QUARTERLY REPORT

Extractives industry

2024/25 Q1

July to September

Te Kāwanatanga o Aotearoa
New Zealand Government

WORKSAFE
Mahi Haumaru Aotearoa

About this report

This quarterly health and safety performance report has been prepared by WorkSafe New Zealand to provide extractives-specific information to mining, tunnelling and quarrying operations in New Zealand.

The information is derived from a variety of sources but the predominant source is industry itself, through notifiable incident reporting and quarterly reporting.

The report also contains information on the activities of the regulator, as well as commentary on industry performance and focus areas for regulation.

Operators should use the information presented in this report to assist them in improving safety management systems and undertaking risk assessments at their sites.

Foreword

Our mission is to transform New Zealand's health and safety performance towards world-class. To achieve this requires the commitment not just of WorkSafe New Zealand, but of businesses, workers and a wide range of other players in the health and safety system.

This will be the last quarterly report published in 2024, and it is always useful at the end of a year to look back on recent performance and any significant events.

The 2022 Mining Operations and Quarrying Operations Regulations Amendments continued to roll out, with the changes to Regulation 3 and Regulation 21 coming into force this year. This was the implementation of the 'A-grade quarry' description, that is, an A-grade quarry is now determined by the number of workers, not whether there are explosives used at the site. This change was made because of Industry submissions and has been generally well understood by the Quarrying sector. There will be some questions raised by operators who have fluctuating workforce numbers, and these are best dealt with by contacting inspectors for advice.

This means that all the changes affecting the quarrying and surface mining sectors have now been made.

The final change will only affect the metalliferous underground operations and will take effect 18 July 2025 when the Regulation 8, Regulation 17, Regulation 31 changes are made. These changes mean that only a 'Metalliferous' type Certificate of Competence (CoC) will be suitable for the person appointed as SSE, Manager or Supervisor at an underground metalliferous mine. Previously a 'Tunnel' type CoC was also suitable. Those that currently hold Tunnel CoCs issued when the CoC was common for tunnels and metalliferous mines are recognised as having both CoCs. At the time of renewal of the CoC, the holder of the CoC will have the choice of renewing either type, or both.

A reminder to all – each year from 2022 the Regulations have changed on 18 July. If you want to reference the regulations, it pays to update your copy each year, to get the correct version for the coming year.

Note: The current regulations has 'version as at 18 July 2024' on the top of the cover page.

This year we have also recently had an updated Safe Work Instrument (SWI) out for consultation. When the SWI was first published in 2023, some unit standards the BoE wished to recommend were not available. The updated SWI which was put out for consultation now includes those unit standards.

The BoE believes the competencies required for the changes made to roles and responsibilities in the amended regulations which included new CoCs such as Metalliferous CoC's and new concepts such as 'additional competencies' for explosives, underground or coal are now better recognised in the prescribed competencies. What has also been addressed in the proposed changes was the lack of any specific leadership or worker health unit standards in any of the CoCs. Two separate new unit standards covering Worker Health and Leadership have now been added to most CoCs.

One achievement worth noting during the last year is that the quarrying and alluvial mining sectors were implementing significant regulatory changes, that is, full inclusion into the regulations, including the introduction of the principal hazard regime for A-grade operations.

We acknowledge that this has required a lot of effort by operators and managers. In general, the industry has successfully introduced the required changes to their management systems. This year we have undertaken a regulatory compliance inspection/ audit type approach to 20 quarries and 5 alluvial mines to see if there are any common issues in the implementation, so we can better educate or assist operators to reach full compliance.

Paul Hunt
Chief Inspector Extractives

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IN THIS SECTION:

1.1 Operations

4

Metalliferous opencast mines
Includes 1 mine under rehabilitation

19

Coal opencast mines
Includes 1 mine in care and maintenance

8

Metalliferous underground mines
Includes 1 mine under care and maintenance and 2 operating tourist mines

1

Coal underground mines
Includes 1 tourist mine under care and maintenance

9

Tunnels
Does not include tunnels that notified commencement but did not begin operating in the quarter

10

Coal exploration
Ten operational coal exploration projects

78

Alluvial mines
Number of mines that have been verified (63) or have notified of an Appointed Manager to WorkSafe (15)

Includes 2 iron sands mines

1,015

Quarries
Number of quarries that have been verified (868) or have notified of an Appointed Manager to WorkSafe but not yet verified (147)

An important aspect of understanding the health and safety performance of the extractives industry is to understand its makeup in terms of the number and scale of operations and the number and competency of workers involved.

There were 1,144 active operations in New Zealand as at the end of September 2024.

Active mining operations include those that are operating, intermittently operating, under care and maintenance, or undertaking rehabilitation, as well as tourist mines. Active quarries and alluvial mine numbers include operations that have been verified as actively or intermittently operating (that is, visited by WorkSafe), or have notified WorkSafe of an appointed manager.

1.2 People

745

Metalliferous opencast mines
567 FTEs employed by mine operators and 178 FTEs employed by contractors

915

Coal opencast mines
759 FTEs employed by mine operators and 157 FTEs employed by contractors

623

Metalliferous underground mines
503 FTEs employed by mine operators and 120 FTEs employed by contractors

0

Coal underground mines
0 FTEs employed by mine operators and 0 FTEs employed by contractors

534

Tunnels
149 FTEs employed by mine operators and 385 FTEs employed by contractors

2

Coal exploration
17 workers employed by mine operators and 2 workers employed by contractors

682

Alluvial mines
Number of workers is known for 52 of the 78 alluvial mines that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 28 operations

3,252

Quarries
Number of workers is known for 792 of the 1,015 quarries that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 223 operations

There were 6,753 Extractives FTEs in New Zealand as at the end of September 2024. The numbers of workers will also vary from quarter to quarter. Changes in the number of quarry and alluvial mine workers largely reflect the changes in the number of active operations verified by inspectors. Part of those verifications includes determining the number of workers at each operation.

Note: Typically >95% of mining operations and tunnelling operations submit quarterly reports to WorkSafe, and the numbers of workers are reported directly from these figures.

Quarterly reports were provided by 18 alluvial mining operations (23%) and 180 active quarries (18%). That is the reason for the significant difference between the extrapolated numbers of workers and the actual number of workers reported for these sectors in Figure 2. WorkSafe will continue to extrapolate numbers of workers for quarries and alluvial mines until the reporting percentage has improved.

Figure 1 shows the total hours worked in Q1 2024/25, reported to WorkSafe in the quarterly reporting. The hours are separated into Employees and Contractors.

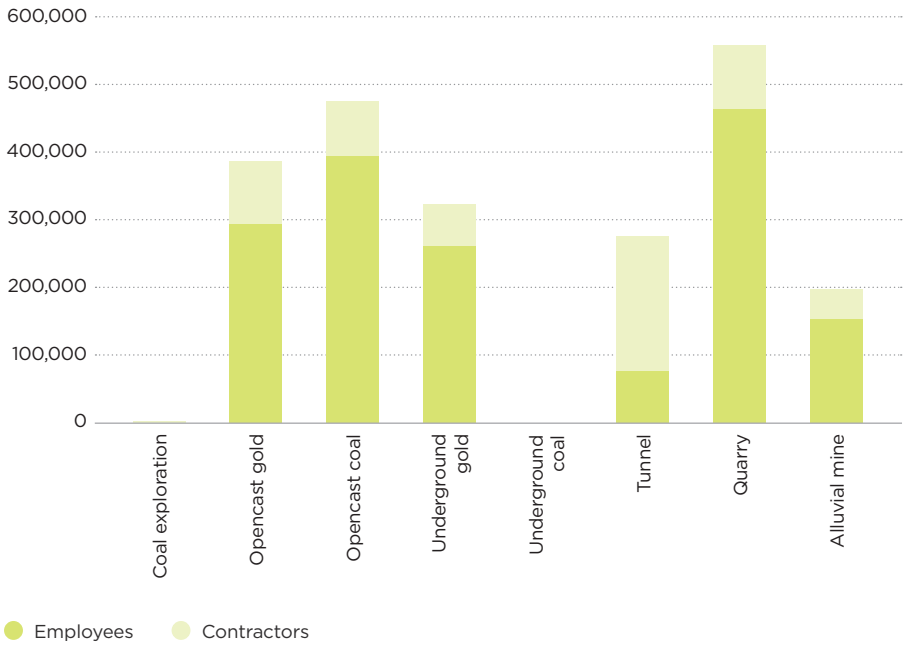


FIGURE 1:
Total hours worked by sector 2024/25 Q1

Figure 2 shows the number of Full Time Equivalents (FTEs) calculated from total hours worked that were reported to WorkSafe in quarterly reports for Q1 2024/25. The hours are separated into Employees and Contractors.

