QUARTERLY REPORT

Extractives industry

2020/21 Q2

October to December

New Zealand Government

WORKSAFE
Mahi Haumaru Aotearoa

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.

When WorkSafe published the first quarterly report, I wrote about the importance of the information we receive from industry in notifications or quarterly reporting for forming an accurate picture of Extractives health and safety performance. To not have to debate whether we were doing well but just to accept we need to do better and to identify the areas for industry to focus on based on actual data and the data trends.

One incredibly consistent number in all of the quarterly reports to date – or a very flat trend – is the total of high potential incidents (HPIs) that occur every three months. This quarter it is 24. The quarterly average over six quarterly reports stands at 23.3.

Although I have talked about using this information to improve industry by identifying the areas of concern (for example, mobile plant roll overs, two vehicle interaction, fall from heights), the number of times we have a serious event occurring is not reducing.

As this understanding of the areas of concern does not automatically translate into improvement, we have now started to give examples of investigation findings from some of the incidents to further assist duty holders on what improvements or considerations should be made.

But industry should understand that useful as the data we provide is, the responsibility for prevention of harm is still primarily the duty holder's, and that the best work and analysis that can be done is the analysis of their own workplace by those who best understand it, including the hands-on workers on the site.

In general terms we know that it is important to understand the basics and where to start, which is the risk management process.

As you read investigation report findings, it is almost certain that you will read of organisational failings.

One failing that is almost always present is that organisations fail to identify the full extent of the risk.

This failure to identify risk can occur in high level appraisals, detailed work design or at day-to-day tool box meetings.

The risk assessment often fails to consider human factors, for example we don't build work systems that take into account that it is almost certain people will make mistakes.

Over the next few quarterly reports the regulator comments section will provide some advice on the basic elements of the risk management process and other important processes that sites are expected to undertake, such as review of effectiveness of controls and incident investigations.

We will not reinvent the topics as there is very good guidance and standards which give detailed explanation, but rather just provide a series of reminders linked where we can to the HPIs we are reporting.

Paul Hunt
Chief Inspector Extractives

About this report

This quarterly health and safety performance report has been prepared by WorkSafe 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 mining and tunnelling sector 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.

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1.0
Industry profile

IN THIS SECTION:

1.1 Operations

3

Metalliferous opencast mines
Includes one mine under care and maintenance and one mine under rehabilitation

21

Coal opencast mines
Includes four mines under care and maintenance, and one undertaking rehabilitation

7

Metalliferous underground mines
Includes one mine under care and maintenance and two operating tourist mines

2

Coal underground mines
Includes one tourist mine under care and maintenance

10

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

0

Coal exploration
No notifications of drilling commencement in the quarter

71

Alluvial mines
Number of mines that have been verified (65) or have notified of an Appointed Manager to WorkSafe (6) (includes 2 iron sands mines)

1,074

Quarries
Number of quarries that have been verified (913) or have notified of an Appointed Manager to WorkSafe but not yet verified (161)

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 1,188 active operations in New Zealand as at the end of December 2020.

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.

The numbers of operations will vary from quarter to quarter. In these first quarterly reports, many of the changes are due to verification of sites by our inspectors, rather than actual changes to operations.

1.2 People

657

Metalliferous opencast mines
473 FTEs employed by mine operators and 184 FTEs employed by contractors

809

Coal opencast mines
683 FTEs employed by mine operators and 126 FTEs employed by contractors

392

Metalliferous underground mines
334 FTEs employed by mine operators and 58 FTEs employed by contractors

33

Coal underground mines
26 FTEs employed by mine operators and 8 FTEs employed by contractors

501

Tunnels
249 FTEs employed by mine operators and 251 FTEs employed by contractors

0

Coal exploration
No coal exploration in the quarter

278

Alluvial mines
Number of workers is known for 30 of the 71 alluvial mines that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 41 operations

3,186

Quarries
Number of workers is known for 768 of the 1,074 quarries that are verified and/or have notified of an Appointed Manager. The total number of workers has been extrapolated for the remaining 306 operations

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.

A notable change is anticipated in the number of tunnel workers with two large tunnel operations in Auckland going operational in 2020. Thousands of different types of workers will be exposed to these operations over the duration of the projects. The number of tunnel workers reported this quarter increased by 102 from last quarter.

Figure 1 shows the total hours worked by the mining and tunnelling sectors in Q2 2020/21. The hours are separated into Employees and Contractors.

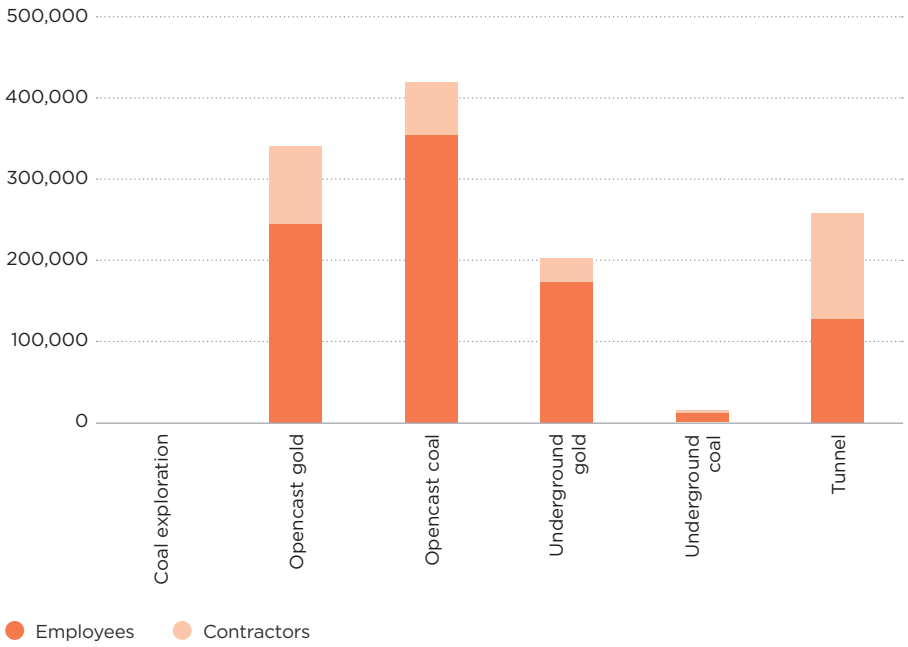

FIGURE 1:
Total hours worked by sector 2020/21 Q2

Figure 2 shows the number of Full Time Equivalents (FTEs) calculated from total hours worked for the mining and tunnelling sectors in Q2 2020/21. The hours are separated into Employees and Contractors.

