



Welcome to the May edition of Train Brain

Back in February I was able to visit the Central Interceptor Project in Auckland with help from MinEx Board Chairman and tunnelling expert, Joe Edwards. This huge project to cope with the city's wastewater puts health and safety front and foremost into every day and every decision. The scale of it is staggering.

If you are still trying to work out how all the bits of the reform of vocational education and training are supposed to fit together, we've got a 101 guide to it all in this Train Brain.

Have a look at a summary of the latest HHU Extractives report which reminds the quarrying and alluvial sector that it needs to up its reporting under the new regulations.

I outline my submission to WorkSafe on the new proposed Safe Work Instrument which supports those new regs; the SWI is generally ok but I'm calling for more transitional arrangements until they bed in.

We also have a piece from MITO on the extension to NZ CoCs so enrolments in them can continue.

There's also a story on one of my first MinEx workshops of the year in Greymouth – next one is in Gisborne on June 15 – register here. Diversity and respect in the workplace is included in this year's workshops and I'm pleased to say I'm getting a positive response for a presentation that's quite challenging for a male-dominated sector.

You've likely seen that MinEx helped bring about the first Women in Extractives Lunch and awards ceremony sponsored by Komatsu New Zealand. Congratulations again to our winners:

- Stephanie Hayton MITO - Te Pūkenga's Emerging Star award winner for her environmental, skills and leadership work at OceanaGold
- Allanah Toko-Mikahere - Hanga-Aro-Rau Workforce Development Council Leader of the Year for her leadership at Winstone Aggregates in Hawke's Bay.
- And Kristy Christensen awarded the Memorial Award posthumously in her name sponsored by MinEx, of which she was a valued Board member, for her pioneering work on diversity and inclusion in extractives.

As fellow MinEx Board member and Straterra CEO Josie Vidal noted, there was a depth of talent in the award nominations to feel our industry is in good hands. Let's work to keep them all in safe hands as well.

Wayne Scott
CEO MinEx and AQA

There's nothing boring about a tunnel

Worker health and safety is at the forefront of Auckland's huge Central Interceptor Project (CI) which MinEx CEO Wayne Scott visited in February, hosted by MinEx Board Chairman Joe Edwards who consults to the project.

On a tight site in Auckland's Blockhouse Bay, a big crane is lowering a skip of excavated dirt from a pipe jacked tunnel supported out of a 16m deep shaft, part of Watercare's vast Central Interceptor Project, designed to significantly reduce wet-weather overflows into central Auckland waterways and beaches.



Skill and care needed on this small Central Interceptor Project site.

Above his head, the crane operator has two sets of HV power lines to take into account. On one side is a steep bank which drops into a creek; on another side sits an occupied 1960s era state house and in front of him, an excavator is ready to scoop the mud into a truck to take to help rebuild a volcanic cone. Dogman, Craig Stanaway, skilfully helps him lower the empty mud container using a walkie talkie to guide the crane operator before attaching extra wire ropes which allows the loaded container to be tipped out into a concrete walled enclosure; it is then quickly carted away by truck. This is one of the smallest sites I've ever seen where machinery of this scale has been operating.

Earlier, we had been at the start point of the \$1.2B Central Interceptor Project in Māngere next to Watercare's wastewater treatment plant which creates its own sense of awesome. Here, MinEx Board chair and consultant to the CI Project Joe Edwards, helps guide me around the extensive pump station and main TBM operation for the Ghella Abergeldie Joint Venture (GAJV) which is building the new wastewater network for Watercare, responsible for Auckland's drinking water, and wastewater disposal.



Wayne with MinEx Board Chairman Joe Edwards.

CI's German-made tunnel boring machine (TBM), started at the Māngere site in August 2021 and has now completed 5km of its near 15km length to Grey Lynn. In 11 weeks from September to December, Hiwa-i-te-rangi (the TBM's te reo name) completed the 1500m stretch under the Manukau Harbour.

The main tunnel shaft (the permanent inlet shaft) is 12m in diameter and 35m deep and the TBM bores a hole which is then filled by connected grouted concrete rings which are 4.5m in diameter – enough to drive a big truck through.

Joe says while the Central Interceptor is designed to take Auckland's sewage and wastewater for a century, it will also provide capacity to help take stormwater in flood events. A poignant reminder of that need were kerbsides stacked with ruined household goods after the devastating flooding that hit Auckland in late January, two weeks before our visit to the CI project.

