



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: J Wilding, S Mount and K Beaton as Counsel Assisting
S Moore QC, K Anderson and K Lummis for the New Zealand
Police
K McDonald QC, C Mander, T Smith and A Boadita-Cormican
for the Department of Labour, Department of Conservation,
Ministry of Economic Development and Ministry for the
Environment
N Davidson QC, R Raymond and J Mills for the Families of
the Deceased
S Shortall, I Rosic and D MacKenzie for certain managers,
directors and officers of Pike River Coal Limited (in
receivership)
C Stevens and A Holloway for Solid Energy New Zealand
N Hampton QC, R Anderson and A Little for Amalgamated
Engineering, Printing and Manufacturing Union Inc
G Gallaway and J Forsey for Mines Rescue Service
G Nicholson and S Gilmour for McConnell Dowell
Constructors
P Jagose for Valley Longwall International Pty Ltd
F Tregonning for Pike River Coal Limited (in receivership)

**TRANSCRIPT OF PHASE 1 HEARING
HELD ON 11 JULY 2011 AT GREYMOUTH**

LEGAL DISCUSSION (11:34:51) – MEDIA COVERAGE

MR WILDING OPENS

LEGAL DISCUSSION (12:43:10) – HEARING PLAN

5 COURT ADJOURNS: 12.57 PM

COURT RESUMES: 2.01 PM

MR STEVENS CALLS

DONALD MCGILLIVRAY ELDER (AFFIRMED)

- 5 Q. Doctor Elder, could you state your full name for the record please?
A. Donald McGillivray Elder.
Q. And confirm you've prepared a statement for the phase one hearing dated 8 June 2011?
A. I have.
10 Q. Do you have a copy of that with you?
A. I do.
Q. Please confirm that to the best of your belief it's true and correct?
A. Yes it is.
Q. Could you please commence reading it from the start of paragraph 1?

15 **WITNESS READS BRIEF OF EVIDENCE**

- A. "As background, Solid Energy have evolved from a 100 year history as New Zealand's State Coalminer to become New Zealand's largest natural resource producer, largest energy producer and one of New Zealand's major exporters. Our current operations include coal and renewable energy fuels, products and services including biomass, biofuels and solar and our overall business includes a range of new developments and technologies that are innovative and leading in both New Zealand and internationally. We're directly responsible through our own and our contractor's staff for close to 2000 direct jobs and we support around 10,000 indirect jobs through our suppliers and communities. Underground coalmining remains one of Solid Energy's core production activities. During my term as CEO we have operated six underground coal mines of which two remain open today in full production. Huntly East Mine and Spring Creek Mine near Greymouth. Each of these is of comparable scale to the planned Pike River Mine and has been at this scale for a decade or more. Solid Energy is a key West Coast stakeholder through our operations and the economic activity they bring and our activities in the community. We have two

current producing mines on the West Coast, Stockton Open Cast Mine on the Stockton plateau north of Westport and Spring Creek. A number of future mines under development planning and longer term prospects under investigation. My qualifications and experience: I have been

5 chief executive officer of Solid Energy since I returned to New Zealand in May 2000. I received a Bachelor of Engineering honours degree in civil engineering from the University of Canterbury in 1980 and a D.Phil in geotechnical engineering from the University of Oxford in the UK in 1985. From 1983 to 1990 I worked in the UK, the US and New Zealand

10 as a geotechnical engineer. From 1990 to 2000 I was vice president of one of Canada's leading engineering firms and worked throughout North America and around the world on a range of business activities and projects including geotechnical engineering, environmental engineering and major projects, development and management. I am currently a

15 director of ASB Bank and over the past 20 years I've been a director and chair of companies, industry and business organisations in New Zealand, Canada and internationally. My previous directorships included Port of Napier Limited, Orion New Zealand Limited and the Halifax Port Commission in Canada.

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A. I was chair of the association of Consulting Engineers of Canada from 1996 to '97. I'm a director of the World Coal Association, the global organisation of the world's major coal producers from 2004 to present and I was chair of the World Coal Association from 2008 to 2010. I'm

25 currently vice chair of the International Energy Agency's Coal Industry Advisory Board. I'm on the Board of Straterra New Zealand's Resource Industry Association and I'm a fellow of the Institution of Professional Engineers of New Zealand and of the New Zealand Institute of Management. In summary as CEO of Solid Energy I've been closely

30 aware of the prospective and eventual Pike River development since shortly after I joined the company in 2000 through meetings and briefings with Pike River's management, through briefings and discussions within Solid Energy with our own staff and from public information. From this information my colleagues and I were able, from

an early stage, to form and hold reasonably well informed views on the nature of and prospects for the Pike River development including the challenges they would face, the likelihood that their projections would be achieved and the potential commercial and business consequences. I have never been in a position to form a specific view on the status of safety management practices at Pike River Mine, nor would have I attempted to form such a view without access to the full range of information that I would expect if I were to seek a similar view on safety in a specific operation within Solid Energy. As the CEO of the major coalmining company in New Zealand the objective of my submission is primarily to provide information to the Commission that is unlikely to be readily available elsewhere. My focus is on identifying information that any mining company developing a large underground mine would expect to consider at a senior decision making level then to put this in the context or the specific context of the geographic and geological environment on the West Coast and at the Pike River Coalfield. I hope this information may be useful in helping the Commission to understand issues that may be relevant in considering how and why the Pike River Mine explosions occurred with tragic consequences. It is not my objective to provide specific answers to the many questions about the explosions themselves or subsequent consequences. Based on these considerations, my submission is in two primary areas. The first is, requirements for financially viable underground mining on the West Coast. Unique factors influence the credibility and commercial viability in developing an underground mine in the difficult conditions of the West Coast. These had specific implications for the planned Pike River Mine. By comparison with Solid Energy's requirements Pike River was from early planning stages over optimistic, had done insufficient coal seam and geological investigation work and had insufficient information to proceed with mine design and development at a level of risk consistent with what Solid Energy would consider good industry practice. From 2000 onwards I and my Solid Energy colleagues increasingly held the view that the Pike River Mine would experience significant development and production issues, was unlikely to achieve most of its production

and financial targets and that this would result in major financial issues. We believe the commercial risk associated with the Pike River development was very high. The second primary area of my submission is safety management for underground hydraulic coalmining on the West Coast. Typical geological conditions on the West Coast combined with the specialist nature of the hydraulic mining method in such conditions bring very significant and unique challenges for safety management that are different and additional to those generally found in underground coalmining elsewhere.

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A. In addition to normal good safety practises, these risks require specialist expertise in specific aspects of mine design and mine operation. Without these risk levels are likely to be elevated well above those that would normally be considered acceptable in coalmining. I also wish to comment briefly here on two other matters. Firstly, Pike River is an open cast mine. Recent public discussion has suggested that Pike River could or should have been an open cast mine from the outset but this may have been stopped by government policies preventing open cast mining in this area for environmental reasons. These suggestions are unfounded. International coal prices at the time of mine planning and initial mine development and forecast at the time in the industry were far too low for open cast mining in the Pike Coalfield to have even been contemplated as economic. At that time, underground mining was the only option with a prospect of being commercially viable. The second brief comment is on rescue activities following the Pike River Mine explosion. Solid Energy was very significantly involved in providing assistance to rescue and mine management activities following the explosion at Pike River. I was not directly involved in most of those activities which will be covered by several Solid Energy witnesses in later phases of the Commission's enquiry. My submission does not address this area. Requirements for financially viable underground coalmining on the West Coast. Coal resource definition, the JORC Code. The Australasian and essentially the international standard for assessing coal resource information is the

Australasian Code for reporting of exploration results, mineral resources and all reserves approved by the Joint or Reserves Committee of the AUSIMM and others, commonly known as the JORC Code this, “Sets out minimum standards, recommendations and guidelines for public reporting in Australasia of exploration results, mineral resources and all reserves.” The JORC Code is now included in the listing rules of the Australian and New Zealand Stock Exchanges. The JORC Code provides clear categorisation of resources with increasing levels of knowledge and confidence as shown in the diagram you see here. Resource categories move from an inferred resource (the top left) through an indicated resource to a measured resource, which requires a high level of knowledge to give confidence in the resource size and quality estimate. Further detailed consideration of other factors allows resources to be further classified as probably reserves and eventually as proved reserves. Mine planning minimum requirements. Solid Energy’s project assessment guidelines, which I’ll refer to as PAGs, specify a five step process for planning and approving new mine prospects similar to those used by most international mining companies. They cover all aspects of mine planning and design from early resource identification through to initial mine development. In 2002 we presented this process at the New Zealand Annual Conference of the Australasian Institute of Mining and Metallurgy or AUSIMM in a paper entitled, “A New Approach to Planning at Solid Energy New Zealand” authored by Rob Yates, Steve Bell and myself. Each phase in the project assessment guidelines, the PAG process, requires the specified work in 20 areas to meet minimum objectives including cost certainty. The quantity and detail of required work and cost certainty required increases as the project advances.

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30 A. To produce a credible mine plan with acceptable commercial risk, the most important initial requirement is extremely good geological and coal resource information available at an early stage in planning. JORC Code definitions are therefore key to defining the resource information requirements at each level. “Level 1 Desktop Review”. This includes

using existing information to decide whether to reject the project or do further work. "Level 2 Conceptual Study". Gather limited new data, decide if the project warrants further investigation. Resource assessment requirement is an inferred resource with more than 10 years planned production. The accuracy of cost estimates at this stage plus or minus 33 percent. "Level 3 Secondary Assessment". Identify at least possible cost whether there are project stoppers. Resource assessment is indicated resource, more than 10 years planned production. Accuracy of cost estimates plus or minus 25 percent. "Level 4 Prefeasibility Study." Conduct major exploration. Identify and assess development options. Select if possible a single alternative for detailed feasibility study. Resource assessment requirement, measured resource five to 10 years further production indicated greater than a recorded 10 years. Accuracy of cost estimates, plus or minus 15 percent. "Level 5 Feasibility Study." Finalise Assessment of Environmental Effects or (AEE) and provide sufficient information to enable a go or no/go decision. Resource assessment requirement, measured resource five to 10 years, indicated 10 to 15 years. Accuracy of cost estimates, plus or minus 10 percent. The minimum requirement to proceed with final design for a new mine development is therefore a completed feasibility study with cost estimates at accuracy better than plus or minus 10 percent. This requires at least five to 10 years of future planned coal production to be quantified and independently audited at JORC measured status, and a further 10 to 15 years at indicated status. The assessment of other factors as a part of the feasibility study allows the coal to be JORC classified as a proved resource. The criteria to determine whether a resource is at measured status are therefore critical. The JORC Code states: "A measured mineral resource is that part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations

are spaced closely enough to confirm geological and grade continuity. Mineralisation may be classified as a measured mineral resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the competent person determining the mineral resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability. This category requires a high level of confidence in, and understanding of, the geology and controls of the mineral resort. Confident in the estimate is sufficient to allow the application of technical and economic parameters and to enable an evaluation of economic viability that has a greater degree of certainty than an evaluation based on an indicated mineral resource.”

