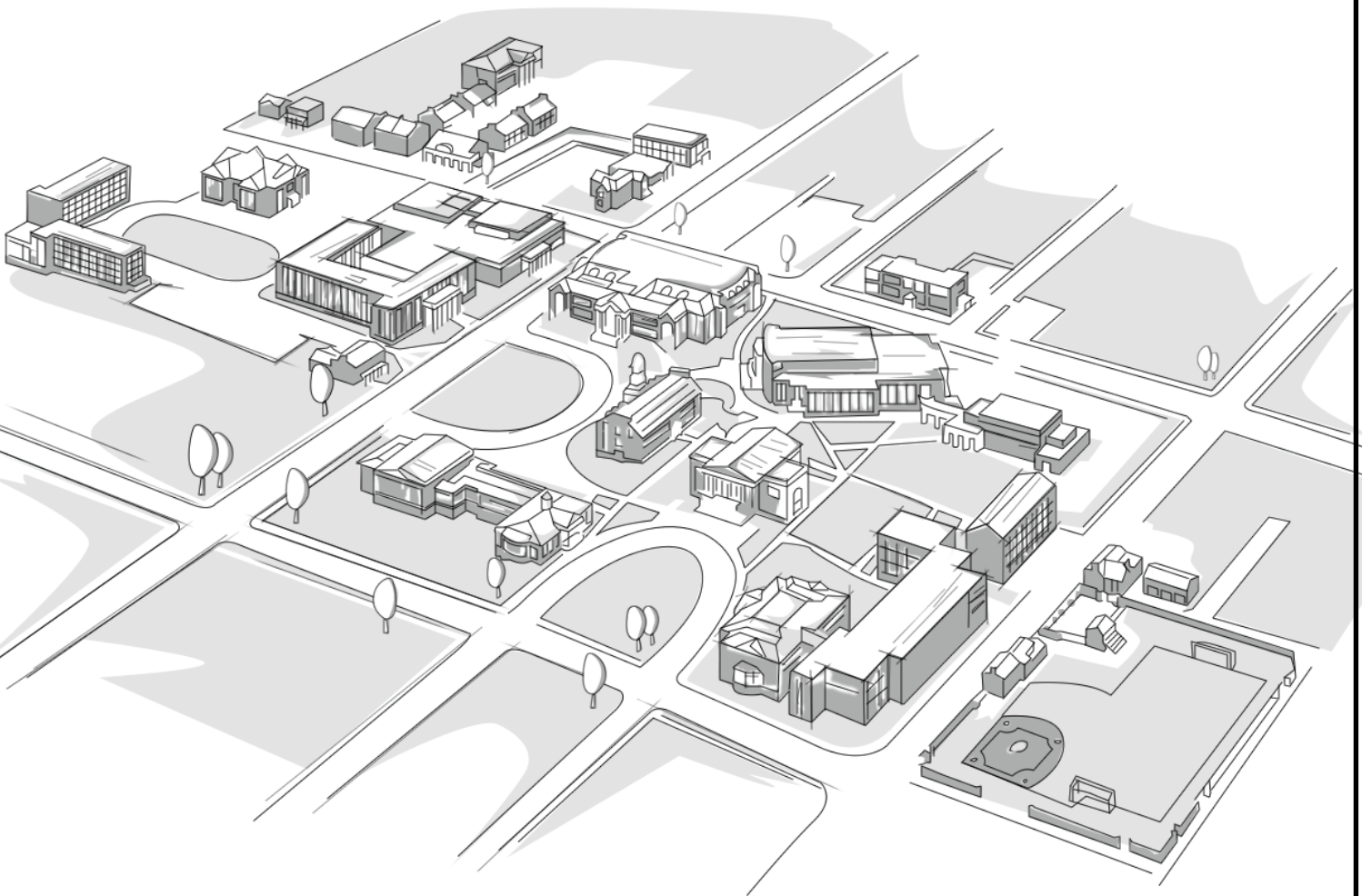


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RESOURCE PROFESSIONALS

Lecturer: Melissa Evans





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**AUSTRALIAN RESOURCE INDUSTRY
OVERVIEW**

- The Australian resource industry is large, and for many years has carried the Australian economy (representing over 6% of the economy total).
- The mineral reserves in Australia are generally of quite a high quality and are diverse with Australia being the worlds leading producer of bauxite and iron ore and the second largest producer of alumina, lead and manganese.