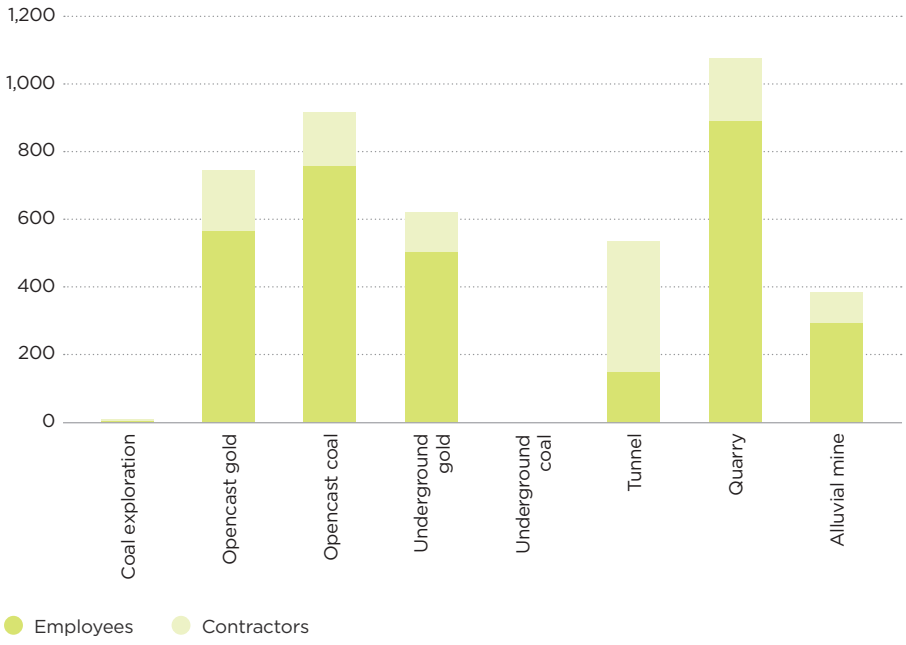


FIGURE 2:
Number of FTEs by sector 2024/25 Q1

1.3 Developing competence

WorkSafe has responsibility for setting competency standards in the Extractives Industry. Improving the competence of the people in the industry is one of the most important aspects of improving health and safety performance. WorkSafe appoints the New Zealand Mining Board of Examiners (BoE) to recommend competency requirements, conduct oral examinations and to issue, renew, cancel or suspend Certificates of Competence (CoCs).

This quarter the BoE has made good progress completing a high number of oral examinations and processing many of the backlog of renewal applications. There were some delays in processing applications as BoE staff members left and new members joined. This situation has significantly improved (and continues to improve in Q2), and any delay is now mostly because of incomplete applications or incomplete CPD logbooks.

General advice on CoC renewal

The BoE advises that the time from submitting application to actual renewal of a CoC is several months at this stage. Most of the time taken is related to follow-up by the Secretariat with applicants – commonly about incomplete application documents and CPD logbooks. It is very disappointing that many people are now renewing for a second time, but that their logbooks are still not compliant with the requirements. Common issues with CPD logbooks are: short of hours, lack of evidence, incorrect type of CPD or no key learnings.

The BoE would like to remind **all** applicants for renewal of CoCs that the preparation and presentation of CPD logbooks is very important. Currently the BoE has many renewal applications being processed that require the BoE Secretariat to go back to applicants to get additional CPD hours verified.

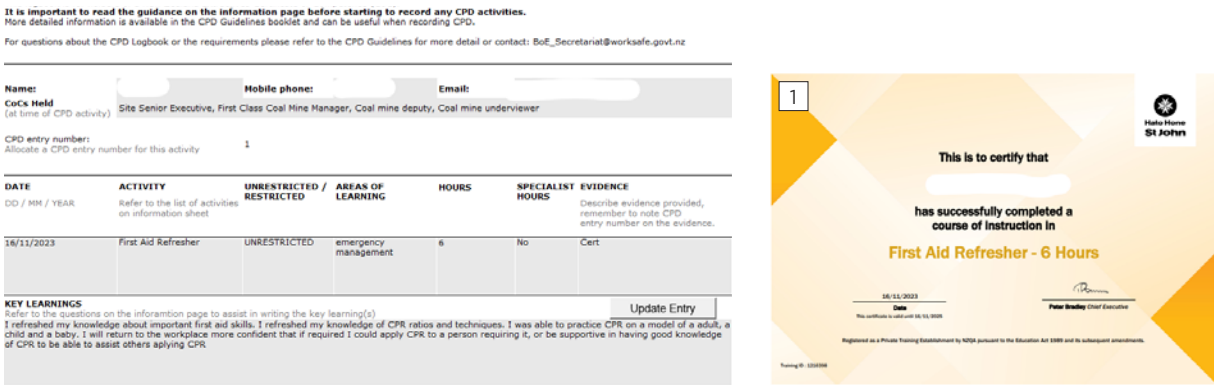
The expectations for each CPD logbook entry are:

1. The logbook entry is identified with a unique number. In the example below we have used CPD entry number '1'.
2. That the date the activity took place is clear – and matches the evidence.
3. That the hours claimed are clear on the evidence.
4. That the entry includes a good key learning.
5. That the evidence is attached and marked as being related to CPD entry number '1'.
6. Also, that you understand and indicate whether hours are restricted or unrestricted – or if they are specialist hours (This only applies to the specialist CoCs, so is not relevant to most CoC holders).

Note: A person requiring 120 hours of CPD may claim up to 20 restricted hours, or for those needing 60 hours they may claim up to 10 restricted hours. There has been some confusion about what evidence is required for some restricted activities. Evidence of reading industry publications may only be identification of the publication, and the learning you state on the CPD log entry. The BoE will make a judgement as to the reasonableness of the number of hours claimed.

Applicants can use the online CPD forms, either PDF or electronic. These can be found on the WorkSafe website Continuing professional development

For your assistance we give an example of an actual logbook entry in Figure 3 below. This example is using the online CPD Excel logbook template and is for a familiar activity for all CoC holders.



It is important to read the guidance on the information page before starting to record any CPD activities.
More detailed information is available in the CPD Guidelines booklet and can be useful when recording CPD.

For questions about the CPD Logbook or the requirements please refer to the CPD Guidelines for more detail or contact: BoE_Secretariat@worksafe.govt.nz

Name: [redacted] Mobile phone: [redacted] Email: [redacted]
CoCs Held (at time of CPD activity): Site Senior Executive, First Class Coal Mine Manager, Coal mine deputy, Coal mine underviewer

CPD entry number: Allocate a CPD entry number for this activity: 1

DATE (DD / MM / YEAR)	ACTIVITY (Refer to the list of activities on information sheet)	UNRESTRICTED / RESTRICTED	AREAS OF LEARNING	HOURS	SPECIALIST HOURS	EVIDENCE (Describe evidence provided, remember to note CPD entry number on the evidence.)
16/11/2023	First Aid Refresher	UNRESTRICTED	emergency management	6	No	Cert

KEY LEARNINGS
Refer to the questions on the inforamtion page to assist in writing the key learning(s)
I refreshed my knowledge about important first aid skills. I refreshed my knowledge of CPR ratios and techniques. I was able to practice CPR on a model of a adult, a child and a baby. I will return to the workplace more confident that if required I could apply CPR to a person requiring it, or be supportive in having good knowledge of CPR to be able to assist others aplying CPR

Update Entry

1

Hato Hone St John

This is to certify that

[redacted]

has successfully completed a course of instruction in

First Aid Refresher - 6 Hours

16/11/2023
Date

Peter Bradley Chief Executive

FIGURE 3: CPD logbook example

Table 1 provides a summary of oral exams conducted during the quarter.

TOTAL NUMBER OF ORAL EXAMS HELD Q1 JUL–SEP 24	TOTAL PASSES	SUCCESS %
19	12	63.2

TABLE 1: Oral exams conducted

Table 2 provides a summary of all CoCs issued during the quarter and the current number of CoCs in circulation at the end of Q1 2024/25.
Note: We no longer report Life Time CoCs.

