Mine Health and Safety Inspectorate

ANNUAL REPORT 2020/2021

mineral resources & energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

2030 NDP

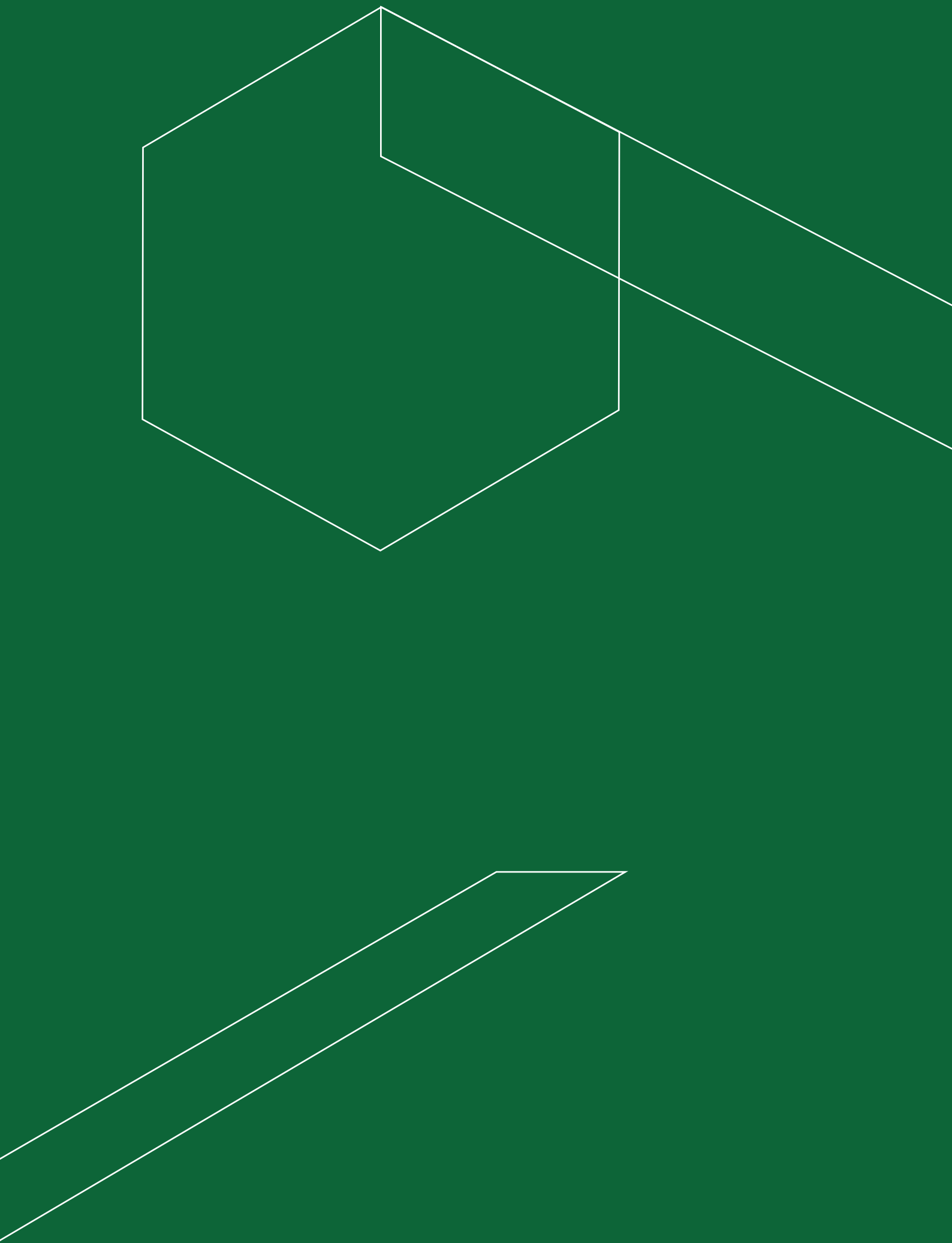


TABLE OF CONTENTS

PREFACE 5

1. GENERAL INFORMATION 6

1.1. Submission of the annual report to the executing authority 6

1.2. Mission statement 7

1.3. Legislative mandate 7

1.4. Executive summary 7

1.4.1. Staffing 7

1.4.2. Implemented training 7

1.4.3. Training interventions 7

1.4.4. Current health performance 7

1.4.5. Current safety performance 9

1.4.6. Illegal mining 10

1.4.7. Women in mining 10

2. PROGRAMME PERFORMANCE 12

2.1. Aim of the programme 12

2.2. Purpose of the programme 12

2.3. Service delivery objectives and indicators 12

2.4. Service delivery improvement plan 14

3. STATE OF OCCUPATIONAL HEALTH IN THE SOUTH AFRICAN MINING INDUSTRY 16

3.1. Occupational hygiene 16

3.1.1. Airborne pollutant exposure 17

3.1.2. Noise exposure 19

3.1.3. Thermal stress 20

3.1.4. General 24

3.2. Occupational medicine 25

3.2.1. Annual medical reports 25

3.2.2. Occupational diseases reported in the AMRs 28

3.3. Medical Inspector's report 44

3.3.1. Medical appeals 44

3.3.2. Appeals received per region 45

3.3.3. Appeals received per commodity 46

3.3.4. Diseases handled in the appeals received for 2020 46

3.3.5. Appeal findings 47

3.3.6. Challenges to the appeal process 47

3.4. Reporting on HIV and TB 48
3.4.1. Compliance for all mines 48
3.4.2. TB programme and TB/HIV co-infection in all mines 50
3.4.3. HCT services in all mines 53
3.4.4. HCT services per commodity 53

4. STATE OF SAFETY IN THE SOUTH AFRICAN MINING INDUSTRY 58
4.1. Accident statistics 58
4.2. Analysis of accidents and injuries 58
4.2.1. Fatalities per region 58
4.2.2. Injuries per region 59
4.2.3. Fatalities per commodity 59
4.2.4. Injuries per commodity 60
4.2.5. Fatalities: Women in mining 60
4.2.6. Injuries: Women in mining 61
4.2.7. Fatalities classified by casualty classification 61
4.2.8. Accidents classified by casualty classification 64
4.2.9. Injuries classified by casualty classification 65
4.2.10. Accidents classified by time of occurrence 67
4.2.11. Accidents classified by location 67
4.3. Enforcement 68
4.3.1. Section 54 instructions to deal with dangerous conditions 68
4.3.2. Section 55 instructions to order compliance 69

5. MINE SURVEYING IN THE SOUTH AFRICAN MINING INDUSTRY 72
5.1. Activities of the Mine Surveying Directorate 72
5.2. Surveying matters 72
5.3. Special surveys 72
5.4. Section 55 instructions issued 72
5.5. Mapping services 73

6. TRAINING AND EXAMINATIONS 75
6.1. Implemented training 75
6.2. Training interventions 75
6.2.1. Assistant inspector programme 75
6.2.2. Bursary scheme 75
6.3. Examinations 75
6.3.1. Written candidates vs certificates issued per examination category 75

7. ACTIVITIES OF THE INSPECTORATE 77

7.1. Regional operations: Central and Coastal Regions 77

7.1.1. Gauteng 78

7.1.2. KwaZulu-Natal 81

7.2. Regional operations: Central, Coastal and North-Eastern Regions 83

7.2.1. Eastern Cape 85

7.2.2. Free State 86

7.2.3. Limpopo 88

7.2.4. Mpumalanga 91

7.3. Regional operations: Western and Coastal Regions 93

7.3.1. Northern Cape 94

7.3.2. North West: Klerksdorp 95

7.3.3. North West: Rustenburg 97

7.3.4. Western Cape 99

8. ANNEXURES 102

ANNEXURE A: Organogram of the MHSI for the period ending 31 March 2021 102

ANNEXURE B: Contact list for the period ending 31 March 2021 103

ANNEXURE C: Acronyms 105

PART I

GENERAL INFORMATION

PREFACE

This document is a report by the Chief Inspector of Mines (CIOM) on health and safety at mines and the activities of the Mine Health and Safety Inspectorate (MHSI), compiled as required by section 49(1)(j) of the Mine Health and Safety Act, 1996 (Act 29 of 1996), as amended (MHSA).

The MHSI, established in terms of the MHSA, as amended, has the responsibility of protecting the health and safety of persons working at mines or those who are affected by mining activities.

The CIOM also has the responsibility of leading the tripartite structures that are formed in terms of the MHSA as the Chairperson of the Mine Health and Safety Council (MHSC) and the Mining Qualifications Authority (MQA).

The MHSC consists of representatives of the state, organised labour and employer organisations. The Council was established to advise the Minister of Mineral Resources and Energy on health and safety issues and to promote a healthier and safer culture in the mining industry.

The MQA is the Sector Education and Training Authority for the minerals and mining sector and is responsible for the education and training needs of the mining industry. The MQA was established under the Skills Development Act, 1998 (Act 97 of 1998).

The activities of the above-mentioned two bodies are intricately linked with those of the MHSI and their accounts are captured in their respective annual reports.

1. GENERAL INFORMATION

1.1 Submission of the annual report to the executing authority

Mr. S.G. Mantashe, MP

Minister of Mineral Resources and Energy

Republic of South Africa

Dear Minister

I am pleased to present to you the Annual Report of the Mine Health and Safety Inspectorate for the 2020/21 period under review.This report is in accordance with the requirements of section 49(1)(j) of the Mine Health and Safety Act, 1996 (Act 29 of 1996), as amended.

Yours sincerely

D Msiza
Chief Inspector of Mines
Mine Health and Safety Inspectorate

1.2 Mission statement

The MHSI strives towards a safe and healthy mining industry. This is to be achieved by reducing mining-related deaths, injuries and occupational diseases through the formulation of national policy and legislation, the provision of advice, and the application of systems that monitor and enforce compliance with the law in the mining sector.

1.3 Legislative mandate

The MHSI was established in terms of the MHSA, as amended, for the purpose of executing the statutory mandate of the MHSI in safeguarding the health and safety of mine employees and communities affected by mining operations.

1.4 Executive summary

It is with great honour and pleasure that I present this report on the state of health and safety in the South African mining industry and the activities of the MHSI for the 2020/21 financial year.

1.4.1 Staffing

The establishment of the inspectorate provides for 281 posts of which 243 are currently filled and 38 posts are vacant. The demographics of the Inspectorate were as follows:

GENDER	AFRICAN	WHITE	ASIAN	COLOURED	TOTAL
Male	124	10	0	0	134
Female	97	5	0	7	109

1.4.2 Implemented training

During the reporting period, there were no developments regarding the skills and knowledge base of the MHSI staff due to the Corona Virus Infection Disease 2019 (COVID-19) pandemic and its subsequent restrictions.

1.4.3 Training interventions

1.4.3.1 Assistant Inspector programme

The Department had nine Assistant Inspectors at the commencement of the reporting period and all of these Assistant Inspectors are at various stages in obtaining their Government Certificate of Competency (GCC) in their respective disciplines.

1.4.3.2 Bursary scheme

There were no MHSI bursary holders pursuing studies during the reporting period due to the COVID-19 pandemic and its subsequent restrictions.

1.4.4 Current health performance

1.4.4.1 Occupational health

Statutory compliance reports submitted by the mines decreased across all stressors in 2020 when compared to 2019. The North West: Klerksdorp region recorded the biggest decrease in the number of mines that reported on airborne pollutants, thermal stress: heat and thermal stress: cold, whilst the Western Cape recorded the biggest decrease in the number of mines that reported on the exposure of employees to noise.

Due to the COVID-19 pandemic and the national lockdown restriction levels, most South African mining operations were not fully operational. This had a direct impact on the number of employees at risk to occupational hazards and ultimately the number of reports submitted by the mines.

The submitted annual medical reports (AMRs) showed a slight decrease in 2020. The respective regional offices will implement corrective measures to enforce compliance with regard to the submission of AMRs. The total number of employees covered in the AMRs decreased by 4% in 2020 when compared to 2019 and the medical surveillance showed a decrease in the initial, periodic and exit medical examinations conducted when compared to the previous reporting period.

Despite the reduction in the submission of AMRs, there was a 37% decrease from a total of 2 013 occupational diseases cases reported by mines in 2020 when compared to 3 130 cases reported in 2019. Statistics showed a decrease in silicosis, pulmonary tuberculosis (PTB) and noise-induced hearing loss (NIHL) cases reported from the gold and platinum sectors. The coal sector showed a decrease in PTB and coal workers' pneumoconiosis (CWP) cases, whilst NIHL cases showed a slight increase.

The MHSA requires the employer to submit statutory reports to the respective Principal Inspectors (PIs) detailing information of personal exposure monitoring for occupational hygiene stressors. Regrettably, there was an increase in the number of employees over-exposed to airborne pollutants, heat and cold stressors, as well as noise levels during the reporting period.

There is a need for employers to assess, monitor and adhere to maintenance schedules in order to reduce excessive exposure to airborne pollutants and undesired noise levels which exceed 85 decibels (dB). Training and awareness of employees on the adverse health effects of exposure to occupational hazards, as well as continuous supervision, should remain a priority. The South African mining industry, together with original equipment manufacturers (OEMs), are encouraged to continue the sharing of best practices where possible, to ensure that strategies achieve the aim of reducing and eventually eliminating the risks identified.