At peak capacity, the Central Interceptor will be able to store wastewater and control the flow of the equivalent of 90 Olympic swimming pools of material into the Māngere wastewater treatment plant.



Wayne looks at one of the 4.5m concrete rings which link to make the main tunnel.

The TBM is now tunnelling under Mount Roskill at the rate of about 20m a day. At the May Road site it will connect to the secondary tunnel we saw under construction at Blockhouse Bay's Miranda Reserve. Here, what they call a micro-TBM known as Domenica, is making her final drive on links to connect to the main CI network. Domenica leaves behind a tunnel still big enough to drive a car through. The tunnel is pipe-jacked – pre-formed concrete pipes are installed with hydraulic pressure after Domenica has cut the face. The earth material – extracted by an Archimedes screw effect – is carried out in skips travelling on rails. Some of it is being used to rebuild the maunga (volcanic cone) at Puketutu Island, once a quarry whose materials helped build much of Auckland. The last section of tunnelling on Link Sewer C has included one of the longest pipe drives in the world – some 1190m.

The whole CI project is being carried out by a JV which includes Ghella, a family-owned Italian company founded in the 19th century by Domenico Ghella who first worked on the Suez Canal's construction. The other JV partner is Abergeldie, an Australasian infrastructure company.



Michele Petris works for Ghella and is the Tunnel Manager.

Michele showed us the operations control room where the 26 staff working in the CI underground operation are monitored. Each wears a tracking device, and with a mouse click reveals their exact whereabouts. Operations control room staff have views from cameras located every 250m along the tunnel.

"The biggest challenge was the Manukau Harbour crossing," says Michele.



Tunnelling under the sea can make any emergency intervention more difficult with the tunnel at times 15m under the seabed. His team worked 24/7 for three months to get across the harbour. Should anything happen, Michele says his team includes half a dozen people trained by Mines Rescue and there are three first responders trained to assist the rescue personnel.

Being an Italian-run site, the tunnel portal also includes a statue of Santa Barbara, the patron saint of miners and tunnellers.

**It is a good idea to record your CPD
restricted and unrestricted hours
every time CPD is done. It only takes
a few minutes!**



A beginner's guide to industry training reforms

If you are a bit confused by what is a WDC, where your ITO has gone to, and what is Te Pūkenga – you are not on your own. The new structures for vocational education are still bedding in and there's a new organisation – with different tasks – to get your head around. Karl Burke gives us the 101 tour...



Karl Burke, Industry Manager
for Hanga-Aro-Rau

Karl started life with his head under the bonnet as a motor mechanic before moving to train apprentices; now he's helping drive the Workforce Development Council (WDC) for a wide range of industry sectors.

His formal title is Industry Manager for Hanga-Aro-Rau, the Te Reo Māori name for the Workforce Development Council (WDC) which represents 70 sectors including extractives across manufacturing, logistics, and engineering.

Our WDC (there are five others for different sectors) has the task of developing appropriate qualifications for the various industries it represents.

Extractive sector qualifications are up for renewal for the first time since they were created in 2015. Currently, our sector's qualifications start with the NZ Certificate in Mining and Quarrying (Level 2) and go through the Level 6 Diploma in Mining and Quarrying (Management) and the Certificate in Mine Surveying, one level below where a degree qualification would start.

Karl admits there's not much diploma level uptake in the industry and no degree-level qualification but Hanga-Aro-Rau is keen to support pathways through to degree level for extractives. But where past qualifications were often earned in big chunks of time and learning, now there's also a move to micro-credentials, where a specific skill is mastered; these can then piece together into a qualification.

Helping bring these new extractive qualifications together with Hanga-Aro-Rau is an industry review group. Karl is a member but it's industry-led, including MinEx & AQA CEO Wayne Scott, Bathurst GM of Health Safety Environment and Community and MinEx Board member Fiona Bartier, J Swap Contractors' Quarry Development Manager and MinEx & AQA Board member Mike Higgins, OceanaGold Health, Safety & Training Superintendent Geoff Guthrie, and IOQNZ President, Tim Kennedy.

The group started work last September and tries to meet every two weeks (barring floods etc). It will finish its work later this year with a new set of extractive industry draft qualifications. These are then sent to the NZ Qualifications Authority for review.