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- 15 A. Because every coalfield is different there is no absolute rule for exactly what comprises detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes spaced closely enough to confirm geological and grade continuity. This is a matter for experience and judgement. West Coast geology and coals unique conditions requiring unique consideration. Solid Energy has a very good understanding of West Coast coalfields from our long history as the largest coalminer in New Zealand and on the West Coast. Other Solid Energy with staff with more specific geological and mining expertise than I have will be able to give more detailed technical evidence in later phases of the inquiry. However, the factors controlling decisions about whether a mine can be operated successfully to meet both economic and safety requirements simultaneously is relevant to phase one of the Commission’s inquiry, but geology, geography and climate of the West Coast make all the processes around coalmining not just the mining extraction process itself, as hard or harder than most other locations in New Zealand and in the world. Geographic factors include difficult and often remote access, very high rainfall with fog and low cloud common and land prone to instability. Most coalfields are in

locations with high inherent environmental and ecological value and relatively unaffected by other human activities. Environmental requirements of all kinds are significant. Potential for sulphur bearing rock to generate acidic run off and ecological damage is high in many locations. All these factors significantly increase both the costs and the risks of coalmining. Proximity to the Pacific/Australia tectonic plate boundary means the region is geologically active with significant folding and faulting. Some surface conditions are extremely variable within short distances. Coal seams are highly variable over short distances in thickness and in physical and chemical characteristics. They are usually significantly inclined rather than near horizontal. Coal seams are often not continuous even over moderate distances but instead are disrupted by faults that have vertical and horizontal displacements often far larger than seam thicknesses. All these factors significantly increase both costs and risks of coalmining. Most coalfields and deposits are relatively small by world standards so that the economies of scale achieved in large mines are not available. This significantly increases costs of coalmining. Most easily accessible, shallower, high quality coal on the West Coast has already been mined over the last century. While significant coal remains it is largely in less accessible locations with greater environmental sensitivity, deeper and of lower and more variable quality than that mined in the past. These factors significantly increase both costs and risks of coalmining. For all these reasons coalmining on the West Coast increasingly requires innovative and often internationally unproven techniques that have to be developed, particularly for our unique conditions. This applies to both open cast and underground mining and significantly increases both costs and risks of coalmining. Hydraulic extraction: A technique suited to underground mining on the West Coast. The most attractive economic method for underground mining at any scale in most current West Coast coal deposits is hydraulic mining. This technique was pioneered in Japan where it is no longer used since the working out of most of Japan's coalfields. Because of its specialised nature and suitability it is used at very few locations around the world, mainly in New Zealand. Solid Energy uses

hydraulic mining at Spring Creek Mine and previously used it at Strongman 2 Underground Mine near Greymouth and Terrace Underground Mine near Reefton, both of which are now closed.

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- 5 A. Hydraulic mining is most suited to very thick seams, eg 10 metres thick or more that dip or incline steeply. These are typical West Coast conditions. Conventionally mechanised mining methods have difficulty extracting coal in steeply dipping coal seams and are unable to extract the full seam thickness, leaving behind much valuable coal. Other high
- 10 volume and/or thick seam mining methods require coal seam consistency over significant distances and are therefore largely unsuitable in West Coast conditions. Hydraulic mining involves two distinct and very different mining activities. Development is the process of tunnelling out into the mine through rock and coal from the mine
- 15 portal to provide access and to put mine infrastructure in place. These tunnels have different terms and different parts of the mine and maybe variously referred to, for example, as drifts, mains, headings, sub-headings, sub-levels et cetera. However, in all cases their primary purpose is to provide the safest, most efficient and lowest cost access with supporting infrastructure to the coal that is the target of extraction.
- 20 Development is carried out using conventional mechanised mining methods to create accessways, typically four to six metres wide and two to four metres high in most places. The furthest point in any section of the mine is accessed by driving accessways up the slope of the inclined coal seam from the lowest point in that section. Infrastructure is then
- 25 established out to the furthest point. Although, some saleable coal is obtained from the development process, that is not the primary objective of development activities. Coal extractions is carried out in that section using a high pressure, high volume water jet. The water jet progressively blasts the coal from the coalface across the full width of the section which maybe 15 to 30 metres and up to the full height of the coal seam 10 to 20 metres. Coal flows back with the water as a coal water slurry and flows downhill under gravity, down the floor of the sloping seam to a low point in the mine from where it is pumped or
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de-watered and conveyed to the surface. From some points in the mine it may be possible for the coal to flow downhill directly to the mine portal. In a hydraulic underground mine the saleable coal obtained from development is typically only 10 to 25% of the total coal produced from the mine. The rest, 75 to 90% is produced in the extraction process. Coal is produced from a development place at a rate typically five to 10 tonnes per hour whereas coal is produced from an extraction place at a rate typically 100 to 300 tonnes per hour. However, extraction can only be carried out in places where all development activities have been completed. The entire production focus of a hydraulic mine is therefore on carrying out sufficient development at sufficient rates to keep hydraulic extraction operating as often and continuously as possible. Ideally a mine of this type will operate the extraction process continuously. In theory a hydraulic underground mine could produce considerably more than one million tonnes of coal annually. In practice, in West Coast conditions, the constraints on development required to support this and the need to repeatedly move extraction equipment and infrastructure make it very difficult to achieve production rates above 600,000 tonnes per year even when a mine is operating well. The physical characteristics associated with every part of the hydraulic extraction process are completely different to those associated with the conventional mining processes during development.

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A. Development simply creates a small tunnel through the ground. The objective is to have the minimum tunnel size possible with minimum ground disturbance consistent with allowing good access and infrastructure installation. Ground strengthening around development activities minimises the effect on surrounding ground. Hydraulic extraction is the complete opposite. By intent and design hydraulic extraction creates massive disruption to the subsurface conditions. The objective is to remove as much of the coal seam as possible, vertically and horizontally. In places this might be up to 80% of a coal seam up to 20 metres deep. The hydraulic extraction process therefore creates extreme changes in ground conditions that are significantly different to

those created by conventional mining. These include loss of support for overlying ground, all the way to the surface hundreds of metres above usually resulting in surface subsidence that can be difficult to predict, especially in hilly or mountainous terrain. They include major changes in ground stress distribution and loss of strength for significant distances away from the mined area causing increased instability and surrounding areas of the mine and requiring large barriers to be left around extraction places to maintain stability. They include large releases of gas from the coal extracted and from the goaf which is the collapsed zone around an area that has been extracted. These factors all create significant risks and require highly specialised technical capability and experience to assess and manage safely. Liability of coalmining on the West Coast, as a result of all the factors above coalmining on the West Coast is inherently greater risk, much more challenging technically, generally higher cost and overall by world standards much more difficult to carry out safely and economically. If it were not for two further factors coalmining at a significant scale for the export market would not be commercially viable on the West Coast today. First factor is the relatively attractive properties of some, but not all, West Coast coal. This includes high carbon content, low ash which is the soil and rock in a coal seam and some specific chemical properties that combined make some West Coast coal particularly valuable and in demand for steel making able to command premium prices. Against this, properties of some West Coast coals such as high sulphur content and high volatile matter content can be regarded as problematic by steel makers and detract from the saleability or attractiveness of these coals. The second factor is the sustained and continuing global commodity boom over the last decade and particularly since 2005. This has created a continuing tension between demand and supply that caused international coal prices to increase on average by a factor of five or more from 1999 to 2011. I consider that all considerations regarding underground mining on the West Coast and the history and current status of the Pike River coalfield and mine should be viewed in light of all these factors I have just discussed in the sections above. Solid Energy's underground

mining experience and conclusions for West Coast Mines. Solid Energy and its predecessors State Coal and Coal Corp have been involved in underground mining in New Zealand and on the West Coast for about a century. Underground coalmining remains one of Solid Energy's core activities.

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A. During my term as CEO since May 2000 we have operated six underground mines. Ohai Mine in Southland, Strongman 2 Mine north of Greymouth, and Terrace 1 and Terrace 2 mines in Reefton are now all closed. Strongman 2 and Terrace 1 were both fully worked out to exhaust their reserves in accordance with the mine plans. Ohai Mine and Terrace 2 Mine were both nearing the end of their expected lives but Solid Energy closed both mines early because we considered we could not mine remaining coal both safely and economically. Two underground mines remain open today in full production. Huntly East Mine in the Waikato and Spring Creek Mine near Greymouth. Each of these is of comparable scale to the planned Pike River Mine and has been at this scale for a decade or more. Spring Creek Mine is similar and directly comparable in many ways to the Pike River Mine. Similar geographical terrain to the mine entrance and above the underground workings, although Spring Creek has much easier access to the mine entrance. Similar geology near or intersected by major faults and with extensive minor faulting. Generally similar coalfields with thick seams of good quality low ash coal. Coals seams with thicknesses, grade or incline, structure, integrity and coal quality highly variable over relatively short distances. Difficult conditions for conventional mining due to all these factors. Hydraulic mining the best or only economically viable mining method.

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30 **WITNESS:**

Your Honour, if I may just make a quick note that there are some differences as well. The specific geology is unique in each case. The depth to the seams, the coal types and the gas contents would be some of the differences but the similarities are probably greater, much greater than the differences.

EXAMINATION CONTINUES: MR STEVENS

Q. Just for the record Dr Elder, I note that that comment was made at the end of paragraph 38.6.

WITNESS CONTINUES READING BRIEF OF EVIDENCE

5 A. “The history of Spring Creek Mine therefore provides information of
direct relevance to Pike River Mine. Solid Energy investigated the
potential for a Spring Creek mine in various joint ventures through the
1980s and 1990s. One of these partners was Mitsui Mining of Japan, a
pioneer of hydraulic mining technology. Eventually other joint venture
10 partners withdrew and left Solid Energy and Todd Energy in a 50/50
joint venture. By the late 1990s no decision had been made and Crown
Minerals gave the joint venture a “use it or close it, a “use it or lose it”
choice for the licence. This decision had to be made near the bottom
of the 1998/99 Asian financial crisis. At that time Solid Energy’s
15 financial position was very weak. International coal prices were at an
extreme low and the New Zealand domestic market for the coal was
minimal as its heat content was too high for the specifications of many
industrial boilers. However, Solid Energy’s Strongman 2 mine was
within two years of the end of its economic life and the company had no
20 contingency to maintain continuity of supply to the export customer base
it had built up over the previous two decades for New Zealand’s
premium quality semi-soft coking coal. Todd Energy had recently
closed its Moody Creek Mine nearby in the same coalfield and had no
other source of coal for a significant New Zealand domestic supply
25 contract. As a result the two partners made the decision to open Spring
Creek but neither was willing to commit to the major capital required to
prove and develop the large underground mine that had always been
planned. Instead a less costly option was agreed in early ’99 to access
the coal seam at a location where coal was thought to be of higher
30 quality and closer to the surface, hence lower capital cost, although the
accessible resource in this area and from this location was much
smaller than for the large mine initially planned.