During the reporting period, the Medical Inspector dealt with 152 appeals of which only 50 of these appeals met all the requirements to be handled as a section 20 medical appeal. With appellants and second opinion health practitioners unavailable to complete the appeal process due to the COVID-19 pandemic, only 40 appeals were finalised during the reporting period.

1.4.4.2 HIV/Aids and TB

There is a continued alignment between the work of the Department of Mineral Resources and Energy (DMRE) and the strategies of the Department of Health (DOH) in the spheres of Human Immunodeficiency Virus (HIV) and tuberculosis (TB). During the period under review, most of the mines complied with the reporting requirements and the analysis of TB and HIV matters is based on data contained in the DMR 164 forms received from the South African mining industry.

For 2020, data was received from 775 mines representing 482 068 employees when compared to 754 mines with 449 246 employees in 2019. It should be noted that the compliance with the integrated HIV and TB policy decreased, and compliance to the integrated HIV and TB programme was also low. The overall HIV and TB programme budget remained constant while the diamond sector remained the worst performer in terms of compliance to HIV and TB programmes, budget as well as monitoring and evaluation.

The COVID-19 pandemic affected the TB and HIV programmes at the mines, which resulted in a decrease in TB screening and an increase in employees diagnosed with TB. Screening for TB remained above 90% in line with the Joint United Nations Programme on HIV/AIDS (UNAIDS) 90:90:90 strategy. New strategies to deal with TB and HIV management during COVID-19 need to be investigated. TB and HIV policies must have guidelines on key strategies and implementation plans, and all mines must dedicate budgets for TB and HIV programmes irrespective of the sector or the size of the mine.

1.4.4.3 The COVID-19 pandemic

In March 2020, COVID-19 was declared a global pandemic by the World Health Organization (WHO) and the President of South Africa declared a national state of disaster on COVID-19, in terms of the Disaster Management Act, 2002 (Act 57 of 2002) (DMA). Several restrictions aimed to curb the spread of the disease were introduced. Despite these measures, the numbers of COVID-19 positive cases continued to increase dramatically throughout all sectors in the country.

During the reporting period, the CIOM issued a guideline in accordance with section 9 of the MHSA, to compel all mines to prepare and implement a Code of Practice (COP) for the prevention, mitigation and management of the COVID-19 outbreak.

During the reporting period, more than 1.5 million people in South Africa had been infected and nearly 50 000 people had been reported to have died from the disease. The global scientific community has developed, tested and produced several vaccines that are safe and effective against the disease. South Africa's scientists and research institutions have made an important contribution to these efforts and have contributed to global knowledge regarding the disease, including on the emergence of new variants.

Vaccination is our most decisive measure to combat COVID-19, and like many countries, South Africa initiated its vaccination programme.

1.4.5 Current safety performance

1.4.5.1 Occupational safety

There was an improvement with regard to the total number of injuries reported during 2020. A total of 1 747 injuries were reported in 2020 when compared to 2 452 injuries reported during 2019.

However, it is regrettable and a misstep on the journey towards zero harm that a total of 60 fatalities were reported by the South African mining industry in 2020 compared to 51 fatalities reported in 2019. The increase in fatal accidents during 2020 is extremely disappointing and it is not a regression that can be accepted. This increase resulted in a more intensive introspection with regard to the root causes of these fatalities and it is receiving our full attention.

Fall of ground (FOG) accidents, including seismic-related rock bursts, remain a significant challenge in both the platinum and gold sectors, especially at our deep level mining operations. Transport-related accidents continue to mostly affect the coal and platinum mining sectors.

It is also worth noting that the fatalities recorded during 2020 include seven fatalities classified under the miscellaneous category, which is fatalities that may not be readily classified under the other available categories on the South African Mines Reportable Accidents Statistics System (SAMRASS) and is currently pending investigations and/or post-mortem reports. After these seven cases were assessed, it was found that none of the cases were COVID-19 related deaths. The deceased employees had collapsed and passed on while on duty with no evidence of accidents. The preliminary investigations and post-mortems received have so far proved that three of these cases were as a result of natural causes of which two were in the coal mining sector and one in the gold mining sector.

1.4.5.2 Disaster-type accidents

There were no reports of mine disasters or disaster-type accidents during the period under review. However, near miss accidents involving large numbers of employees were reported at Sibanye Stillwater Kloof Gold mines on 29 March 2021, where seven employees were involved in a seismic-related accident. One employee was unfortunately fatally injured at this incident.

Again, on 17 November 2020, a geotechnical failure occurred on the south pit western high wall slope (ore footwall) at Vedanta Gamsberg mine in the Northern Cape. At the time of the failure, ten employees were trapped because the access/exit ramp was rendered inaccessible by the failed material. Initially eight employees were rescued from the pit and two employees remained unaccounted for. The proto team managed to locate one of the employees using the South African Police Service (SAPS) sniffer dogs but unfortunately, the employee succumbed to his injuries. Rescue/recovery operations to locate the last trapped miner are still ongoing.

1.4.6 Illegal mining

Illegal mining adversely affects the health and safety of mine employees and the surrounding communities. Illegal mining, as in the past, resulted in a significant loss of life mainly as a result of underground fires, FOG accidents and murder. The illicit activities also have a negative impact on our economy and result in a significant loss of revenue for the state and the mining sector.

There are reports claiming that some of these illegal activities are conducted by desperate people including current mine workers who are moonlighting, former mine employees that have been laid off, as well as people from neighbouring countries. The *modus operandi* of illegal mining is continuously changing as the Department and the relevant stakeholders implement measures to eradicate the illicit activities. For instance, there is now an increase in violent crimes including murder associated with illegal mining as a result of rival gang activity.

Illegal mining is a criminal activity fuelled by highly organised, dangerous, well-financed and complex local and international crime syndicates. The Department works with, and supports other departments on a national strategy to eliminate illicit mining activities and the trade of precious metals and diamonds. It also continues to collaborate with law enforcement agencies and other stakeholders to ensure the continued implementation of strategies to combat illegal mining activities in South Africa.

1.4.7 Women in mining (WIM)

One female mine employee was fatally injured in 2020 compared to two women in 2019 which translates to a decrease of 50% year-on-year. Statistics proves that it is possible to report zero fatalities with regard to WIM since there were no fatalities of women reported for the 2001, 2003, 2005, 2010 and 2015.

There was a decrease in the number of injuries involving WIM. The injuries that were reported involving women were mainly in the general classification (66%) and were due to slipping and falling, material handling, and being struck by object.

PART 2

PROGRAMME PERFORMANCE

2. PROGRAMME PERFORMANCE

2.1 Aim of the programme

The MHSI was established in terms of the MHSA, as amended. The aim of the programme is to carry out the constitutional mandate of the DMRE to protect the health and safety of persons working at mines and people residing in nearby communities that are directly affected by mining activities. This is done by performing statutory inspections and audits, the enforcement of the MHSA and its regulations, as well as conducting investigations and inquiries at South African mines.

The programme also administers the GCC for the mining sector. It consists of two sub-programmes: Governance, Policy and Oversight, and Mine Health and Safety (Regions).

2.2 Purpose of the programme

To execute the statutory mandate of the DMRE to protect the health and safety of mine employees and people affected by mining activities.

2.3 Service delivery objectives and indicators

The MHSI's strategic plan and achievements during the period under review are outlined in the table 2.3. This is an account of progress achieved in the period under review against the annual targets set for achieving the strategic objectives of the MHSI.

TABLE 2.3: Progress achieved against annual targets

MEASURES	STATUS	PERFORMANCE ANALYSIS	RECOMMENDATIONS	CURRENT ACTUAL	CURRENT TARGET
Percentage reduction in occupational fatalities		**Not achieved:** A total 60 fatalities were reported from April 2020 to March 2021 when compared to 59 fatalities reported during the same period in 2019. **Calculation:** [(60 - 59)/59]*100 = 2% There was a regression in the number of fatal accidents reported by mines. Multiple fatalities were reported by mines during the financial year. FOG, general and equipment type accidents remain major contributors.	More inspections, audits, tripartite meetings and meetings with mine management and executives will be conducted in the new financial year to combat fatalities. There is also hope that with all measures to address COVID-19 cases being continuously implemented by mines including the possible vaccine roll-out, there will be more focus on addressing fatal accidents.	2% regression	10%
Percentage reduction in occupational injuries		**Achieved:** A total of 1 811 injuries were reported from April 2020 to March 2021 when compared to 2 375 injuries reported during the same period in 2019. **Calculation:** [(1 811 - 2 375)/2 375]*100 = -24%	The reason for over achievement is that less injuries were reported during lockdown levels 2 and 1.	24% achievement	5%
Percentage reduction in occupational diseases (including TB)		**Achieved:** A total of 1 198 diseases were reported from April 2020 to March 2021 when compared to 2 060 diseases reported during the same period in 2019. **Calculation:** [(1 198 - 2 060)/2 060]*100 = -42%	The reason for over achievement is that less diseases were reported during lockdown levels 2 and 1.	42% achievement	10%
Percentage of investigations completed (initiated vs completed)		**Achieved:** A total of 487 accident investigations were completed from April 2020 to March 2021. **Calculation:** [(487/487)*100] = 100%	The reason for the over-achievement is that some of the investigations are less complex and do not require big gatherings. This measure was not totally impacted by the COVID-19 lockdown regulations and restrictions.	100% achievement	80%
Percentage of inquiries completed (initiated vs completed)		**Achieved:** A total of 13 accident inquiries were completed from April 2020 to December 2020. **Calculation:** [(13/15)*100] = 87%	The non-availability of witnesses and legal representatives due to lockdown regulations and restrictions remain a challenge. Outstanding accident inquiries will be completed in the next financial year.	87% achievement	80%
Number of qualitative inspections conducted (cumulative)		**Partially achieved:** A total of 8 030 inspections and audits were conducted from April 2020 to March 2021 when compared with the target of 8 800 for inspections and audits.	The partial achievement is a result of the lockdown regulations and restrictions. At the beginning of national lockdown, some mines were not operating and those that were operational started at 50% capacity of the total workforce.	8 030	8 800

2.4 Service delivery improvement plan

TABLE 2.4: Progress achieved against annual targets

KEY SERVICE	SERVICE BENEFICIARY	DESIRED STANDARD		PROGRESS AS AT 31 MARCH 2021
Address health and safety risks in mining through: **Number of inspections conducted** **Number of investigations conducted** **Number of inquiries conducted** **Reduction in occupational injuries** **Reduction in occupational diseases**	Mining operations	Quantity	80% of planned investigations as per capacity 5% of planned reduction in occupational injuries 10% of planned reduction in occupational diseases 80% of planned inquiries as per capacity	100% of planned investigations as per capacity 24% reduction in occupational injuries 42% reduction in occupational diseases 87% of planned inquiries as per capacity
		Quality	Implementation and compliance to standardised policies and procedures	Achieved
		Consultation	Quarterly consultation with mining operations	Achieved
		Open and transparency	Policies and procedures are public documents	Achieved
		Information	Information is shared on a monthly basis with mines	Achieved
		Value for money	Ensure the optimum utilisation of voted funds	Achieved

PART 3

STATE OF OCCUPATIONAL HEALTH IN THE SOUTH AFRICAN MINING INDUSTRY

3. STATE OF OCCUPATIONAL HEALTH IN THE SOUTH AFRICAN MINING INDUSTRY

The exposure of employees to occupational hazards which exceed the occupational exposure limit (OEL), remains a concern. The number of employees at risk to airborne pollutant exposure decreased by about 22% from a total population of 420 785 in 2019 to 326 744 in 2020. Employees at risk to noise exposure recorded a 17% decrease from a total population of 402 454 in 2019 to 332 578 in 2020, and thermal stress: heat recorded a 22% decrease in the total number of employees at risk from 314 882 in 2019 to 244 741 in 2020. The South African mining industry continued to maintain zero over-exposure to thermal stress: cold from 2013 to the current reporting period. The number of employees at risk decreased by about 14% from 121 291 in 2019 to 104 565 in 2020.

Compliance by the mines with regard to reporting, decreased across all stressors in 2020 when compared to 2019. The total number of mines that reported decreased per stressor as follows: airborne pollutants by 18.8%, noise by 16.0%, thermal stress: heat by 26.8% and thermal stress: cold by 18.9%. North West: Klerksdorp recorded the biggest decrease in the number of mines that reported on airborne pollutants, thermal stress: heat and thermal stress: cold. The Western Cape recorded the biggest decrease in the number of mines that reported on noise exposure to employees.

It should however be noted that due to the COVID-19 pandemic, most operations within the South African mining industry were not fully operational due to the national lockdown restrictions. This may have had a direct impact on the number of employees at risk to occupational hazards and ultimately the number of reports submitted.

There was a slight decrease of 5.28% in the submission of AMRs from a total of 984 reports in 2019 to 932 reports in 2020. The regional offices should take the necessary corrective measures to enforce compliance regarding the submission of AMRs.

