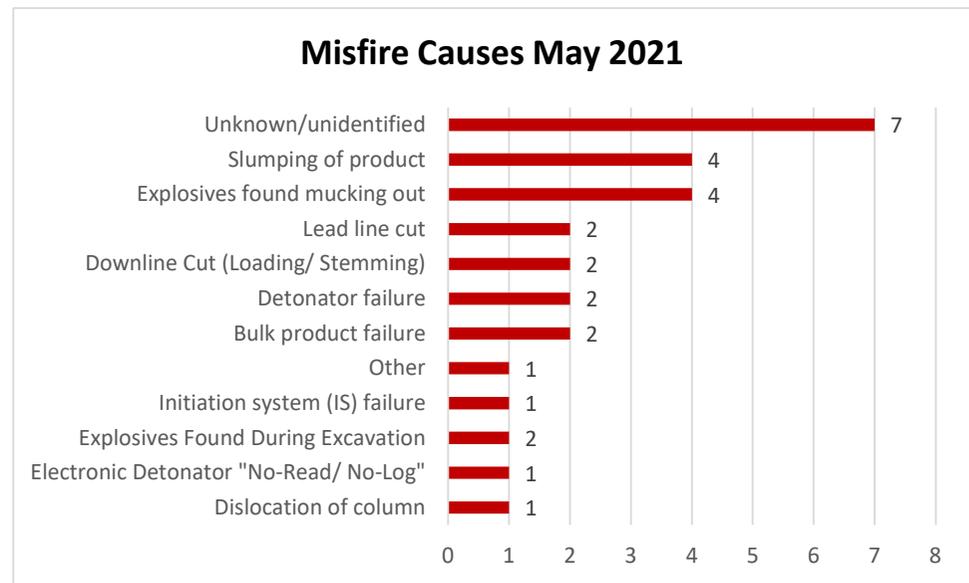




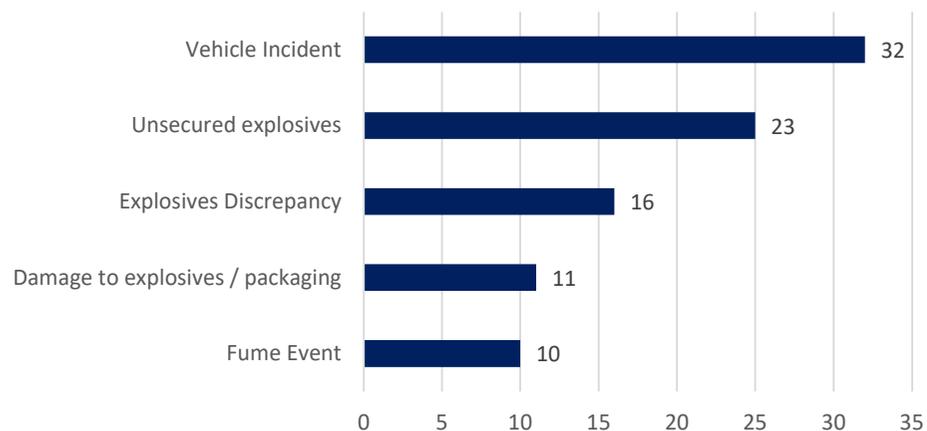
## Explosives incidents – May 2021

This document presents statistics for all explosives safety and security incidents reported during May 2021. It also includes the top 5 incidents for the current and previous financial years, plus a cumulative summary of all safety and security incidents for the last 12 months. The number of injuries and fatalities occurring in the community and industry are presented for the month of May 2021, as well as the cumulative total for the financial year 2020-21.

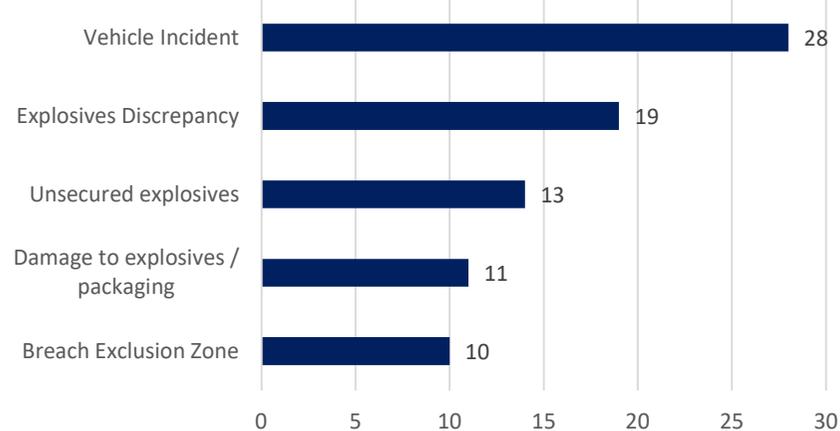
	May 2021	Financial year to date (2020-21)
Community	0 fatality 0 injury	0 fatality 0 injury
Industry	0 fatality 0 injuries	0 fatality 2 injuries