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A. The partners also agreed to use conventional continuous miner technology rather than to set the mine up for high volume, hydraulic mining, at least in early years. the preliminary mine plan and budget were approved in July 1999, under time pressures and with too little geological and resource investigation completed and with only a short term view of the future mine plan. These combined decisions compromised the mine for the next 12 years resulting in challenges for safe and economic mining that have had to be overcome with difficulty ever since and are still felt today. From the beginning of coal production in early 2000 Spring Creek Mine struggled to meet its production plan and forecasts. By the end of 2000 it was clear the mine could not and would not achieve its production plan. With 24 million of capital already spent by the JV partners and export prices still extremely low the mine was losing close to \$1 million per month in 2000. Looking forwards the mine had, at most, about three years of measured coal remaining compared to the requirement in accordance with Solid Energy's newly developed project assessment guidelines of five to 10 years. Geological and production risk were both assessed as very high. The mine required an additional 15 million of capital expenditure to access this coal and financial projection suggested the mine would incur at best a \$9 million cumulative loss over this period. The mine had no economic future in its current form. In February 2001 the joint venture partners agreed to stop production and put the mine on care and maintenance while they assessed long term options. Through 2001 no option accessible to both JV partners was found and the mine remained effectively closed. In mid 2002 Solid Energy acquired Todd Energy's 50% interest and became the 100% owner of the Spring Creek Mine. This early history of Spring Creek Mine is particularly relevant to Pike River. The interests and drivers for the two joint venture partners in Spring Creek Mine at the time were divergent. For Solid Energy, Spring Creek was part of a larger portfolio of mines. Our view of the prospects for all our mines was long term. Rather than push forward with production at Spring Creek simply to obtain short term coal for markets and cash, we were willing to fund the costs of maintaining the mine on

care and maintenance while we carried out further drilling investigation to improve our resource information and assess alternative mining options including hydraulic mining. We also had the option when the nearby Strongman 2 mine closed late in 2002 of transferring some of an experienced workforce and other mining assets direct to Spring Creek at that time. Solid Energy was able to fund this period for the mine from the operating cash flows generated by other mines in our portfolio. The uncertainties associated with mining mean this situation for mining companies with significant mine portfolios is not uncommon and it is a defining difference between the risk profiles of different mining companies whether or not they have multiple cash flow streams to be able to manage financially through periods when some mines are either in early development or are not performing well. Todd Energy, however, had no other coal mines or coal interests of significance. Todd had short term customer contracts, it was not able to supply from the mine and had to purchase coal from other suppliers. It had no existing long term contracts or significant customer relationships in the export or domestic market. Its only sources of funding for care and maintenance and long term investigation and planning work were from the corporate parent.

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A. Mining companies in this position, where the subsidiaries of parent companies or stand alone entities generally have short lives once production fails to hit plan for a prolonged period. They are generally closed and/or sold very quickly. Once Solid Energy obtained full ownership we progressed plans to convert Spring Creek to a hydraulic mine and the mine reopened in late 2002. However, it remained compromised by the original mine development options chosen and by insufficient geological information. Unexpected geological and mining surprises continued to occur. In mining where certainty of geological information is the key to good mine planning and operations the unexpected only ever has negative consequences. So it was with Spring Creek. For the next six years the mine struggled and repeatedly failed to meet its production and financial plans. In 2005 I made the

decision to present the detailed financial history of Spring Creek publicly. In the interests of providing important information to the industry, the general mining community and potentially interested parties. I presented this information in a key note talk at the annual

5 New Zealand AUSIMM conference in November 2005. Further on in my document are the eight slides, slides 13 to 20 from that presentation that tell the Spring Creek story. They show cumulative net cash flows which is revenue generated from sales less total capital and operating

10 expenses for the mine from the three years from restart in 2002 to late 2005. The thin coloured lines are consecutive net cash forecasts prepared by the mine based on the current mine plan at each projection. The thick black line on those graphs is the actual net cash flow achieved. When the mine reopened in 2002 the cumulative net cash deficit at the mine was about \$32 million. This was projected to

15 increase by \$26 million to a deficit of about \$58 million as the development phase of the mine continued with minimal coal sales and revenue. Once hydraulic extraction began in 2003 the mine was expected to quickly become net cash generating and the cumulative net cash break even was projected to occur by mid 2007. That's shown on

20 slide 13 for those who have it. Almost two years later, shown on slide 14, extraction had not begun. The cumulative net cash deficit had grown to \$67 million and was now forecast to bottom out at \$71 million with break even delayed two and a half years. Shown on slide 15. However, extraction start up encountered significant difficulties, slide 16,

25 and full extraction was projected to be delayed by another year, slide 17, with the net cash deficit now projected to reach \$87 million. However, a combination of rising export coal prices and optimism for hydraulic extraction rates meant the mine now projected higher revenues and a more rapid climb out of the negative cash hole. Without

30 these more positive projections the mine's future would have been reconsidered at that time. However, the mine yet again missed the extraction start up date, shown on slide 18, which was finally achieved late in 2005, two years late. The cumulative net cash deficit had reached \$90 million which had required \$58 million of new investment in

the mine since 2002, well over twice the \$26 million allowed for at mine reopening in 2002. Based on greater realism about geological difficulties and mining challenges, the credible mine plan now only extended out two further years, shown in slide 19.

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- A. Cash invested in underground mining is primarily used to develop access and install mine infrastructure. Only a small amount is generally for surface facilities or mobile equipment, most becomes a sunk cost that's useful only for continuing the mine operation and its unrecoverable for any other purpose. For this reason it's rare that an established underground mine with significant coal resource ahead and significant sunk investment does not appear cash positive looking forwards. This is often used to justify continuing to mine and continuing to invest on an incremental basis as occurred repeatedly at Spring Creek. However, unless the future cash expected to be generated from the mine with reasonable confidence, has value greater than the cash already invested, the difference has to be written off, my slide 20. In 2005 this net cash shortfall between the forward cumulative net cash flow, based on the mine plan and the historical sunk cash position, was almost \$70 million, or almost 40 million since the 2002 re-opening. Back analysis that Solid Energy has carried of a number of historical and recent underground mines in New Zealand shows a similar pattern to that of Spring Creek. Geology and mining conditions are always different and more variable than expected. Investment needed is always significantly greater than planned. Hindsight often shows that the best decision would have been to close the mine significantly earlier or never to have opened it. This detailed analysis in 2005 to quantify in detail what we have known for some time, an inability to accurately plan and budget for underground mines and deliver against these plans represented a significant turning point for Solid Energy. It confirmed the primary conclusion we had drawn several years earlier when we implemented our new mine planning process. As discussed in section 1.2 to produce a credible mine plan with acceptable commercial risk the most important initial requirement is extremely good geological

and coal resource information available at an early stage in planning. Solid Energy's mine planning process, consistent with most international mining companies, requires that for a feasibility study prior to and approving and proceeding with detailed mine design and development, the resource should have five to 10 years of production at JORC Code measured status. In the very difficult geological conditions of West Coast coalfields, Solid Energy's experience is that to define a coal resource to JORC measured status requires high quality drill holes at aerial density no less than 100 metre spacing on average and even at this spacing a mine plan will still have significant uncertainty and mining and financial risk. I presented these experiences and conclusions at the AUSIMM conference in November 2005. Pike River's mine planning relative to Solid Energy experience. As CEO of Solid Energy I have been closely aware of the prospective and eventual Pike River development since shortly after I joined the company in 2000. My first meeting on Pike River was with the then CEO Gordon Ward who contacted me and visited our office in November 2000 to walk me through a presentation on the planned Pike River mine. He left a copy of that presentation with me. The presentation stated that Pike River had already completed "final feasibility study in May 2000 with a decision to proceed with mine development imminent. All the information presented was stated to be the outcome of work completed to feasibility study standard.

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25 A. The presentation stated that exploration had included outcrop mapping with about 28 samples plus 20 bore holes over an area six to eight square kilometres. Three more bore holes were proposed to complete the resource assessment prior to mine development. The average spacing of the bore holes of the area explored was about 500 metres reducing to about 400 metres with outcrop sampling included. The presentation stated coal "reserves" of greater than 50 million tonnes. Detailed maps showed geological fault structures and isopach contours of important coal parameters including coal seam elevation, seam thickness, ash content and sulphur content. Further maps

showed a detailed mine plan for the entire resource and mining schedules. The presentation gave a breakdown of planned capital expenditure to develop the mine to the point of first coal which was projected end of 2001, early 2002 and full extraction at one million tonnes per annum by 2004. Including contingency the projected capital expenditure total was \$53 million. In concluded at that time that based on my own experience as a geotechnical engineer the geological and coal resource information Pike had did not support the level of detail they were presenting on these aspects. Based on this I concluded also that the information available was insufficient to support the expected mine productivity or the detailed mine plans and schedules. The Solid Energy underground mining team drew the same conclusions. The level of geological and resource, coal resource information work presented is at feasibility study level would not have come close to satisfying Solid Energy's requirements at feasibility study level. No JORC code resource estimate was provided but the coal resource was stated to be at reserve status. To meet commonly accepted standards for a feasibility study a resource needs to be at JORC measured status. In my view, and that of the Solid Energy mining team with four to five hundred metre bore hole spacing and typical West Coast variability the resource was only at JORC indicated status. To be at measured status the resource would have required detailed geological and coal information from bore holes at about 100 metre average spacing. The actual aerial density at Pike River's bore hole and outcrop sampling information was, on average, about one tenth to one twentieth of that. In our view the work presented as the results of a feasibility study, or level 5 in our planning process, only satisfied our level 3 planning criteria, i.e. a secondary assessment or the level below a pre-feasibility study. By comparison with Solid Energy's requirements and expectations, Pike River had done insufficient coal seam and geological investigation work, had insufficient information to proceed with mine design and development at a level of risk consistent with what Solid Energy would consider good industry practice and was over optimistic about the mine development timeline and the mine's production

potential. Although not stated specifically in the 2000 presentation, Pike claimed initially that their export coal would be a hard coking coal of similar premium quality to that produced from our Stockton Mine north of Westport. Because a possibility existed for blending with other Solid Energy coals, our export marketing team reviewed Pike River's Coal quality data carefully and discussed the coal specifications with our own and external technical specialists and with our customers.