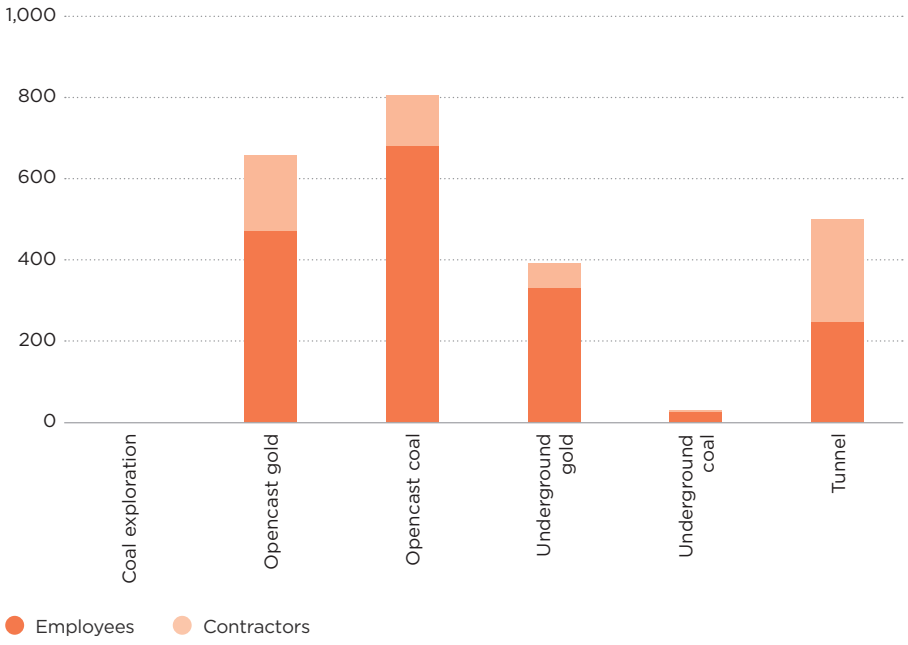

FIGURE 2:
Number of FTEs by sector 2020/21 Q2

1.3 Developing competence

WorkSafe has responsibility for setting the 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).

In July 2020 the first CoCs issued under the new regulations began to expire and those wishing retain a CoC were required to submit a renewal application with CPD log books. The table we have used previously showed a progressive increase of CoCs issued, but what will be important going forward will be the total number of current CoCs in circulation. From this Quarter we will begin to provide the net number of current CoCs in circulation.

Table 1 provides a summary of all CoC's issued up to 30 June 2020 and current number of CoCs in circulation at the end of Q2 2020/21.

COC TYPE	TOTAL NUMBER OF COCs ISSUED (2015 to June 2020)	TOTAL NUMBER OF CURRENT COCs (31 December 2020)	CHANGE IN NUMBER OF CURRENT COCs July to December 2020
A Grade Quarry Manager	315	321	6
B Grade Quarry Manager	482	473	-9
A Grade Opencast Coal Mine Manager	71	70	-1
B Grade Opencast Coal Mine Manager	64	67	3
A Grade Tunnel Manager	32	35	3
B Grade Tunnel Manager	74	68	6
Site Senior Executive	62	61	-1
First Class Coal Mine Manager	21	20	-1
First Class Mine Manager	31	29	-2
Coal Mine Deputy	44	40	-4
Coal Mine Underviewer	35	31	-4
Mechanical Superintendent	25	24	-1
Electrical Superintendent	17	17	0
Ventilation Officer	3	3	0
Mine Surveyor	13	13	0
Site Specific	1	2	1
Winding Engine Driver	3	1	-2
Total	**1,293**	**1,275**	**-18**

TABLE 1: Certificates of Competence in circulation

Table 2 provides a summary of expired, renewed and new CoCs as at 31 December 2020.

COC TYPE	TOTAL NUMBER OF EXPIRED COCs July to December 2020	TOTAL NUMBER OF RENEWED COCs July to December 2020	TOTAL NUMBER OF NEW COCs ISSUED October to December 2020
A Grade Quarry Manager	29	25	10
B Grade Quarry Manager	35	18	8
A Grade Opencast Coal Mine Manager	12	11	0
B Grade Opencast Coal Mine Manager	2	1	4
A Grade Tunnel Manager	6	6	3
B Grade Tunnel Manager	20	12	2
Site Senior Executive	5	2	2
First Class Coal Mine Manager	8	7	0
First Class Mine Manager	7	4	1
Coal Mine Deputy	14	9	1
Coal Mine Underviewer	10	6	0
Mechanical Superintendent	2	1	0
Electrical Superintendent	0	0	0
Ventilation Officer	1	1	0
Mine Surveyor	4	3	1
Site Specific	0	0	1
Winding Engine Driver	2	0	0
Total	**157**	**106**	**33**

TABLE 2: Certificates of Competence issued

2.0 Health and safety performance

IN THIS SECTION:

2.1 Notifiable events

Notifiable events are required to be reported to WorkSafe under S23(1), S24(1) and S25(1) of the Act, and for mining and tunnelling operations, 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 two years and for Q1 and Q2 2020/21 for mines and tunnels (Table 3) and quarries and alluvial mines (Table 4).

MINES AND TUNNELS	2018/19 QUARTERLY AVERAGE	2019/20 QUARTERLY AVERAGE	2020/21 Q1	2020/21 Q2
Number of notifiable events	18	20	16	17
Number of operations that notified events	9	11	8	10

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

Seventeen individual mines and tunnels from a total of 43 reported notifiable events in the past 12 months.

QUARRIES AND ALLUVIAL MINES	2018/19 QUARTERLY AVERAGE	2019/20 QUARTERLY AVERAGE	2020/21 Q1	2020/21 Q2
Number of notifiable events	14	18	17	20
Number of operations that notified events	13	15	8	19

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

Fifty-one individual quarries and alluvial mines from a total of 1,145 reported notifiable events in the past 12 months.

Figure 3 shows the number of notifiable events reported to WorkSafe by sector from January 2019 to December 2020.