### Top 5 Most Common Incidents Excluding Misfires July 2020 - May 2021

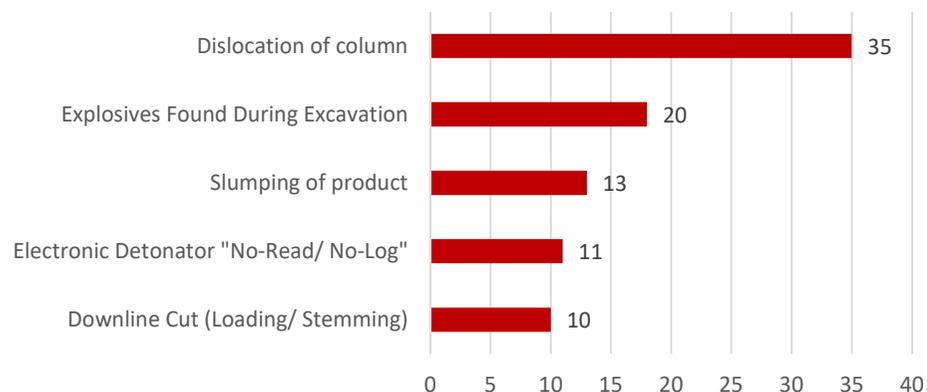


### Top 5 Most Common Incidents Excluding Misfires Jul 2019 - Jun 2020



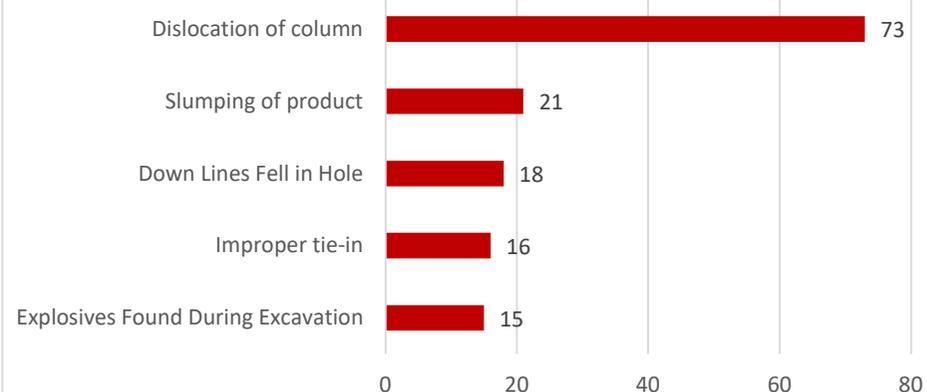
### Top 5 Most Common Reasons for Misfires July 2020 - May 2021