The total number of employees covered in the AMRs showed a slight decrease of 4.24% in 2020 when compared to 2019. Medical surveillance showed a decrease in the initial, periodic and exit medical examinations conducted when compared to the previous reporting period.

A general decrease of 35.69% was noted in the total of 2 013 occupational diseases reported by mines in 2020, when compared to 3 130 cases reported in 2019. The analysis of occupational diseases rate trends showed a notable decrease from 57 employees per 10 000 employees in 2019 to 38 employees in 2020. Statistics showed a decrease in silicosis, PTB and NIHL cases reported from the gold and platinum sectors. The coal sector showed a decrease in PTB and CWP cases, whilst NIHL cases showed a slight increase.

3.1 Occupational hygiene

Regulation 9.2.7 of the MHSA requires the employer to submit statutory reports to the PIs on prescribed forms detailing information of personal exposure monitoring for occupational hygiene stressors.

The analysis of occupational hygiene measurements is based on the reports submitted to the MHSI as indicated in table 3.1 below:

TABLE 3.1: Compliance reporting

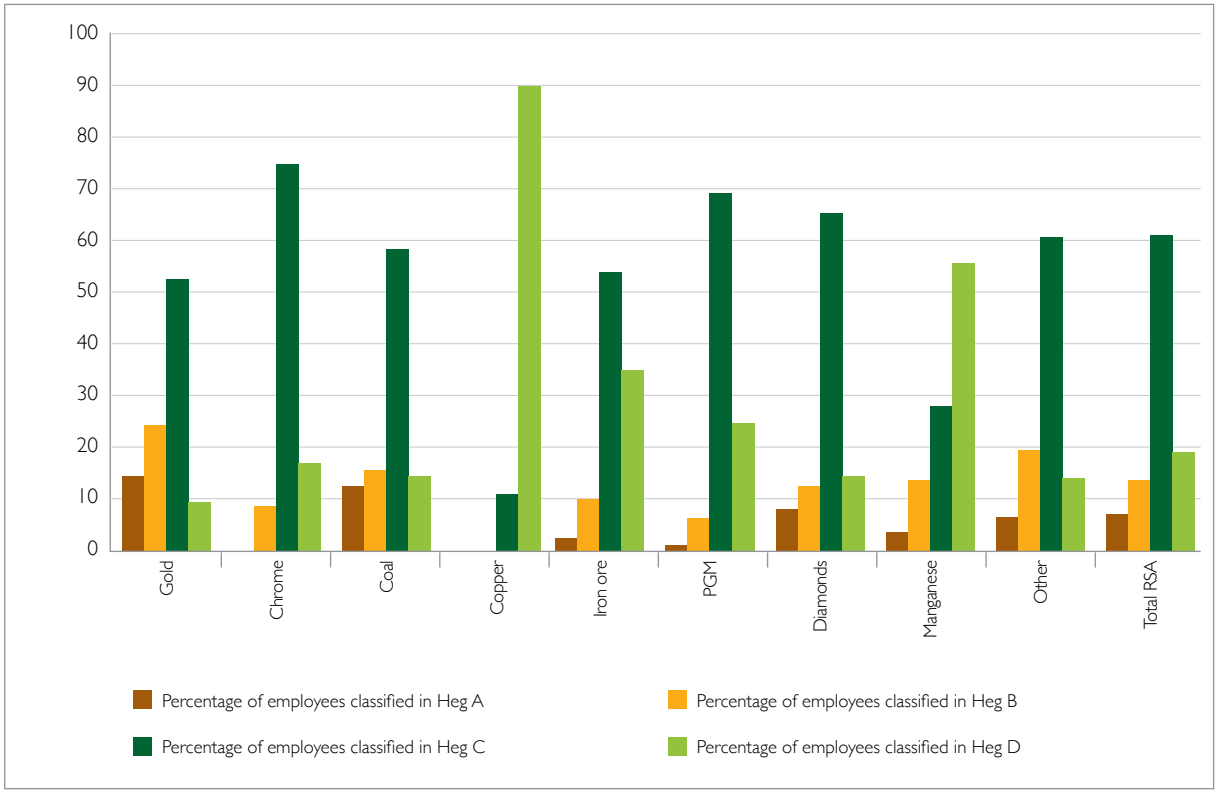
REGION	AIRBORNE		NOISE		HEAT STRESS		COLD STRESS	
	2019	2020	2019	2020	2019	2020	2019	2020
Eastern Cape	36	29	31	25	27	24	25	20
Free State	39	39	39	38	32	28	21	16
Gauteng	110	107	115	112	97	84	67	64
KwaZulu-Natal	67	59	67	58	61	52	48	37
Limpopo	70	60	75	58	68	46	40	38
Mpumalanga	149	124	146	121	91	77	95	83
Northern Cape	72	57	69	57	51	43	42	35
North West: Klerksdorp	148	84	89	72	90	31	89	55
North West: Rustenburg	145	122	155	136	126	95	86	82
Western Cape	81	64	71	43	70	42	65	39
TOTAL	**917**	**745**	**857**	**720**	**713**	**522**	**578**	**469**

3.1.1 Airborne pollutant exposure

NOTE:

- The air quality index (AQI) of multiple pollutants is determined by dividing the dust concentration of each pollutant in the mixture by its OEL and adding the results.
- The sum should not be greater than a unit.

FIGURE 3.1.1(a): Percentage exposure to airborne pollutants per classification band per commodity

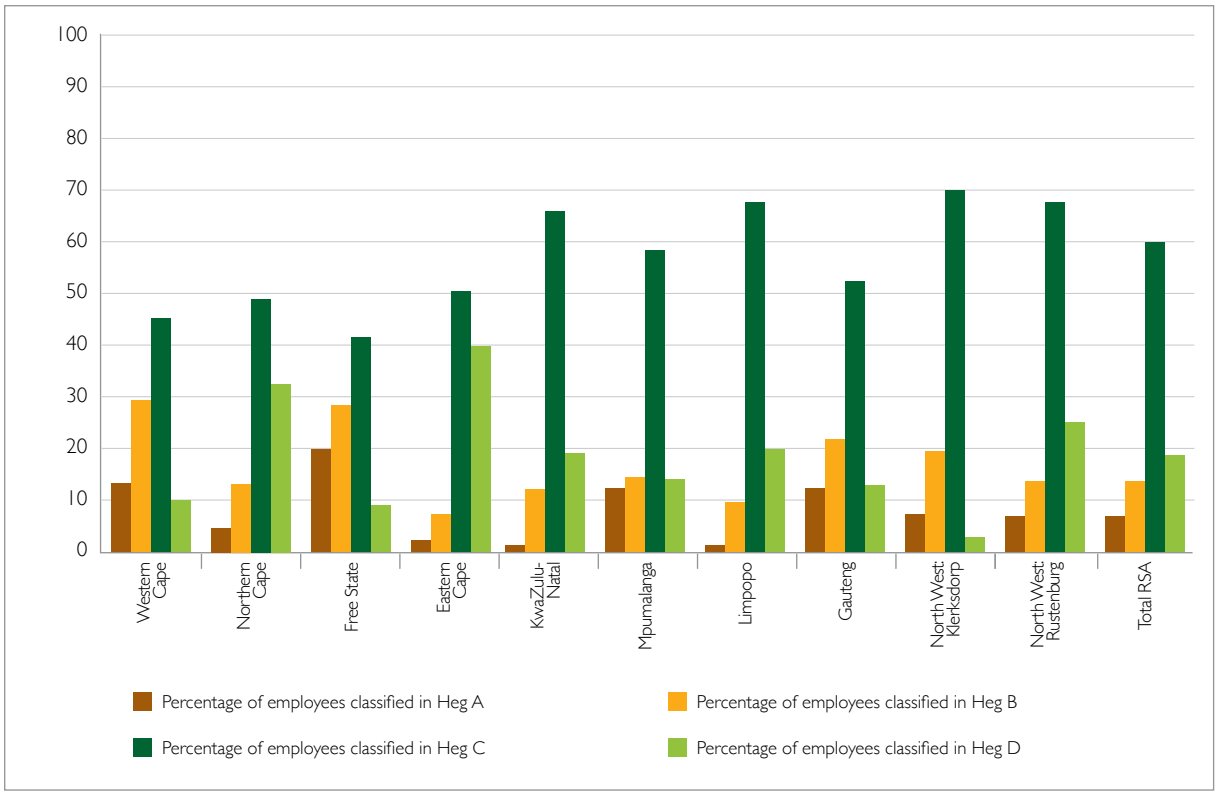


Exposure classification band:
A = Exposures ≥ the OEL or mixture of exposures ≥ 1
B = 50% of the OEL ≤ exposures < OEL or 0.5 ≤ mixtures of exposures < 1
C = 10% of the OEL ≤ exposures < 50% of the OEL or 0.1 ≤ mixtures of exposures < 0.5
D = Exposures < 10% of the OEL or mixtures of exposures < 0.1

The number of employees over-exposed to airborne pollutants were 22 458 with a percentage of 6.87% in 2020 when compared to 6.13% in 2019. The slight increase can be noted in the following commodities: gold increased from 11.83% in 2019 to 14.29% in 2020, the Platinum Group Metals (PGMs) increased from 0.13% in 2019 to 0.53% in 2020, diamonds increased from 7.87% in 2019 to 7.98% in 2020, manganese increased from 2.79% in 2019 to 3.19% in 2020, and other mines increased from 6.27% in 2019 to in 6.58% in 2020.

Although there was a national increase in employee over-exposure to airborne pollutants, there were some commodities that recorded a decrease: iron ore from 13.52% in 2019 to 2.27% in 2020, copper from 5.02% in 2019 to 0.00% in 2020, chrome from 0.47% in 2019 to 0.18% in 2020 and coal, with an insignificant decrease, from 12.32% in 2019 to 12.31% in 2020.

FIGURE 3.1.1(b): Percentage exposure to airborne pollutants per classification band per region



Exposure classification band:
A = Exposures ≥ the OEL or mixture of exposures ≥ 1
B = 50% of the OEL ≤ exposures < OEL or 0.5 ≤ mixtures of exposures < 1
C = 10% of the OEL ≤ exposures < 50% of the OEL or 0.1 ≤ mixtures of exposures < 0.5
D = Exposures < 10% of the OEL or mixtures of exposures < 0.1

There was a slight increase in employee over-exposure to airborne pollutants nationally of 0.74% in 2020 when compared to 2019. This increase was noted mainly in the Western Cape which increased from 13.11% in 2019 to 14.16% in 2020; the Free State from 16.34% in 2019 to 20.33% in 2020; Mpumalanga from 10.96% in 2019 to 12.52% in 2020, Gauteng from 11.36% in 2019 to 12.35% in 2020 and the North West: Rustenburg from 0.25% in 2019 to 0.68% in 2020.

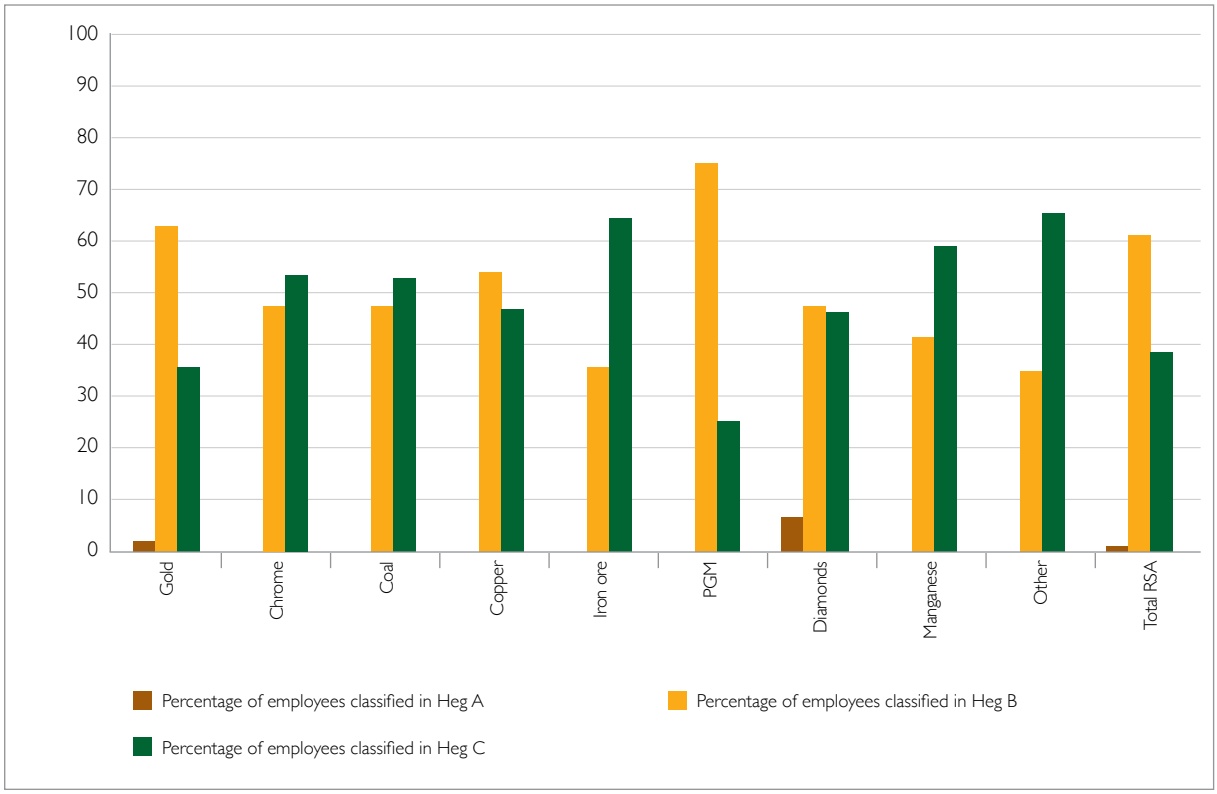
A decrease in the number of employees over-exposed to airborne pollutants was noted in the Northern Cape from 9.72% in 2019 to 4.63% in 2020; the Eastern Cape from 5.96% in 2019 to 2.22% in 2020, KwaZulu-Natal from 4.45% in 2019 to 1.60% in 2020; Limpopo from 3.74% in 2019 to 1.64% in 2020 and North West: Klerksdorp from 8.18% in 2019 to 7.63% in 2020.