COC TYPE	TOTAL COCs RENEWED Q1 Jul–Sep 2024	TOTAL NEW COCs ISSUED Q1 Jul–Sep 2024	TOTAL NUMBER OF CURRENT COCs
A Grade Quarry Manager	7	19	306
B Grade Quarry Manager	9	4	427
A Grade Opencast Coal Mine Manager			60
B Grade Opencast Coal Mine Manager	1		51
A Grade Tunnel Manager			36
B Grade Tunnel Manager	2		83
Site Senior Executive		1	55
First Class Coal Mine Manager			15
First Class Mine Manager	1		19
Coal Mine Deputy			30
Coal Mine Underviewer			20
Mechanical Superintendent		1	19
Electrical Superintendent			20
Ventilation Officer			4
Mine Surveyor			12
Site Specific			5
Winding Engine Driver			0
Total	**20**	**25**	**1,162**

TABLE 2: Certificates of Competence issued and in circulation

2.0 Health and safety performance

IN THIS SECTION:

2.1 Notifiable events

For all extractive operations, notifiable events are required to be reported to WorkSafe under S23(1), S24(1) and S25(1) of the Act, and under Schedule 5 of the Regulations. Notifiable events include any notifiable incidents, notifiable injuries or illnesses, or fatalities.

The tables below show the number of notifiable events and the number of operations that notified events for the previous five years and for Q1 of 2024/25 for mines and tunnels (Table 3) and quarries and alluvial mines (Table 4).

MINES AND TUNNELS	2019/20 QUARTERLY AVERAGE	2020/21 QUARTERLY AVERAGE	2021/22 QUARTERLY AVERAGE	2022/23 QUARTERLY AVERAGE	2024/25 Q1
Number of notifiable events	20	18	20	21	11
Number of operations that notified events	11	9	11	10	7

TABLE 3: Mines and tunnels – notifiable events and operations that notified events

QUARRIES AND ALLUVIAL MINES	2019/20 QUARTERLY AVERAGE	2020/21 QUARTERLY AVERAGE	2021/22 QUARTERLY AVERAGE	2022/23 QUARTERLY AVERAGE	2024/25 Q1
Number of notifiable events	18	16	14	17	24
Number of operations that notified events	15	12	13	15	21

TABLE 4: Quarries and alluvial mines – notifiable events and operations that notified events

Figure 4 shows the number of notifiable events reported to WorkSafe by sector from October 2022 to September 2024.

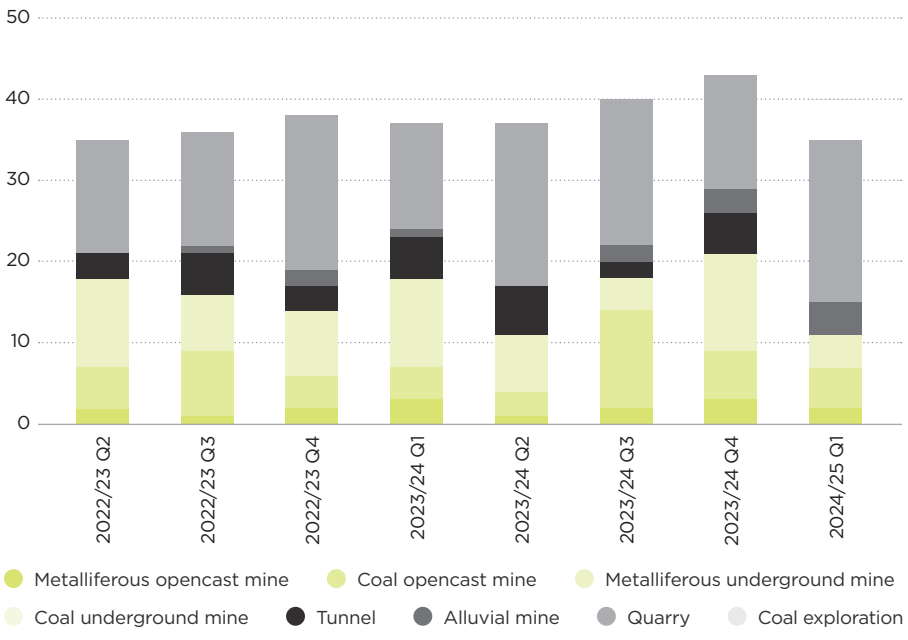


FIGURE 4: Notifiable events by sector

2.2 Injuries

Additional information about injuries is reported to WorkSafe in the form of Quarterly Reports and Records of Notifiable Events under Schedules 6 and 8 of the Regulations.

Figure 5 shows the number of injuries by injury type reported to WorkSafe from September 2021 to September 2024. The graph also shows the rolling 12-month average for the Total Recordable Injury Frequency Rate (TRIFR), the rate of recordable injuries that occurred per million hours worked. The current rolling 12-month average TRIFR is 3.5. Rates have fluctuated over past two years without any clear trend.

While TRIFR is not the only measure indicating the health of the industry, it is a useful indicator of how workers are being injured and should be interpreted in conjunction with other data such as notifiable event information.

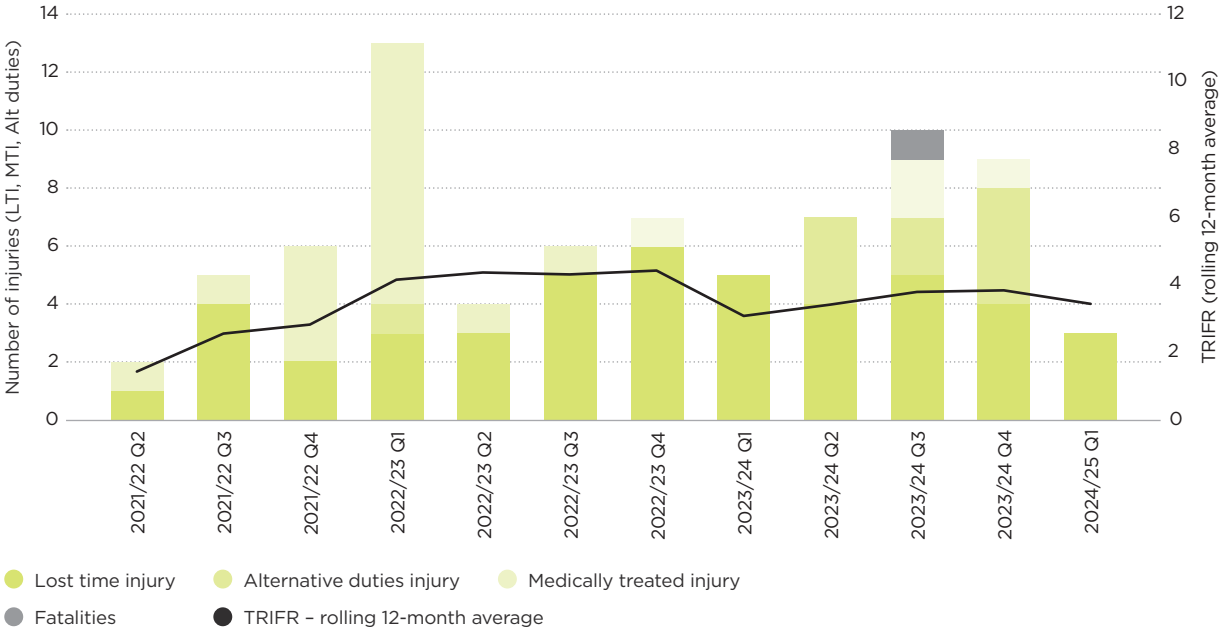


FIGURE 5: TRIFR

The following injury definitions are taken from Schedule 8 of the Regulations:

- **Lost-time injuries** are events that involved injury or illness of a mine worker that resulted in the inability of the worker to work for one day or more (not including the day of the event) during the reporting period (whether the worker is rostered on that day or not).
- **Alternative duties injuries** are events that involved injury or illness of a mine worker that resulted in the worker being on alternative duties during the reporting period.
- **Medical treatment injuries** are work-related injuries to mine workers that required medical treatment during the reporting period but did not require a day lost from work or alternative duties (other than the day of the event).