*Note Unidentified and Other have been removed (62)*

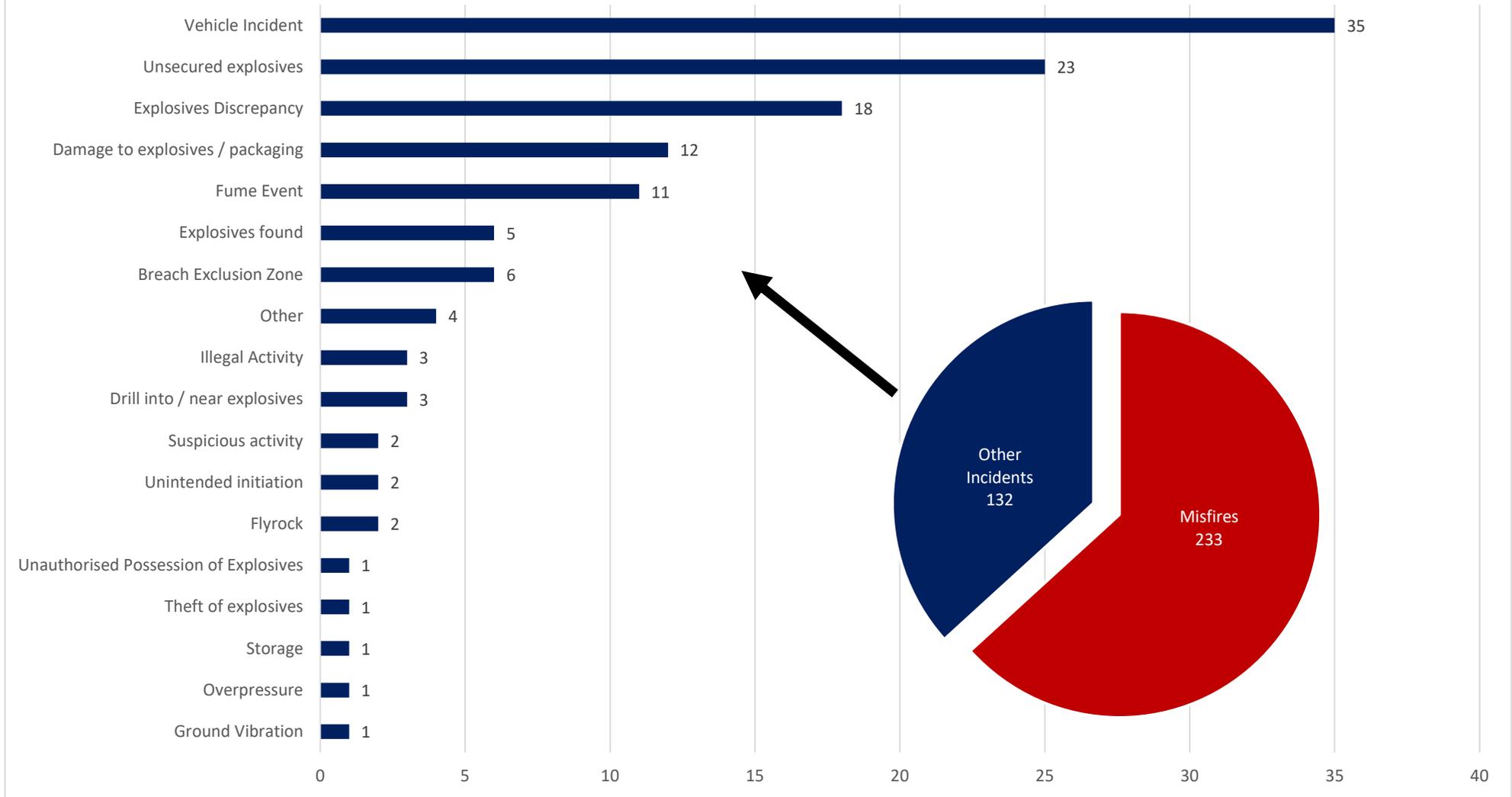


### Top 5 Most Common Reasons for Misfires Jul 2019 - Jun 2020

*Note Unidentified and Other have been removed (72)*



### Past Year Incidents June 2020 - May 2021



## Breakdown of incidents for May 2021

### Security

Problem	Action	Explosives Inspectorate Actions / Outcomes
<b>Explosives Discrepancy (1 incidents)</b>		
An over order of stock occurred. Detonators were destroyed to bring the stock back into licensed levels.	In the process of booking out and destroying the detonators 19 detonators never left the magazine and have been found when removing cut off signal tubes that were from the original destruction exercise.	Secondary checks must be completed to ensure security of explosives and account accuracy.
<b>Unsecured Explosives (3 incidents)</b>		
The shift supervisor on his rounds found a roll of detonating cord on the side of a decline. The supervisor blocked the decline and moved the roll of detonating cord to the level and called the charge crew to come and secure the explosive.	A charge hand and trainee had finished charging and packed the explosives vehicle up In the process of packing up they did not see a roll of detonating cord (with 20 metres of cord remaining on it) on the back of the explosives vehicle. The charge crew proceeded to the surface for crib. A stock take of the explosive vehicle was undertaken to ensure there were no discrepancy with other explosives on board and there were not.	Directed site to investigate incident
Whilst cornering the "open door" alarm has sounded inside the cab. The shot firers have stopped immediately and realised the explosive haulage box on the driver's side rear has come open. Upon inspection of the situation the shot firers have observed a box of boosters have come out of the box and boosters have spilled on the haul road. Whilst reclaiming the spilled boosters the shot firers have accounted for all explosives.	Upgrade latches on older explosives boxes. Investigate an alarm system that indicates when boxes are unlocked as well as open. Toolbox incident with both crews and ensure checks are done to ensure box doors are secure	Where it was initially reported as a mechanism failure it was unable to be replicated and then deemed human error. Operators were counselled on this matter.
Shotfirer found red cord during shift and placed it into bomb box in explosives vehicle which he forgot to remove at end of shift. Vehicle was in workshop for inspection and fitter noticed this and secured vehicle notifying supervisor.	Failure to follow procedure Slip/lapse	Incident was communicated/highlighted to all personnel on the importance of ensuring that procedures are followed.