Once confirmed (not likely before 2024) the new qualifications will be taught by Te Pūkenga, which is the integration of the country's 23 polytechnics and Industry Training Organisations (ITOs), including the extractive's sector ITO, MITO, and private training providers such as ACT Safety and Mines Rescue. Previously, polytechnics were mostly focused on backside on seats learning, while ITOs provided workplace-based learning.



Karl Burke with colleagues Maree Thomas (Industry Relationship Team Lead) and Stu Murray (Qualifications System Team Lead) on a visit to Macraes last year.

Te Pūkenga now has wider responsibilities to integrate both forms of learning; the individual polytechnics and ITOs have ceased to be standalone entities.

So how does it all fit together, and will it improve learning outcomes? “I’d like to think it brings a lot more involvement with the extractive industry,” says Karl. “From our point of view there’s a bigger industry influence”.

There’s also a massive focus now on health and safety. He says some training advisers he is talking to are excited by the new learning options, like micro-credentials, which are starting to take shape.

“These are better for some learners than looking three years down the tunnel and not seeing the light. We need to make it appealing to youngsters.”

A snapshot assessment done by Hanga-Aro-Rau before the review of qualifications started says the average age of workers in both mining and quarrying is above the national average, “highlighting the need to train and retain younger employees to replace people as they retire. The majority of the workforce in the industries are classed as low skilled (55% and 56% for Mining and Quarrying respectively), highlighting the need to further train, and recognise the existing workforce.”

The new structure is also working to be more inclusive of women, Māori, Pacific people and older recruits to extractives and other industries. While women make up 46% of the national workforce, it’s only 12% in mining and 14% in quarrying.

MinEx and Hanga-Aro-Rau are committed to drive change and see more wāhine in the trade and initiatives like the recent inaugural [Komatsu New Zealand Women in Extractives Lunch](#) and awards ceremony help with this. The event held in March marked the extractive industry’s commitment to workplace diversity and inclusion and celebrated the achievements of three leading women in our sector. Hanga-Aro-Rau sponsor the Leader of the Year award, won in 2023 by Allanah Toko-Mikahere from Winstone Aggregates Hawke’s Bay Quarry.

WorkSafe wants quarry/alluvial under-reporting to end

Systemic under-reporting by quarries and alluvial mines of notifiable health and safety events continue to be observed by WorkSafe and it is signalling the new regulations require this to end.

The latest quarterly extractive sector’s report, documents that in the past 12 months 43 notifiable events were reported from the nation’s 34 open cast or underground mines and 8 tunnels, but only 46 such events were reported by more than 1000 quarries and alluvial mines.

The under-reporting is reflected in the number of injuries requiring more than a week away from work. In most quarters, the number of such workers is considerably higher in quarries/alluvials than in mines and tunnels.

WorkSafe says data is received from a high proportion of mining and tunnelling operations and considered to be accurate. Notifiable events were reported by 37% of operations in the last 12 months but only 4.8% of quarries and alluvial mines and was less likely to be a true reflection.

Chief Inspector Extractives Paul Hunt says the revised Mining and Quarrying Regulations now require more reporting and notification. This includes reporting notifiable events, the status of an operation and quarterly reports. He says it's obvious that WorkSafe needs to know where work is taking place and that a competent person is managing it.

"The other information that is essential to us is the reporting of incidents. WorkSafe wants to be an intelligence-led regulator. We want to understand where actual or potential harm incidents are occurring so we can focus our resources on those areas."

The three years of data WorkSafe has collected and published shows, for example, high numbers of incidents involving mobile plant but not necessarily why this is happening.

"To go deeper and to assist us to determine what causal factors contribute the most regularly to incidents, we will be required to seek further information."

WorkSafe extractives team has decided to develop some secondary reporting sheets for some types of high frequency incidents like vehicle roll overs to gather information on issues like road and environmental conditions, vehicle maintenance, operator training and fatigue.

Paul Hunt also notes that the shortage of workers is one factor that has been around for a while and seems to be getting worse. It will likely result in operators having to spend more time and money on ensuring they maintain a competent workforce with additional training required to upskill inexperienced staff.

"It is important to remember that if you are short-staffed you need to modify the workload to reflect this. Managers, supervisors and workers are more likely to make mistakes when they have high workloads."