2.3 Types of events

Figure 6 shows the notifiable event categories for events notified to WorkSafe in the previous 12 months. The data shows that 43% of notifiable events in the past 12 months have occurred in relation to vehicles and plant (30%), and fire, ignition, explosion or smoke (13%). These two categories are broken down in more detail in the following section. A further 11% of notifiable events in the past 12 months occurred in relation to ground, geotechnical and other structural failures.

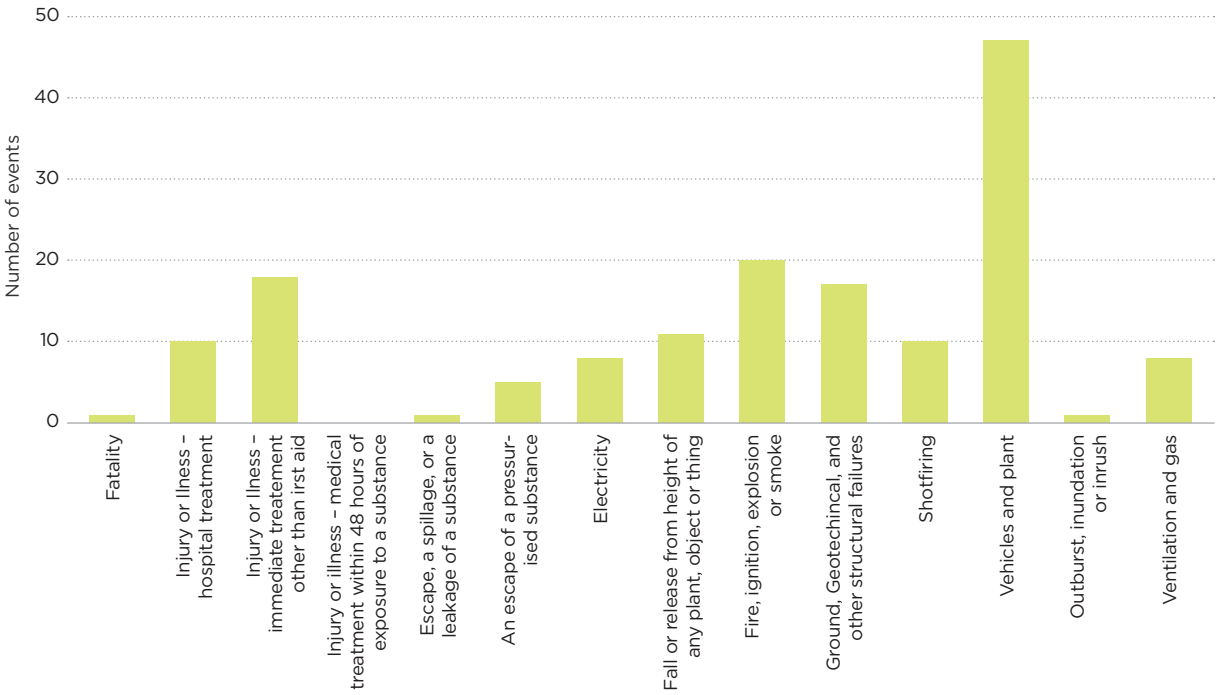


FIGURE 6: Notifiable event categories for the previous 12 months

2.4 Extractives sector focus areas

Where there is a high frequency of notifiable events in any Schedule 5 category, we have broken these events down in more detail to identify key focus areas. We will target our inspections to ensure that operators have adequate controls in place to address these risks.

Figures 7 and 8 break down the two largest notifiable event categories in the past 12 months into the corresponding Schedule 5 sub-categories. The data shows that for notifiable events related to fire, ignition, explosion or smoke, 90% involve fires on plant, mobile plant or in buildings associated with mining or tunnelling activities, and 10% involves the outbreak of a fire on the surface or underground. The vehicle and plant-related notifiable events involve collision of mobile plant with other plant (17%), overturning of mobile plant (57%), breach of a safety berm or windrow (5%), and unintended movement or brake failure (21%).

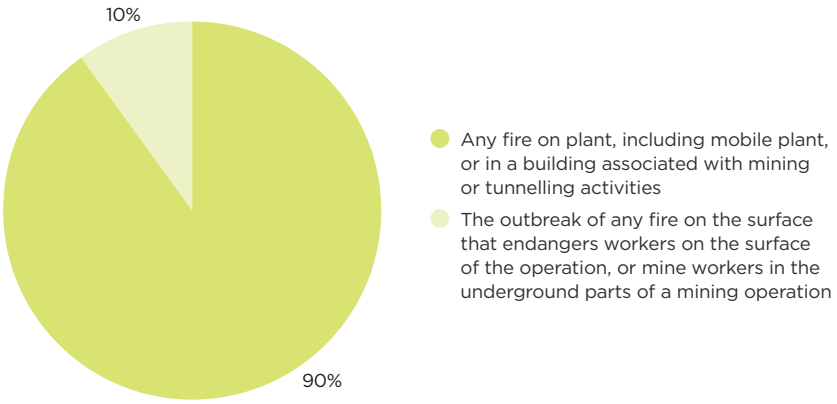


FIGURE 7:
Fire, ignition, explosion or smoke-related notifiable event sub-categories

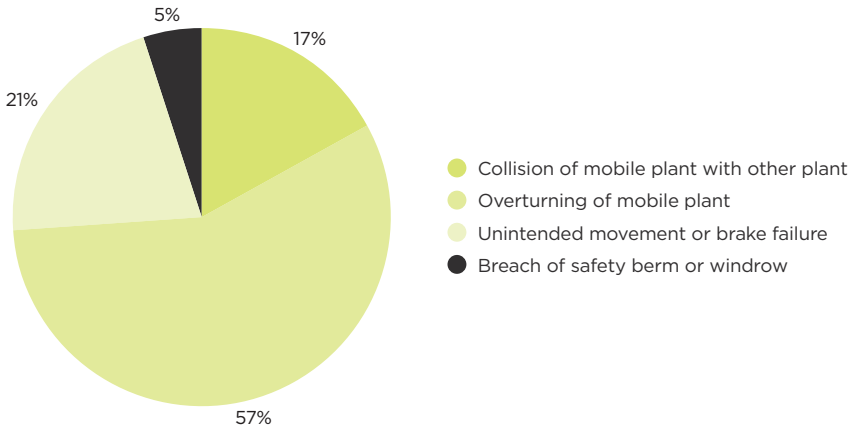


FIGURE 8:
Vehicles and plant-related notifiable event sub-categories

Consistency of reporting

Mining and tunneling data are received from a high proportion of those operations and are considered to be accurate. Notifiable events were reported by 14% of operations in the past quarter, and quarterly reports were submitted by 100% of operations this quarter.

Quarrying and alluvial mining data are received from a much lower proportion of those operations and are likely to be less accurate. Notifiable events were reported by just 2% of operations in the past quarter. Quarterly reports were provided by 18 active alluvial mining operations (23%) and 180 active quarries (18%).

2.5 Regulator comments

Each year the Extractives team identify priority work for our sector. As well as completing normal inspection schedules and HPI follow up work, in the 2024/25 the team has identified three key areas to focus on during this year:

1. Influence and support Quarries and Alluvial Mining Operations to meet regulatory compliance (Amendment Regulations 2022 resulted in significant changes required for Quarries and Alluvial mining operations. Approximately 1100 operations affected, assess and assist progress to compliance).
2. Ensure all mining, tunnelling and high-risk quarrying operations have adequate catastrophic risk management systems (Ensure Zero catastrophic events – continuous focus required on health and safety safety management systems, especially identification and monitoring of critical controls, and assessment of general emergency preparedness).
3. Lead industry to improve competency at all operations through the administration of the BoE's independent authorisations processes under Part 2 of the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016, including focus on improvement of the competency of critical safety roles and mobile plant operator competency.

In general terms most operators may not see any significant change in their engagements with the regulator. But there will be some changes to the types of inspections conducted and some areas that inspectors will focus on at different types of operations.

The upskilling of competence is an ongoing focus, and the inspectors remain committed to participating in industry training sessions (MINEX, IoQ, Conferences etc) to educate industry about industry issues and good health and safety practice for operators, managers, supervisors and workers.

Our focus on high-risk activities to avoid any catastrophic event will also remain a priority; it will be in every year. This year we will focus on Emergency preparedness and be reviewing the 'critical controls' on any of the higher risk sites. What are they, how are they monitored, and what happens if any of them fail.