### Safety

Problem	Action	Explosives Inspectorate Actions / Outcomes
<b>Misfires – aboveground (13 incidents)</b>		
<b>Downline Cut (Loading/Stemming) 2</b>		
Whilst conducting routine inspections of a blast pattern, a blast crew member discovered a severed downline on a single primed, loaded and stemmed blast hole.	OCE and On Bench Supervisor have been notified and area secured. Investigation commenced.	No adverse outcomes reported
Loading shot in broken fractured ground when dipping hole found it to be bridged by rock falling in, tried to loosen rock with PVC pipe, rock fell down to 2.8m onto explosive column and in the process has severed the down line.	Was unable to retrieve down line so reprimed hole and loaded up to 2.6m and stemmed off.	

<b>Electronic Detonator “No-Read/ No-Log” 1</b>		
No dialogue on electronic det whilst timing shot.	Likely cause to be cut down hole due to ground Conditions. Notified immediately and area painted and marked before blast initiation.	No adverse outcomes reported
<b>Explosives Found During Excavation 3</b>		
HANFO Product located on the shovel dig face. The product is in the top stemming zone of the hole. This area is a redrill and firing of previously shot ground.	Given the height of the product this is assumed to be runaway product during the loading process.	No adverse outcomes reported
Worker was grading a presplit line after it had been fired. As he was turning, he noticed a yellow object off to the side of his grill he stopped the machine to investigate as he got closer he noticed a can like object with printing on the side. The worker notified the Drill & Blast supervisor to investigate. Drill & Blast supervisor attend scene and confirmed that there was a loose booster the Drill & Blast supervisor secured the scene and notified all relevant personnel.	Site investigation underway	No adverse outcomes reported
Dozer push uncovered misfired hole and upon shotfirer inspection recovered 1 primer and found 1 live downline still in explosives column	Nil provided	No adverse outcomes reported
<b>Lead Line Cut 1</b>		
9 holes in an overburden (production dragline) shot failed to initiate due to cut-off.	Shotfirer identified in post blast examination. Investigation commenced hole locations and photos collected prior to attempting to clip back in successfully refired. Treating as potential misfires still will dig with caution.	No adverse outcomes reported
<b>Other 1</b>		
Cracking was identified by the shotfirer after completion of loading shot. Inspections were carried out by the OCE, SSE and H&S Superintendent in the afternoon. The risk of wall failure at the time was anticipated to be low. The intention was to fire the shot the following day. Night shift OCE reported that the area in question had slumped, noting that there was a high potential for downlines to be sheared off from their attached boosters.	The blast area was demarcated, and no entry was had to the area. People, plant and equipment were removed from the area. Shot fired	Area demarcated for clearance after risk assessment due to instability of pit wall
<b>Slumping of Product 4</b>		
While loading it was noticed that holes previously loaded days prior to the discovery of the misfire had slumped. These holes are positioned above an underground portal and had gas bags inserted to keep from the portal and also a hole liner was used. The other holes that had slumped were able to retrieve the leads from down the hole and secure them to the holding pegs.	At hole Z unable to retrieve the leads as they had tangled and unable to bring to the surface. After consultation with the OCE did a risk assessment to try and dig around the hole to try and find the leads, dug approximately 5 metres down the side of the hole but could not find any leads. The Superintendent was consulted and the decision was made to declare a misfire for the hole Z.	No adverse outcomes reported
Loading hole was bobbed to stem height and stemmed off to collar height taking approximately 15m of stemming. When inspecting the hole in the afternoon it was discovered that the hole had slumped 17m taking all three leads down the hole. An attempt to retrieve the leads	The misfired blasthole position was survey recorded and socialised with the Drill and Blast Engineer. The OCE was informed and a misfire exclusion zone established after the blast. Further incident investigation is in progress.	No adverse outcomes reported