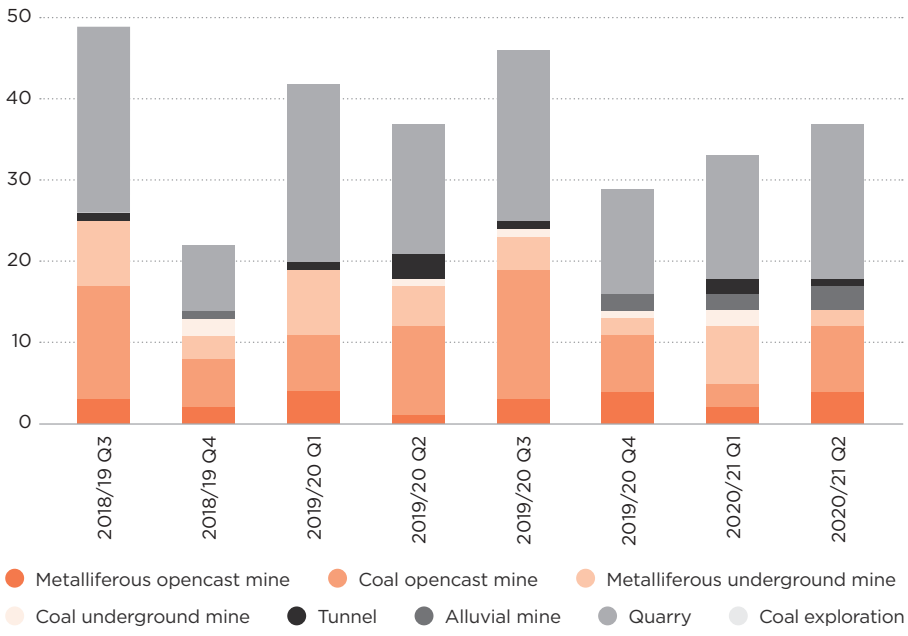

FIGURE 3: Notifiable events by sector

2.2 Injuries

Additional information about injuries is reported to WorkSafe for mining and tunnelling operations in the form of Quarterly Reports and Records of Notifiable Events under Schedules 6 and 8 of the Regulations. Figure 4 shows the number of injuries by injury type reported to WorkSafe by the mining and tunnelling sectors from January 2018 to December 2020. 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 TRIFR is 3.2. The quarterly report has used online reporting data to calculate TRIFR since Q1 2020/21, and there was concern about the Q1 result being significantly lower than previous quarters. We note Q2 has returned to a more normal level.

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.

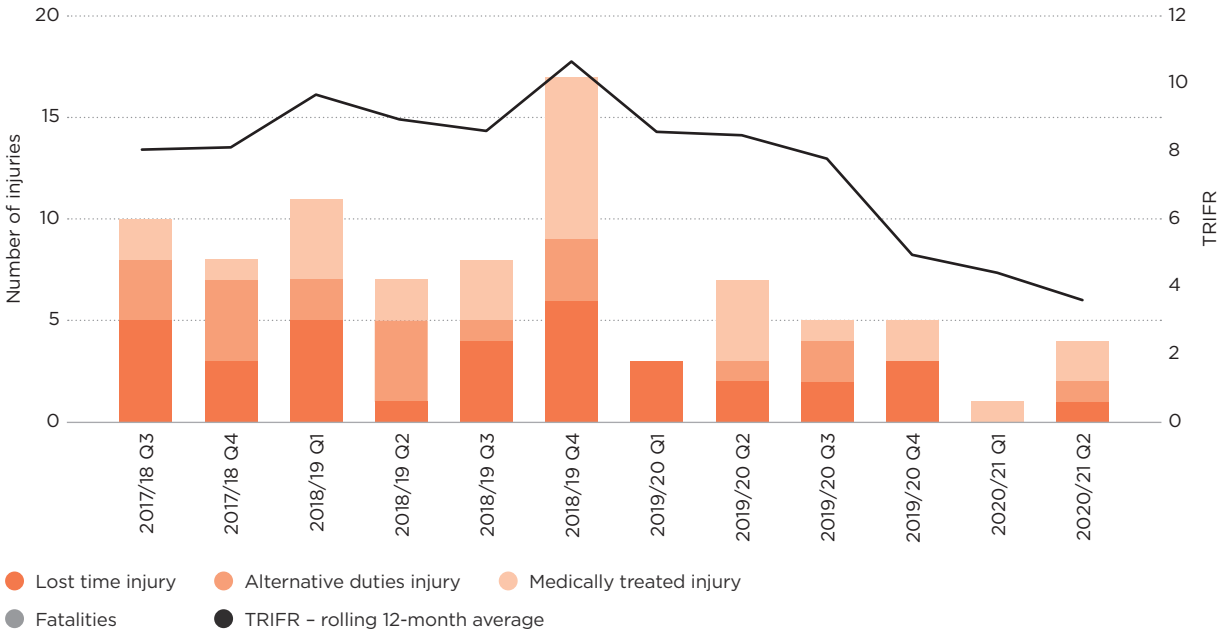

FIGURE 4: TRIFR – mines and tunnels

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 1 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).

Figures 5 and 6 show the number of injuries resulting in more than a week away from work (WAFW), and the sum of the claims costs for those WAFW injuries for the mining and quarrying sectors from January 2018 to June 2020. It is important to note that the number of WAFW injuries for previous quarters may increase over time as ACC can grant claims up to 12 months after an injury has occurred. The claims costs for WAFW injuries for previous quarters will also continue to increase over time as the true costs of those injuries are realised. It may take two years or more for the true costs to be realised. The average cost of extractives sector WAFW injuries between January 2018 and June 2019 was over $18,000 per injury.