A one-off special focus this year will be assessment of quarrying and alluvial mining compliance with the regulations. Because there were significant changes required by the quarrying and alluvial mining sectors to become compliant with the full Mining and Quarrying regulations it was decided to conduct 25 regulatory compliance inspections across the larger quarries and alluvial mining operations in New Zealand. By doing this, WorkSafe can assess if there has been a good implementation, or where there are areas of poor compliance or understanding. This process began in this first quarter and will continue to the end of the year. As we begin to see trends or common areas of good or poor compliance, we can update our training material and, through forums such as workshops or quarterly reports, communicate back to industry regarding clarifications and advice on how to do better. These assessments normally require the pre-provision of the site's health and safety system documents to inspectors and some desktop preparation by the inspectors prior to the actual inspection. The inspection itself typically involves two inspectors on site for at least a day in total. The feedback from the first Regulatory Compliance Assessments has been favorable from operators, who have appreciated the assurance that these types of assessments will highlight if gaps are identified and then corrected.

We encourage any of the sites who are notified that we are undertaking such an inspection to take the opportunity to ask questions and seek clarity on any health and safety system requirements you may be uncertain about.

2.6 High potential incidents

A high potential incident at a mine, quarry or tunnel is an event, or a series of events, that causes or has the potential to cause a significant adverse effect on the safety or health of a person.

High potential incidents – 2024/25 Q1

Table 5 provides a summary of high potential incidents notified to WorkSafe in Q1 2024/25. The summaries are an abridged version from the operator's notification report.

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Jul 24	Digger operator was ripping toe out of a high wall when the face above slipped down around the machine causing engulfment and damage.	– Ground or strata instability – Geotechnical design – Risk assessment – Supervision – Training
Jul 24	The auto grease pump was faulty, a worker tried to check it out and fix it, they opened up the guard and the remaining air pressure pushed the piston down then pinched their finger.	– Stored energy – Mechanical – Risk assessment – Supervision – Training
Jul 24	Fire on Charmec. It appears the exhaust manifold has come loose and parted at a joint under thermal lagging, degrading the lagging on the exhaust to the point where it is sparking and burning.	– Fire or explosion – Mechanical – Maintenance
Jul 24	A road truck and trailer were delivering limestone to a quarry. Upon raising the trailer, the load moved and the trailer tipped over and landed on it's side. This is an exclusion zone and there were no other vehicles, mobile plant or pedestrians in the area. No injuries occurred.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Jul 24	Customer truck and trailer turned up to site it was loaded with Clay. The truck was told to back straight onto a concrete pad to tip off the trailer but has decided to jackknife the trailer onto the concrete pad. As they started raising the tray it has tip over on its side. On review of video footage it shows the clay load in the trailer was all to one side of the trailer.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Jul 24	A new employee, busy with training on a dump truck, accidentally put the articulated dump truck in reverse while thinking it is in forward, and reversed slightly onto a stockpile. This caused the dump truck tray to overturn.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Jul 24	A dump truck's retarder system failed (to be confirmed still) and since it was fully loaded, it appears that the drum breaks were not able to completely stop the unit, only slowed it down to around 7km/h. Further investigation is needed to fully understand the incident, which we're doing at present.	– Mechanical – Risk assessment – Supervision – Training
Jul 24	UG Haul Truck was loaded and being driven to surface from the underground mine operation, operator observed a flame from the engine compartment area and activated the AFFF system which extinguished the fire.	– Fire or explosion – Mechanical – Workplace inspection – Supervision – Training

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Jul 24	A trailer unit went to offload its fourth load of raw feed sand at the production stockpile of the sand plant. The operator backed into the offload area and started raising the trailer. At the third stage (with approximately half of the load tipped off) the operator heard a bang. They immediately started lowering the hoist, however the trailer started to roll over and tipped on its side. Looking at the trailer post incident it appears that the operator was able to re-tract one stage of the hoist (two stages still out) before the trailer tipped. The truck and trailer unit was specially designed for the job of carting sand to the sand plant and had features like an ram driven tail-door and road covers. The sand run was the operator's main job and they had been doing the job for over 20 years.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Jul 24	Operator of a Dozer has been cleaning up pit face and the 777-haul truck has come into the area and parked waiting for the cleanup to be finished and the dozer has worked along the face and hasn't seen the truck and backed into it.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Jul 24	Loss of custody of explosives at an underground face that resulted in a bag of Detonators (12 recovered) being bogged and hauled to the ROM PAD (Run of Mine Ore) and discovered by excavator removing steel and stockpiling on ROM. Investigation underway to determine root causes, likely left with rubbish at face during blasting.	– Shotfiring – Workplace inspections – Risk assessment – Supervision – Training
Jul 24	Operator was having lunch break when they were allegedly sprayed on the top of head with liquid brake cleaner out of a small 1ltr hand pump bottle. They wiped the liquid of their head with a rag, going back to operate the machine until the end of shift.	– Hazardous substances – Supervision – Training
Jul 24	When preparing a drill hole for a blast, a rock fell into the hole bridging across the hole. The det and booster were already in the hole. Tried to dislodge rock without success. Tried to pull the det cord to dislodge the rock but the det cord broke. The hole had been gps'd so it was decided to put a dazzle can in the hole, fire the shot, and retrieve the booster and det afterwards. The shot was fired and plans have been put in place to retrieve the det and booster.	– Shotfiring – Risk assessment – Supervision – Training
Jul 24	Fly rock hit two parked vehicles and a portacom. Initial findings indicate there was not enough stemming/burden on the 3m toe shots. Fly rock went slightly outside the exclusion zone for plant and equipment. All personnel were well away from the fly rock.	– Shotfiring – Risk assessment – Supervision – Training
Aug 24	Right front strut appears to have failed on Cat 789C dump truck.	– Mechanical – Roads and vehicle operating areas
Aug 24	The operator was relocating a 50T excavator to undertake some test pits using an existing track put in by the previous PCBUs' loggers on this site. They were widening the track as they went along it to support the machine. When tracking past a tree on what appeared to be gravel laided stable ground the track collapsed on one side as there was a soil laided greasy back slip buried under the top gravel layer. The operator attempted to swing around and support the machine on the down hill side but the tree prevented this. The bank collapsed very fast and the machine rolled over on its side.	– Ground or strata instability – Job planning – Risk assessment – Supervision – Training
Aug 24	Unexpected movement of drill mast.	– Falls from height – Mechanical
Aug 24	Operator was reversing the ADT when the back wheels rode up the edge protection bunding which resulted in the tray of the ADT turning over. The Cab remained upright as the ADT was operating slowly in reverse.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Aug 24	Articulated dump truck backing into pit to dump a load of papa, (seventh trip of the day) driver advised to 'go where you went last time' which was the third bench. Driver saw a rock and made the decision to go down second bench, rear wheels sunk into softer ground on one side as second bench narrows. Tray of dump truck tipped over against bank. Driver attempted to pull forward as they felt it go but the wheels were stuck. Subsequent D&A test showed no impairment from drugs or alcohol.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Aug 24	38T Digger was walking along the bench and suspect the bench gave way (to be investigated). The digger began to slide on to its on-side and ended up rolled on to its cab on rocks below. Roll over protection system protected the machine and operator and the operator escaped through the escape hatch. The bench was approximately 6m high. The operator suffered contusions to the hand and knee. They were driven to the hospital for a checkup.	– Ground or strata instability – Risk assessment – Supervision – Training
Sept 24	While the digger was digging waste the digger operator has noticed product in the dig face. Digger operator shut down the pit notified the shot firer of the day, and they have inspected the area and coned off the area.	– Shotfiring – Risk assessment – Supervision – Training
Sept 24	Dump trucks were carting material to an area where they were constructing a 'clay wall'. A dump truck carting material turned and began to reverse at a 90 degree angle to the edge of a pond to get in position to dump a load of material from which the bull dozer was to maneuver. As the dump truck neared the edge of the slope the slope slumped under the weight of the truck. Witnesses described that the slumped area was approximately 4–5m horizontally. The dump truck slid down the slumped slope and the back end became submerged. The edges of the pond are shallow and firm, and the truck came to a stop rather than slowly sink. The operator exited the vehicle safely and communicated to their supervisors.	– Ground or strata instability – Tips, ponds and voids – Risk assessment – Supervision – Training
Sept 24	A third-party service contractor arrived on site, and made their way to the excavator to work on it. The third-party service contractor did not sign in, or notify the site supervisor and or site staff of their arrival. The third-party service contractor drove to the excavator, parked and exited the vehicle. The third-party service contractor had parked in the same area of the site loader. The site loader reversed then collided with the third-party contractor vehicle.	– Contractor management – Risk assessment – Supervision – Training
Sept 24	A customer's truck has brought in clean fill for disposal a the clean fill site. The truck has reversed on to the wet tip site, the truck was loaded with wet material, when the truck tray was being lifted, the truck tray tipped over (the cab remained upright). No Injuries.	– Roads and vehicle operating areas – Risk assessment – Supervision – Training
Sept 24	A small slip of material from a face occurred, damaging the steps to the excavator.	– Ground or strata instability – Workplace inspections – Risk assessment – Supervision – Training
Sept 24	A block of mudstone, 0.5m x 0.5m detached from the face and rolled from the toe, over a windrow onto the haul road.	– Ground or strata instability – Workplace inspections – Risk assessment – Supervision – Training

