



DRILLING INDUSTRY

WORKFORCE DEVELOPMENT REPORT

Resources Industry Training Council (RITC)

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INTRODUCTION

The drilling industry plays a critical role across many industries in the Australian economy, including civil infrastructure, agriculture, and the resources sector (onshore and offshore mining, oil, and gas). In a resources sector context, drilling activity is required throughout the entirety of the mining life cycle - through exploration drilling, construction-related drilling and production drilling operations (such as blast hole drilling), generating a significant amount of output and providing a multitude of employment opportunities. However, with fluctuating levels of demand and supply being a feature of the sector, the need for a workforce development strategy has become apparent.

This report has been developed by the Resources Industry Training Council (RITC) with the support of PwC Skills for Australia and the WA Drilling Industry. The intent is to identify the workforce development issues impacting the drilling industry in Western Australia and propose recommendations to support industry resilience and growth.

DRILLING INDUSTRY OVERVIEW

Industry outlook

In WA, a strong inter-relationship between the resources and drilling industries, as evidenced in the relationship between mining activity (including exploration expenditure) and drilling activity. At the peak of the previous resources sector cycle in 2012, mining exploration expenditure was \$3.9 billion and drilling activity at 11.3 million meters drilled¹. Unsurprisingly, drilling sector employment is also subject to commodity price and resource sector cycles.

Pre-COVID key indicators (e.g. increasing industry gross value, high commodity prices, and an overall increase in recent expenditure on mining exploration) suggested the resources industry broadly is entering another growth phase. In WA, this has materialised in high commodity prices for gold and iron ore, driving further investment opportunities. For example, gold prices have risen from the \$1268 USD yearly average in 2018, to \$1756 USD as a yearly average in 2020. Comparably, the price of gold in the last peak of 2012 \$1668.98 USD yearly average per ounce². For drilling, mineral exploration expenditure rose 11.9% (\$72.7m) to \$683.3m in the June quarter 2020, with expenditure on areas of existing deposits rising 17.5% (\$67.5m) and new deposits 2.4% (\$5.3m)³.

It is expected projected resources sector growth will continue to drive demand for drilling services in the disciplines of exploration drilling, construction-related drilling and production drilling operations. This demand is increasingly reflected in the labour market, with advertised vacancies (late in 2019) at their highest since the height of the mining boom (2012). Western Australia has been experiencing an above average demand for workers over the last 18 months⁴.

In November 2020, it was reported that ninety-six applicants submitted proposals for Round 22 of the Exploration Incentive Scheme's (EIS) Co-funded Exploration Drilling Program. The program co-funds drilling programs and exploration in greenfields and under-explored areas of WA. More than a quarter of the successful explorers are searching for battery metals, while record prices are also making gold a popular target. Other commodities include copper, rare earth elements and potash. It is the third-highest number of applicants that have applied for Round 22 of EIS drilling program and represents a 50% rise between Round 21 and 22⁵.



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¹ Australian Bureau of Statistics, 5220.0 Australian National Accounts: Expenditure, Income and Industry Components of Gross State Product, Western Australia, Chain volume measures and current prices. Accessed 19/1/2018.

² https://www.kitco.com/finance/mining/?j1_module=sectorDetail&popup=1&j1_region=US&j1_symbol=-MIGL. Accessed 24/11/2020.

³ Australian Bureau of Statistics, 8412.0 Mineral and Petroleum Exploration, Australia, Table 2. Mineral Exploration, (Other than for Petroleum) – Expenditure and metres drilled. Accessed 24/11/2020.

⁴ Department of Jobs and Small Business, Labour Market Information Portal: Employment Projections. Accessed 21/11/2018.

⁵ <https://www.mediastatements.wa.gov.au/Pages/McGowan/2020/11/Explorers-show-strong-interest-in-EIS-co-funded-drilling.aspx>. Accessed 24/11/2020.

WORKFORCE OVERVIEW

Labour market supply and demand

Since the post-2012 downturn, the exploration incentive schemes operated by various State Government's (e.g. Exploration Incentive Scheme in WA) have played a role in maintaining a level of exploration activity and supporting the sector. However, driller employment in Australia had contracted by 20% post downturn, with WA experiencing a lesser contraction of 12%⁶. Notably, during times of downturn, skilled drilling sector staff often move into new employment opportunities in outside industries, and often fail to return to drilling. This is significant, as the WA drilling labour pool may not have declined to the same extent as the national pool, however this latent pool is likely deficient in experienced labour. This erosion in the skills and experience base has important implications for education and training.