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- In terms of resources, there are many (including those listed above) including copper, zinc, mineral sands, gold, silver and uranium.
- Not only is Australia leading the way in production, it is also a leader when it comes to the techniques and innovation used for extraction and processing and these factors put Australia ahead of the pack.
- Within the resource industry there are nearly 190,000 direct employees and nearly 600,000 in the support industries – and a large proportion of these are professionals.



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WHERE IS THE RESOURCE INDUSTRY?

- Worldwide! In Australia there is a significant resource presence spread across the country with the majority residing in WA with QLD and NSW coming in second place, followed by SA, NT, VIC and TAS.
- The map on the right outlines the spread in Australia as at 2014 (courtesy of Mining Australia <http://www.miningaustralia.com.au/australian-mine-map>):



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WHAT ARE THE PROJECTS?

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Pluto Gas Plant WA



Kalgoorlie Superpit –
Australia's Largest Gold mine

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WHAT ARE THE PROJECTS?

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Oil refinery in QLD



Christmas Creek, Iron Ore, WA

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RESOURCE PROFESSIONALS

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Resource Professionals from an insurance standpoint, is a very broad term, used to categorise any professional who is said to work within the ‘resource industry’, which might encompass mining and minerals, oil and gas, petrochemical/refinery based work or pipeline related work (to name a few).

Within the above areas of the resource industry, there are many different professionals, including (but not limited to) the following:



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RESOURCE PROFESSIONALS

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- Engineers
- Architects
- Surveyors
- Science based professionals (including but not limited to geologists, geochemists, metallurgists)
- Other Service Professionals such as environmental investigation specialists, inspection services, management consultants, OHS consultants, recruitment/personnel consultants and risk/hazard assessment professionals.



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- The types of engineers that may be involved in the resource industry include:
 - Mining Engineering who normally manage, plan and organise the engineering aspects of extracting and processing resources from the earth.
 - Geotechnical Engineers can be involved on many levels, conducting sampling to determine soil/foundation conditions for mine sites



- Petroleum engineering
- Environmental engineers might be involved on many levels but generally they will be engaged to check and manage the effects of the proposed mining (and actual mining) activity on the natural land and built environment.
- Project Management is another important aspect of a mines operation and construction and often these project managers are qualified engineers (in multiple disciplines).



- Structural engineers are also involved in many aspects and often are employed in conjunction with the large machinery and heavy equipment being used at mine sites. Given the large structures on mine sites there is often a big emphasis on the structural foundations for such machinery and structural engineering designs and input is critical at all stages.



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- Surveyors are utilised on many different levels in the resource industry and can be involved in mining (both open pit and underground), oil & gas and pipeline work.
- There may be a need for surveyors in the resource industry during many different stages. In an open cut scenario we see surveyors being involved in machine control, road and ramp set out,



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volume calculations, reconciliation, high wall surveying and stockpile monitoring.

- The surveyors may have a background in building surveying, land surveying and/or quantity surveying.
- During exploration for mine site development, oil & gas identification and pipeline set up, there is also a need for aerial and topographical surveying which



may involve the use of complex machinery such as automated laser scanners.

- In addition to the above duties, as with the majority of surveying roles, there may necessarily be elements of asset and service location work, water level monitoring and rehabilitation monitoring and control.



- There are a number of different science based professionals within the resource industry who are also involved at different stages of many projects (mining, oil and gas). Some of the science based risks include:
 - Geologists – combine the principles of geology and economic geology as well as elements of mining engineering to identify and develop resource deposits. In simple terms, geologist generally find the



resources and test whether it is economically viable to extract it. Mining geologists also might be involved in report writing under the Joint Ore Reserves Committee (JORC) standard which is a code to report exploration results, mineral resources and ore reserves.