TABLE 5: High potential incidents – 2024/25 Q1

Table 6 and Figure 9 shows the number of high potential incidents per quarter during the last two years for all extractives operations.

QUARTER	Q2 OCT-DEC 2022	Q3 JAN-MAR 2023	Q4 APR-JUN 2023	Q1 JUL-SEP 2023	Q2 OCT-DEC 2023	Q3 JAN-MAR 2024	Q4 APR-JUN 2024	Q1 JUL-SEP 2024	TOTAL PREVIOUS 12 MONTHS
Number of high potential incidents	22	22	21	24	22	25	29	27	**103**

TABLE 6: High potential incidents per quarter

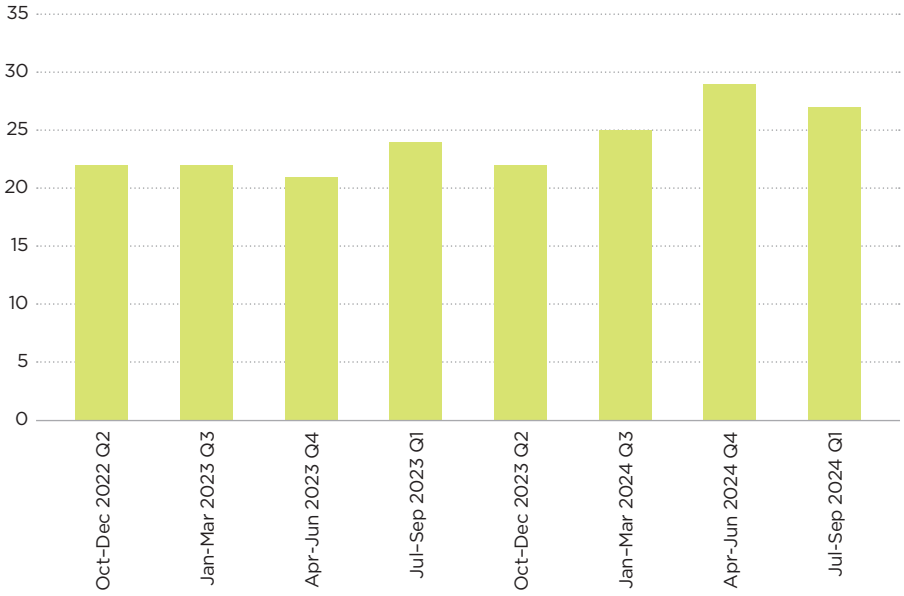


FIGURE 9: High potential incidents per quarter

2.7 High potential incidents – investigation outcomes

High potential incident case study – vehicle interaction

Sep 24	A third-party service contractor arrived on site, and made their way to the excavator to work on it. The third-party service contractor did not sign in, or notify the site supervisor and or site staff of their arrival. The third-party service contractor drove to the excavator, parked and exited the vehicle. The third-party service contractor had parked in the same area of the site loader. The site loader reversed then collided with the third-party contractor vehicle.

TABLE 7: High potential incident – investigation outcomes case study

THE INCIDENT

A third-party contractor service vehicle arrived on site to assess a hire excavator that was having issues with its hydraulic hose. They entered the site working area without reporting to staff on site. The contractor was sent to site by the excavator hire company and was not inducted to the site.

The contractor then parked next to a parked excavator and exited the vehicle and climbed up on the tracks to inspect the machine.

The site loader working in the area was reversing back towards where the excavator was parked and did not see the service vehicle resulting in the loader making contact with the left side of the service vehicle.

No injuries reported from the incident.

FINDINGS AND LEARNINGS FROM THE INVESTIGATION

Key issues identified during the investigation

- The quarry operator's Contractor Management process was not adhered to.
- The quarry operator's Energy Isolation process was not being adhered to, regarding mobile equipment.
- There was no scope of task or risk assessment for the work undertaken on the day (loaders).
- Site traffic management was inadequate.
- The quarry operator's minimum PPE requirements were not being adhered to (employees, customers, contractors, and third-parties).
- There were gaps in key messaging between management and staff/ contractors.
- There was a shortfall in training, with regard to Incident Management.
- The quarry operator's Change Management process was not used when the hire excavator was changed out by the hire company for an older model.

Other learnings related to incident investigation

The incident occurred on a Friday, and both employee and temp drivers were interviewed on the following Wednesday and given the opportunity to share their perspective on the incident. Given the time that had passed since the incident occurred, their information was of limited utility to the investigation and highlighted the importance of getting witness statements as soon as practicable (whether typed or hand-written) immediately following an incident. The camera footage, while also limited in terms of positioning, provided a more reliable source of the truth.

FIGURE 10:
Incident scene

REGULATOR COMMENTS AND RECOMMENDATIONS

Contractor management

Contractors offer a significant benefit to the industry in terms of their specialist skills and equipment in meeting short-term requirements for additional resources. When brought into a workplace, however, they can introduce additional risks as a result of the tasks being undertaken, or their lack of awareness of existing site hazards and safe systems.

The requirement to provide training and supervision and ensure competency to use plant and equipment applies equally to both in-house and contracted workers. You must fully induct contractors on your company's processes and make sure the contractors follow safe working practices. Items included in the induction should include the requirement to sign in and out of the site, site contacts and responsibilities, pertinent site rules and emergency procedures, accident and 'near miss' reporting requirements and the use of onsite equipment/facilities.

Effective planning is essential when engaging contractors to ensure efficient and safe working. The extent of any planning should be proportionate to the complexity, duration and risks associated with the activity.

Vehicle Interaction Incidents

There have been 7 incidents involving the collision of mobile plant with other plant reported to WorkSafe in the last year (17% of all vehicles and plant notifiable events reported to WorkSafe).

Collision and struck-by incidents involving mining machines and other vehicles, objects, or people can result in fatalities or serious injuries. The bigger the mining machinery is, the harder it is for operators to see around them due to restricted visibility. This has been especially evident at surface mines with incidents involving large haul trucks.

Use of heavy machinery and moving objects in mines and quarries is a critical risk area which the sector needs to address through introducing effective controls and monitoring their effectiveness. Controls for critical risks must be understood by all personnel and applied without exception to ensure everybody's safety.

Access to sites should be controlled to make sure unauthorised persons cannot travel to a location where they may be at risk from site operations

Extractive site operators should:

- utilise WorkSafe's *Health and Safety at Opencast Mines, Alluvial Mines and Quarries* guidelines to assist in the development and implementation of controls to manage mobile plant interaction
- review relevant procedures and management plans to prevent vehicle interactions
- consider elimination or minimisation of interactions between heavy and light vehicles
- regularly inspect and observe critical risk activities to monitor and enforce compliance of safe operating procedures
- carry out mobile plant visibility surveys to identify blind spot areas and put controls in place to correct them
- implement systems to help identify operating mobile plant locations around haul trucks (for example, warning signage, elevated flag indicators with high-visibility strips, revolving light and having hazard lights on)
- design road intersections and dump areas to reduce mobile plant interactions
- design windrows for optimum visibility (for example, at dump entrances)

- have managers and supervisors conduct adequate workplace inspections before and during work
- ensure workers and contractors are be site inducted, made aware of the site rules, operating procedures and through risk assessment, understand the hazards associated with the tasks that being performed.