3.1.2 Noise exposure

NOTE:

- The OEL for noise is 85dB (A) based on an eight-hour exposure shift.
- No special precautions, except monitoring, are required for the C-band.
- The implementation of the hearing conservation programme (HCP) is required for the A- and B-bands.
- Persons in the A- and B-bands are over-exposed.

FIGURE 3.1.2(a): Percentage exposure to noise per classification band per commodity



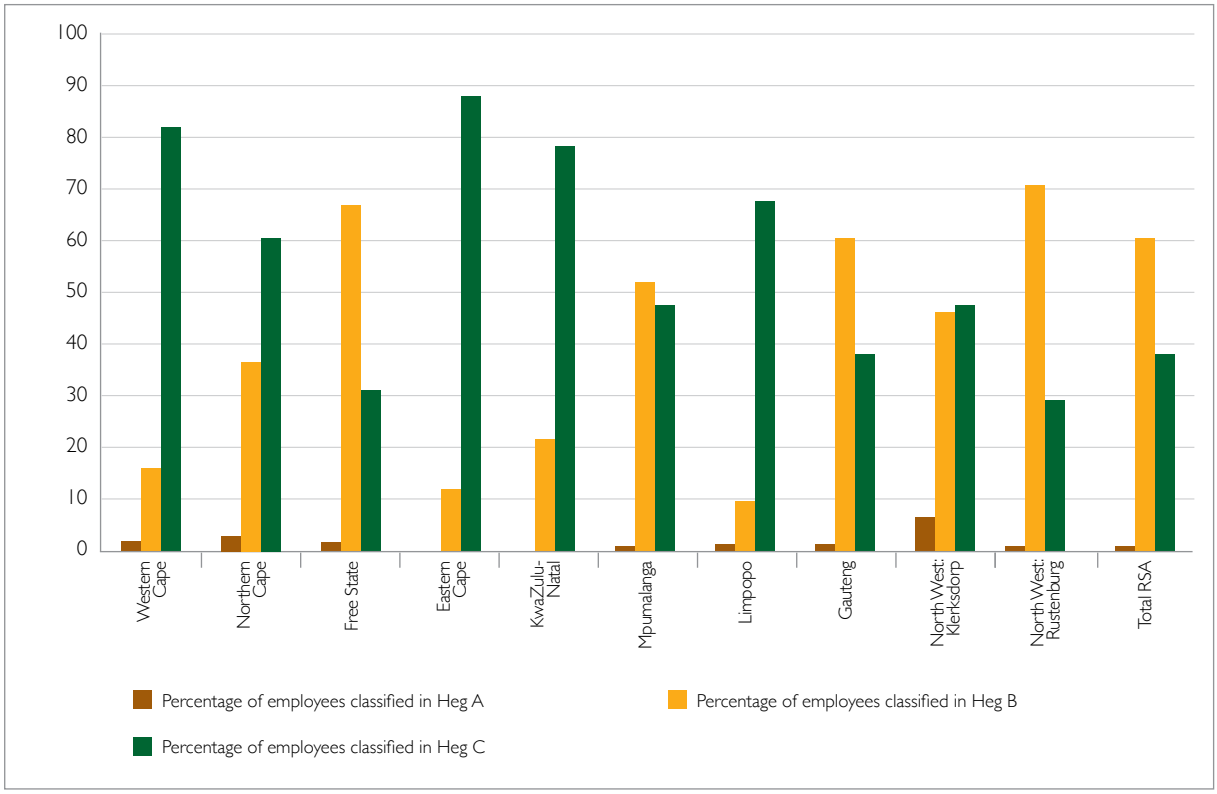
Exposure classification band:
A = Exposures ≥ 105 dB LAeq, 8h
B = 85 dB $L_{Aeq, 8h}$ ≤ exposures < 105 dB $L_{Aeq, 8h}$
C = 82 dB $L_{Aeq, 8}$h ≤ exposures < 85 dB $L_{Aeq, 8h}$

The number of employees over-exposed to excessive noise levels in 2020 was 2 877 from a total population of 332 578 employees at risk. This equates to 0.87% nationally in 2020 when compared to 0.68% in 2019. This increase in employee over-exposure to excessive noise levels was notable in the diamond sector, which increased significantly from 0.87% in 2019 to 6.51% in 2020, the gold sector increased slightly from 1.34% in 2019 to 1.92% in 2020, and a slight increase was also noted in the coal sector from 0.03% in 2019 to 0.27% in 2020.

A decrease in employee over-exposure to excessive noise levels was noted in the following commodities: chrome from 0.12% in 2019 to 0.00% in 2020, PGM from 0.75% in 2019 to 0.06% in 2020 and other mines from 0.44% in 2019 to 0.15% in 2020.

The copper, iron ore and manganese commodities are commended for maintaining a zero employee over-exposure to excessive noise levels from 2018 to 2020.

FIGURE 3.1.2(b): Percentage exposure to noise per classification band per region



Exposure classification band:
A = Exposures ≥ 105 dB LAeq, 8h
B = 85 dB $L_{Aeq, 8h}$ ≤ exposures < 105 dB $L_{Aeq, 8h}$
C = 82 dB $L_{Aeq, 8h}$ ≤ exposures < 85 dB $L_{Aeq, 8h}$

Regardless of a slight increase in employee over-exposure to excessive noise levels nationally, there was a significant increase in the North West: Klerksdorp region from 0.16% in 2019 to 6.48% in 2020. The Western Cape increased from 0.16% in 2019 to 1.98% in 2020; the Northern Cape from 0.02% in 2019 to 2.71% in 2020;, Mpumalanga from 0.12% in 2019 to 0.26% in 2020 and Gauteng from 0.02% in 2019 to 1.33% in 2020.

Regions which recorded a slight decrease in employee over-exposure to excessive noise levels are: the Free State with a decrease from 4.16% in 2019 to 1.43% in 2020, North West: Rustenburg from 0.69% in 2019 to 0.03% in 2020 and, KwaZulu-Natal and Limpopo both decreased from 0.79% and 0.55% respectively in 2019 to 0.00% in 2020. The Eastern Cape maintained zero over-exposures of employees to excessive noise levels since 2018 until 2020.

3.1.3 Thermal stress

Monitoring is conducted on an annual cycle period in compliance with regulation 9.2(7) of the MHSA. Accurate and meaningful results are to be representative of all full working shifts for that thermal environment, as obtained from monitoring.

The employer must ensure that in defining any thermal environment, the precautions listed below are observed:

- Care should be exercised to detect trends where the thermal environment changes, especially from 'cool' to 'hot', or from 'hot' to 'abnormally hot'.
- This is clearly indicated by regular monitoring, even if only on a random basis, and 'cool' environments should not be excluded, especially when marginal.
- The specific protocol would be dictated by prevailing circumstances and therefore cannot be stipulated or prescribed.

Seasonal changes could be crucial, and relying on winter temperatures may lead to an underestimation of the risk and *vice versa*. Environmental monitoring should take this into account.

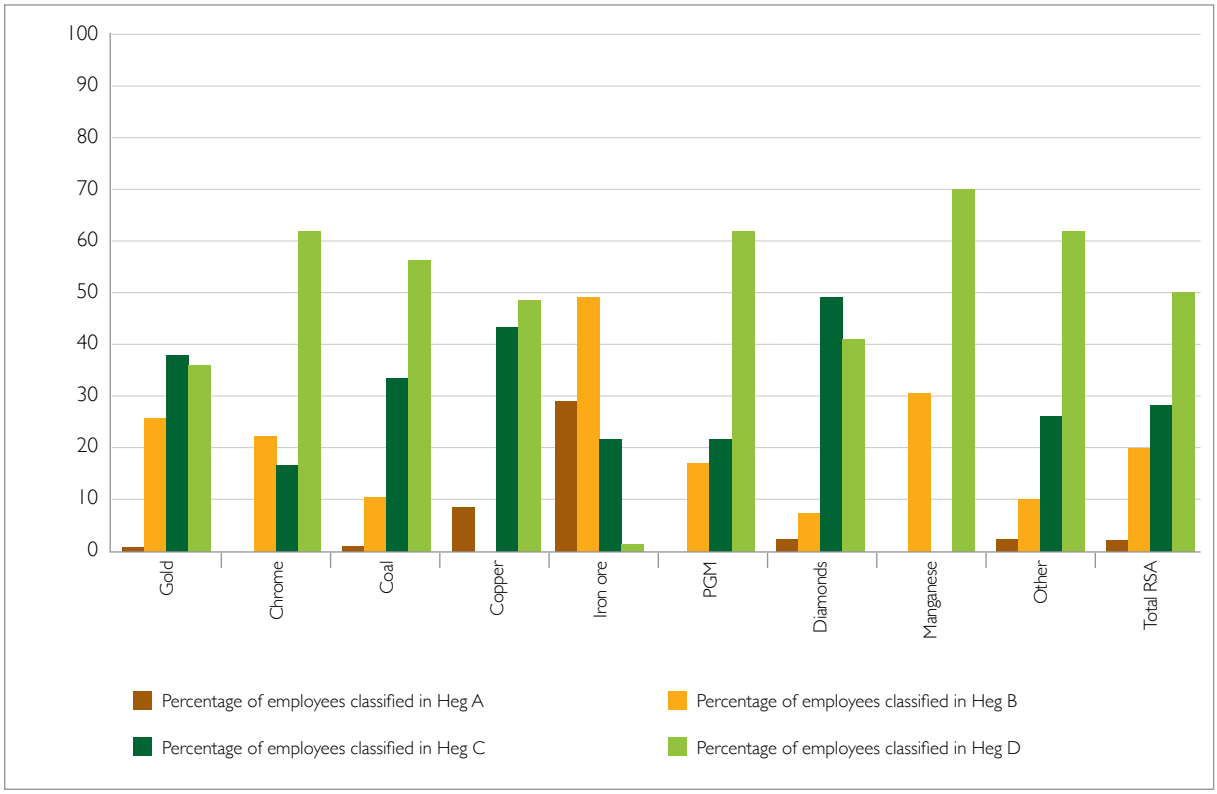
Adequate and appropriate personal protective equipment (PPE) should be provided during cold seasons and portable water should be made available to employees during very hot conditions.

3.1.3.1 Heat stress

NOTE:

- To define the thermal environment from a heat stress management point of view, dry- (DB) and wet-bulb (WB), globe temperatures, whirling hygrometers or any other suitable instrumentation may be used.
- This information may be extracted from existing databases that are continually updated.
- Regular monitoring, even daily, is recommended under certain circumstances.