- Geochemists – can be involved in environmental and geotechnical aspects of open pit and underground mining projects throughout the lifecycle of a mine. Some of the involvement might include evaluation



of closure and post closure alternatives, treatment design support, water quality monitoring and environmental impact assessment.

- Metallurgists – can perform a wide range of functions. Metallurgists generally study the chemical behaviour of metallic elements and their intermetallic compounds and mixtures. They may specialise in extractive metallurgy (primary) or physical metallurgy (secondary) and their roles might involve separating



minerals from ore, improving process methods and develop and control methods of storing and treating waste material.



- Within the resource industry outside of the typical engineering, surveying and science risks there are a large number of other professionals at work on a daily basis. Some of these occupations are listed below:
 - Management consultants – these consultants are typical in the resource industry and more often than not they are tertiary qualified with an engineering or science based background, or sometimes both. These consultants advise on aspects of business improvement, efficiency, use of technology and the use of people to achieve peak performance amongst other things.



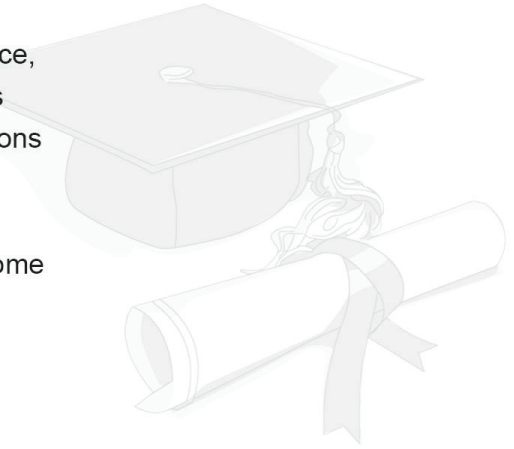
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- Environmental Consultants – given the highly regulated nature of the resource industry whether it be mining and minerals, oil and gas or pipelines, there is always a need for environmental consultants who look at issues of project approvals and environmental impact assessment, environmental and sustainability management, ecology and rehabilitation and stakeholder engagement.
- Occupational Health & Safety Consultants – OHS consultants play a crucial role in the whole resource industry and might include risk management, site inspection and reporting, hazardous materials and incident investigation.



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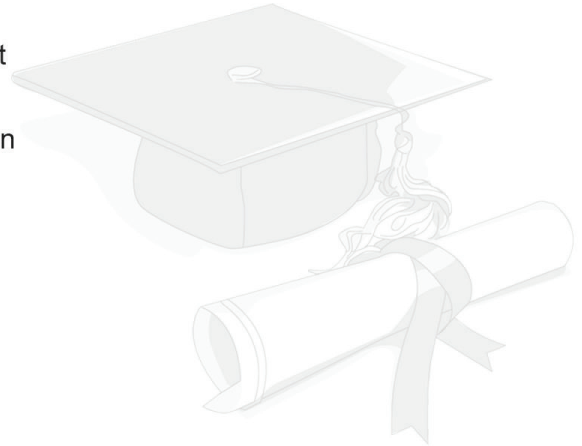
- Quality Assurance –roles are varied and may be applicable to every aspect of the resource industry. The quality of equipment, materials, structures and components is often subject to strict regulations and standards and quality assurance professionals may be used to ensure compliance, verify materials/parts/final products through checks, audits and inspections and also ensure all contractual specifications are adhered to.
- Recruitment Consultants – is a standard occupation but some specialise in recruiting for the resource industry alone.



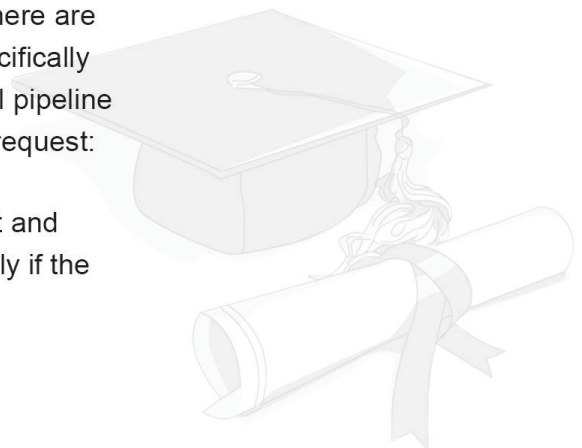
- All of the occupations mentioned in the previous slides (and more) generally require Professional Indemnity (PI) insurance as well as the typical public and products liability (PPL) insurance.
- Given a large proportion of the occupations covered in the previous slides are classified as 'office based', it is generally not too expensive to obtain a PPL policy with the PI policy (depending on a few risk management questions being answered appropriately).