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- A. We concluded that while small areas within their resource might be of higher quality on average Pike River coal was likely at best to qualify only as a semi-hard coking coal which sells internationally at prices discounted significantly below premium hard coking coal. This was confirmed in late 2010 when at the request of Pike River after the explosions we agreed to market and sell about 20,000 tonnes of their stockpiled coal on a transparent pricing basis. However we were unable to find any customers interested in purchasing it as a hard or even as a semi-hard coking coal, although the one-off nature of the shipment was a disadvantage in marketing that coal. We eventually had to sell it at much lower semi-soft coking coal prices. Based on these observations and conclusions from 2000 onwards we increasingly held the view that the Pike River mine would experience significant development and production issues, was unlikely to achieve most of its production and financial targets, and that this would result in major financial issues. Without the benefit of a portfolio of other cash generating mines to support the uncertain and large cashflows through the development phase we believed the commercial risk associated with the Pike River development was very high. The primary reasons Pike River shared their information with us in 2000, and on a number of occasions after that, were that they considered the mine to be a major new exporter from New Zealand of premium coking coal. On that basis it should facilitate a range of opportunities that others would want to work with them on, including additional transport capacity for export, joint marketing and blending of premium coals, and development of other West Coast coalfields. For example, transport options promoted by

Pike River to Solid Energy and others included increasing Midland Rail Line and Lyttelton Port capacity, barge transshipment options through Shakespeare Bay, and several West Coast port developments and expansions. Our view formed in 2002 was that Pike River was a very risky commercial development that had a high chance of eventual failure and that Pike River would therefore be a high risk business partner. This view remained and increased through meetings and briefings with Pike River's management, discussions with our own staff and from our observations of public information released by Pike River from time to time. We therefore avoided any early commitments to working with them on transport or other proposed co-operative ventures. This did not concern Pike, who stated that they didn't need Solid Energy support for any of their activities. However, as Pike advanced their mine development they needed a credible coal transport solution from mine to export ship. While they explored other options they eventually approached us to discuss utilising the rail and port capacity that had essentially been established and funded by Solid Energy across the Midland Rail Line to the Port of Lyttelton. Since we believed it was unlikely that Pike River would deliver their projected volumes then the additional capital investment we and rail and port companies would make to support these higher transport volumes would expose us to significant financial risk. Solid Energy therefore made a specific risk-based commercial decision. We decided we would enter a long-term contract to provide coal transport services to Pike River if and only if this agreement was on a take or pay basis. In other words, if we were paid a minimum amount regardless of whether Pike River produced their projected coal volumes for transport. In 2007 we entered a Coal Transport Agreement with Pike River with very strong take or pay provisions and with the ability for us to exit the agreement in event of Pike River default. This agreement met our own risk management criteria. In May 2011 we gave notice to terminate this agreement as a result of Pike River's ongoing force majeure event under our contract.

A. Solid Energy interest in the Pike River coal resource. In November 2000 Pike River Coal Limited was owned 75% by New Zealand Oil and Gas and 25% by private Australian and New Zealand investors. Pike had held a coalmining permit over the Pike River coalfield for a number of years. Whilst Solid Energy was well aware of the resource it regarded the resource as one that would be difficult and costly to explore, develop and mine economically. Although of some interest it did not rank high on Solid Energy's priority list for future coalmining options compared to other resources Solid Energy had on the West Coast. This remained our position throughout the period of Pike River's mine planning and development work. We believe our original assumptions have been justified by the production and financial difficulties Pike encountered prior to November 2010. As I stated earlier in my submission both in regard to West Coast coalmining for export generally and with respect to Spring Creek Mine in particular, West Coast coalmining is difficult and costly. Only the strong increases in export coal prices in recent years have kept most West Coast export coal mines and future prospects potentially viable. The Pike River coal resource is in that category. Even at very high current international coal prices we believe the economics of mining the Pike River coalfield are marginal. One of the few opportunities to improve the economic viability is to seek synergies with other related operations including other nearby mines and blending with other West Coast coals. Safety management in Solid Energy. Although this is one of the two primary areas of my submission my comments are brief. I have never had sufficient information nor been in a position to form a specific view on the status of either the specific safety risks or the safety management practices at Pike River Mine, nor would I have attempted to form such a view without access to the full range of information that I would expect if I were to seek a similar view on safety in a specific operation within Solid Energy. My comments describe how Solid Energy's general approach to safety management is a part of our overall approach to risk management. This leads to brief conclusions that follow from my observations in section 1 on issues for underground mining on the West Coast, particularly using

the hydraulic mining method. Risk management. Safety is not an absolute. A statement that underground coalmining is dangerous is meaningless. Managing safety is about managing risk. The overall approach to safety should be comprehensive and follow the same principles as managing other risks. Solid Energy aims to operate all our activities, including safety management, in accordance with our integrated risk management system which includes an overarching board and CEO approved risk management policy and standard system elements for risk management. Other specific areas of risk management such as health and safety or environment are expected to be consistent with the integrated risk management system. Risk results from a combination of a level of hazard with potential consequences and exposure to that hazard with a probability or a likelihood of occurring. The simplest way to estimate risk non-quantitatively but consistently is by using a risk matrix which defines the level of risk created by different combinations of consequence and likelihood. An example of a simplified risk matrix for estimating safety risks is shown on the screen. Very briefly, on the left side you see five categories of likelihood and across the top five categories of consequence ranging from negligible consequence which might be a minor first aid injury through to catastrophic consequence which is multiple fatalities.

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- A. The combination of likelihood and consequence gives you the risk level. So if I may simply give an example to make that clear, the combination of a major consequence, which could result in a fatality, the second right column, with a possible likelihood gives you a high risk. That becomes a consistent way to estimate risk. Could I again just note, this is only a very small part and this is at paragraph 89, this is only a very small part of an overall approach to risk management, but it is a very important concept in safety management. We and others use many detailed and specific tools to assess risk in much more detail, but ultimately it does come back to this concept. Once a level of risk is estimated, a decision is made on whether and how to reduce it. A further decision is then required on whether the residual level of risk is acceptable. Safety

management. Solid Energy's approach to safety is described in our highest level standalone safety document. Our board approved health and safety document. Our board approved health and safety governance charter which is included in appendix 1 of my evidence.

5 This defines how we set our expectations for health and safety and develop our health and safety strategy and it identifies how health and safety is expected to be managed at every level in the company from board to front line operations. May I note at paragraph 1 that I personally wrote the safety governance charter for Solid Energy prior to

10 discussion and approval by the board. Continuing at 91. The health and safety governance charter is part of our corporate governance process. It contains a description of how all our governance and management processes relate, our approach to setting expectations for health and safety performance; how a board and management

15 responsibilities for health and safety relate; our approach to developing and implementing a health and safety strategy. Factors contributing to risk and opportunities for risk reduction can be separated into five categories. The first is organisation. Then people. Third, work environment. Fourth, work processes. Five, equipment. For a specific

20 risk of incident that has occurred, risk factors are often found in several or all these categories, but the root cause is, in my experience, more often than not organisation related. Quick wins in risk management can often be achieved in each category, but lasting reductions in major or systemic risks usually require comprehensive organisational

25 development and change. Solid Energy's approach to safety generally is therefore founded on organisational development. Our strategic framework for this is the concept of organisational maturity. There are many different ways to characterise organisational maturity. Solid Energy's approach is based on that developed by the University of

30 Queensland Minerals Industry Safety and Health Centre and used widely by the Australian mining industry. Organisations at the lowest level on the maturity curve, at a regressive maturity level, largely have what's called a, "no care," safety culture. Most people simply accept that incidents happen. Organisations at the next level a, "reactive,"

maturity level, largely have a blame safety culture. Many people take reactive steps to prevent similar incidents occurring.

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- 5 A. At the third level, organisations at a planned maturity level have a compliance safety culture. People try to prevent incidents before they occur. Level 4 organisations at a proactive maturity level have an ownership safety culture. The organisation and people work together to prevent situations that could result in incidents and, finally, at the top organisations at a resilient maturity level have a way of life safety culture. The organisation and people work together to prevent situations that could even result in incidents,” sorry that’s the second last level, I’ll read that again, paragraph 100, “Organisations at a resilient maturity level have a way of life safety culture, the organisation and people automatically work in a way where potential for incidents hardly ever arises. Organisational factors are the root cause of unacceptable safety risks and incidents. A common driver of organisational problems is the pressure felt by groups or individuals in the organisation to achieve specific results when they do not feel they have control over all the factors that influence the result. In an operational environment two fundamental areas of specific result expectations are production and financial performance. Safety management in underground mining on the West Coast, as discussed in section 1, typical geological conditions on the West Coast combined with the specialist nature of the hydraulic mining method in such conditions bring very significant and unique challenges for safety management that are different and additional to those generally found in underground coalmining elsewhere. In addition to normal good safety practices, these risks require specialist expertise in specific aspects of mine design and mine operation. Without these risk levels are likely to be elevated well above those that normally would be considered acceptable in coalmining. Relevance of these factors to Pike River Mine, three factors at Pike River had significant potential to be at the root cause of generating a wide range of safety risks that would have been largely unique to the Pike River Mine at the time of the
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explosions. Unless these were fully and systematically addressed, safety risk levels would have been likely to be elevated well above those levels that would normally occur or be considered acceptable in coalmining. The first factor, difficult geological conditions in a mine developed with insufficient geological information by normal mining planning standards and particularly for West Coast conditions. These would have been likely to create frequent surprises and needs for changes to standard practices which is a common cause of elevated safety risk. The second factor, hydraulic mining, a method that is not common and introduces an additional set of risks requiring highly specialist expertise, capability and experience to plan then manage. Third factor, prolonged production and financial under-performance. The organisational pressures associated with these on groups and individuals would have had the potential to create many safety risks.”

MR STEVENS:

Your Honour and Commissioners with your leave Dr Elder has then appended the Health and Safety Governance Chart I referred to at paragraph 91 of his evidence. Rather than him read the six pages I would ask that he simply highlight the matters in that that he thinks might be of assistance to the Commission.

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EXAMINATION CONTINUES: MR STEVENS

Q. Doctor Elder, could you just take us through, rather than reading the matters of particular note please in terms of the health and safety governance charter?