FIGURE 3.1.3.1(a): Percentage exposure to thermal stress: heat per classification band per commodity



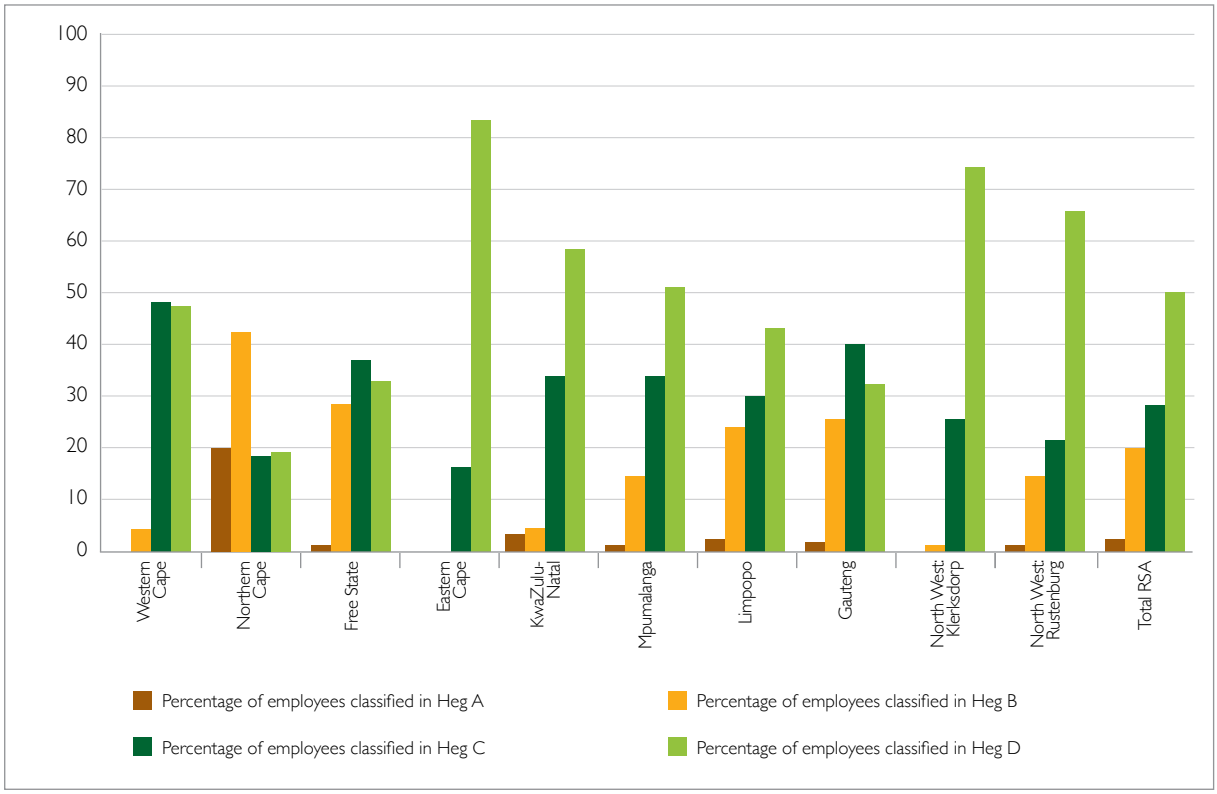
Heat stress exposure classification band:
A = WB > 32.5°C or DB > 37°C or globe temperature > 37°C
B = 29.0°C < WB ≤ 32.5°C and DB ≤ 37°C globe temperature as for dry bulb
C = 27.5°C < WB ≤ 29.0°C and DB ≤ 37°C globe temperature as for dry bulb
D = WB ≤ 27.5°C and DB ≤ 32.5°C globe temperature as for dry bulb

The number of employees over-exposed to thermal stress: heat in 2020 was 5 250 from a total population of 244 741 employees at risk, which is 2.15% in 2020 when compared to 1.14% recorded in 2019. This increase was the result of employee over-exposure recorded in the following commodity sectors: iron ore increased significantly from 0.00% in 2019 to 28.98% in 2020 and a slight increase in the coal sector from 0.21% in 2019 to 0.34% in 2020.

Despite the increase noted nationally, slight decreases were recorded in gold from 1.62% in 2019 to 0.57% in 2020; chrome from 0.63% in 2019 to 0.00% in 2020; copper from 12.85% in 2019 to 8.53% in 2020, PGM from 0.17% in 2019 to 0.05% in 2020; diamonds 9.61% in 2019 to 2.40% in 2020 and other mines slightly from 2.63% to 2.17%.

Manganese has maintained a zero employee over-exposure to thermal stress: heat since 2018 until 2020.

FIGURE 3.1.3.1(b): Percentage exposure to thermal stress: heat per classification band per region



Heat stress exposure classification band:
A = WB > 32.5°C or DB > 37°C or globe temperature > 37°C
B = 29.0°C < WB ≤ 32.5°C and DB ≤ 37°C globe temperature as for dry bulb
C = 27.5°C < WB ≤ 29.0°C and DB ≤ 37°C globe temperature as for dry bulb
D = WB ≤ 27.5°C and DB ≤ 32.5°C globe temperature as for dry bulb

There was an overall increase in employee over-exposure to thermal stress: heat from 1.14% in 2019 to 2.15% in 2020. This national increase was a result of a significant increase recorded in the Northern Cape from 3.10% in 2019 to 20.11% in 2020 and Mpumalanga recorded a slight increase from 0.10% in 2019 to 0.30% in 2020.

Notwithstanding the national increase in employee over-exposure to thermal stress: heat, the following regions recorded a decrease as follows: the Free State from 1.80% in 2019 to 0.76% in 2020; KwaZulu-Natal 7.48% in 2019 to 3.29% in 2020; Limpopo from 2.55% in 2019 to 1.96% in 2020; Gauteng from 3.18% in 2019 to 1.10% in 2020; and a slight decrease was noted in North West: Rustenburg from 0.25% in 2019 to 0.05% in 2020.

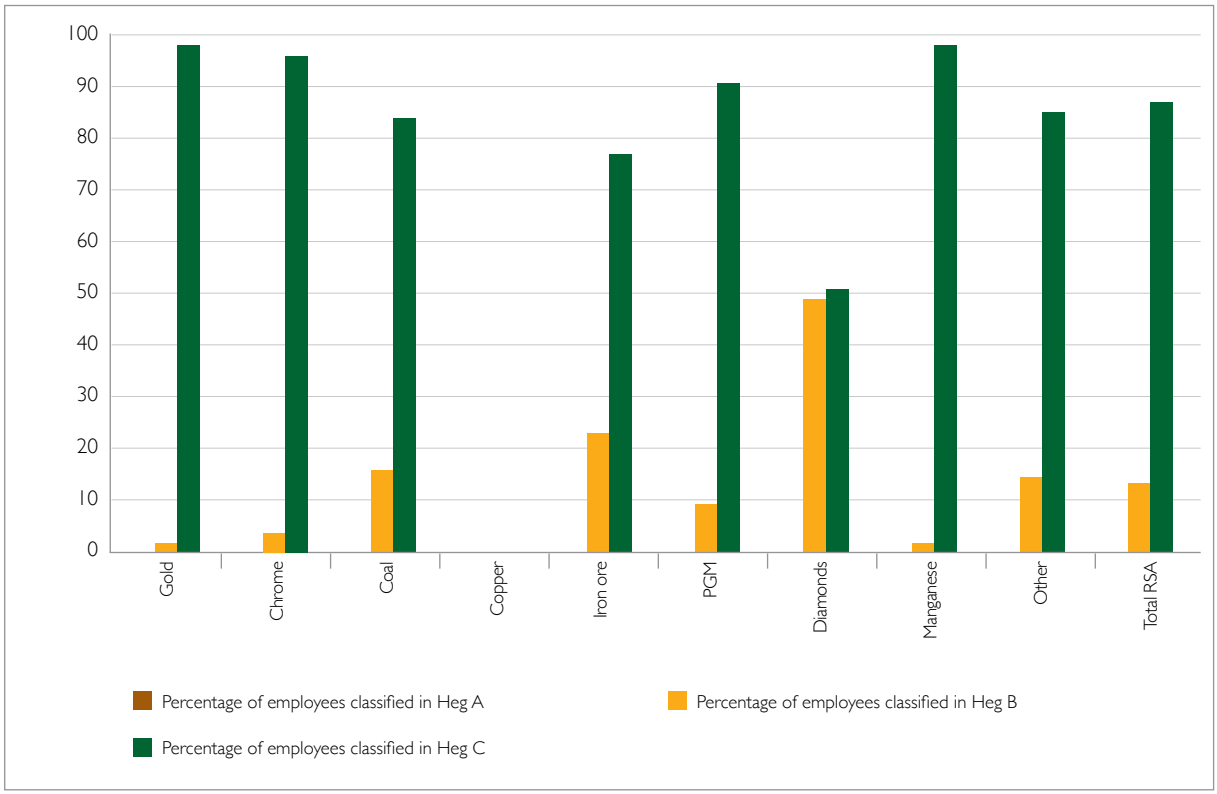
The Eastern Cape, Western Cape and North West: Klerksdorp regions are commended for maintaining a zero over-exposure from 2018 until 2020 and, particularly North West: Klerksdorp in having maintained a zero over-exposure since 2015 to the current reporting period.

3.1.3.2 Cold stress

NOTE:

- Temperature ranges are given in terms of equivalent chill temperature.
- Cold stress management (CSM).
- Thermal monitoring for cold stress should be conducted during the coldest quarter (June to August), as determined by risk assessment.
- For defining the thermal environment from a CSM point of view, dry-bulb temperatures, and velocity, using any suitable instrumentation, may be used. This information may be extracted from existing databases that are continually updated.
- Regular monitoring, even daily, is recommended under certain circumstances.

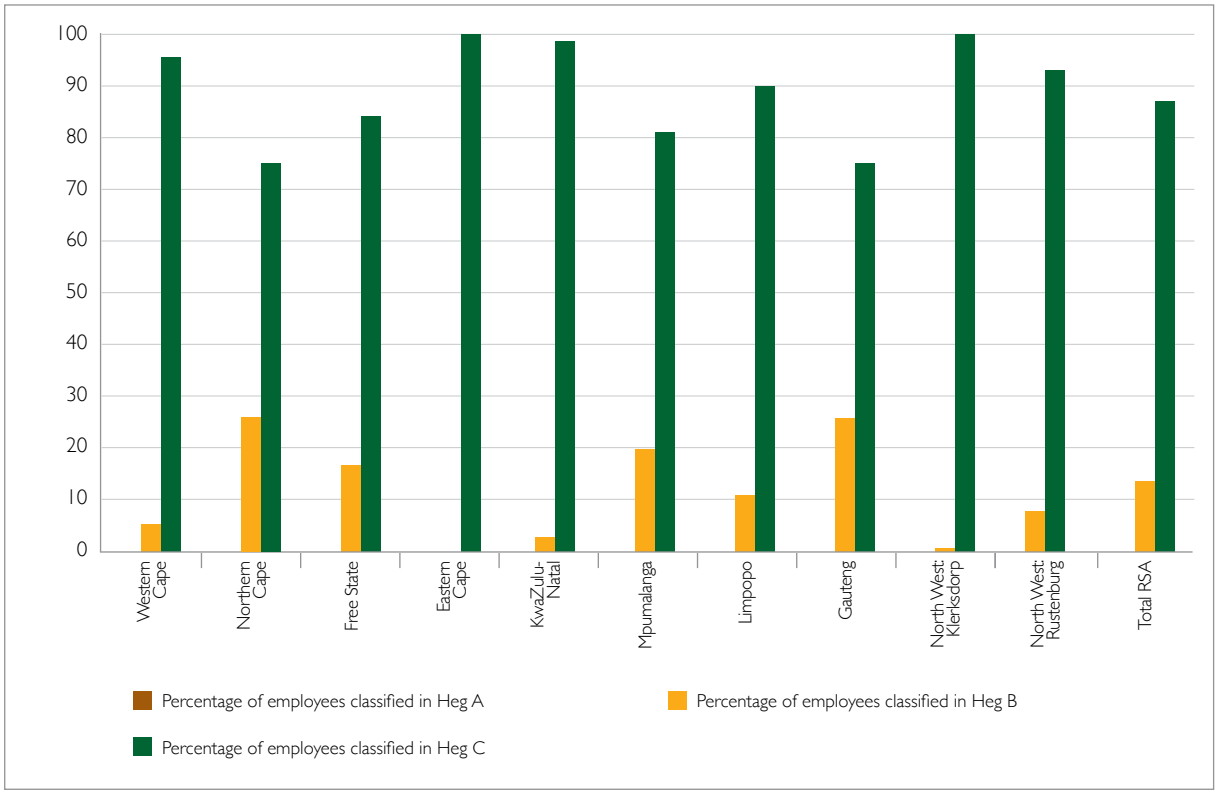
FIGURE 3.1.3.2(a): Percentage exposure to thermal stress: cold per classification band per commodity



Cold stress exposure classification band:
A = Temperature ≥ -30.0°C
B = 5.0°C ≤ Temperature < -30.0°C
C = Temperature > 5.0°C

There was an overall zero employee exposure above the OEL which has been maintained year-on-year since 2013 until 2020. A collective effort is required to ensure that appropriate controls are put in place to accommodate extreme cold conditions. It should however be noted that exposures of employees in homogenous exposure group (HEG) B nationally, increased from 11.09% in 2019 to 13.01% in 2020.

FIGURE 3.1.3.2(b): Percentage exposure to thermal stress: cold per classification band per region



Cold stress exposure classification band:
A = Temperature ≥ -30.0°C
B = 5.0°C ≤ Temperature < -30.0°C
C = Temperature > 5.0°C

Regionally, employee exposure above the OEL has been maintained at zero and the South African mining industry is encouraged to strive at reducing exposures in the HEG B classification. All regions are encouraged to continue maintaining the status.

3.1.4 General

There is a notable decrease in the number of statutory reports received from the mines across all occupational hygiene stressors when comparing 2020 to 2019.

Although there has been a 22% decrease in employees at risk to exposure, it is still of great concern that there are employees exposed to airborne pollutants exceeding the recommended OEL. This can be linked to, but is not limited to the failure of implementing appropriate controls. Where appropriate and adequate controls have been identified and implemented, the lack in maintenance together with the failure of implementing the hierarchy of controls where isolation is suitable and key to mitigating the risk(s) to which employees may be exposed to.