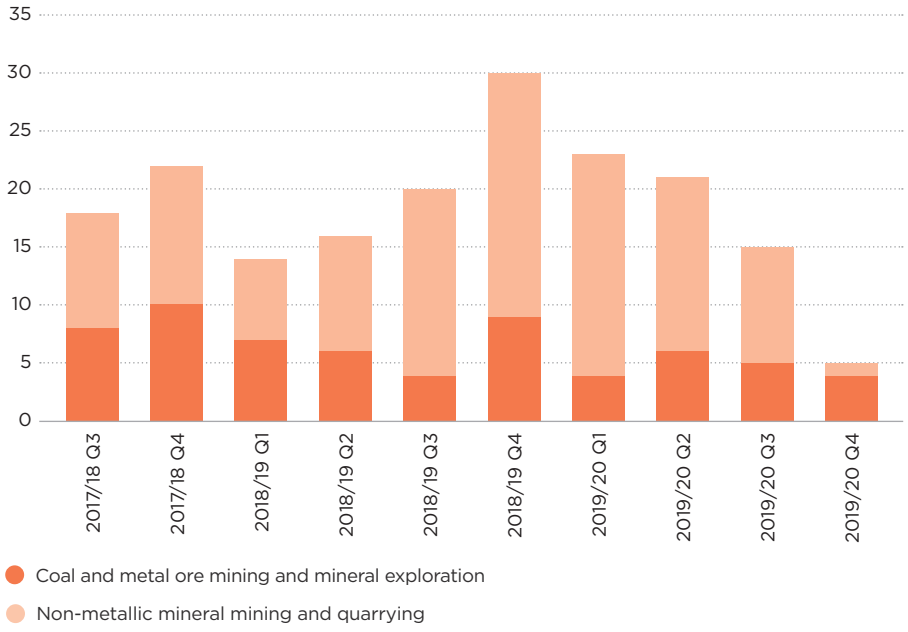

FIGURE 5:
Number of injuries resulting in more than a week away from work

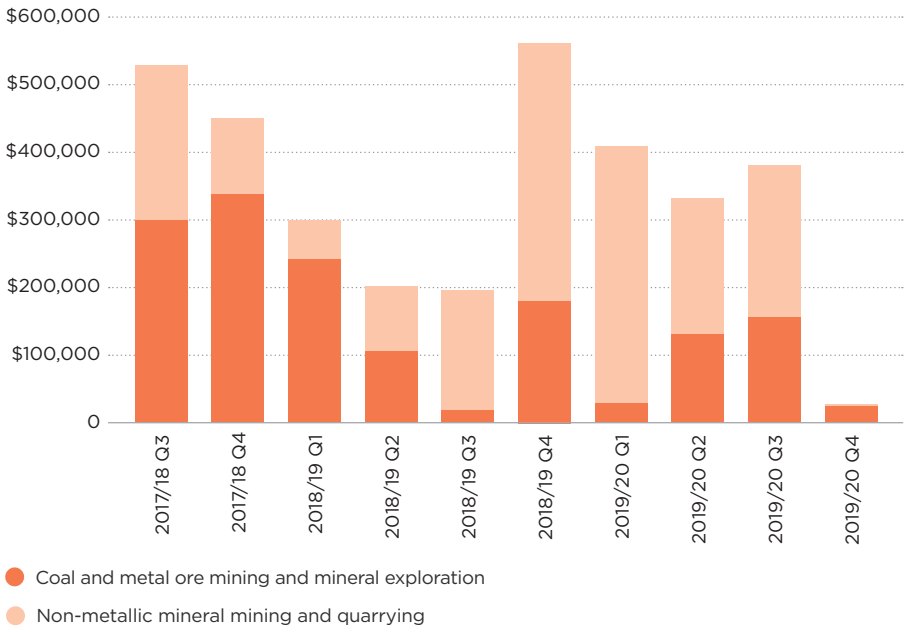

FIGURE 6:
Sum of claims cost (excluding GST) for injuries resulting in more than a week away from work

The data for these graphs comes from our System for Work-related Injury Forecasting and Targeting (SWIFT) database. It includes ACC data on approved work-related injury claims that resulted in more than a week away from work (WAFW). There is a seven month lag applied to the data to allow time for the claim information to stabilise, so data for the past two quarters is not yet available. While SWIFT data draws on ACC data, differences in counting criteria mean it may not match ACC counts, and should not be considered official ACC data.

2.3 Types of events

Figures 7 and 8 show the notifiable event categories for events notified to WorkSafe in the previous 12 months, by the mining and tunnelling sectors and the quarrying and alluvial mining sectors, respectively. The data shows that 61 percent of notifiable events in the mining and tunnelling sectors in the past 12 months have occurred in relation to vehicles and plant (30%), and fire, ignition, explosion or smoke (31%). These two categories are broken down in more detail in the following section. Sixty-seven percent of notifiable events in the quarrying and alluvial mining sectors in the past 12 months involved the collapse, overturning, failure or malfunction of, or damage to plant (46%) and an implosion, explosion or fire (21%).

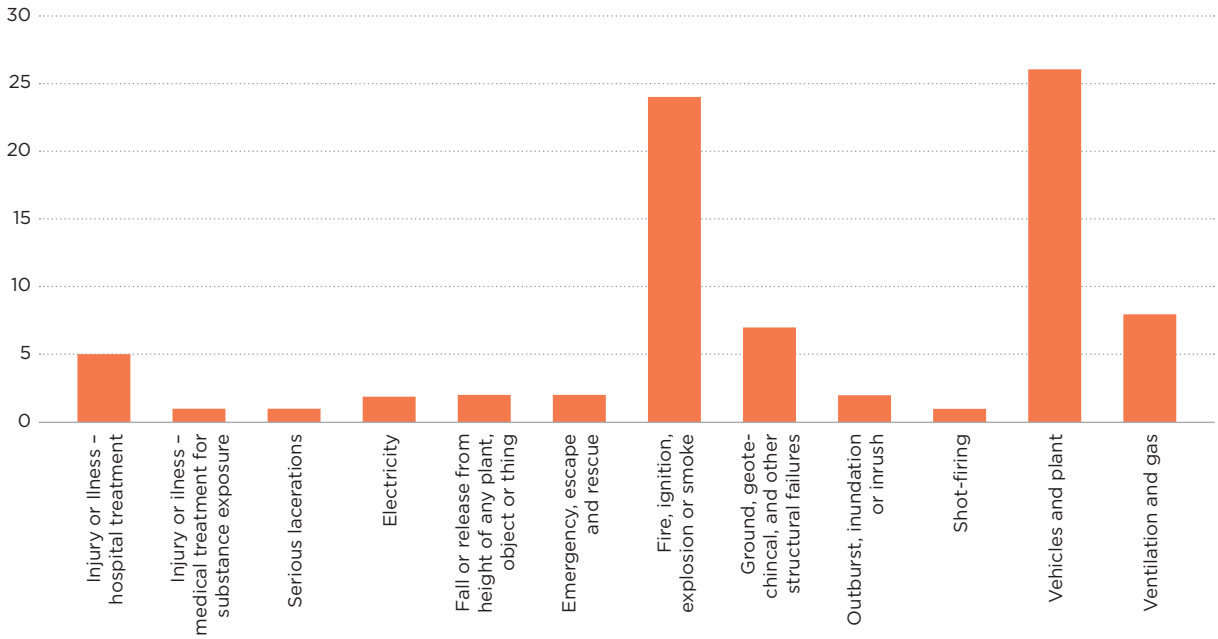

FIGURE 7: Mines and tunnels notifiable event categories for the previous 12 months

