let's say you are going up to the operating site underground, (inaudible 16:45:49) the fresh air was leaking through (inaudible 16:45:53) and go back to ventilation fan.

Q. Now again if there had been a ventilation officer at Pike, presumably you would have raised that with the ventilation officer?

A. Yes.

Q. Was there anyone available to you that you could raise this situation with

A. Well if there was somebody who could point out you know, that leak through that sealing system, who showed me deputy in charge of monitor area (inaudible 16:46:31) face area.

Q. And to your knowledge what was done about this problem?

A. Well I (inaudible 16:46:38) it was too late to modify the you know, sealing system because there are so many sealing in the you know, cut through you know. It's cut through has you know, sealing brattice and the, if we start saying to (inaudible 16:47:00) rubbish you know, sealing system, they have to say changing all that sealing system from the beginning to the end. That would've taken quite a bit of time.

Q. What would robust seals have looked like?

A. Well usually we use some concrete brick or even wood and also steel plate and all you know, they contact (inaudible 16:47:31) first, that sealing material in the coal seam is you know, concreted to stopping a leak.

Q. If we move forward to the 22nd of September, point 5 of your notes on the 22nd says, "It was reported that methane density came up to over 5% in return airway from time when monitoring. It must be noted that it is a safety hazard to continue the monitor extraction under these conditions. It is recommended that monitoring should be stopped until main fan becomes operational."

A. That's correct.

Q. That was your note?

A. Yes.

Q. Did you raise that with anyone at the time?

A. I think (inaudible 16:48:34) in the afternoon much coal was at the face and the (inaudible 16:48:39) pushing you know, (inaudible 16:48:42) and he came out

of the mine and talked to Doug White and he couldn't stand you know, for that you know, dangerous situation to keep on going and Terry Moynihan –

Q. Moynihan yes.

A. Moynihan and (inaudible 16:49:05) Andy Sanders, he was (inaudible 16:49:06) engineer joined in it together and (inaudible 16:49:10) I joined in that (inaudible 16:49:13) that it was a meeting and we knew to Commission the main ventilation fan definitely you know, before I keep on extracting a coal by monitor. That was you know, (inaudible 16:49:30) we had really serious you know, meeting.

Q. And what was the result of that meeting to your recollection? What do you remember happened?

A. Well Doug White started to put in more effort in commissioning in a main fan underground but you know, as I said you know, system was not designed properly and yes the system is weak and ventilation fan, like you know, shaft was touching through the casing making spark, you know, equipment is not well built and Doug was having hard time to commission it and he was sitting in the control room and – commanding, you know to start up (inaudible 16:50:27) whatever, you know, I didn't know what he was doing but it was not successful.

1650

Q. Now the day that you made that note, methane over 5% you recommended that monitoring be stopped was 22 September, on 24 September, two days later you've noted down that it was the due date for a bonus payment for the hydro bonus. Obviously you were aware of this hydro bonus?

A. Yes I did.

Q. Can you tell us what the practical effect of that hydro bonus was for the men working at the mine?

A. Well certainly everybody was keen to get, you know, that bonus and they really wanted me to produce more coal from monitor face, yeah, and I couldn't refuse it. I didn't have any right to stopping operations. So, you know if they really want me to do it, you know, I tried to operate the monitor very carefully watching the gas content.

Q. Were there things you could do in operating the monitor to reduce the level of methane coming out?

A. Yes.

Q. What were they?

A. Well just simply you know reducing the pressure, the water quantity to produce less coal because if we produce more coal giving off more pressure, they are aware of generate you know, more methane at the face.

Q. Did you do on occasion?

A. Yes, yes, always.

Q. What sort of response did you get?

A. Well some people say not much coal coming out and why you cannot produce more coal. That is you know word that I had from somewhere.

Q. Who were the people saying, “Not much coal coming out?”

A. Well you know management people.

1653

Q. Management people. What was your view about that attitude?

A. Well, they should all hear the danger of methane gas and before putting pressure on the production, they should give more pressure to getting a main fan going, that is what they were supposed to do, I think.

Q. If we can look at document DAO.001.03567?

WITNESS REFERRED TO DOCUMENT DAO.001.03567

Q. You’ll see in the top left hand corner that this is called ‘a permit to mine’ and it relates to one west, one right, panel 1 extraction. You see that?

A. Yes, I do.

Q. And down in the bottom right corner, it’s dated ’22 September, last year’ and signed off by Mr White and Mr Borichevsky. Were you aware of the permit to mine system when you were at Pike?

A. No. I didn’t aware any of (inaudible 16:54:53) permit to extract coal, and I didn’t receive any formal document or this paper. Of course, when I established, you know, this cutting pattern, and when we had this (inaudible 16:55:11) about with this cutting pattern, we were not sure, you know, how many metres retreat we should make after, you know, finished, you know, first cutting but from this, you know, document for drawing, I think decided to –

Q. So Mr Nishioka, we just need to get you to speak into that microphone as much as possible.

A. I think they decided to retreat six metres. I don't know how many metres.

Q. What we'll do Mr Nishioka, just lean back for a moment. What we'll do is we'll zoom in on the diagram at the bottom right hand corner of the permit?

A. Okay, when we were discussing about, you know, this cutting pattern –

1656

Q. Just a moment we'll just zoom in on that, make it a bit easier.

A. Okay. You know this (inaudible 16:56:07)

Q. Just pause for a moment. I just want to point out a few features on this, what we are looking at here is the top of the first panel, is that right?

A. Yes, that is correct.

Q. And the yellow number 1 in a square, is that the first position where the monitor machine was located?

A. That is correct.

Q. And then we can see some segments straight up at 12 o'clock from the number 1.

A. Yes.

Q. We can see a number 1.

A. That's what we cutting first, yes.

Q. Now I'm sorry one more thing Mr Nishioka, when you're looking at it, the microphone picks you up the best if you face me and look at the screen in front of you.

A. Okay.

Q. So the number 1 straight ahead, that would be the first cut, is that right?

A. Yes that is correct.

Q. And then it just moves around to the left 2, 3, 4, 5 –

A. Yes that's right 3, 4 and 5, yes.

Q. So that was the cutting sequence you developed, is that right?

A. Yes that's correct.

Q. And then the number 2 underneath, that's at 183 metres, so that six metres back?

A. Yes that was you know what we were discussing – I really wanted to retreat only you know six metres, because lots of coal still left to uncut you know in this area, but many people wanted to you know 18 metres from this. You know that was their proposal initially you know by Pike River Coal. You know if we retreat more distance the monitor retreat is less frequent that count's you know

their labour. However, cutting productivity as well as face recovery which is you know how much coal we can take out from this tunnel. You know I really wanted to retreat only six metres, but at that time you know they couldn't give me any answer, you know, how many metres you are going to retreat. And now I look at this (inaudible 16:58:15) and now you know I understand they decided to retreat of six metres so that was close to my last day you know. Underground people told me to have decided to retreat only six metres and they understand you know what I was saying (inaudible 16:58:43).

COMMISSION ADJOURNS: 4.59 PM

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