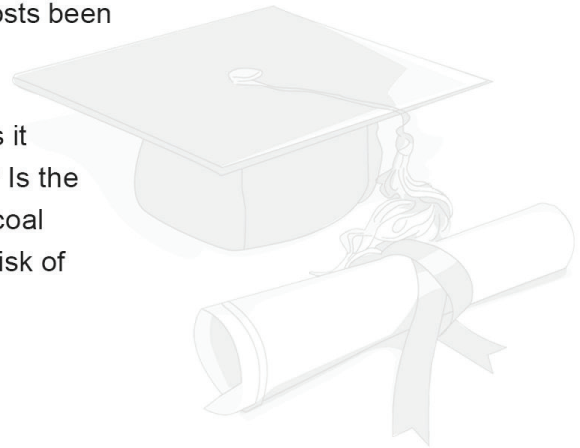
- PI insurance is generally a must for any professional wanting to enter into a contract with a third party if there is any element of design/specification or service. Furthermore, it is often a requirement under law to hold PI insurance and companies your clients might seek to do business with will not allow your client to begin work until a valid PI insurance policy has been sighted.



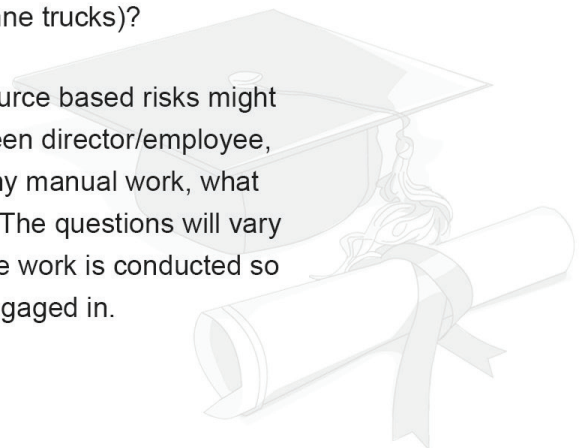
- So what exactly do insurers consider when assessing a PI risk?
 - Typical features of any PI insurance assessment! There are insurers who specialise in the resource industry specifically as they understand the nuances of how a mine or oil pipeline works from top to bottom. Generally, an insurer will request:
 - 1) Fully completed proposal form on behalf of the client and an up to date CV of the directors/principals, especially if the business is less than a few years old.



- 2) Has the client had any claims? What is the claim frequency? How much has been paid out by insurers? Has the client done anything to ensure the same situation does not repeat itself (ie by risk management procedures)? Have any legal costs been incurred?
- 3) In what area does the client work? Is it Oil & Gas? Is it Mining? Is it above ground or underground mining? Is the client involved in underground mining of metals or coal (the latter being much more dangerous due to the risk of spontaneous combustion)?



- 4) What advice is actually being provided? Does the advice include design and specification work (ie for a structural engineer setting out specifications for the supports for a conveyor belt or a geotechnical engineer giving specifications for soil for a mining road to hold 110Tonne trucks)?
- 5) Typical other questions that do not only apply to resource based risks might include number of employees, what the ratio is between director/employee, whether subcontractors are used, whether there is any manual work, what percentage of work is office based vs in the field etc. The questions will vary according to the risk occupation and area in which the work is conducted so you should really understand the work the client is engaged in.