WorkSafe also strongly recommends operators investigate options of proximity detection systems for mobile plant used onsite such as:

- the proximity of detection/collision avoidance systems appropriate to the residual risk level, where reasonably practicable
- using Global Positioning Satellite (GPS) collision warning systems
- ultrasonic systems
- vehicle cameras.

3.0 Regulatory insights

IN THIS SECTION:

3.1 How to carry out an appraisal to identify principal hazards

One of the Extractives team's priorities during the 2024–2025 year is to conduct regulatory compliance assessments at 20 A-grade quarrying operations and 5 alluvial mining operations, to assess how well the relevant operator has developed systems to comply with the Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016, commensurate with the nature, size and complexity and risks associated with the operation.

Following the completion of several regulatory compliance inspections at quarries and alluvial mining operations, inspectors have identified that is some misunderstanding about the requirement for carrying out an appraisal of the operation to identify principal hazards (Regulation 66). In general, this has not been well implemented or understood by industry.

Since 18 July 2023, under Regulation 66 the operator of an A Grade operation must:

a. carry out an appraisal of the operation to identify principal hazards at the operation, and
b. ensure that there is a principal hazard management plan for each principal hazard identified.

In this quarterly report we will provide a simple explanation about the requirements for identification of Principal Hazards, which is the essential starting point for all operators.

Meaning of a principal hazard (Regulation 65)

Any hazard arising at the operation that could create a risk of multiple fatalities in a single accident, or that could create a risk of multiple people being exposed to potentially fatal health risks in relation to any of the following:

- ground or strata instability
- roads and other vehicle operating areas
- explosives, and
- any other hazard at the operation that has been identified as a hazard that could create a risk of multiple fatalities in a single accident, or that could create a risk of multiple people being exposed to potentially fatal health risks.

Identifying whether principal hazards exist at your site

Points to note about the identification of principal hazards – regulations require an appraisal to be carried out. An appraisal is a consideration of whether the principal hazard is present on the site – it is not a risk assessment.

Hazard identification is usually a qualitative/descriptive process undertaken by a group of skilled and experienced people with knowledge of the operation or activities being undertaken. Those who will be exposed to the hazards can make a valuable contribution to identifying the hazards, that is, workers.

Principal hazard appraisal process

Operators should complete the appraisal with a cross section of the workforce and any other skilled and experienced people who can provide input about the hazard, as required – they should identify scenarios at the site where there is a reasonable potential that more than one fatality in a single event could occur, or that exposure to the hazard could result in potentially fatal health risks.

A 'reasonable potential' is a real possibility or likelihood that an incident may occur. If the risk of an incident is theoretically possible, but extremely unlikely to occur, it should not be considered to have a 'reasonable potential' to occur.

The process is a simple ‘yes’ or ‘no’ appraisal.

Regarding explosives, there is no appraisal required – the operation ‘must’ have a PHMP for explosives if explosives are used at the site – Regulation 66(2)(b).

In addition to explosives, the regulations also require quarries and alluvial mines to at least consider whether the following are principal hazards at the site: 1) ground and strata and 2) roads and other vehicle operating areas.

These are not the only hazards that need to be considered – and issues such as dust and silica exposure would be common considerations (as they could create a risk of multiple people being exposed to potentially fatal health risks).

Risk appraisal records

The output of a Principal Hazard Appraisal should record the following:

- date
- persons involved
- a simple record of the following considerations:
  - list of hazards considered for the site
  - the nature of each of the hazards at the site
  - potential accident scenarios or exposure scenarios
  - do any of these scenarios pose a reasonable potential for an accident resulting in more than one fatality – Yes/No
  - do any of the exposure scenarios pose a reasonable potential for multiple people to be exposed to a health hazard – Yes/No.

Any ‘yes’ answer should result in development of a Principal Hazard Management Plan for that hazard.

The process for developing PHMPs is another topic that will be covered in future industry reports – the first step to developing a PHMP is to do a comprehensive risk assessment for the hazard.

Priscilla Harris
Acting Deputy Chief Inspector Extractives

4.0
The regulator

IN THIS SECTION:

4.1 Our activities

The Extractives Specialist Health and Safety Inspectors at WorkSafe use a range of interventions to undertake their duties. Inspectors strive to achieve the right mix of education, engagement and where required enforcement. This section of the report includes a summary of the interventions used by the Extractives Inspectors during the quarter.

4.2 Assessments

Proactive assessments aim to prevent incidents, injuries and illness through planned, risk-based interventions. Reactive activities are undertaken in response to reported safety concerns or notifiable events. Assessments can be either site- or desk-based in nature.

For proactive site-based assessments, the objectives of each visit are agreed and the appropriate inspection tool is selected. Targeted assessments and regulatory compliance assessments can take several days on site with a team of inspectors attending. These multi-day inspections may be 'targeted' to assess the controls in place for a particular principal hazard (for example, WorkSafe has been targeting 'roads and other vehicle operating areas' as a result of the high number of notifiable events in this area), or they may involve a more general assessment of 'regulatory compliance'. Site inspections and targeted inspections are generally completed in a one day site visit but can also focus on specific topics.

As well as site-based assessments, the Inspectors spend considerable time undertaking desk-based assessments. Proactive desk-based assessments include the review of Principal Hazard Management Plans (PHMPs), Principal Control Plans (PCPs), mine plans, and high risk activity notifications. Responding to notifiable events and safety concerns may involve a site-based or desk-based assessment, or both.

Table 8 shows the range of assessments undertaken in Q1 2024/25 by sector.

		ASSESSMENTS	MINE	TUNNEL	ALLUVIAL MINE	QUARRY
Proactive	Site-based	Targeted assessments				
		Regulatory compliance assessments			1	6
		Site inspections	4	1	5	33
		Targeted inspections	6	2		
	Desk-based	PHMP/PCP review	9	37	11	
		Mine plan review	28	12		
		High risk activity				
Reactive	Site-based	Concerns – inspection	1		1	1
		Notifiable events – inspection	13		3	15
	Desk-based	Concerns – desk-based				
		Notifiable event – desk-based	16	3	3	13

TABLE 8: Proactive and reactive site and desk based assessments conducted in Q1 2024/25

Figure 11 shows the number of proactive and reactive site- and desk-based assessments undertaken by the regulator in Q1 2024/25. This quarter 41% of our activities were site-based, and 69% of activities were proactive.

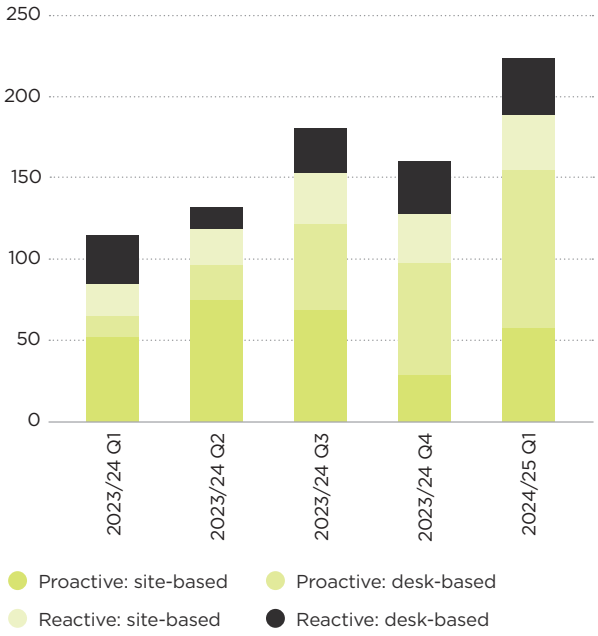


FIGURE 11:
Proactive and reactive site and desk-based assessments

Figure 12 shows the number of assessments undertaken by the regulator in Q1 2024/25 by sector. This quarter, 30% of our assessments were for quarries, 34% for mines, 25% for tunnels and 11% for alluvial mines.