Prior to the COVID-19 crisis, a tightening of supply of drillers in Western Australia was anticipated in the short-term (next 12 months), developing into a genuine shortage in the current period of 2020. The intensified demand for select minerals has stimulated demand for drillers in both exploration and production operations. Currently, there is limited agility for drilling companies to respond to significant increases in demand.

As of the final quarter of 2020, many drilling companies are running at 75-80% capacity due to a lack of labour supply. Applications for drilling positions are down by an estimated 30-40% compared to the first quarter of 2020⁷. Additionally, the WA Border closures have amplified labour market tightening for skilled drillers at the supervisory level, with a percentage of those being employed from outside jurisdictions. Consultations noted a significant deficit in driller supply versus demand.

Within the larger mining companies the drilling workforce is generally composed of 90% in-house and 10% contracted employment⁸. The 'in-house' drillers are primarily recruited through internal pathways from other avenues of the business, with companies sourcing from the external labour pool as needed. Contractors are typically employed for exploration and some underground drilling activities.



Industry growth

Intensified demand for select minerals has stimulated demand for drillers



Workers in demand

Many drilling companies are running at 75-80% capacity due to a lack of labour supply

⁶ Australian Bureau of Statistics, 2016 Census – Driller employment by place of work. Accessed 20/11/2018.

⁷ Data derived from RITC stakeholder consultations.

⁸ Data derived from RITC and PwC Skills for Australia stakeholder consultations.

Employment pathways, skills, and training

Drillers commonly enter the industry unqualified, with completion of the relevant drilling qualification not seen as a pre-requisite to gain employment. Instead, experience is highly valued in the sector, and sustainability of the industry is dependent on its' capacity to attract younger generations. As the volume of drillers must meet both the increased demand in the industry and the natural attrition rate, the capacity of existing recruitment and training pathways to address any spikes in demand in a timely and cost-efficient manner are critical factors dictating labour supply.

The key qualifications are the nationally recognised Vocation Education and Training (VET) Certificates and Diploma in Drilling Operations, offered as 1 to 2-year traineeships. These qualifications are relevant for exploration drilling, construction-related drilling and production drilling operations, leading to roles as driller's assistants, drillers, senior drillers or drill rig supervisors.

Despite commencements in drilling qualifications trending upwards since 2016, and the WA State Government offering generous incentives (Lower Fees Local Skills initiative), a relatively high rate of non-completion exists (e.g. since 2014, just over 40% of learners who enrolled in the Certificate III in Drilling Operations did not go on to complete the course⁹). This training discontinuation is echoed in the employment retention rates where approximately 40% of new entrants will leave the industry within 6 months of employment¹⁰. In instances where training is completed, the driver at a Certificate III level is primarily from the client side, with the relevant skills acquired in a workplace context and typically verified on-site through a private RTO.

Currently, there are three private RTOs and one enterprise RTO operating in WA which service the drilling industry, and it is expected that increased competition will improve the quality of training outcomes. There is a difficulty finding RTOs to service more specialised units, such as artesian bore drilling, which is required to obtain a Drilling License.

Automation is proposed to further support women through drilling careers



Skills impact of emerging technologies

Due to the adoption of new technologies and continual drilling practice evolution, the tasks and skills required of workers in some drilling job roles are changing. This is mostly notably in the blast hole and mine services drilling. However, exploration, water well and geotechnical drilling will not change significantly in the future. Automation helps in rod handling, drill speeds and feeds but the underlying knowledge and practical application of how to set up, plan and drill a hole remains unchanged. Analytics will be transferred from a drill rig to a Geotech. The format of data may be different, but it will not be the driller's job to interpret this data.

⁹ Data sourced from the Department of Training and Workforce Development, 2020

¹⁰ Based on RITC Industry Consultation

Challenges for the talent pipeline

The drilling industry can encounter difficulties attracting and retaining workers due to the cyclical demand in employment linked with commodity prices, implying steep increases in times of strong demand, and steep decreases in times of weak demand. As such, the industry is highly susceptible to employment volatility, driving a need to relocate or re-skill into other industries. Additionally, a lack of pathways intersecting the industry with the capacity to provide temporary employment in time of low demand with the bespoke skills acquired during drilling occupations generally not widely transferable to other industries. Therefore, displaced workers are commonly required to re-skill, complete training aligned with new occupations which subsequently encourages them to leave the industry permanently and not consider returning when the business cycle improves. This negatively impacts on the size of the labour pool available in periods of heightened demand and therefore the long-term viability of drilling as a career.