was made but they were unable to be retrieved.		
Whilst tying in the shot, 2 x 75 meter leads were discovered as lost in the hole. Hole was a through-seam hole containing 2 x 75m leads in the bottom deck (through-seam) and 3 x leads in the top deck. The hole contained evidence of slumping. The 2 x 75m leads were unable to be recovered and thus will be unable to be fired.	Event raised, OCE notified, Pre-blast hole survey pickup completed. Explosives delineation to be added post blast around the misfire area.	No adverse outcomes reported
Discovered that hole had slumped and had taken down 2x leads primed with 400g Booster for each detonator. Attempts were made by shotfirer to retrieve leads however were unsuccessful as hole column had slumped 9 meters down.	The blast was fired as is	No adverse outcomes reported
<b>Unknown/Unidentified 3</b>		
An intact detonator and booster were identified by loader operator working in the area. The loader operator immediately notified the on shift OCE who attended. The loader was parked in a safe location away from activity occurring on the ROM pad, the area was delineated to restrict entry.	Shotfirer attended and inspected the area and product. Shotfirer transported the explosives to the Magazine until daylight hours where it could be tested and disposed of accordingly. Investigations have commenced and are ongoing.	No adverse outcomes reported
Dozer operator was pushing waste material on the dump. Operator noticed a yellow object on the dump tip head. Operations were stopped, and the circuit supervisor and open cut examiner were notified. The shotfirer was notified and inspected the yellow object.	The object was then identified as a booster and lead. The lead and booster were then separated and stored within the magazine. Relevant internal and external persons were notified.	No adverse outcomes reported
Pocket of product found during excavation on the Shovel dig floor	Shotfirer contacted	No adverse outcomes reported
<b>Misfires – underground (15 incidents)</b>		
<b>Bulk Product Failure 2</b>		
Site reported that some wrapper from product and about an inch of the base of the detonator were found in the muck pile. The detonator end had demonstrated that it had fired.	Nil provided	No adverse outcomes reported
Two holes in the backs had not fired correctly. Detonators and boosters had initiated successfully. Low density ANFO had not fully initiated due to holes being wet.	The un-initiated product was washed out with water and the hole recharged.	No adverse outcomes reported
<b>Detonator Failure 2</b>		
Unfired product and unfired detonator found in muck pile.	Recovered Detonator had a resistance of 0.1 ohms when tested. Shot consisted of 67 holes with overall resistance of 109.1 ohms. Site procedure is to periodically test batches of dets for resistance variations. This shot used 1.55 ohms per det. Unsure of whether the detonator was not tied in or was a faulty det. Total shot resistance, including resistance for length of firing line was within tolerance for all detonators in the shot.	No adverse outcomes reported
One detonator and 5 x cartridges misfired due to line being cut.	New initiating set was used to reprime the hole and fired at the end of shift.	No adverse outcomes reported

<b>Dislocation of Column 1</b>		
Cause not stated	Washed out and refired	No adverse outcomes reported
<b>Explosives Found Mucking Out 4</b>		
4 incidents of Bad ground	Cleared and fired	No adverse outcomes reported
<b>Initiation System (IS) Failure 1</b>		
3 cartridges found in development drive lifter hole un-initiated.	Cause potential cord whip. Refired by charge up	No adverse outcomes reported
<b>Lead Line Cut 1</b>		
Flyrock cut lead line	Nil provided	No adverse outcomes reported
<b>Unknown/unidentified 4</b>		
Found remnants of 2 x wrappers from explosive plugs in muck pile. No actual explosive found.	Nil provided	No adverse outcomes reported
RH lifter hole misfire	Nil provided	No adverse outcomes reported
Misfired holes found in face	Nil provided	No adverse outcomes reported
Lump found in LH lifter	Cause not known. Remediated with explosive charge.	No adverse outcomes reported
<b>Breach Exclusion Zone (2 incidents)</b>		
Pit Supervisor and Blast controller cleared the area, confirmed the blast guard and handed the blast over to shotfirer. The blast was fired resulting in some flyrock activity, Flyrock fell within the vicinity of the shot crew and blast guards. There was no damage to persons or property.	Progression of blasting area had not been considered when siting firing point in 'usual' place. Documentation was unclear. Shotfirer stood down pending further training. Site reviewing all documentation and the responsibilities of the blast controller.	Explosives Inspectorate attended site to investigate and also attended next shot. Recommendations provided to site for improvement of procedures
Light vehicle (used for remote bogging) was parked close to brow of slot. The slot had been fired twice before hand and the final firing was still to be completed. The crew completed the charging and initiated the blast at the end of shift. The vehicle suffered significant damage because of the blast.	Nil provided	No adverse outcomes reported
<b>Damage to explosives / packaging (2 incidents)</b>		
During a pre-blast inspection a downline was found to be cut.	Stemming truck arrived on site to replace the I.T. and stemming bucket, however, the auger was bogged and was being repaired. Was a coal shot. Stemming pile was	No adverse outcomes reported