The increase in employee exposure to excessive noise levels is the result of a lack of adequate maintenance of rock drills which are not silenced. There are instances where rock drills have been silenced, but were damaged when employees punched holes in the mufflers since they believed that this increased sound levels on the rock drills implies better drilling efficiency.

Employees exposed to excessive heat, particularly those working at surface operations where globe temperatures exceed 37°C, should be monitored closely, and a heat stress management programme should always be instituted and adhered to.

There is a need for employers to assess, monitor and adhere to their own maintenance schedules to reduce excessive exposure to airborne pollutants and undesired noise levels which exceed 85dB time weighted averages (TWA). Training and awareness of employees on the adverse health effects of exposure to occupational hazards, as well as continuous supervision, should remain a priority.

The South African mining industry, together with OEMs, are encouraged to continue the sharing of best practices together with the adoption of Mine Occupational Safety and Health (MOSH) leading practices and initiatives where possible, to ensure that strategies achieve the aim of reducing and eventually eliminating the risks identified. A collective different approach on the elimination of risks should be on an on-going basis during engagements and at forums such as the Mine Occupational Health and Safety Summit, the Mine Ventilation Society and the South African Institution of Occupational Hygiene, as well as other academic institutions.

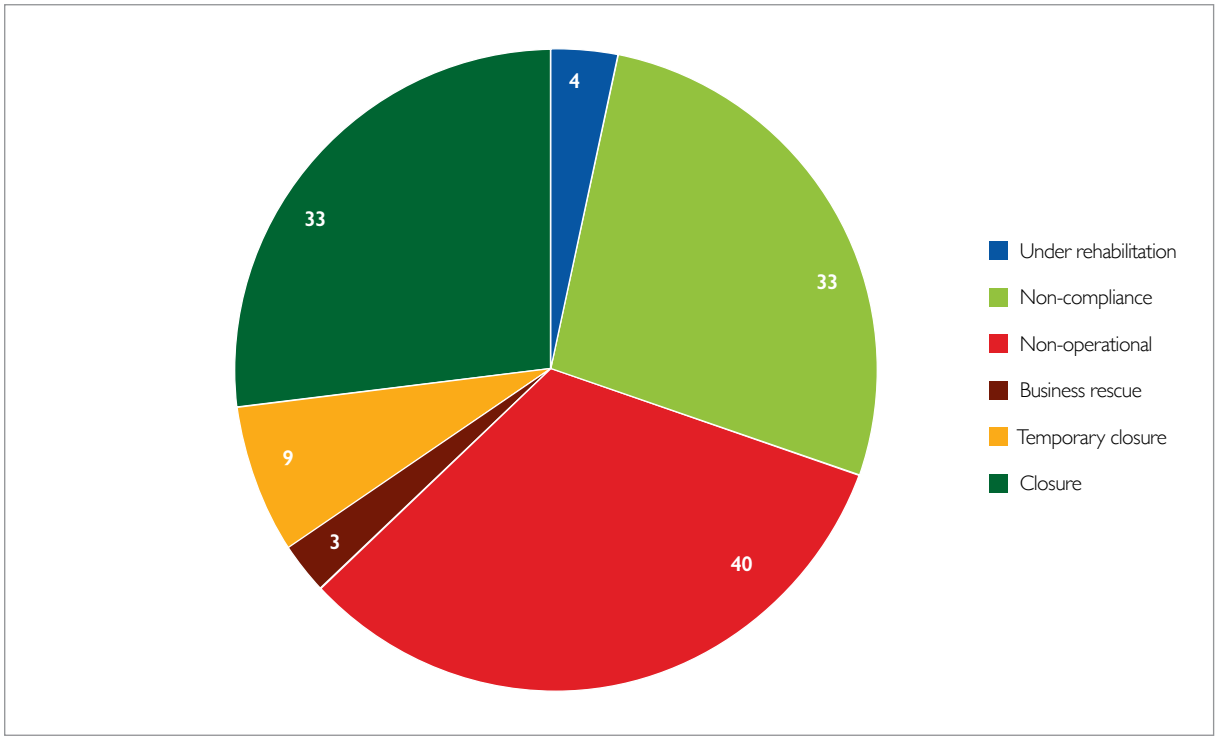
3.2 Occupational medicine

3.2.1 AMRs

The South African mining sector submitted a total of 932 AMRs during 2020 which is a decrease of 5.28% from 984 reports submitted in 2019. The AMRs submitted from the Northern Cape showed an increase whilst a reduction was noted in the AMRs submitted from the Eastern Cape, Free State, Gauteng, KwaZulu-Natal, Limpopo, Mpumalanga, North West: Klerksdorp, North West: Rustenburg and the Western Cape regions.

A total of 122 mines that previously submitted AMRs did not submit reports for 2020 due to various reasons shown in figure 3.2.1 below. The regions should take the necessary corrective actions to enforce compliance with the submission of AMRs as required in terms of section 16 of the MHSA.

FIGURE 3.2.1: Non-submission of AMRs



3.2.1.1 AMRs received per region and by commodity

TABLE 3.2.1.1: AMRs per region and by commodity: 2019 and 2020

	Gold		Platinum		Coal		Diamonds		Copper		Chrome		Iron ore		Manganese		Other mines		Total		Percentage change
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	
Eastern Cape	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	58	**62**	**58**	**-6.45**
Free State	20	19	0	0	2	2	4	3	0	0	0	0	0	0	0	0	25	23	**51**	**47**	**-7.84**
Gauteng	16	17	0	0	0	0	1	1	0	0	0	0	0	0	0	0	82	78	**99**	**96**	**-3.03**
KwaZulu-Natal	0	0	0	0	11	12	0	0	0	0	0	0	0	0	0	0	47	44	**58**	**56**	**-3.45**
Limpopo	3	3	13	12	4	4	2	1	1	1	15	16	0	1	0	0	47	39	**85**	**77**	**-9.41**
Mpumalanga	7	7	2	2	126	126	0	0	0	0	0	0	0	0	1	1	25	23	**161**	**159**	**-1.24**
Northern Cape	0	0	0	0	0	0	53	66	2	1	0	0	8	8	21	23	31	28	**115**	**126**	**9.57**
North West: Klerksdorp	15	16	0	0	0	0	96	84	0	0	0	0	0	0	1	0	28	22	**140**	**122**	**-12.86**
North West: Rustenburg	0	0	72	72	0	0	1	1	0	0	20	19	2	2	0	0	28	22	**123**	**116**	**-5.69**
Western Cape	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	89	74	**90**	**75**	**-16.67**
TOTAL	**61**	**62**	**87**	**86**	**143**	**144**	**158**	**157**	**3**	**2**	**35**	**35**	**10**	**11**	**23**	**24**	**464**	**411**	**984**	**932**	**-5.28**

3.2.1.2 Total employees covered in AMRs

Statistics show an overall decrease of 4.24% in the total number of employees covered in the AMRs, from 547 847 in 2019 to 524 619 in 2020. Table 3.2.1.2 below shows a decrease in the total number of employees reported in the gold, platinum, coal, diamond, chrome as well as other mining sectors, whilst an increase was shown in the copper, manganese and iron ore sectors.

TABLE 3.2.1.2: Total employees reported from AMRs by commodity: 2019 and 2020

	2019	2020	Percentage change
Gold	104 064	100 643	-3.29
Platinum	176 432	171 492	-2.80
Coal	116 777	115 559	-1.04
Diamond	17 233	15 240	-11.57
Copper	4 963	6 122	23.35
Chrome	39 693	30 117	-24.13
Manganese	14 976	18 202	21.54
Iron ore	21 247	22 211	4.54
Other mines	52 462	45 029	-14.17
TOTAL	**547 847**	**524 619**	**-4.24**

NOTE:

- Incidence rate (for medical surveillance, occupational diseases, medical incapacity cases and deaths) per 10,000 employees is calculated as the number of new cases during the calendar year divided by the number of employees in the reference group during the year, multiplied by 10,000.

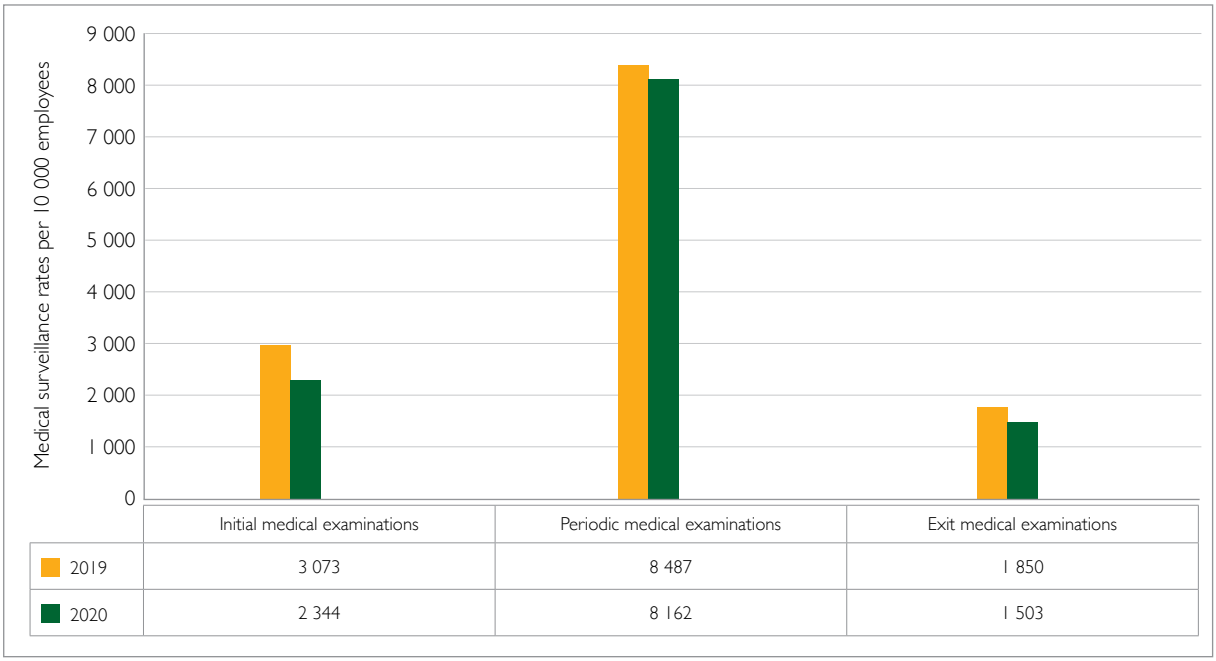
$$\text{Incidence rate} = \frac{\textit{Number of new cases}}{\textit{Number of employees in the reference group}} \times 10\,000$$

3.2.1.3 Medical surveillance conducted

A decrease in medical surveillance conducted in 2020 was noted when compared to 2019 and these are as follows: initial examinations 122 953 in 2020 from 168 347 in 2019; periodic examinations 428 189 in 2020 from 464 931 in 2019 and exit examinations 78 829 in 2020 from 101 354 in 2019.

The analysis of medical surveillance incidence rates per 10 000 employees, showed a reduction on medical surveillance conducted during 2020 when compared to 2019 as shown in figure 3.2.1.3 below.

FIGURE 3.2.1.3: Medical surveillance rates per 10 000 employees reported from AMRs for all mines: 2019 and 2020



	Initial medical examinations	Periodic medical examinations	Exit medical examinations
2019	3 073	8 487	1 850
2020	2 344	8 162	1 503

3.2.2 Occupational diseases reported in the AMRs

A general decrease of 35.69% was noted in a total of 2 013 occupational diseases reported by mines in 2020 when compared to 3 130 cases reported in 2019 as shown in table 3.2.2.1.1(a) below.

The analysis of occupational diseases rate trends per 10 000 employees in table 3.2.2.1.1(a) below shows an overall total of 38 employees diagnosed with occupational diseases in 2020 from 57 employees in 2019. The occupational diseases rate trends were noted as follows: five silicosis cases in 2020 from seven cases in 2019; 16 PTB cases in 2020 from 28 cases in 2019; 14 NIHL cases in 2020 from 16 cases in 2019; zero CWP cases in 2020 from one case in 2019 and two other occupational diseases cases in 2020 from four cases in 2019. The rate trends on silico-tuberculosis (Sil+TB) remained unchanged at a rate of zero for both 2019 and 2020.