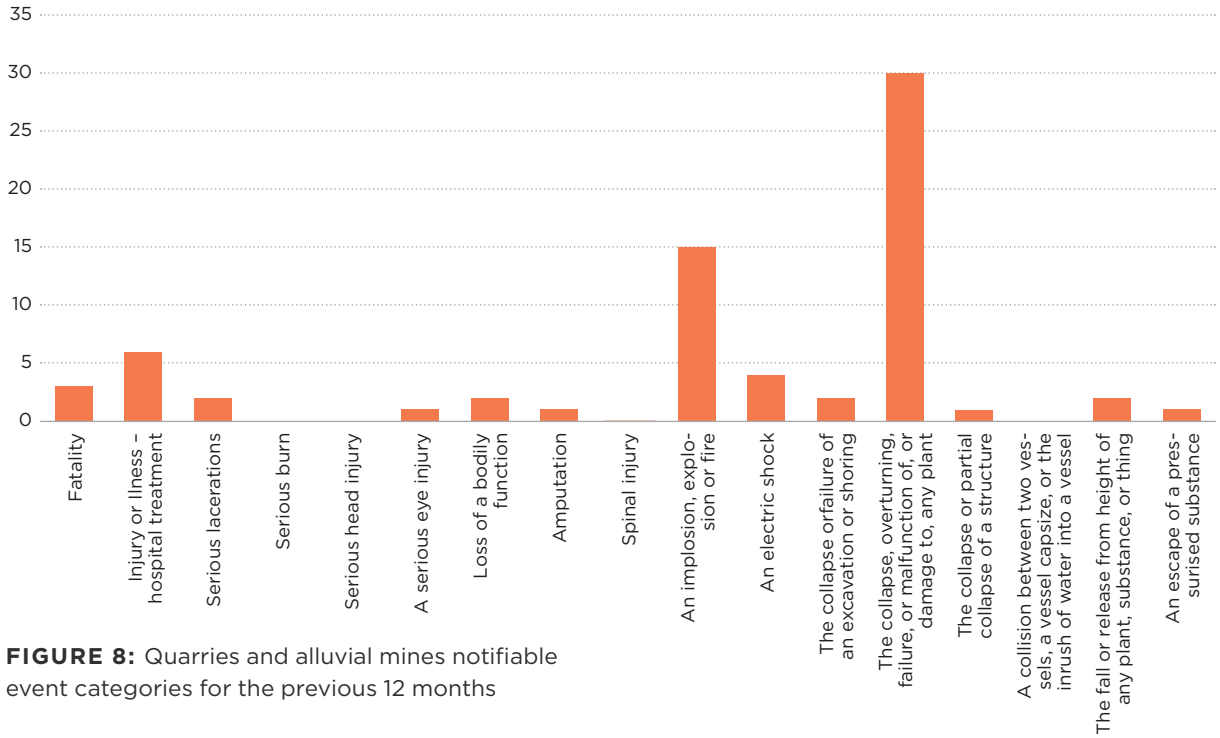

FIGURE 8: Quarries and alluvial mines notifiable event categories for the previous 12 months

2.4 Mine and tunnel 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 9 and 10 break down the two largest notifiable event categories for mines and tunnels 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, 87% involve fires on plant, mobile plant or in buildings associated with mining or tunnelling activities, and 13% involves spontaneous combustion. The vehicle and plant-related notifiable events involve collision of mobile plant with other plant (37%), overturning of mobile plant (27%), unintended movement or brake failure (18%), and breach of a safety berm or windrow (18%).

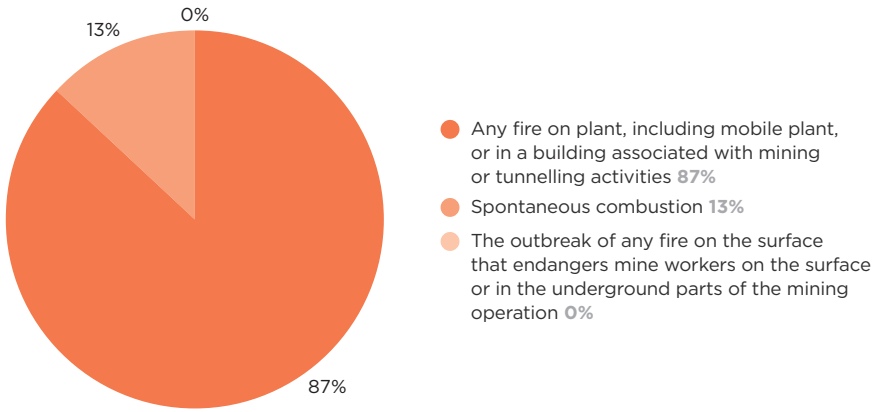

FIGURE 9: Fire, ignition, explosion or smoke-related notifiable event sub-categories

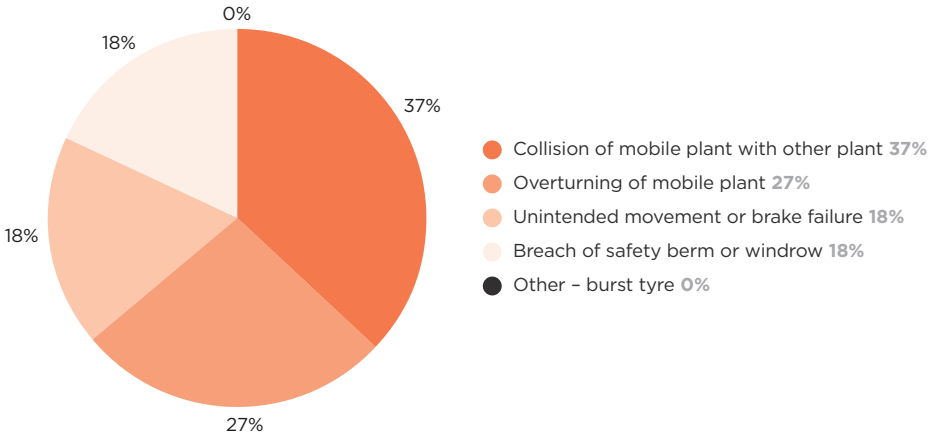

FIGURE 10:
Vehicles and plant-related notifiable event sub-categories

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 25% of operations in the past 12 months, 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 4.5% of operations in the past 12 months. The SWIFT data on WAFW injuries consistently shows higher numbers of injuries in the quarry sector, suggesting under-reporting of events. More accurate reporting from the quarry sector is expected when the requirements for reporting under Schedules 5 and 8 are implemented for quarries.

2.5 Regulator comments

Risk management is a term used widely in industry. Unfortunately there is also a wide range of understanding of what good risk management practice looks like. Almost without exception a good HPI investigation we receive will uncover failures in the risk management system on the site.

The mining industry formally introduced risk into the Regulations in 2013 (at that time the Health and Safety in Employment Act 1992 was fundamentally hazard based). The Regulations were followed by the Health and Safety at Work Act 2015 and the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016, which filled in the legislative framework. Many of us in the mining industry had been practicing risk management processes for many years prior to 2013, mostly adopting Australian practice.

So the expectation is that the mining industry (and some of the other high hazard sectors) should lead New Zealand in the practice of risk management. We acknowledge some operators do a good job, but we routinely see fundamental failures to 1) identify risk 2) analyse the risk and 3) treat the risk (controls). And often 4) even when risks have been identified and controls introduced, we then see organizations fall down in the monitoring of the effectiveness of the controls or to recognize that changes have altered the risk and that the existing controls are no longer adequate.

Reference Australia/New Zealand risk management – principles and guidelines to understand the iterative cyclic processes required.

When controls are identified at a risk assessment their appropriateness or potential effectiveness should be clearly considered on the basis of hierarchy of controls prior to undertaking the activities. Operators should not accept that any administrative control is an adequate risk treatment for any serious health and safety risk.

When adequate controls are identified they should be initially tested or assessed for effectiveness. They should be maintained, and the effectiveness of the controls checked regularly through inspection or testing.

Any changes of operation, plan, people or location of work should trigger another check of adequacy of controls – or trigger training or further RA.

Any failure of the controls should trigger review and improvements. More effective reasonably practicable steps may available and should be adopted.

Operators must understand that risk management is not a one-off risk appraisal and risk assessment; that they are dynamic systems that requires continuous attention. And the risk management systems that are implemented on a site must be able to identify and deal with change.

The HPI investigation outlined in Section 2.7 of this quarterly report gives a simple example of how changes can increase the potential for HPIs to occur, and how having a good system is only effective if everyone who should, knows when and how to use it.

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 – 2020/21 Q2

Table 5 provides a summary of high potential incidents notified to WorkSafe in Q2 2020/21. The summaries are an abridged version from the operator's notification report.