A. The purpose of the governance charter is Solid Energy’s highest level stand alone health and safety document. It defines how we set our expectations for health and safety and develop our health and safety strategy and it identifies clearly how health and safety is managed at every level in the company from the board to frontline operations. It is approved by the board. A key element is our health and safety policy statement which defines our overall health and safety goal, which is

healthy people with no harm to anyone ever and it defines how we achieve this through all our activities and behaviour. Our health and safety policy statement is shown on the screen. Expectations for specific performance against our health and safety policy statement are set and reviewed regularly by the board.

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Q. I'll just pause you there Dr Elder. The statement shown on the screen, you confirm for the record, that that's the one at paragraph 34 of your evidence?

A. It is.

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Q. Thank you.

A. On the roles responsibilities and accountabilities for health and safety it's fundamentally important to us to note that health and safety is the responsibility of everyone in, or working with, Solid Energy everywhere, on or off site at all times. Every person at every Solid Energy site has

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the responsibility and the authority to act to avoid accidents and to prevent unsafe actions or practices by themselves or others and I would like to emphasise every person has that authority. In specific responsibilities my role as chief executive, I am responsible and accountable for implementing the strategy to achieve our overall health and safety goal, to meet the expectations in our health and safety policy statement and to meet expectations for specific performance that are

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set by the board. Health and safety behaviours and performance are primary responsibilities and accountabilities for every line manager, supported by specialist health and safety staff and advisors, internal and external. Health and safety performance objectives are set and assessed through our personal and performance development system and executives and managers remuneration is directly linked to health and safety behaviour and performance. The next table, if we could bring it up on screen, are simply summaries and I won't go through this.

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The health and safety governance, roles, responsibilities and accountabilities as we have agreed them in Solid Energy, I think you will see the point is that they are very specific, very detailed and very clear in terms of primary, secondary and support responsibility and accountability. In developing health and safety strategy our approach is

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based on continuous improvement referring to the maturity curve concept I discussed in health and safety risk management to achieve an increasing maturity in health and safety behaviour, management and performance. We assess ourselves and define our maturity against a continuum ranging from traditional organisational driven health and safety management, the best practice team work driven health and safety management. Developing our health and safety strategy considers four sets of strategic drivers and knowledge of our own business and requirements, our current position in that health and safety maturity continuum, industry best relevant practice and of course legislative compliance requirements. Our health and safety management approach includes health and safety management processes, health and safety programmes for people and health and safety requirements for plant and equipment.

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A. So that's processes, people and plant and equipment. We develop our operating plans, our targets, our initiatives and our action plans based on all those and all of that is integrated into our integrated business management framework for our entire business.

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MR STEVENS ADDRESSES COMMISSIONERS

THE COURT ADDRESSES MR STEVENS – LEAVE GRANTED

COURT ADJOURNS: 3.26 PM

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COURT RESUMES: 3.43 PM

EXAMINATION CONTINUES: MR STEVENS

Q. Dr Elder, who wrote your evidence?

A. I wrote my evidence in full.

5 Q. And were you asked to give the evidence or did you do it voluntarily?

A. I did it voluntarily.

Q. Is it fair to assume it took a significant amount of time?

A. Yes there were, there were three reasons that I decided I needed to, to
do this and they're all out of respect for the community we obviously
10 work in here and for the families who I know who have been through
tragic times and for my colleagues in the industry, including my
colleagues at Pike River. Felt that the, the three objectives were that it
was essential that the Commission have the best opportunity to find the
right answers as to why this tragic event occurred.

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A. The second is that the Commission be able to draw the right and the
most appropriate conclusions. And the third is that the Commission's
able to provide the best and most appropriate recommendations going
forwards. It was also partly driven by significant speculation, that I was
20 aware of in the media and elsewhere, that perhaps this tragedy was
simply the result of a number of rare and isolated circumstances, all of
which simply happened to occur at the same time and the same place
with tragic consequences. In effect, a very unlikely set of coincidences
that were tragic but unforeseeable.

25 Q. And what was your view on that?

A. Well yes that is theoretically possible of course but I don't believe it's an
acceptable explanation for what happened in any way. Underground
mining is, has many challenges and modern mining is very complex.
But incidents like this with catastrophic consequences shouldn't be able
30 to occur in modern mining. The health and safety, The Health and
Employment Act, for example, requires any organisation, um, whether
it's a miner or otherwise to take all practicable steps in many many

areas to provide a safe workplace. I don't, while it's theoretically possible I realised I didn't believe it was remotely likely that this event could have occurred with the tragic deaths that occurred if all practicable steps had been taken so I took it upon myself to say that I wanted to provide the best information I could to assist the Commission with its findings.

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Q. Can I move now to other members of Solid Energy providing evidence, and you cover that at page 5, at for instance 12.2. You're aware of members of your staff who are also to give evidence in capacities other than as employees of Solid Energy?

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A. Yes I am.

Q. Can you give some examples of that?

A. Yes, there are at least three circumstances that I'm aware of. There may well be others. One is to, I believe, assist the police, or relevant to the police. One is relevant to mines rescue. And the third is a Solid Energy employee who was formally a Chief of Mines Inspector. We've taken a specific approach in Solid Energy to this. We -

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Q. What is that?

A. – recognise that it's in the interests of the Commission for these people to be able to provide information and not withstanding that it may well be difficult for them or even for Solid Energy. We respected that they should be able to do that freely and without restrictions, so without a view of either supporting or discouraging it we supported them, allowed them to do that. But I should add that we did provide assistance to them in the form of external legal counsels assistance but we did not in any way review support or for that matter even plan their evidence so what they have submitted is completely their own.

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Q. Staying on page 5 of you evidence, at paragraph 14, you refer to the JORC Code providing clear categorisation of resources with increasing levels of knowledge and confidence. Who makes those judgments according to the JORC Code Dr Elder?

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A. Yes. The JORC Code requires that judgments are made by what is referred to as a competent person, which I think I have referred to in my evidence. That includes a geologist who has at least five years

experience in that style of resource and is a member of a professional auditing body. And I believe in the case of a reserve which has more than just geological information the same requirement plus a competent engineering qualification.

5 Q. We now move to page 26 of your evidence. At paragraph 77 you referred to, for instance the 2000 presentation to you by Pike River Mine and talked about various meetings and briefings with Pike River management subsequently. Have you any ability to comment on where Pike considered it was in terms of its development in 2010?

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A. Yes.

Q. What was that?

A. Clearly most of the evidence that I've given relates in a factual way to the information that I was given in November 2000, so from that point on my dealings with Pike River other than on contracts such as the Coal Transport Agreement were probably more informal but it was probably the important matter is that there was a continuing industry view which was my view as well which I think I have shared the, that things have not significantly changed in terms of the quality of the information that was available, but in I think it was early 2010, it may have been late 2009 a fairly significant event occurred which was quite a major surprise to me and to our management team. The former Pike River CEO proposed, approached Solid Energy and proposed that we work together on new mine developments and I recall, because it was quite surprising, almost verbatim the words that were used to me at the time. It was something like this, "We're essentially now through the development phase and from here on it's pretty straight forward and easy. We're looking for new opportunities to use the expertise we now have." I discussed that with my management team and they

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Q. One final matter, you've talked about Solid Energy's health and safety management, is it a fair summary that management of a mine in terms

of safety is that it should always identify hazards and then act upon those hazards that are identified?

A. Sorry, can you repeat the comment there?

5 Q. The way that you presented Solid Energy's safety management is it fairly summarised that it would include identifying hazards and then acting upon those hazards which are identified?

A. Yes, identifying hazards and incidents.

Q. And incidents. And then secondly acting upon those hazards and incidents?

10 A. Yes.

Q. You've spoken of some characteristics being similar between Spring Creek and Pike River and they are physically reasonably close. Could you give one or two examples of how hazards and incidents have been identified at Spring Creek and have then been acted upon to demonstrate that policy?

15 A. Yes our, our policy and systems require, as I think I said earlier, all hazards and incidents to be reported, recorded and over a specific threshold investigated and actions followed up and implemented and we track those and I'll be the first to say that we're by no means perfect but
20 it's a very important part of our system. Over the last four weeks for example at Spring Creek we've recorded seven hazards which have had a potential consequence of moderate through to major and three incidents with a risk, recalling that risk is a combination of consequence and likelihood, three incidents with a risk that range from high to very
25 high. All of those get instantly logged and automatically emailed straight through to me and many others so I see those as soon as they enter our system and I have those on my, my database at any time. None of those seven hazards or three incidents had any actual consequences for safety which means that the controls that are in place
30 to prevent a hazard becoming an incident or prevent an incident having consequences that could move from negligible through to major, all of those controls worked and worked effectively.

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CROSS-EXAMINATION: MS SHORTALL

- 5 Q. Sir, you've told the Commission that certain factors at Pike had significant potential to be at the root cause of generating a wide range of safety risks that would have been, in your words sir, "largely unique to the Pike River Mine at the time of the 19 November 2010 explosion," right?
- A. Yes.
- Q. And hydraulic mining was one of those factors you identified, right?
- A. Yes.
- 10 Q. But Spring Creek uses hydro-mining, doesn't it?
- A. It does, yes.
- Q. And so does Burkes Creek?
- A. I'm not familiar with the mining technique at Burkes Creek.
- Q. What about Roa sir?
- 15 A. I'm not familiar with the mining technique at Roa.
- Q. Sir, are you aware that all the currently operating underground mines on the West Coast use hydro-mining?
- A. If you're telling me that I am now, but I wasn't until now.
- Q. And you've already noted sir that Solid Energy previously used hydro-mining at its Strongman 2 Mine, didn't it?
- 20 A. It did, yes.
- Q. And at its Terrace Mine, right?
- A. At Terrace 2 Mine.
- Q. So even if hydro-mining carries safety risks those risks were not unique to Pike River, were they?
- 25 A. It's the combination of circumstances at Pike River, hydraulic mining on its own isn't the unique characteristic.
- Q. Now the so called production and financial underperformance, again to use your words, was another of your factors, wasn't it?
- 30 A. Yes.
- Q. And you've told the Commission that, in your words sir, organisational pressures associated with any such production and financial issues on groups and individuals would have had the potential to create many safety risks at the Pike River Mine, right?

A. Yes, that's correct.

Q. But you didn't identify any Pike River groups or individuals facing these so called organisational pressures in your earlier testimony, did you?