**Remember to keep all evidence of
CPD activities to provide when you
apply/renew your CoC**



MinEx submits on new WorkSafe arrangements for CoCs

MinEx has told WorkSafe it generally supports the new Safe Work Instrument (SWI) for the extractives industry but has concerns particularly about a lack of transitional arrangements.

WorkSafe has been consulting on the proposed SWI to support the new regulations under the Health and Safety at Work Act which outline requirements for CoCs in the extractives industry.

Wayne Scott says the SWI does not include transitional arrangements and MinEx is recommending some. He says MinEx assumes the new CoCs and unit standard (US) requirements will only apply to new applicants or those who have not commenced study prior to 18 July 2023 when the new SWI comes into effect.

The new SWI requires some B-grade CoC holders to hold an A-grade CoC from 18 July 2024.

Wayne says it's reasonable for those managing sites with larger numbers of workers (some were previously exempt if no explosives are used) but they should not be required to re-sit an A-grade oral exam.

"They have already been assessed as competent prior to new regulations. Some of them have also recently had their CoC reissued by WorkSafe which is further evidence of their competence to manage the operations they currently manage."

Another point of his submission was to note the continual updating and changing of US numbers is forcing learners to re-do standards previously completed due to a change of US number. He says there should be recognition for those that have completed the superseded US but not yet completed their CoC, as the US content is substantially the same.

MinEx supports the Continuing Professional Development requirements and activities proposed in the Safe Work Instrument for extractives.

An industry wish for an individual to be able to renew multiple CoCs at the same time does not appear to have been addressed in the SWI. MinEx says both applicants and the BoE would benefit if CoCs could all be renewed at the same time, so as to have the same renewal date.



Extension to NZ CoCs

The NZ certificates that currently cover CoCs were due to expire on 31 December 2023. This meant that learners could not enrol in CoC programmes after March 2023. MITO and Hanga-Aro-Rau (MELT) have worked with NZQA to secure a 12-month extension to these certificates so that training can continue while these certificates are converted into micro-credentials and revised unit standard requirements are bedded in.

Extractives Industry Training Advisory Group continue to meet with Hanga-Aro-Rau as we review the qualifications for mining, quarrying, and tunnelling. MinEx Board member Mike Higgins and MinEx CEO Wayne Scott have been selected to represent extractives on the National Industry Advisory Group of Hanga-Aro-Rau. The first meeting of this group is on 12 June.

Walk a mile in a woman's shoes

Extractive site managers and workers are being challenged at this year's MinEx workshops to think about how to make women employees feel comfortable in their workplaces.

MinEx CEO Wayne Scott told the 30+ mostly male attendees at one of the early 2023 workshops in Greymouth that he talks to women working in the sector and sometimes they express concerns about things like girly calendars. "One woman told me she'd never really made a scene, but it does make her feel uncomfortable walking into an area with a 'wall plastered with titties'."

Wayne said men needed to ask themselves how they'd feel in a workplace plastered with naked men. "You've got to put yourselves in the shoes of a woman working at your place."

He says some large extractive employers don't employ women because of the challenges involved – but that cuts them off from half the potential workforce. "We shouldn't be afraid of employing anyone – a woman, a Muslim or anyone who might be considered different to the usual profile of workers on a site."

Employers need to have conversations with workers, remove anything that could be interpreted as inappropriate, act on any complaints straight away, encourage positive behaviour and demonstrate it themselves. However, he says a third of the WA complaints about sexual harassment came from men. He says he's not personally aware of cases of sexual harassment in the New Zealand extractives sector but knows about a number of issues with bullying.



Wayne was speaking in Greymouth just a few weeks before awarding the Kristy Christensen Memorial Award (sponsored by MinEx) awarded to Kristy Christensen posthumously in recognition of her contribution to diversity and inclusion in the industry. He recounted her experiences as a young underground miner in Australia being initially denied mine entry because she was a woman and who then had to share male PPE, toilets and showers.

"It's not a solution only to employ people like yourselves. It's how you encourage diversity and mutual respect," says Wayne. Reviewing health and safety performance in extractives in 2022, he's still hearing of sites where 15-hour days are worked. "It's not good for them or for productivity". He says long hours are taking their toll on the industry's ageing workforce. "Some guys are saying for the first time in their life they can't do it anymore."