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Oct 20	Worker received electric shock from lighting tower. The worker was touching ignition key of tower and touching the door frame of control box and felt a shock through right foot and right hand.	– Isolation – Equipment maintenance
Oct 20	Excavator rolled onto its side while excavating material.	– Roads and operating surfaces – Risk assessment – Training – Supervision
Oct 20	While undertaking manual handling of A frame rails in a utilities trench a worker had their hand caught between two of the rails. The worker received serious injuries to their hand, degloving the end of their middle finger. The worker was taken to hospital for surgery.	– Job planning – Risk assessment – Training
Oct 20	A long reach excavator struck a live underground buried cable. No injuries.	– Job planning – Risk assessment – Isolation – Supervision – Change management

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Oct 20	A haul truck broke through cover into a void while working on top of an exposed coal seam. The truck dropped one metre, becoming stuck.	– Job planning – Risk assessment – Roads and operating surfaces – Tips ponds and voids
Oct 20	An excavator operator noticed cracks forming and dribbling when working a face. Workers withdrew and a cordon was established. An area 15m long, 8m wide and 10m deep began to slump along a fault plane. Site ceased operation and received geotechnical advice.	– Ground and strata – Workplace inspection – Design – Risk assessment
Oct 20	Water cart hit a light vehicle. The LV was a maintenance vehicle and had parked in close proximity to the water cart.	– Roads and operating surfaces – Traffic management – Job planning – Training
Oct 20	Worker was cleaning out a catch pit and the face collapsed into the catch pit and overwhelmed it, causing a rock to hit the door of the excavator, breaking the window and bending the bottom window grill.	– Ground and strata – Risk assessment – Workplace inspection – Emergency
Nov 20	While two workers were climbing onto a tunnel access trolley an e-stop was disengaged and the trolley began to run away in free fall. One of the workers was able to pull a battery isolator which activated the brakes. The trolley ran away a distance of 9m.	– Equipment selection and design – Equipment maintenance – Training
Nov 20	Operator reversing ADT to dump load. One wheel rode up onto previous heap and the other side sank in soft ground and the tray tipped over.	– Roads and operating surfaces – Job planning – Training
Nov 20	While removing metal screws from a sign in a mine site office, an electrical arc was witnessed.	– Isolation – Equipment maintenance
Nov 20	While reversing a small smooth metal drum vibrating roller, the operator felt it slide off course and unclipped their seat belt and jumped off as it rolled over onto its side. The roller did have roll over protection fitted. No injuries were sustained	– Roads and operating surfaces – Job planning – Equipment selection – Training
Nov 20	A truck operator was taking a load of mud over to the mud tip and rolled the cab of the truck.	– Roads and operating surfaces – Traffic management – Job planning – Training
Nov 20	HV versus HV: Loader backed into dump truck on loading area.	– Roads and operating surfaces – Traffic management – Job planning – Training
Nov 20	A loader hit a car at an extractives site.	– Roads and operating surfaces – Traffic management – Job planning – Training
Nov 20	Operator slips and falls from dump truck while climbing down ladder.	– Equipment selection and design – Training
Nov 20	Excavator rolls over into pond. Cab exit was facing up out of pond and operator could exit unharmed.	– Roads and operating surfaces – Tips ponds and voids – Risk assessment – Training – Supervision

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Dec 20	Excavator rolled onto its side while excavating material.	– Roads and operating surfaces – Risk assessment – Training – Supervision
Dec 20	Dozer backs into watercart. Watercart approached dozer without positive communications.	– Roads and operating surfaces – Traffic management – Job planning – Training
Dec 20	While working on compressor lines, two fitters inadvertently disconnected a pressurised bull hose which ejected under force.	– Isolation – Risk assessment – Job planning – Supervision
Dec 20	While conducting mill maintenance, a worker had eyes exposed to quicklime. Worker's goggles had been covered and while trying to remove them and replace with other safety goggles, quicklime blew into face and eyes. Treated at A&E.	– Job planning – Hazardous substances – Training
Dec 20	Customer truck tipped over onto side while tipping. The truck had been attempting to tip in an area of soft ground, away from the designated pad.	– Roads and operating surfaces – Traffic management – Job planning – Training, induction
Dec 20	Hoist mount on tipping trailer broke, causing bin to fall 2 metres. No persons or other vehicles were exposed to the failure and it resulted in only damage to trailer on this occasion.	– Maintenance – Equipment selection and design – Prestart checks
Dec 20	Loader backed into truck. Loader was catching product from under belt and truck was reversing into position for loading.	– Roads and operating surfaces – Traffic management – Job planning – Training

TABLE 5: High potential incidents – 2020/21 Q2

Table 6 and figure 11 shows the number of high potential incidents per quarter during the last year for all extractives operations.

QUARTER	Q2 OCT-DEC 2019	Q3 JAN-MAR 2020	Q4 APR-JUN 2020	Q1 JUL-SEP 2020	Q2 OCT-DEC 2020	TOTAL PREVIOUS 12 MONTHS
Number of high potential incidents per quarter	28	34	15	20	24	93

TABLE 6: High potential incidents per quarter

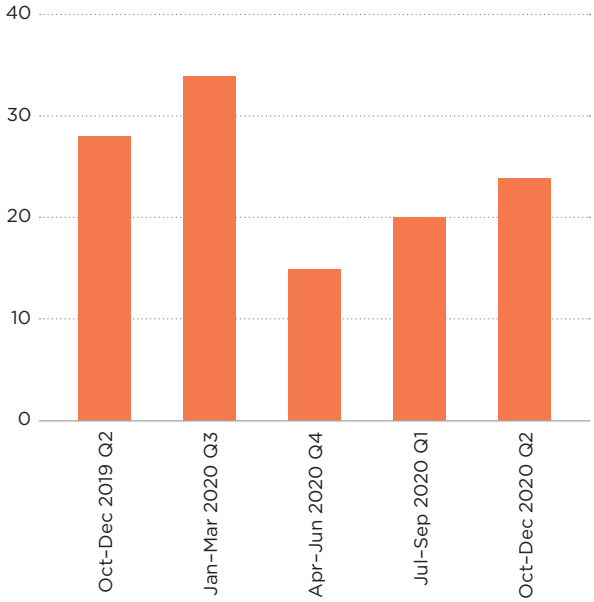

FIGURE 11: High potential incidents per quarter

2.7 High potential incidents – investigation outcomes

INCIDENT DATE	SUMMARY	CONSIDERATIONS
Oct-20	A long reach excavator struck a live underground buried cable. No injuries.	– Job planning – Risk assessment – Isolation – Supervision – Change management

TABLE 7: High potential incident – investigation outcomes case study

FIGURE 12: Incident scene photographs

The incident

A contractor was engaged to clean out water holding sumps at an Extractives site as part of the water sump cleaning program. Three sumps were identified to be partially cleaned.

The 30t long-reach excavator used had been checked for site compliance, and it was the second time the machine had been on the site that year. The operator was a competent and experienced operator.