A. I said they had the potential to.

5 Q. Do you recognise the name Peter Whittall sir?

A. Yes I do.

Q. And you understand that Mr Whittall became employed by Pike River in 2005, right?

A. I don't know the date but I accept that.

10 Q. You have any reason to believe that isn't the case sir?

A. No I don't.

Q. And Mr Whittall became Pike River's CEO in October 2010, right?

A. I believe so.

15 Q. And prior to being promoted Mr Whittall held the position of General Manager Mines at Pike River, right?

A. I accept that.

Q. You've never met with Mr Whittall to discuss whether any so called production or financial issues at Pike River elevated safety risks at the mine, have you?

20 A. No I have not.

Q. You've never called Mr Whittall to ask him if this was the case?

A. No I have not.

Q. You've never sent him an email asking this question?

A. No I have not.

25 Q. You've never texted him sir about this matter?

A. No I have not.

Q. You've simply never even spoken with Mr Whittall about this matter, have you?

A. Not about safety at his mine, no.

30 Q. And Mr Whittall has 30 years experience in the coalmining industry including developing, operating and managing underground coal mines, right?

A. Which is why I saw no need to contact Peter Whittall because we have issues at our mines that we expect our mine managers to look after and

balance production and financial issues while always maintaining safety and it was always my presumption that the same would be happening at Pike River.

5 Q. So you've testified about the potential effect on Pike River employees of so called organisational pressures and your view of elevated safety risks without even bothering to follow up with Mr Whittall, right?

A. As you said, Mr Whittall has 30 years experience in the industry, that would be a widely held view in the industry that under those sorts of pressures you would have to manage safety very carefully, you would
10 have potential risks and I would assume that Mr Whittall would be as aware of that as anyone else in the industry.

Q. Do you recognise the name Doug White sir?

A. Yes I do.

Q. And you understand that Mr White was the operations manager at Pike
15 River from January 2010 until recently, right?

A. I understand that to be the case, yes.

Q. And you've never met with Mr White to discuss whether any so called production or financial issues at Pike River elevated safety risk levels, have you?

20 A. Again I assumed that Mr White was in that position, that he would be aware of the commonly held industry view that a mine under pressure needs to pay extra attention to safety.

Q. So that was an assumption you made sir, right?

A. That would be a widely held and made assumption throughout the
25 industry.

Q. You never called Mr White to discuss this?

A. I have no reason to do so.

Q. You never sent him an email asking this question sir?

A. I have no reason to do so.

30 Q. You never sent him a text message?

A. No reason to do so.

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Q. But you had a reason sir to come in here today and give testimony about so called pressures that Pike River employees were facing. Is that right sir?

5 A. The point I made today was that there were many organisational pressures on Pike River Mine, financial and production wise. Those issues need to be managed, whether or not they were managed is the responsibility of an organisation in the management within that mine.

10 Q. Now Mr White has over 30 years experience in the coalmining industry including managing underground coal mines and over two years as the deputy chief inspector of mines in Queensland, right?

A. I don't know, but I'll accept that.

Q. Any reason to believe that isn't the case sir?

A. No.

15 Q. So you've also testified about the potential effect on Pike River employees of so-called organisational pressures and your view of elevated safety risks without even bothering to check with Mr White. Right sir?

20 A. I was providing standard industry information that I would expect Mr White to know and understand. I wouldn't feel the need for me to explain that to him, especially not given his background.

Q. You don't know sir, for a fact, do you that any so-called production or financial issues at Pike River created safety risks, do you?

A. No that's why I said they were potential.

25 Q. In fact you testified earlier that you've never had sufficient information or been in a position to form a view on the status of either specific safety risks or safety management practices at Pike River. Right?

A. That's correct, that's why I said they were potential risks.

Q. Your office isn't located near the Pike River Mine is it?

A. No it's not.

30 Q. You don't live near the Pike River Mine do you sir?

A. No I do not.

Q. Your office isn't even located on the West Coast is it?

A. No it's not.

Q. And you don't live on the West Coast do you sir?

A. No I do not.

Q. Your testimony about how any so-called production or financial issues, may have created or elevated safety risks at Pike River is just speculation, isn't it?

5 A. No it's not; it's providing standard industry information that I would expect anybody familiar with the industry to be well aware of.

Q. And you've told the Commission today sir about safety management in Solid Energy, right?

A. Yes.

10 Q. And based on Solid Energy's safety management approach, you've offered conclusions about safety risks at Pike River, right?

A. I have offered conclusions about potential safety risks at Pike River.

Q. But Solid Energy has elsewhere described its safety performance as unacceptable, hasn't it?

15 A. Yes.

Q. And sir in other occasions Solid Energy's safety performance has been identified as subject to concern by parliamentary select committees hasn't it?

A. You'll have to update me on that.

20 Q. Well let me see if I can show you a document to refresh your recollection sir. I'll hand up some copies and I'll hand some around to other counsel as well.

WITNESS REFERRED TO DOCUMENT – REVIEW OF SOLID ENERGY

Q. Do you have the document sir?

25 A. I do.

Q. Do you recognise this document – sir have you – do you see the document that I've handed to you?

A. Yes I have it, thank you.

30 Q. And do you recognise this document sir as a review of Solid Energy by the Commerce Select Committee for the 2009, 2008/2009 -

A. Yes I do.

Q. – year sir?

A. Yes.

Q. And sir, previously you testified that Solid Energy has described its health and safety performance as unacceptable, right?

A. That was a statement that I – according to this and I believe we probably made in our annual report or to the Select Committee that year. That was our statement.

Q. Sir – I think the wrong document may have been passed up to you, but let me just ask whether in response to your question about – my question to you about the criticism by the Commerce Commission as to Solid’s own financial – sorry, own safety performance, you didn't recall that. Is that right?

A. I don’t believe they made that comment to you, I believe they’ve referred to our own comment.

1605

Q. So let me show you the document that I actually intended to pass up to you.

WITNESS REFERRED TO DOCUMENT – REVIEW OF SOLID ENERGY BY THE COMMERCE COMMISSION 2009

Q. Sir, do you recognise this document as a review of Solid Energy by the Commerce Select Committee for the 2009/2010 financial year?

A. Yes I do, it’s the document for the year following the first document you gave me.

Q. Yes sir, and if I could take you to page 4 of the document. There’s a heading, “Health and Safety,” isn’t there?

A. Yes.

Q. And sir, can I just ask you to read aloud the first sentence under that heading?

A. Yes and I would like to note Your Honour that it needs to be read in the context of the previous document as well. We have previously expressed concern about the health and safety performance of Solid Energy. I do know that’s actually incorrect compared to the document from the previous year. They did not express concern the previous year.

Q. No, in fact the previous sir it was Solid Energy itself that described that safety management is unacceptable, right?

A. Yes, so the statement that we have previously expressed concern about the health and safety performance of Solid Energy is actually an incorrect statement.

5 Q. Your testimony today sir is that the Commerce Committee has inaccurately made a statement in its report about Solid Energy's safety performance. Is that right?

A. That's correct, it's the first time I've noticed it because I've never tried to reconcile the two documents but in fact what they probably should have said is Solid Energy has previously expressed concern about its health and safety performance.

10 Q. You've never read this report of the Commerce Committee before sir?

A. I read them most years but I don't attempt to correlate year by year comments in that way, no.

15 Q. So it's your testimony, just so I'm clear sir, that the Commerce Committee got it wrong in this report. Is that right?

A. So it appears according to the information that you've presented here.

20 Q. In fact sir, during the period that you've been CEO Solid Energy's safety management approach has involved being prosecuted three times by the Department of Labour for breaches of health and safety legislation hasn't it?

A. I can recall two, you may have to help me with the third.

Q. Which of the two you recall sir?

A. I recall one in Southland and one on the West Coast, and in both of those cases I'd also note that Solid Energy didn't contest the charges.

25 Q. In fact Solid Energy pleaded guilty to those charges didn't it sir?

A. We did indeed.

Q. And with respect to the third prosecution sir, do you recall whether Solid Energy also pleaded guilty to that charge?

A. I'm sorry –

30 **OBJECTION: MR STEVENS (16:08:33)**

CROSS-EXAMINATION CONTINUES: MS SHORTALL

Q. Sir, do you have any reason to believe that during your tenor as CEO Solid Energy your company has not been prosecuted three times for health and safety violations?

5 A. As I'm thinking through I believe I can recall the third incident.

Q. And now that you can recall it sir do you have any reason to believe that Solid Energy didn't plead guilty to that health and - in the course of that health and safety prosecution?

10 A. My recollection, which I think is correct, is that we pleaded guilty on all three counts.

Q. Now sir just let me change the subject for a moment. You've testified today about the JORC Code haven't you?

A. Yes I have.

15 Q. And the JORC Code sets minimum standards for public reporting in New Zealand and Australia of exploration results, mineral resources and/or reserves doesn't it?

A. Yes it does.

Q. It's a reporting code used for the public disclosure of information relating to minerals like coal isn't it?

20 A. Yes it is.

Q. And JORC is a principles-based not prescriptive code, right?

A. Largely principles-based but there is a great deal of guidance within it that comes close to being prescriptive.

1610

25 Q. Well, sir, there are three principles in the JORC Code involving transparency, materiality and competence, right?

A. I believe that's correct, yes.

30 Q. So, and I believe you mentioned this in your earlier testimony, sir, consistent with its principles, the JORC Code requires public reports due based on work undertaken by a competent person, right?

A. Yes.

Q. And not just anyone can qualify as a competent person under the JORC Code for purposes of reporting coal resources and reserves, can they?

A. No.

Q. You're not qualified as a competent person under the JORC Code, are you?

5 A. Well in fact as a geotechnical engineer with a PhD in, in geotechnical engineering I would be qualified as competent for part of it, but no I would not now consider myself as an appropriate person to carry out that work. I certainly consider myself more than competent to judge what competencies are required from others.

10 Q. But, sir, just to answer my question, you're not qualified as a competent person under the JORC Code today, are you?

A. Specifically today, no, and I haven't claimed to be.

Q. In fact the code describes the qualifications and type of expertise required to be a competent, right?

A. Yes, it does. That's the part of the purpose of it.

15 Q. And nowhere does the code regulate the procedures used by competent persons to estimate and classify minerals like coal, does it?

A. I think it was you that said that it's principles based, it's very easily able to be inferred from the code what it applies to.

20 Q. Well, sir, is there specific language in the code that regulates what specific procedures a competent person must use to estimate and classify minerals like coal?

A. I think anybody who is well qualified and experienced in the industry would understand exactly what the competency requirement is without having to have it spelled out specifically within the code.

25 Q. But just to answer my question, sir, nowhere does the code regulate the procedures used by competent persons to estimate and classify coal, does it?