Fatigue is contributing to an increasing failure to follow procedures which he'd seen double from 15% to 30% in a recent quarter. Some of the Greymouth MinEx workshop attendees said they were too flat out to follow procedures which increasingly felt not fit for purpose. Wayne said some sites had reached saturation point. He'd seen 46 separate procedures in a quarry with 7 or 8 staff.

For those workers for whom English was not their first language there were additional risks with not being able to understand procedures or instructions. However, Wayne said this applied also to many Kiwis too and this risk was rising with lowering school attendance rates and reducing literacy. "Increasingly you are going to be working with people who can't read."

He also reminded people that the average concentration span of a male was about the same time as it took him to drink a pint of beer – 15 minutes. At one Australian site when investigating a fatality Wayne had seen a 54-page procedure. "Everyone had dutifully signed the procedure – no one had understood it".



Wayne with Minerals West Coast Manager, Patrick Phelps.



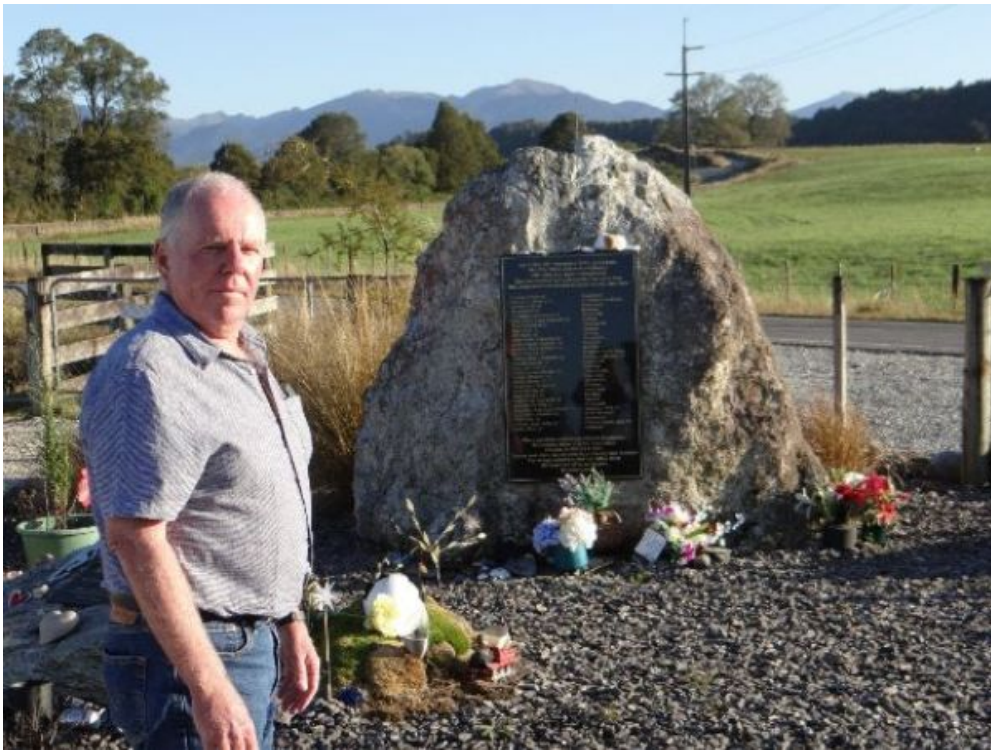
A couple of the local students talking to extractive workers at a tea break.

Minerals West Coast Manager, Patrick Phelps was among the 30+ attending the Greymouth MinEx 2023 workshop. Also among those attending were four students from local high schools interested in finding out more about working in the mining and quarrying sector.

When it came to learning from past incidents and reporting them – another aspect of the 2023 workshops – Wayne says there was sometimes an attitude that because no one had ever been hurt, procedures must be ok. There had to be consequences for not following procedures including mandatory reporting of breaches or they had no value. Often procedures were written by people in offices, not on sites and staff should be involved in developing them and reporting breaches because no manager could be on a site or part of a site at all times.

"You need people to tell you when stuff goes wrong. Generate a culture where everything is reported."

Driving back from the Greymouth workshop, Wayne took time to stop at the Pike River Memorial which he had not previously visited. He says it's a powerful and an enduring reminder of the critical importance of taking health and safety seriously in extractive workplaces.



Wayne at the Pike River Memorial.