3.2.2.1 Analysis of occupational disease trends

3.2.2.1.1 Occupational disease trends per region

TABLE 3.2.2.1.1(a): Total number of occupational diseases reported from AMRs per region: 2019 and 2020

	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	Percentage change
	Silicosis		PTB		Sil+TB		NIHL		CWP		Asbestosis		Other occupational diseases		Total		
Eastern Cape	0	0	0	2	0	0	0	0	0	0	0	0	0	0	**0**	**2**	
Free State	117	98	211	151	8	5	103	63	0	1	0	0	56	34	**495**	**352**	**-28.89**
Gauteng	97	73	310	140	0	0	173	113	0	0	0	0	35	13	**615**	**339**	**-44.88**
KwaZulu-Natal	0	0	25	7	0	0	10	3	1	1	0	0	4	1	**40**	**12**	**-70.00**
Limpopo	5	4	47	51	0	0	77	30	0	0	4	2	8	5	**141**	**92**	**-34.75**
Mpumalanga	10	11	214	123	0	0	87	107	45	17	1	0	55	34	**412**	**292**	**-29.13**
Northern Cape	0	0	41	24	0	0	17	2	0	0	0	0	6	4	**64**	**30**	**-53.13**
North West: Klerksdorp	96	52	122	68	14	3	89	130	0	0	0	0	19	12	**340**	**265**	**-22.06**
North West: Rustenburg	49	33	556	280	0	0	310	278	0	0	3	0	60	23	**978**	**614**	**-37.22**
Western Cape	0	0	7	3	0	0	37	12	0	0	0	0	1	0	**45**	**15**	**-66.67**
TOTAL	**374**	**271**	**1 533**	**849**	**22**	**8**	**903**	**738**	**46**	**19**	**8**	**2**	**244**	**126**	**3 130**	**2 013**	**-35.69**

TABLE 3.2.2.1.1(b): Occupational diseases incidence rates per 10 000 employees from AMRs per region: 2019 and 2020

	Silicosis		PTB		Sil+TB		NIHL		CWP		Asbestosis		Other occupational diseases		Total	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Eastern Cape	0	0	0	12	0	0	0	0	0	0	0	0	0	0	**0**	**12**
Free State	34	29	62	45	2	1	30	19	0	0	0	0	16	10	**145**	**104**
Gauteng	16	13	51	25	0	0	29	20	0	0	0	0	6	2	**102**	**61**
KwaZulu-Natal	0	0	14	6	0	0	6	3	1	1	0	0	2	1	**22**	**11**
Limpopo	1	1	6	8	0	0	11	4	0	0	1	0	1	1	**19**	**14**
Mpumalanga	1	1	20	11	0	0	8	9	4	1	0	0	5	3	**38**	**25**
Northern Cape	0	0	8	5	0	0	3	0	0	0	0	0	1	1	**13**	**6**
North West: Klerksdorp	43	24	54	32	6	1	40	61	0	0	0	0	8	6	**151**	**124**
North West: Rustenburg	3	2	32	18	0	0	18	18	0	0	0	0	3	1	**57**	**39**
Western Cape	0	0	10	3	0	0	53	14	0	0	0	0	1	0	**65**	**17**
TOTAL	**7**	**5**	**28**	**16**	**0**	**0**	**16**	**14**	**1**	**0**	**0**	**0**	**4**	**2**	**57**	**38**

3.2.2.1.2 Occupational disease trends by commodity

TABLE 3.2.2.1.2(a): Total number of occupational diseases reported from AMRs by commodity: 2019 and 2020

	Silicosis		PTB		Sil+TB		NIHL		CWP		Asbestosis		Other occupational diseases		Total		Percentage change
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	
Gold	319	233	648	367	22	8	351	298	0	0	0	0	109	61	**1 449**	**967**	**-33.26**
Platinum	45	33	519	297	0	0	355	278	0	0	1	0	63	24	**983**	**632**	**-35.71**
Coal	1	0	206	110	0	0	76	88	46	19	1	0	49	30	**379**	**247**	**-34.83**
Diamond	0	0	6	5	0	0	8	1	0	0	0	0	2	0	**16**	**6**	**-62.50**
Copper	0	0	0	3	0	0	2	3	0	0	0	0	0	0	**2**	**6**	**200.00**
Chrome	9	4	80	26	0	0	26	39	0	0	5	2	4	3	**124**	**74**	**-40.32**
Manganese	0	0	23	12	0	0	1	0	0	0	0	0	2	2	**26**	**14**	**-46.15**
Iron ore	0	0	12	8	0	0	8	1	0	0	0	0	4	1	**24**	**10**	**-58.33**
All other	0	1	39	21	0	0	76	30	0	0	1	0	11	5	**127**	**57**	**-55.12**
TOTAL	**374**	**271**	**1 533**	**849**	**22**	**8**	**903**	**738**	**46**	**19**	**8**	**2**	**244**	**126**	**3 130**	**2 013**	**-35.69**

TABLE 3.2.2.1.2(b): Occupational diseases incidence rates per 10 000 employees from AMRs by commodity: 2019 and 2020

	Silicosis		PTB		Sil+TB		NIHL		CWP		Asbestosis		Other		Total	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Gold	31	23	62	36	2	1	34	30	0	0	0	0	10	6	**139**	**96**
Platinum	3	2	29	17	0	0	20	16	0	0	0	0	4	1	**56**	**37**
Coal	0	0	18	10	0	0	7	8	4	2	0	0	4	3	**32**	**21**
Diamond	0	0	3	3	0	0	5	1	0	0	0	0	1	0	**9**	**4**
Copper	0	0	0	5	0	0	4	5	0	0	0	0	0	0	**4**	**10**
Chrome	2	1	20	9	0	0	7	13	0	0	1	1	1	1	**31**	**25**
Manganese	0	0	15	7	0	0	1	0	0	0	0	0	1	1	**17**	**8**
Iron ore	0	0	6	4	0	0	4	0	0	0	0	0	2	0	**11**	**5**
All other	0	0	7	5	0	0	14	7	0	0	0	0	2	1	**24**	**13**
TOTAL	**7**	**5**	**28**	**16**	**0**	**0**	**16**	**14**	**1**	**0**	**0**	**0**	**4**	**2**	**57**	**38**

Gold mines

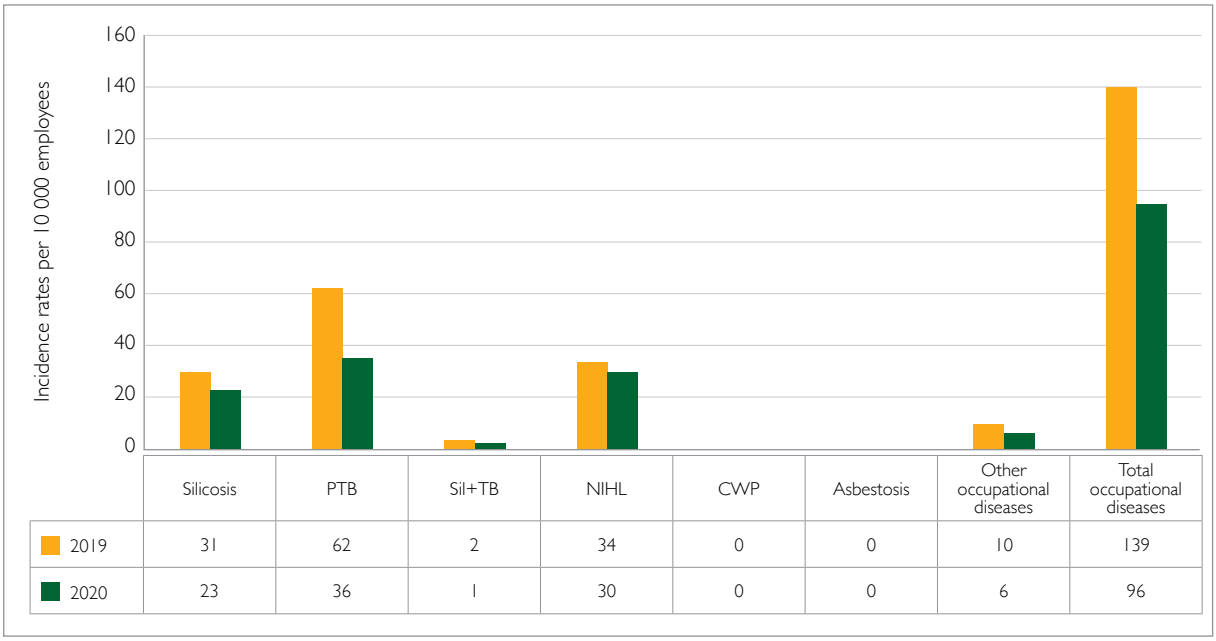
During 2020 the gold sector reported a total of 967 occupational diseases cases when compared to 1 449 cases in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(a) below shows an overall total of 96 employees diagnosed with occupational diseases in 2020 from 139 employees in 2019.

The initiatives implemented by the gold sector to reduce the incidence of occupational lung diseases included: automated foot wall treatment systems; centralised blasting, and adherence to blasting schedules and procedures; high pressure fogging systems at tips and ore passes; real time dust monitoring; fitment of diesel particulate filters to load haul dump (LHD) trucks; Isoniazid Prophylaxis Therapy (IPT) programme initiated on all known silicosis cases and high-risk employees; awareness campaigns, as well as issuing appropriate PPE and 70% alcohol-based hand sanitizers to all employees. The sector adhered to the DMA regulations relating to COVID-19 in terms of a staggered return to work with regard to vulnerable employees, ensuring de-densification to prevent crowding at the workplace, and the temporary suspension of spirometry testing, to prevent the spread of COVID-19.

The gold sector continued to implement the pillars of the hearing conservation programmes which included: periodic exposure noise monitoring, engineering controls and adoption of MOSH Industrywide *Buy and Maintain Quiet* Initiative (IBMQI), administrative controls and personal hearing protection, audiometric evaluation, employee and/or management education and training, as well as record keeping. The sector also adhered to infection control measures in terms of sanitizing the audiometry booths before and after use to prevent the spread of COVID-19.

FIGURE 3.2.2.1.2(a): Occupational diseases incidence rates per 10 000 employees reported from AMRs by gold mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	31	62	2	34	0	0	10	139
2020	23	36	1	30	0	0	6	96

A total of 61 other occupational diseases were reported in 2020 when compared to 109 cases in 2019. The analysis of rate trends indicated six cases per 10 000 employees diagnosed with other occupational diseases in 2020 from 10 cases in 2019. The other occupational diseases included five chronic obstructive airways diseases (COAD) cases in 2020 from nine cases in 2019 and one extra PTB case in 2020 from zero cases per 10 000 employees in 2019.

Platinum mines

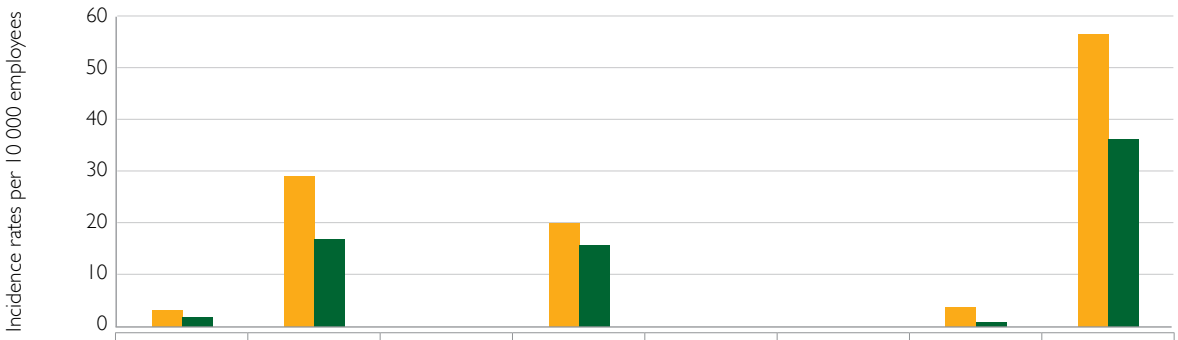
During 2020 the platinum sector reported a total of 632 occupational diseases cases when compared to 983 cases in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(b) below shows a total of 37 employees diagnosed with occupational diseases in 2020 from 56 employees in 2019.

The platinum sector continued to implement initiatives which included: continuous monitoring of airborne pollutant hazards, engineering controls including enclosed bobcats and loaders, vacuum sweepers, administrative controls including reduction of exposure time in high-risk areas, awareness campaigns and issuing appropriate PPE.

Hearing conservation programmes included the identification and demarcation of noise areas, awareness campaigns for employees, noise reduction strategies and issuing appropriate PPE.

FIGURE 3.2.2.1.2(b): Occupational diseases incidence rates per 10 000 employees reported from AMRs by platinum mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	3	29	0	20	0	0	4	56
2020	2	17	0	16	0	0	1	36

A total of 24 other occupational diseases were reported in 2020 when compared to 63 cases in 2019. The analysis of rate trends indicated one case per 10 000 employees diagnosed with other occupational diseases in 2020 from four cases diagnosed in 2019. The significant rate in other occupational diseases was shown in COAD cases, whilst occupational asthma and occupational dermatitis cases showed a rate of zero per 10 000 employees.