30 A. Your Honour I think the point here is that the code doesn't actually regulate in the first place so I'm not sure I'm able to answer the question.

Q. Let me ask it differently, sir. Is there anywhere in the JORC Code that it specifically states what procedures must be used by a competent person to estimate and classify minerals like coal?

A. I don't believe it states anything that must be done, however it certainly provides absolute clarity on what should be done.

5 Q. So while you've testified earlier about Solid Energy's internal guidelines, the JORC Code, sir, provides for a competent person to base his or her opinion as to coal classification and estimates on information that he or she considers appropriate, right?

A. That's correct.

10 Q. And that means the competent person determines, for example, what geological sampling and testing he or she needs to form an opinion, right?

A. Yes, and if that competent forms a view that's out of line with the industry then that would immediately question their competence.

15 Q. Well, sir, if a competent person under the JORC Code, let me restate that. A competent person under the JORC Code could be subject to liability, right, if he or she fails to take appropriate care and diligence when being used for purposes of public reporting coal reserves and resources, right?

A. Well given that the ASX and NZX both used the JORC Code then certainly that, that could be the case, yes.

20 Q. Now an outcrop, just so I'm clear sir, is a visible exposure of bedrock or a superficial deposit on the surface of the earth, right?

A. That's a pretty good description, yep.

Q. And outcrops allow observation and sampling of bedrock for geologic analysis, right?

25 A. Yes.

Q. And while the JORC Code refers to gathering information, including from outcrops, the code does not prescribe how such information should be gathered, does it?

A. I don't recall the specifics but I don't think so, no.

30 Q. And likewise while the JORC Code refers to gathering information from drill or bore holes, it nowhere prescribes any minimum spacing for such holes, does it?

A. I, I think that question is the wrong question. The purpose of the JORC Code and the principles within the JORC Code establish very clearly

what would be required to provide the appropriate information. It doesn't specify the spacing, but a competent person would be able to work out from their experience and background exactly what spacing should be required.

5 Q. So under the JORC Code, the decisions as to the spacing or drill or bore holes and the collection of samples from outcrops are to be made by a competent person, right?

A. That's correct.

1615

10 Q. Sir, you would agree with me sir that the JORC Code regulates who can be a competent person rather than prescribing what the competent person must do, right?

A. No, I would not agree with that.

15 Q. Well sir, just to – I want to be clear on one point. The JORC Code nowhere prescribes the actual procedures that a competent person must follow when estimating classifying coal reserves or resources, does it?

20 A. With respect I think you're splitting hairs between prescribing a person and regulating a process. I think the JORC Code is absolutely clear on who a competent person should be and what the guide, very clear guidelines are for how they are required to do their work, whether the bore hole spacing is A or B is a different question completely but that is a very clear outcome of a competent person doing work in accordance with the principles of the JORC Code and there should be no confusion about that in my view.

25 Q. Now, you testified about your view as to the sufficiency of Pike River's coal seam and geological investigation work and the information the company had to proceed with mine design and development. Do you recall that testimony sir?

30 A. Yes I do.

Q. And to use your words, insufficient geological information is the third and last factor that you've testified had the potential to be at the root cause of generating safety risks largely unique to the Pike River Mine, right?

- A. Can you refer me to a clause please?
- Q. If I can take you to paragraph 103 of your brief sir.
- A. Yes, thank you.
- Q. And would you agree with me sir, to use your words?
- 5 A. I think you said it was the third but it looks to me as though it's the first.
- Q. We've talked about hydraulic mining, haven't we sir?
- A. Sorry, I'm only referring to 103 where it's the first not the third of the three points. I'm not sure if it's material but –
- 10 Q. Well sir let me just be clear. In paragraph 103 of your brief it's your testimony that there are three factors at Pike River that had significant potential to be at the root cause of generating a wide range of safety risks that would have been largely unique to the Pike River Mine at the time of the explosions, right?
- A. Yes.
- 15 Q. That's stated in your evidence, isn't it sir?
- A. Yes.
- Q. And then you break down, under paragraph 103, three separate points, don't you sir?
- A. Three factors, yes.
- 20 Q. Sure and the second point is hydraulic mining, which we've talked about, right?
- A. Yes.
- Q. And the third point is so called prolonged production and financial underperformance, isn't it?
- 25 A. No, no it says – it doesn't say so called, it says prolonged production and financial underperformance.
- Q. It's called that by you sir, isn't it?
- A. Well, so called is your wording, not mine.
- Q. Well, sir you've used the words in your witness brief, haven't you sir?
- 30 A. Not the word so called.
- Q. You used the words sir prolonged production and financial underperformance, didn't you?
- A. Thank you, yes.

Q. And the only other factor that's identified in your listing under 103 is in 103.1, right sir?

A. Yes.

5 Q. And in that factor you refer to difficult geological conditions as being another factor that had potential to be at the root cause of generating safety risks at Pike River, right?

10 A. No, I didn't use the word potential in that paragraph, I said they would have been likely to create frequent surprises and needs for changes to standard practices which is a common cause of elevated safety risk and which would be widely accepted in the industry as a common cause.

Q. Sir, can I just turn your attention to the first sentence in paragraph 103 of your brief, which you testified earlier as truthful testimony, right?

A. That's correct.

Q. The first sentence, can you just read that for me sir?

15 A. "Three factors at Pike River had significant potential," but I note that's not 103.1, which you were just referring me to.

Q. Could you read the full sentence please sir?

20 A. "Three factors at Pike River had significant potential to be at the root cause of generating a wide range of safety risks that would have been largely unique to Pike River Mine at the time of the explosions."

Q. And just so there's no confusion sir, one of the factors under 103 is difficult geological conditions, right?

A. Yes.

25 Q. And you've described your view as to Pike River's geological information being based on three things, meetings and briefings with Pike River's management, briefings and discussions within Solid Energy with your own staff and from public information, right?

A. Yes.

Q. So let's take each of those in turn.

30 A. Can you refer me to a clause again please?

Q. Sure, if you could go to paragraph 7 of your brief sir.

A. Thank you.

Q. You agree with me sir that that was your earlier testimony?

A. Yes.

Q. So, let's take each of those in turn. No Pike River employee attended your staff briefings or discussions within Solid Energy about the Pike River development, did they?

5 A. That's not strictly correct because there were meetings with Pike River staff management that included our staff, where they gave us briefings and there would've been discussion at that time.

1620

Q. Sir, is it not the case that those discussions are captured in your second point regarding meetings and briefings with Pike River's management?

10 A. Yes, you're quite correct, yes.

Q. So your internal discussions were with just Solid Energy people, right?

A. Yes indeed.

Q. And in fact once operational as a coal mine, Pike River was to become a competitor to the Spring Creek coal mine, right?

15 A. No I don't believe Pike River was ever a competitor to Solid Energy.

Q. Well Spring Creek is another coal mine on the West Coast, right?

A. Yes it is, but it was never a competitor, in fact the two mines had synergies and a range of ways between them where it was always our view and our statement that we hope that Pike River would succeed to the maximum degree possible because there were great opportunities together. It was never a competitor.

20 Q. And just so I'm clear sir, Solid Energy operates the Spring Creek Mine, right?

A. We do.

25 Q. Now you've testified earlier that you know of Peter Whittall, right?

A. I know Peter Whittall, yes.

Q. And we can agree that Mr Whittall has been part of senior management at Pike River for the past six years, right?

A. Yes.

30 Q. You've never been briefed by Mr Whittall about mine development at Pike River have you?

A. Personally, no. I have attended conferences and meetings where he has briefed larger audiences which have included me, yes.

Q. You've never met with Mr Whittall personally about mine development at Pike River, have you?

A. No, no.

5 Q. You've never called Mr Whittall to talk about mine development at Pike River, have you?

A. No it would be inappropriate that I would do that as my manager at Pike River at the time, there may have been a number of my staff, people in Solid Energy who may have, but I would never have had reason to do that.

10 Q. You've never sent Mr Whittall an email enquiring about mine development at Pike River have you?

A. I have never had any reason to. My dealings were primarily with the former CEO Gordon Ward, and I should perhaps make clear at this, this stage if I may Your Honour, that Gordon Ward was the person who
15 always made it abundantly clear that Solid Energy's view on the status and the progress of Pike River wasn't of particular interest.

Q. You've had no discussions whatsoever with Mr Whittall about mine development in Pike River, have you?

A. I've had no reason to.

20 Q. You've never been underground at Pike River's coal mine have you?

A. No I have not.

Q. You testified earlier sir that you know of Mr White, right?

A. I know of Mr White I don't believe I've ever met Mr White, but that may not be correct.

25 Q. And Mr White also was part of senior management at Pike River, wasn't he?

A. Yes.

Q. You've never been briefed by Mr White about mine development at Pike River, have you?

30 A. No I've had no reason to be, but again it's possible I've been in an audience when he's given a briefing and I'm sorry I don't recollect.

Q. You've never met with Mr White about mine development at Pike River have you?

A. No I've had no reason to.

Q. You've never called Mr White to talk about mine development at Pike River have you?

A. No I've had no reason to.

5 Q. You've never sent Mr White an email enquiring about mine development at Pike River have you?

A. No, I've had no reason to.

Q. You've had no discussions whatsoever with Mr White about mine development at Pike River have you?

10 A. No and as you explained as an experienced mine manager, I would assume that Mr White would be more than capable of managing all aspects of his mine despite the pressures that the mine may well be under and the company maybe under.

Q. So notwithstanding never having spoken with Mr Whittall or Mr White about mine development at Pike River, it's still your view that the safety risks that you – potential safety risks that you're talking about at Pike River were based in part on meetings and briefings with Pike River's management, right?

15 A. Information provided to me indicated that the mine would be under production and financial stress and that would create a range of organisational difficulties which I would expect would translate into a whole range of pressures. How they manifested them self would be up to my management to deal with, I would have no knowledge of that.

20 Q. And I'm just trying to be clear for the record sir that the information that you gathered for that purpose did not involve any discussions whatsoever with Mr Whittall or Mr White, did it?

25 A. I have never had any discussions with either Mr Whittall nor Mr White on production issues, no.

Q. In fact sir, the only meeting or briefing with Pike River management about which you've testified today happened 11 years ago with Gordon Ward, right?

30 A. No again I don't think that's accurate because the point is that there are a range of ways of having briefings which include one on one, in somebody's office or in an industry forum where papers were presented and I have certainly been in a range of forum where Pike River staff

have - and management have presented information that was very, very comparable to that I received from Gordon Ward in person in 2000. I would regard the sources of those information and the way I received them as being very, very similar.

5 1625

Q. Well let's talk about the meeting that you've testified about with Mr Ward six years ago in, sorry, excuse me, 11 years ago in November 2000, right?