Safe drill and blast in surface operations booklet

The Safe Drill and Blast in Surface Operations booklet has been developed to provide practical guidance regarding drilling and blasting activities that must be considered as part of the risk assessment process, and during the development of a health and safety management plan and associated operating procedures and work instructions. Available to view now on the [MinEx website](https://www.minex.org.nz).

Register to the MinEx Health and Safety workshops [here](#)



If you know of anyone who would like to receive the Train Brain email office@minex.org.nz and we'll help keep their training on track



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15 hours of unrestricted CPD
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NEW WEBINAR | SELF CARE FOR QUARRY PERSONNEL - 31 MAY 2023

Our next scheduled IOQ NZ webinar is Self Care for Quarry Personnel which is being held on 31 May 2023 at 9am NZ time.

This webinar is also available 24/7 in the IOQ NZ Store for purchase.

Duration: 1 hour

CPD Hours: 1-hour Unrestricted Activity

Learning Objectives:

Your key learnings will be:

1. To define what self-care is and understanding its benefits.
2. To explore the 6 types of self-care and what you can do for each type.

Topics:

1. What is self-care, why is it important, and why we don't do it?
2. What does self-care look like to you?
3. Physical self-care
4. Emotional self-care
5. Spiritual self-care
6. Relationship self-care
7. Financial self-care
8. Professional self-care
9. Social self-care
10. Benefits of self-care

Cost:

- \$25 IOQ NZ Member
- \$25 IQA Member
- \$50 Non-Member

To view the information sheet or to register - please click below:

<https://ioqnz.co.nz/shop/product-category/webinars-courses/>

For more information email loq@xtra.co.nz



**THE INSTITUTE OF
QUARRYING NZ (INC.)**
**2023 JIM MACDONALD
MEMORIAL LECTURE TOUR**

Held throughout NZ starting from 8 May in Whangarei and concludes in Dunedin on 17 May 2023. Click [here](#) for more details.

Tai Poutini Courses



Tai Poutini Polytechnic are offering the Diploma in Quarrying and Mining Supervision (Level 5) and Training Scheme in Quarrying and Mining Supervision (Level 4) in Greymouth, Gore, Christchurch and Palmerston North.

You'll gain the skills and expertise required to apply for your A and/or B Grade Quarry Manager's Certificate of Competence – a requirement for managers of any quarry or surface mining operation in New Zealand.

You can make the training work for your current job as well as your future; by allowing you to enrol in the units required for your chosen Certificate of Competency.

Learners may be eligible for free fees – details available at <https://www.feesfree.govt.nz/>

For further information please visit our website:

<https://tpp.ac.nz/diploma-in-quarrying-and-mining-supervision-level-5-and-training-scheme-in-quarrying-and-mining-supervision-level-4/>

Or phone Nicole Scalmer on 03 769 9645.

Mines Rescue Courses



Click on the links below to view details on the up coming courses you can do through Mines Rescue.

- [2023 A-grade COC Training Schedule](#)
- [2023 B-grade COC Training Schedule](#)
- [2023 Site Senior Executive Training Programme](#)
- [2023 Specialist CoC Training Schedule](#)

For more information on the schedules click on the link here: [Training Schedules – New Zealand Mines Rescue Service](#)

Visit the Mine Rescue website: [New Zealand Mines Rescue Service – Specialist Services & Training](#).

ACT Safety Courses



Click on the links below to view details on the up coming courses you can do through ACT Safety.

A-Grade Tunnel: [A Grade Tunnel Manager National Training_|ACT Safety Ltd_|ACT Safety](#)

B-Grade Tunnel: [B Grade Tunnel Manager Training_|Extractive Industry Training_|ACT Safety](#)

A-Grade National Certificate in Surface Extraction: [A Grade Quarry Manager Training_|ACT Safety Ltd_|ACT Safety](#)

B-Grade National Certificate in Surface Extraction: [B Grade Quarry Manager Training_|Extractive Industry Training_|ACT Safety](#)

Oral Examination Preparation: [Oral Panel Preparation_|Extractive Industry Training_|ACT Safety](#)

CPD – Continuing Professional Development: [Continuing Professional Development_|Health and Safety Courses_|ACT Safety](#)

For more information visit our website: www.actsafety.co.nz or book a course here: <https://book.actsafety.co.nz>.

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