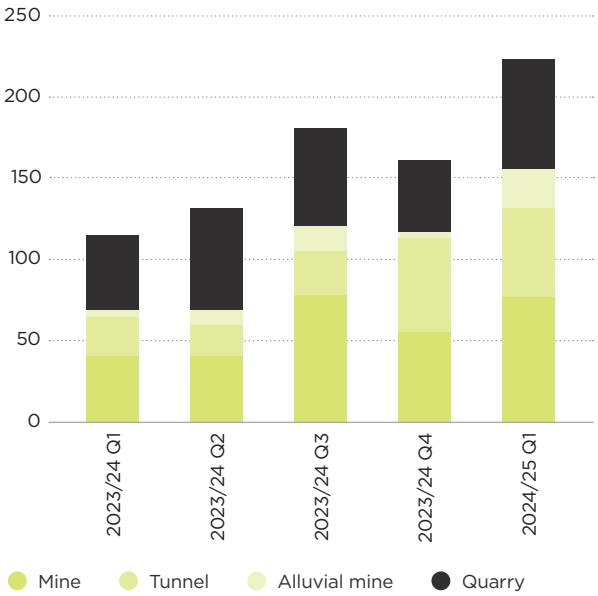


FIGURE 12:
Assessements by sector

4.3 Enforcements

Enforcement actions issued by WorkSafe include prohibition and improvement notices and directive letters. Enforcement actions are issued according to our Enforcement Decision Making (EDM) Model when health and safety issues are identified through assessments.

Figures 13 and 14 show the number of enforcement actions issued in Q1 2024/25 by notice type and by sector. This quarter, a total of 126 enforcement actions were issued. Of those, 3% of were prohibition notices, 22% were improvement notices, 71% were directives and 1% were sustained compliance letters. The majority of the enforcement actions were issued to the alluvial mining (9%), mining (26%) and quarrying (85%) sectors.

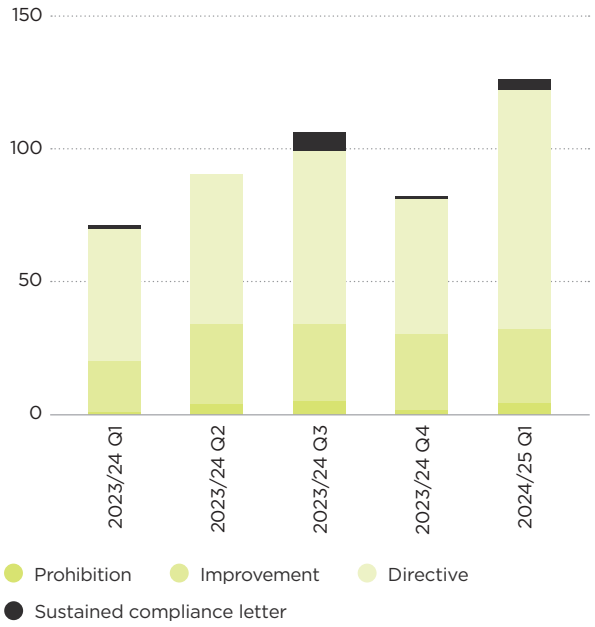


FIGURE 13: Enforcement actions issued by type

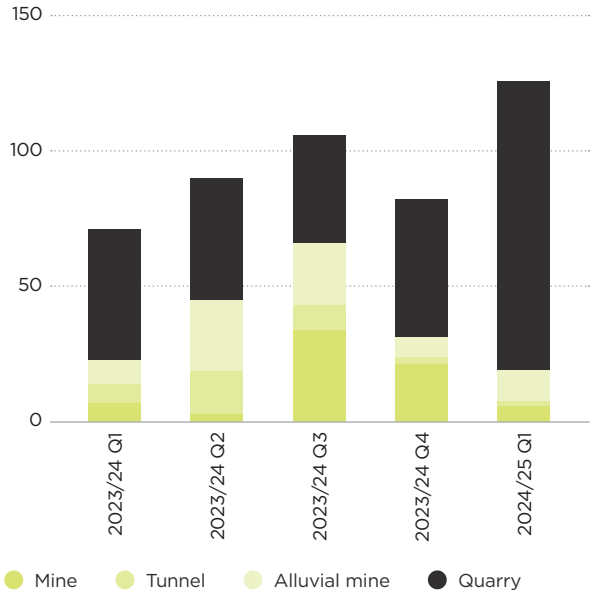


FIGURE 14: Enforcement actions issued by sector

Figure 15 shows the number of enforcement actions issued in Q1 2024/25 by category, and provides an indication of the key areas of concern to our inspectors. This quarter, the majority of enforcement actions were issued for health and safety issues relating to roads and other vehicle operating areas (24%), guarding (21%), and health and safety management systems (14%).

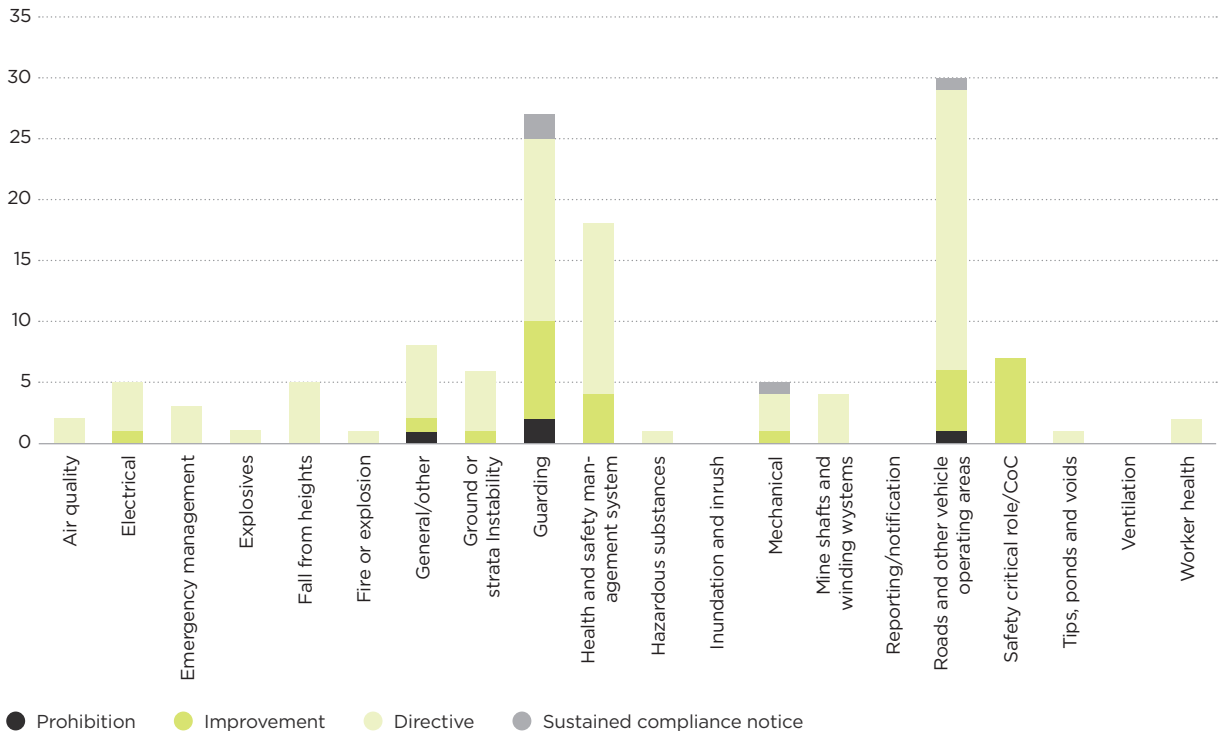


FIGURE 15: Enforcement actions issued by category 2024/25 Q1

Regulator activity comment

In the last quarter regulator assessment activity has been slightly higher than normal, and there is a corresponding higher total of enforcement activity. What should be noted is that the increase in enforcement is aligned to the regulatory compliance assessments (RCA) being conducted in the quarrying and alluvial mining sectors, resulting in an increase in the number of enforcement actions having been issued. Most of the increased enforcement is in the 'directive' category.

Improvement and prohibition notices which deal with breaches in compliance or risk of harm are not increased. Directives which have increased are often of a less urgent nature and are often instructions to improve health and safety systems. Many of these gaps being identified are a result of the more detailed regulatory compliance assessments (RCAs) being conducted at large quarries and alluvial mining operations, which will identify gaps in health and safety systems, or minor non compliances on a site. The trend to see more of this type of enforcement is likely to continue this year as more RCAs are completed.

The other factor which has increased assessment activity is an increase in the number of PHMP and PCP reviews for new operations. There is currently a lot of permit activity, especially around gold mine activities, and it may be that this trend continues to increase.

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