Sump cleaning at two of the sumps had been completed during the week under JSEA. It was decided that due to the location of the third sump (beside a haul road), the safest time to clean the sump would be during the weekend while haul trucks were not carting.

The area supervisor came in on the day to review the JSEA and to manage the sump cleaning process. Cleaning of the drain was not a part of the original work scope.

After cleaning the third sump, it was identified by the excavator operator that the drain running into the sump required cleaning out and tidying up to divert water away from the haul road. The excavator operator and supervisor agreed to undertake the additional task.

The excavator moved across to the drain and commenced cleaning the drain.

The excavator operator noticed a flash beside the bucket as the bucket came into contact with an underground power cable.

The investigation identified

The cleaning of the sump was required to ensure environmental compliance in this area of the site. Appropriate risk control management was thought to be in place, which included a JSEA for sump cleaning, electrical isolation to the sump pump and supervision.

The JSEA was not reviewed for any new hazards associated with the additional task of cleaning out the drain.

Contributing factors identified:

- There was a failure to adequately assess hazards associated with the change in the scope of the task.
- Identification of underground services was not thoroughly completed.
- Whilst a 'Permit to Excavate' process is embedded within company standards and procedures, it is not a set requirement for the purpose of cleaning out of sumps/drains.
- There was inconsistency in knowledge of when an excavation permit is required.
- The cable was not buried correctly. For example, the material cover between the cable and the plastic taping or the physical depth of the buried cable did not meet previous or current Standards.
- Signage demarcating an underground cable was present, however it was largely covered by overgrown gorse and was not easily identifiable from the vantage point of the excavator operator.

KEY LEARNINGS IDENTIFIED

You must use risk management tools when carrying out any work, including new work identified on the job. Working in and around old building structures requires more detail if ground penetration is required. To prevent recurrence in other areas, the Permit to Excavate must be used in all of sump and drain maintenance.

Regulator comments

In this HPI an excavator has struck a live buried cable.

The operator seemingly had systems in place. They had planned the work, produced a JSEA and arranged supervision to come in after normal hours.

The site operator had identified that the hazard of underground services existed at the site and had developed and implemented a Permit to Excavate system.

What occurred was a change in scope of work and a failure to adequately identify that the new area had additional hazards (live cables) that should have triggered the use of the available Permit to Excavate system. There were other contributing factors, but essentially work was agreed to be completed outside of the location of the original plan on the day – this decision added a location with an inadequately buried cable and set up the potential for the incident.

In situations like this, it would be unreasonable to assume that any individual operator or supervisor would be aware of the presence of every cable on the site. The risk management processes should be set up to ensure that only minor changes can be made to planned work, and if changes that have the potential to introduce new or more significant hazards are required, that they are escalated or directed to the appropriate level of knowledge and authority.

The cable was buried to a lessor standard than was currently required, and vegetation had covered signs. Both are examples of changing practice and environment that needed to be considered.

This HPI was predominantly a failure to adequately manage change.

Recommendations

- Ensure that the scope of planned work is clearly defined and understood by those undertaking the work.
- That adequate change management risk processes are in place on sites and understood by workers.
- That change management processes have clear delegated authorities to ensure that those who are best able to identify hazards and controls are involved in the planning.
- That all potential hazards on site are identified.

3.0
The regulator

IN THIS SECTION:

3.1 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.

3.2 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 Q2 2020/21 by sector.

		ASSESSMENTS	MINE	TUNNEL	ALLUVIAL MINE	QUARRY
Preventative	Site-based	Targeted assessments				
		Regulatory compliance assessments				
		Site inspections	15	17	4	47
		Targeted inspections				
	Desk-based	PHMP/PCP review		15		
		Mine plan review	13	3		
		High risk activity				
		COVID-19 assessment				
Reactive	Site-based	Concerns – inspection			1	1
		Notifiable events – inspection	3			
	Desk-based	Concerns – desk-based	1		11	
		Notifiable event – desk-based	14		1	7

TABLE 8: Proactive and reactive site and desk based assessments conducted in Q2 2020/21

Figure 13 shows the number of proactive and reactive site- and desk-based assessments undertaken by the regulator in Q2 2020/21. This quarter 62% of our activities were site-based, and 80% of activities were proactive.

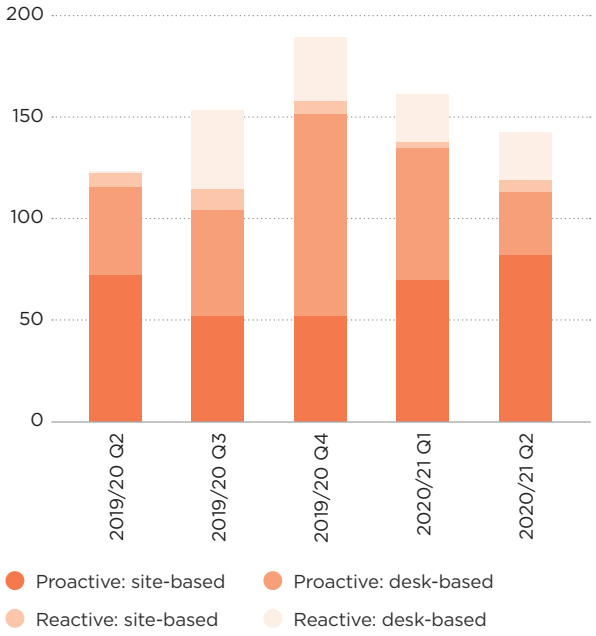

FIGURE 13:
Proactive and reactive site and desk-based assessments

Figure 14 shows the number of assessments undertaken by the regulator in Q2 2020/21 by sector. This quarter, 38% of our assessments were for quarries, 32% for mines, 24% for tunnels and 5% for alluvial mines.

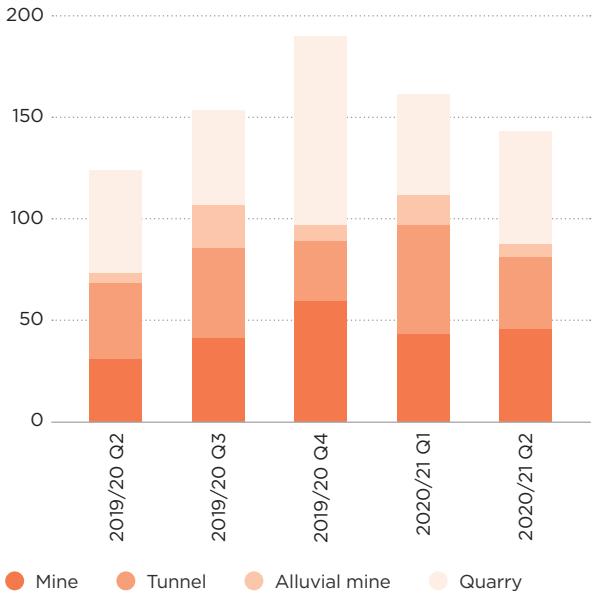

FIGURE 14:
Assessements by sector

3.3 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 15 and 16 show the number of enforcement actions issued in Q2 2020/21 by notice type and by sector. This quarter, a total of 239 enforcement actions were issued. Of those, 4% of were prohibition notices, 26% were improvement notices, 69% were directives letters and 1% were sustained compliance letters. The majority of the enforcement actions were issued to the tunnelling (23%) and quarrying (60%) sectors.