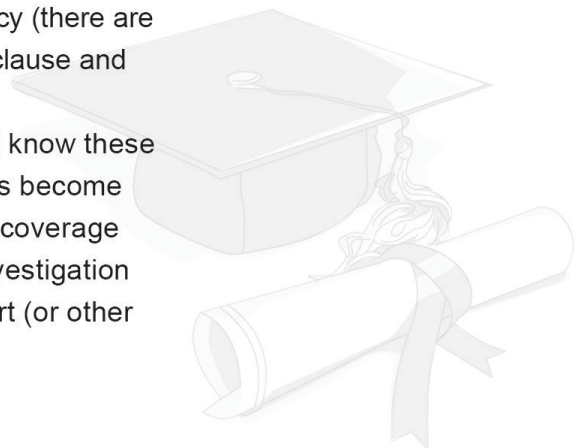


➤ Some examples:

- Contractors & Sub-contractors (Vicarious liability) – this coverage component can be critical for many businesses as any acts, errors or omissions of sub-contractors will be covered on the basis that the act, error or omission arises from the professional service rendered. For example, if a mining engineering company utilises a sub-contractor in its place for a certain job (or aspect of a particular job), then the mining engineering company will likely be covered for an error (or act, or omission) of the sub-contractor.



- Continuous coverage provided – an added benefit which provides the insured peace of mind in the event a claim is made, arising out of a fact or circumstance which could have been, but was not notified, under a previous professional indemnity policy (there are qualifications to the operation of a continuous cover clause and reference will need to be made to the wording).
- Investigation and Enquiry Costs (\$250,000) – we all know these costs can become extreme, especially when lawyers become involved. This coverage provides up to \$250,000 in coverage for legal costs and expenses (which may include investigation reports and forensic reports) and attendance to court (or other tribunal).



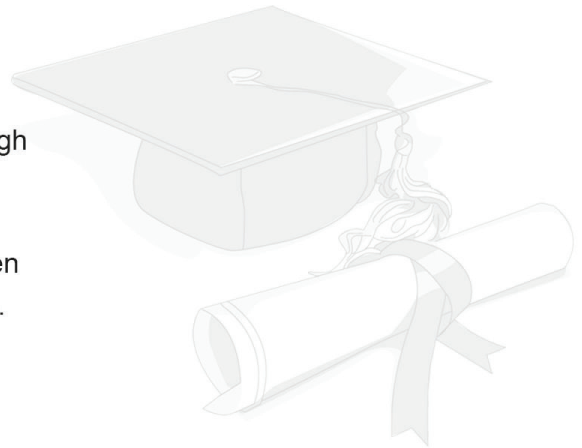
WHAT DO INSURERS LOOK FOR

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As with other traditional professions, insurers will look for a combination of qualifications and experience. If a consultant is unqualified the Insurer will want to see a CV. Insurers will analyse a breakdown of the fee income into the following common categories

Occupation – ie Engineering involved in low, medium or high risk categories.

- Contract sizes. There is a direct relationship between the size and complexity of the job and the exposure.



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WHAT DO INSURERS LOOK FOR

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- Technology. Is the firm using 'cutting edge' technology or standard, tried and tested processes?
- Overseas exposure. Does the practice carry out work for overseas clients? Careful consideration would be paid to such work carried out for US or Canadian clients.
- Retroactive exposure. Does the practice have an exposure to claims arising from past work, whether in the current firm or a former practice?



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WHAT DO INSURERS LOOK FOR

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- Claims History
- Risk management procedures
- How long the company has been established and their qualifications
- Member of relevant industry bodies and industry types
- Subcontractors



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WHERE DO THINGS GO WRONG?

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- The answer to this is – everywhere!
Accidents can and do happen and this is why clients need insurance.
- Some of the claims examples we have seen include:



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TYPES OF CLAIMS

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Just some of the claims exposures are:

- Breach of Copyright and/ or Design Registration
- Project Management Errors and delay
- Design errors
- Certification errors
- Design failure
- Alleged specification failure.
- Inadequate designs
- Structural design defects
- Negligent project management



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INDUSTRY BODIES

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Just some of the industry bodies representing professionals in the Resources industry are:

- Institute of Engineers Australia
- Institute of Mechanical Engineers (IMechE)
- Institute of Civil Engineers
- Australian Minerals Institute (AUSIMM)
- Geological Society of Australia
- The Mine Managers Association of Australia
- Australian Institute of Mine Surveyors



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