A. Yes.

10 Q. Now you testified that you met with the then CEO Gordon Ward, right?

A. I believe he was CEO at the time although I can't be certain that was his title then.

Q. So you're not sure now whether Mr Ward was Pike River's CEO at the time sir?

15 A. My belief is he had full responsibility for Pike River and the development at the time and he certainly presented himself at that way. What his exact title was I don't recall.

Q. Well sir in your testimony you describe, at paragraph 64, that your first meeting on Pike River was with, I'm quoting your words sir, "Was with the then CEO Gordon Ward," right?

20

A. Yeah, I believed he was acting in the capacity of the Chief Executive Officer, whether he formerly held that title I do not know.

Q. Would you have any understanding sir as to whether Mr Ward was in fact a general manager at New Zealand Oil and Gas at that time?

25

A. I believe he was that as well but that didn't stop him from also being the chief, ie, the most senior executive officer for Pike River at the time. And that was certainly the capacity in which I understood he was talking to me.

Q. Now during the meeting that you've testified you had with Mr Ward he provided you with a copy of a presentation didn't he?

30

A. Yes he did.

Q. And it's your testimony today sir, again I'm quoting you directly, "That the presentation stated that Pike River had already completed final

feasibility study in May 2000 with a decision to proceed with mine development imminent.” Do you recall that testimony sir?

A. I see it in front of me, yes, and I –

Q. If I can just turn your attention to paragraph 65 sir?

5 A. Yes.

Q. Do you see that?

A. Yes.

Q. But the document didn't actually say that a decision to proceed with mine development was imminent did it?

10 A. If you can give me a moment I will give you the answer to that because I have the document with me.

LEGAL DISCUSSION (16:27:59) – ASSIST WITH PAGE NUMBER

CROSS-EXAMINATION CONTINUES: MS SHORTALL

15 Q. I think the question was the document didn't actually say that a decision to proceed with mine development was imminent, did it?

A. I didn't in my evidence at clause 65 provide a quotation. If, if - Your Honour, if I could read it. The presentation stated that Pike River had already completed final feasibility study in May 2000 with a decision to proceed with mine development imminent. I believe that's borne out by the fourth/last slide in the presentation, which is that first coal will be available from the mine at the end of 2001, early 2002, which in November 2000 was absolutely imminent.

20 Q. So just so I'm clear sir, notwithstanding your testimony stating that the presentation stated that a decision to proceed with mine development was imminent you're interpreting a slide from the presentation, it has a bullet point around the development decision. Is that right?

25 A. I believe to say that first coal will be around 12 months from when a presentation is given is absolutely consistent with my statement that that was stated as imminent.

30

MS SHORTALL ADDRESSES THE COURT – MAKE COPY AVAILABLE

1630

THE COURT ADDRESSES MS SHORTALL – PRODUCING DOCUMENTS**THE COURT ADDRESSES MR MOUNT – EXHIBITS**

- 5 **EXHIBIT 1 PRODUCED – 2008/2009 FINANCIAL REVIEW OF SOLID ENERGY NEW ZEALAND LTD – DR ELDER 11.07.11**
EXHIBIT 2 PRODUCED – 2009/2010 FINANCIAL REVIEW OF SOLID ENERGY NEW ZEALAND LTD – DR ELDER 11.07.11

10 **WITNESS:**

A. Your Honour, may I clarify my answer to the previous question which I think may have been incorrect?

Q. We will be with you in a minute sir.

- A. I, I said that I thought the document stated that the decision was
15 imminent because of the fourth bullet on first coal, in fact the second bullet on that slide says development decision end of 2000, early 2001, this was November 2000 when it was presented to me so that's implying that the decision would be within a month or very shortly afterwards, that would absolutely verify the statement that the decision was said to be
20 imminent in the paper.

MS SHORTALL:

- Your Honour, perhaps I could make a copy of the document available, this one has actually been produced onto the Commission's website so I can give
25 a number for the record if that would assist?

THE COURT:

That will suffice, if it is already there.

30 **MS SHORTALL:**

I will hand copies around counsel but the document is at DAO0010004.

THE COURT:

That raises another point. Presumably this document is retrievable and we could have had it on the screen at the time that the questions were asked, could we?

5

MR MOUNT:

I understand that is correct sir although because it came in as a Powerpoint presentation Ms Basher tells me that there might be a need to scroll through it in a slightly untidy way so it may be the reason that we haven't leapt into that.

10 **CROSS-EXAMINATION CONTINUES: MS SHORTALL:**

Q. Sir, just to be clear and so that everyone is looking at the same page of the document, you are four pages from the back on the slide headed, "Development Timetable," right?

A. Yes I am, yes.

15 Q. And sir in response to my question about your testimony that the presentation document stated that a decision to proceed with mine development was imminent, you're referring the Commission to the second bullet point there, are you sir?

A. I am, yes.

20 Q. And just to be clear for the record, that bullet point reads, "Development decision (end 2000/early 2001)," right?

A. Correct.

25 Q. You'd have to agree with me sir, wouldn't you, that the slide could be interpreted to state that a decision whether to develop, not necessarily to develop, was anticipated in late 2000 or early 2001, right?

A. No, look I couldn't accept that, I'm sorry, any decision has more than one option otherwise it's not a decision, is it?

Q. So you won't agree with me sir that my interpretation is possible?

A. No I won't, no, sorry.

30 1635

Q. Well, sir, now you testified that you concluded from Mr Ward's November 2000 presentation. Based on your own experience as a geotechnical engineer that the geological and coal resource information

Pike had did not support the level of detail the company was presenting on these aspects, right?

A. I did, yes.

5 Q. And you testified earlier that you worked as a geotechnical engineer in the UK, the US and New Zealand, right?

A. Yes.

Q. You didn't work as a geotechnical engineer for a coalmining company in the UK, did you?

A. No.

10 Q. You didn't actually work as a geotechnical engineer for a mining company in the UK, did you?

A. No.

Q. Nor did you work as a geotechnical engineer for a coalmining company in the US, right?

15 A. Are you stating that or are you asking me?

Q. I'm asking you, sir?

A. No, I didn't. Sorry, actually that's not correct, I did.

Q. You did work as a geotechnical engineer for a coalmining company in the US, sir?

20 A. Sorry, not for a coalmining company, for a mining company, yes, I did.

Q. And when you worked in New Zealand as a geotechnical engineer, you didn't work for a coalmining company, did you?

A. I didn't work for a coalmining company, no.

25 Q. You testified earlier that, 'Development is the process of tunnelling out into a mine through rock and coal,' I'm using your words sir, "from the mine portal to provide access and to put mine infrastructure in place," right?

A. Sorry, again I'll have to ask you to refer me to the appropriate paragraph.

30 Q. Certainly, sir, if you go to paragraph 25.1 of your brief.

A. Yes.

Q. And work to construct the tunnel drive in stone to reach the coal seam at Pike River didn't begin until September 2006, did it?

- A. I actually don't know the answer to that so I'll have to assume that if that's a statement it's correct.
- Q. Well let me see if I can show you a document to refresh your recollection.
- 5 A. Sorry, I should say Your Honour I have no recollection of the specific date whatsoever so you'll have to advise me of the date.

THE COURT ADDRESSES MS SHORTALL

CROSS-EXAMINATION CONTINUES: MS SHORTALL

- 10 Q. Any reason to believe that wasn't the case, sir?
- A. No, none whatsoever.
- Q. And you'll agree with me, sir, that 2006 is six years after your 2000 discussion with Mr Ward, right?
- A. That would be my calculation, yes.
- 15 Q. And in fact, sir, the final mine plan and financial model to proceed with mine development had not been presented to the Pike River Board until July 2005, had it?
- A. I wouldn't have a clue on that I'm sorry. All I know is that the information that I stated that was presented to me, what happened internally in
- 20 Pike River I wouldn't be expecting to know.
- Q. Do you have any reason to believe, sir, that isn't the case?
- A. I have no reason to believe it's either is or isn't the case.
- Q. So whatever your view of the sufficiency of the information in Mr Ward's 2000 presentation, mine development at Pike River didn't proceed for
- 25 another six years, did it?
- A. I believe that to be the case based on what you've told me, yep.
- Q. And in fact, sir, mine development was not even improved at Pike River until five years after the meeting you've testified about with Mr Ward, right?
- 30 A. Your Honour, if the point here is that additional, significant additional work was done in the period then I think that's an important point for discussion from counsel here but I'm concerned the insinuation is a lot of work was done that I wouldn't have known about. If, if she wishes to

tell me that I'd be interested in discussing that but I don't believe that was actually the case based on public information.

THE COURT ADDRESSES WITNESS

5 CROSS-EXAMINATION CONTINUES: MS SHORTALL

Q. And in fact mine development was not even approved at Pike River until five years after the meeting you've testified about with Mr Ward, right?

A. Sorry, that's a statement.

Q. Do you know sir?

10 A. I'm sorry I have no knowledge. You're, you're telling me that.

Q. Sir, just so I'm clear, one of the bases of which your testimony about potential safety risks at Pike River in connection with the sufficiency of its geological information is public information, right?

A. Yes.

15 1640

Q. Do you recognise the name Behre Dolbear Australia Limited sir?

A. Can you spell it please?

Q. B-E-H-R-E D-O-L-B-E-A-R Australia Limited.

A. Actually no sorry I don't.

20 Q. You don't know sir that Behre Dolbear is a well regarded international minerals industry consulting group?

A. Well I think probably the point is that they're certainly not well known in New Zealand. If they'd been active in New Zealand they're not well known in the New Zealand industry and that would suggest that they probably don't have great knowledge of New Zealand geological conditions.

25

Q. Do you recognise the acronym BDA sir?

A. If I do, my recollection is extremely vague and it doesn't mean much to me as a person who has pretty good knowledge of the industry in New Zealand.

30

Q. Do you understand sir that Pike River went through an IPO?

A. I believe they did, yes.

Q. And sir did you ever review any documents – offering documents in connection with that IPO?

5 A. I recall at the time they went through the IPO, I skimmed through the prospectus, yes. I remember seeing nothing there that was inconsistent with my longstanding views on Pike River, but it was not my job at the time of course to offer comment on it.

Q. Well sir do you recall that an independent technical review conducted by Behre Dolbear was attached to the offer document in connection with the IPO?

10 A. No I don't recall that.

MS SHORTALL ADDRESSES THE COURT – FURTHER DOCUMENT

LEGAL DISCUSSION - (16:42:25) – DOCUMENTS AND IMAGES

COURT ADJOURNS: 4.45 PM