The remote locality of many drilling operations, particularly in an exploration context, and limited access to skilled migration present additional challenges to the talent pipeline. Approximately 53% of drilling jobs are conducted in remote or very remote areas. The Australian Drilling Industry Association (ADIA) estimates that up to 50-60% of new entrants to the industry (resources sector related) leave within 12 months due to the extreme and isolated environment. Similarly, consultations noted a preference for a non-FIFO (Fly-In-Fly-Out) lifestyle was also as a key driver behind turnover and impacting the ability of the industry to attract and maintain younger workers.

In relation to female employment, only four out of a total of 527 completions of the Certificate III since 2014 have been female participants, and this is supported by anecdotal evidence of low numbers of women in the drilling labour pool. Increasing automation is hoped to better enable businesses to recruit and support women through drilling careers. ¹¹

The disruption to the global economy and labour market in response to the COVID-19 pandemic has had a measurable impact on the drilling sector. After the initial volatility (Feb-May), the demand for drilling offshoots rapidly increased bolstered by high prices for select commodities. However, stakeholders reported that applications for these positions dramatically reduced. Anecdotally this deficit in labour was theorised to be partially attributed to the implementation of the Federal Government's JobKeeper and JobSeeker schemes, acting as a were disincentive to enter the labour market, particularly among youth. Once changes to JobKeeper and Jobseeker were introduced mid-October, a second anecdotal increase in the number of applications was reported, providing some relief for the future talent pipeline for the drilling industry.

Some companies have positively influenced the attraction and retention of drilling workers via internal initiatives such as, upskilling and reskilling workers in times of low demand, offering fulltime employment in preference to casual employment, and improving working conditions. Despite these changes there is still a high separation and turnover rate within the industry driven by a structural reality that the workforce will expand and contract considerably in response to the commodity cycle. Volatility in the commodity cycle drives extremes in demand for skilled drillers, which is expected to continue. Historically, this has been seen as a feature of the sector with businesses adapting to the "feast and famine" nature of business conditions. Endeavoring to partner with counter cyclical sectors may provide an opportunity to explore strategies such as sharing a workforce which would assist in lessening the loss of skills during the inevitable commodity cycle downturns and keeping skills current during these periods.

¹¹ Check permissions before publication

RECOMMENDATIONS

To support a sustainable and more resilient workforce for the drilling industry, a diverse and agile talent pool needs to be supported. Recommended actions to support this endeavor include:

1	Increase the visibility of the drilling industry among youth and early career seekers .	Growing a skills pipeline will require greater visibility of the drilling industry as a viable pathway to young people. Currently, there is little structured engagement between the sector and schools in Western Australia. Fostering positive relationships between VET coordinators and industry representatives may assist in addressing youth engagement barriers. More broadly, the development of a state-wide campaign and increased engagement with communities may help elevate the profile of the drilling industry in general, particularly among influential adults. An enhanced focus on technology in the drilling sector could also play a role in changing public sentiment towards considering a career in the sector.
2	Implement additional State Government subsidies to support 'job ready' training	While the WA Government's Lower Fees Local Skills initiative has included drilling training programs, industry sees a broader suite of funding support highly desirable to incentivise employers and individuals. Government could go further to subsidise training for existing workers to gain their Certificate IV in Drilling Operations and to subsidise job ready training. For instance, introducing subsidised training for licenses/tickets (e.g. Heavy Rigid driver's license), short courses (working at heights, First Aid and 4WD training), or individual units of competency required for site access, could aid new drilling entrants. This could be applied more broadly to the resources sector and implemented as a 'job-ready' skill set.
3	Develop a strategy to assist the drilling industry with attraction and retention strategies	A key issue identified in the drilling industry is the cyclical nature of demand, which impacts the ability to attract and retain employees, particularly at the driller/offsider level and to maintain a sustainable workforce. While this issue cannot be completely mitigated through industry forums and improvements in strategic Human Resources, this is seen as an opportunity for intervention by the RITC working in collaboration with the ADIA and other industry bodies.
4	Develop a strategy to build leadership capacity at the Supervisory level of Drilling Industry	Leadership skills development are essential for developing a long-term career pathway in the drilling industry, for duty of care and health and safety, training, workforce diversity, and retention. Too often people are promoted into supervisory roles without the skills required for the role and an understanding of their duty of care and WHS responsibilities. An opportunity has been identified to work the Drilling Industry (and Resource Sector more broadly) to develop a Supervisory Skills Set as part of the RII training package.