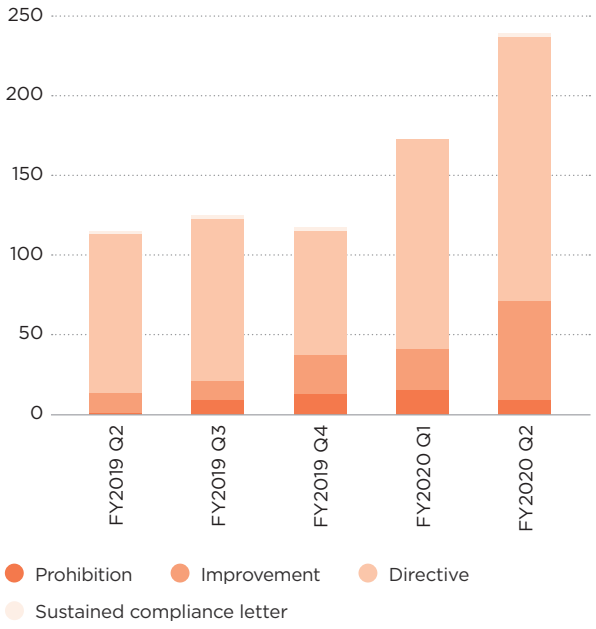

FIGURE 15: Enforcement actions issued by type

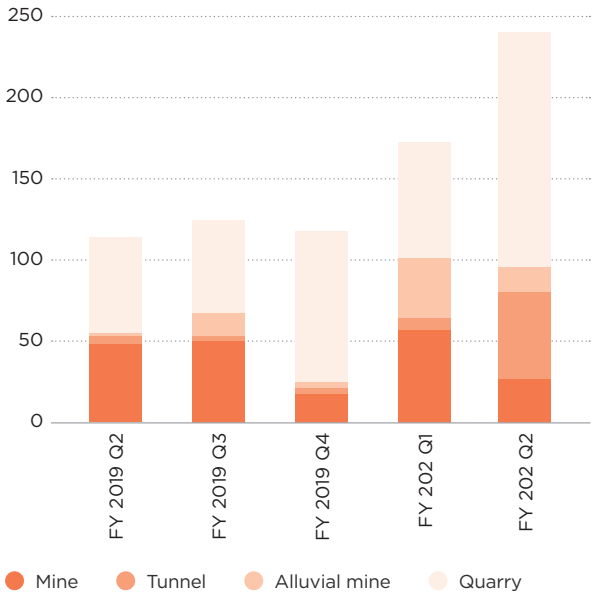

FIGURE 16: Enforcement actions issued by sector

Figure 17 shows the number of enforcement actions issued in Q2 2020/21 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 (19%).

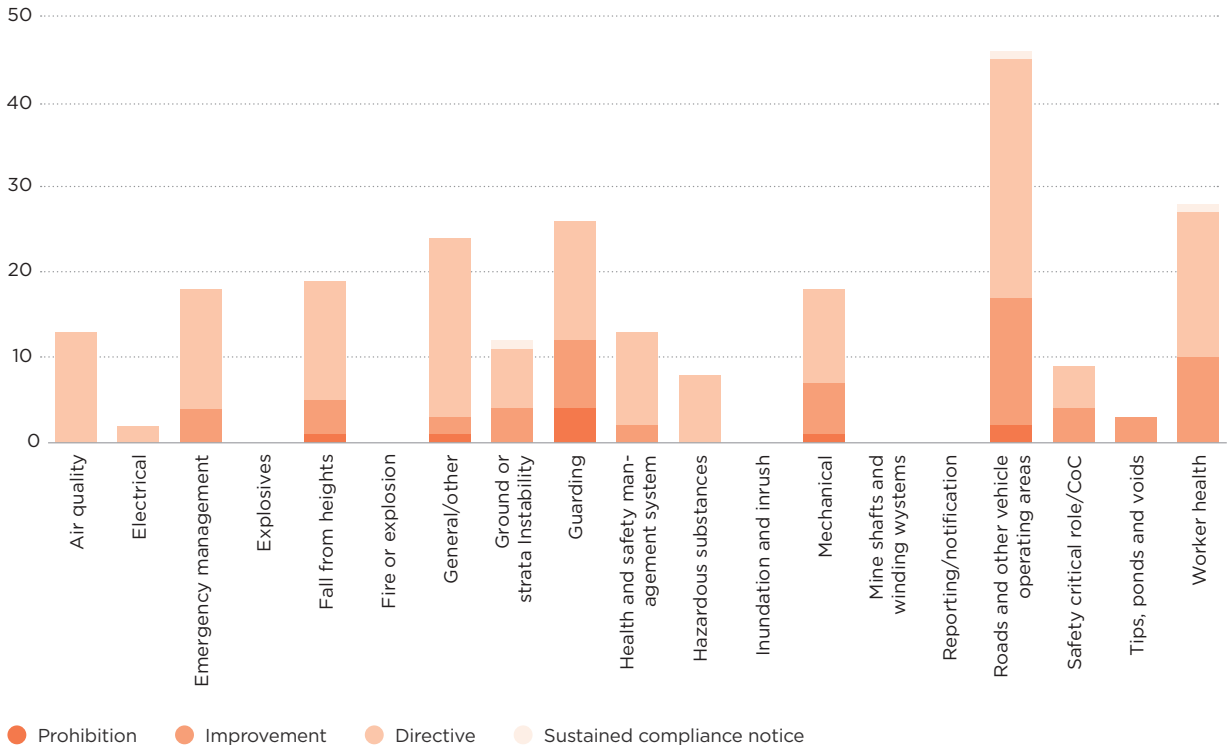

FIGURE 17: Enforcement actions issued by category 2020/21 Q2

Regulator activity comment

The distribution of enforcement actions has changed during the last quarter; while roads and other vehicle operating areas remains a focus area for WorkSafe, there has been more recent focus on worker health, with a significant increase in enforcement in the area. This intention had been communicated in the last quarterly report, and worker health will a long-term focus for WorkSafe across all sectors. Most of the enforcement action taken was dust related, and all operators should focus on identifying, monitoring, and controlling dust issues on their sites.

The total number of enforcement actions increased but the proportion of enforcement actions has continued to reflect a good mix of prohibition, improvement and directives.

The total increase in enforcement actions was due to the large increase in tunnel activity and inspection and the more focused attention on worker health issues.

Disclaimer

WorkSafe New Zealand has made every effort to ensure the information contained in this publication is reliable, but makes no guarantee of its completeness.

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