It is presumed to have been cut whilst cleaning up stemming material. It was re-connected and is scheduled for firing. Spotter not used during clean-up activities.	delivered by a scraper, which caused the stemming pile to spread out in close proximity to a blast hole. Did not identify potential interaction hazard.	
Damage to Container holding UN1942. Suspect interaction with another container being transported by Forklift. No UN1942 leak reported.	Site investigating. Procedural review.	Cameras now fitted to front, sides and rear of forklifts to improve visibility.
<b>Drill into / near explosives (1 Incident)</b>		
Jumbo Operator identified a misfire in a butt. He then proceeded to bore a blast hole in close proximity to the misfire	Original clean up and face inspection was not completed adequately as the misfire was not identified during the process of that cut. Violation of several procedures. The operator claimed he assumed the hole had gone off and consequently forgot to report it. Misfire was identified by Jumbo operator but process not followed.	Information has been communicated highlighting hazard and importance of following procedures Contractor was subject to HR process.
<b>Fume Event (2 incidents)</b>		
When the shot was fired a shift in wind speed and direction was observed. A possible fume event (reported as dust) has occurred	Shotfirer immediately contacted blast guards and requested they fall back and for all personnel to remain indoors. A 1km blast exclusion zone was in place. Two mine workers located approximately 2km away working at a heavy vehicle wash bay, (downwind and at 45 degree perpendicular of the dust cloud) evacuated in a light vehicle back to the office area. On arriving, one of the workers has complained to his supervisor that he was experiencing a metallic taste in his mouth. As a precautionary measure, the mine has called an ambulance. The two men were taken to hospital by Queensland Ambulance Service for observations. Site investigating.	No adverse outcomes reported
Shot was fired. Blast Fume and dust breached the controlled zone by approximately 300m before dissipating. Blast had 1429 holes 40m depth with 2,013t of heavy ANFO.	Fume was reported as level 3	No adverse outcomes reported
<b>Pump Incident (1 incident)</b>		
Person pumping ANE into tanks had completed the fill of Tank 1 and shut down the system to get a person from the front gate. On return the pumping was restarted but the valve system had not been changed and the filling continued into Tank 1 until it overflowed onto the concrete apron around the tank. Pump operator informed site manager and area clean up was instigated.	Plant operator did not direct production correctly from the batching tank to the correct storage tank. Tank levels and valve switching is still completed and monitored manually. The plant operator also left the transfer pump running while absent from the manufacture shed. Monitor storage tank level correctly.	Tank to be dipped multiple times during the day including before and after batching. Operator to be present when pumping out.
<b>Vehicle Incident (3 incidents)</b>		
Basket on Charmec Explosive vehicle struck wall of drive when reversing causing minor damage to the handrails and structure of the basket. The Charmec was carrying emulsion product at the time of the incident.  The emulsion storage and delivery system were not at risk nor damaged.	Stopped vehicle and reported to explosives and minerals inspectorates	No adverse outcomes reported

<p>SSAN auger safety locking pin not secured. Hydraulic ram has slowly leaked causing auger to lower during loading operation. Auger came to rest on MPU handrail minor cosmetic damage only. No spillage occurred.</p>	<p>A bolt has been inserted in the auger boom so that the boom will remain at a fixed height. The seal in the hydraulic cylinder is to be replaced</p>	<p>No adverse outcomes reported</p>
<p>As Magazine keeper was leaving the magazine compound the door on the toolbox had come up and made contact with the magazine gate. There were no explosives on board the vehicle</p>	<p>No walk around inspection has been conducted on the shot vehicle prior to leaving the magazine to ensure all doors are correctly secured.</p> <p>Ensure the following is pre-started to all members of the blast crew:</p> <ul style="list-style-type: none"> <li>a. Allow sufficient time to go to the magazine to complete reconciliation requirements</li> <li>b. Awareness of positioning of the toolbox door in the mirrors and that you may not always see the door.</li> <li>c. Importance of walk around inspections prior to moving the vehicle.</li> </ul> <p>Review technology/engineering options on the shot vehicle for light or audible alarm for if the door is not latched correctly or not closed.</p> <p>Disciplinary action provided to the individual that did not complete the magazine transaction correctly.</p> <p>Review the lift up door of the shot vehicle and see if the side-opening door (similar to shipping container) would be a safer option.</p>	