Coal mines

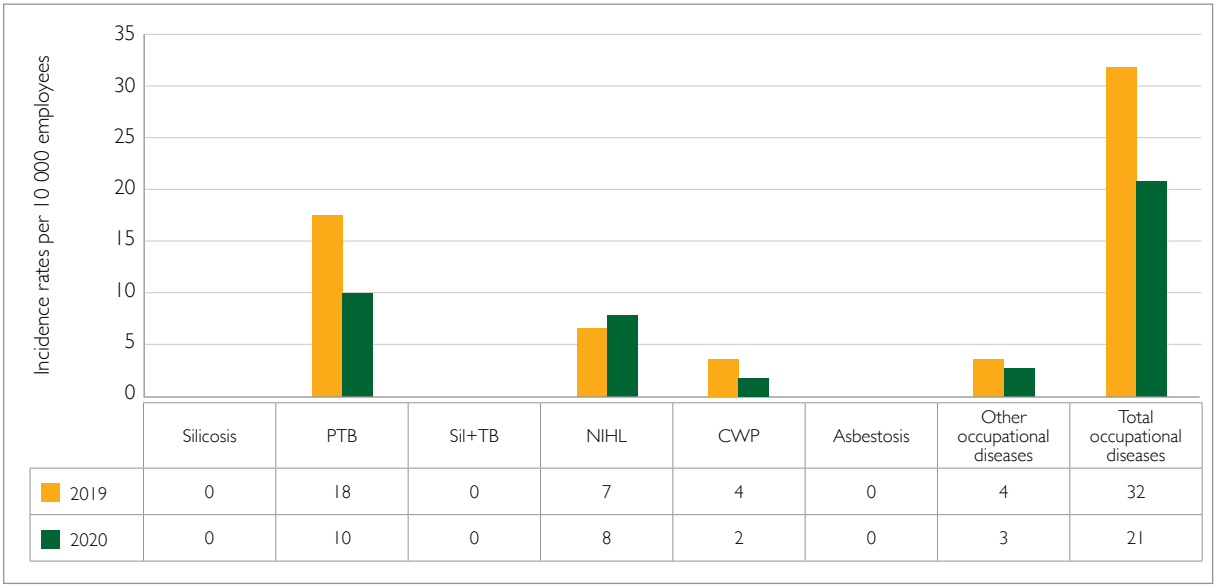
The coal sector reported a total of 247 occupational diseases in 2020, when compared to 379 cases in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(c) below shows an overall total of 21 employees diagnosed with occupational diseases in 2020 from 32 employees in 2019.

The initiatives implemented by the coal sector included: side and footwall treatment, improved dust extraction at the ground hanging facilities, improved ventilation and dust extraction at dry drilling rigs and enforcement of the use of PPE by all employees. The sector continued to implement TB contact tracing programmes and health promotion programmes while adhering to social distancing to prevent the spread of COVID-19.

The sector further continued to implement the linkage of noise measurements with the medical surveillance which contributed to the scheduling of audiometry according to the noise exposure levels, the investigation of early shift from the baseline, the provision of custom-made hearing protection devices (HPDs), as well as health promotion and education.

FIGURE 3.2.2.1.2(c): Occupational diseases incidence rates per 10 000 employees reported from AMRs by coal mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	0	18	0	7	4	0	4	32
2020	0	10	0	8	2	0	3	21

A total of 30 other occupational diseases were reported in 2020 when compared to 49 cases in 2019. The analysis of overall rate trends indicated three cases per 10 000 employees diagnosed with other occupational diseases in 2020 from four cases diagnosed in 2019. The significant rate in other occupational diseases was shown in COAD cases, whilst occupational asthma showed a rate of zero cases per 10 000 employees.

Diamond mines

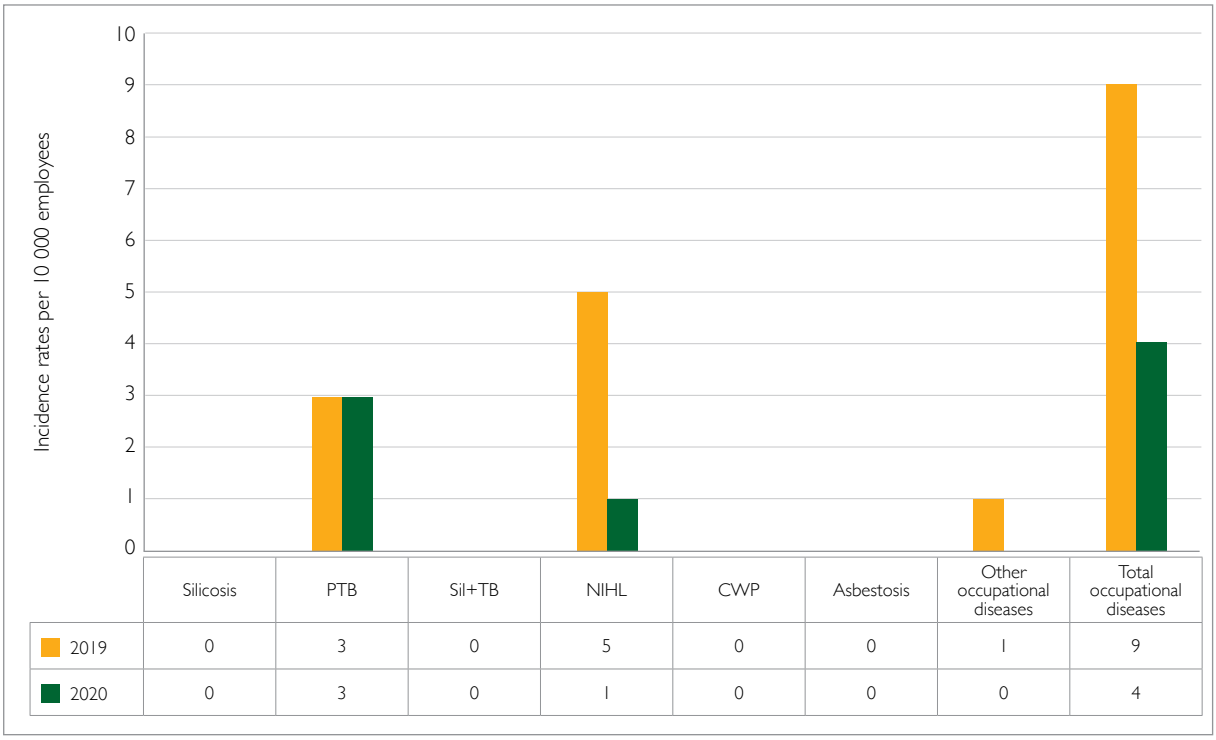
During 2020 the diamond sector reported a total of six occupational diseases when compared to 16 cases in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(d) below shows an overall total of four employees diagnosed with occupational diseases in 2020 from nine employees in 2019.

The initiatives implemented towards reducing the incidence of occupational lung diseases included: improved dust extraction at the ground hanging facilities, improved ventilation and dust extraction at dry drilling rigs, health education and wellness campaigns, monitoring exposures as well as enforcement of wearing PPE, where required.

The diamond sector continued to implement the hearing conservation programmes which included: the silencing of equipment, issuing of moulded earplugs which promote interpersonal communication and are comfortable to wear, induction and on-going awareness campaigns, regular monitoring of exposures for linkage with medical surveillance data and, close monitoring of exposed employees particularly individuals identified with shifts suggestive of early NIHL.

FIGURE 3.2.2.1.2(d): Occupational diseases incidence rates per 10 000 employees reported from AMRs by diamond mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	0	3	0	5	0	0	1	9
2020	0	3	0	1	0	0	0	4

No other occupational diseases were reported in 2020 compared with one case in 2019.

Chrome mines

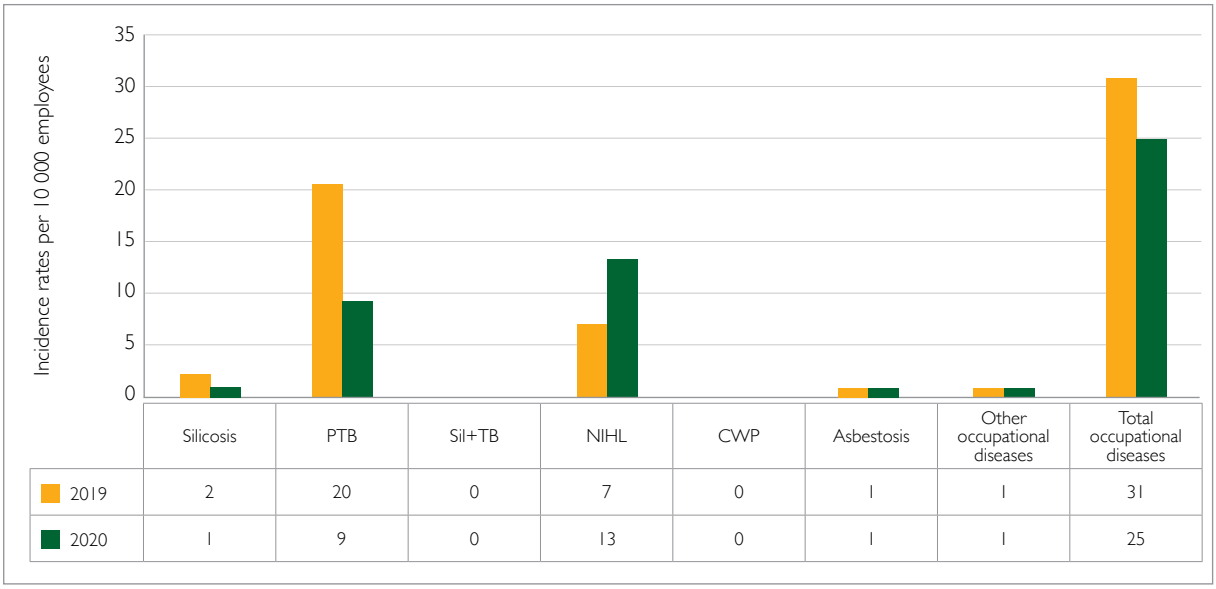
The chrome sector reported a total of 74 occupational diseases in 2020 when compared to 124 cases in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(e) below shows an overall total of 25 employees diagnosed with occupational diseases in 2020 from 31 employees in 2019.

The chrome sector continued to conduct TB screening and initiated IPT on all susceptible mine employees with either HIV co-infection or with known silicosis.

The analysis of the NIHL cases rate per 10 000 employees showed an increase and the chrome sector should review their hearing conservation programmes to reduce the incidence of NIHL. The initiatives implemented by the chrome sector included continuous monitoring of exposures in identified high-risk areas on mines and the provision of custom-made HPDs to offer maximum hearing protection for employees.

FIGURE 3.2.2.1.2(e): Occupational diseases reported incidence rates per 10 000 employees from AMRs by chrome mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	2	20	0	7	0	1	1	31
2020	1	9	0	13	0	1	1	25

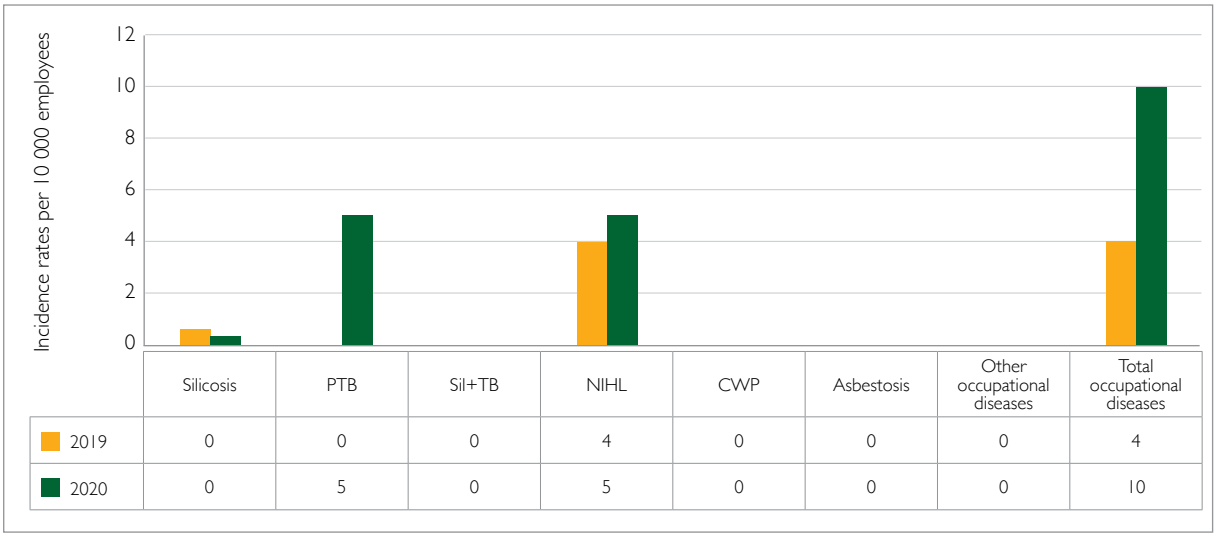
A total of three other occupational diseases cases were reported in 2020 when compared to four cases in 2019. The analysis of overall rate trends indicated one case per 10 000 employees diagnosed with other occupational diseases in both reporting years. The significant rate in other occupational diseases was shown in the musculoskeletal disorders cases, whilst occupational asthma showed a rate of zero per 10 000 employees.

Copper mines

The copper sector reported a total of six occupational diseases cases in 2020 when compared to two cases reported in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(f) below shows an overall total of 10 employees diagnosed with occupational diseases in 2020, from employees in 2019.

FIGURE 3.2.2.1.2(f): Occupational diseases incidence rates per 10 000 employees reported from AMRs by copper mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	0	0	0	4	0	0	0	4
2020	0	5	0	5	0	0	0	10

No other occupational diseases were reported in both reporting years.

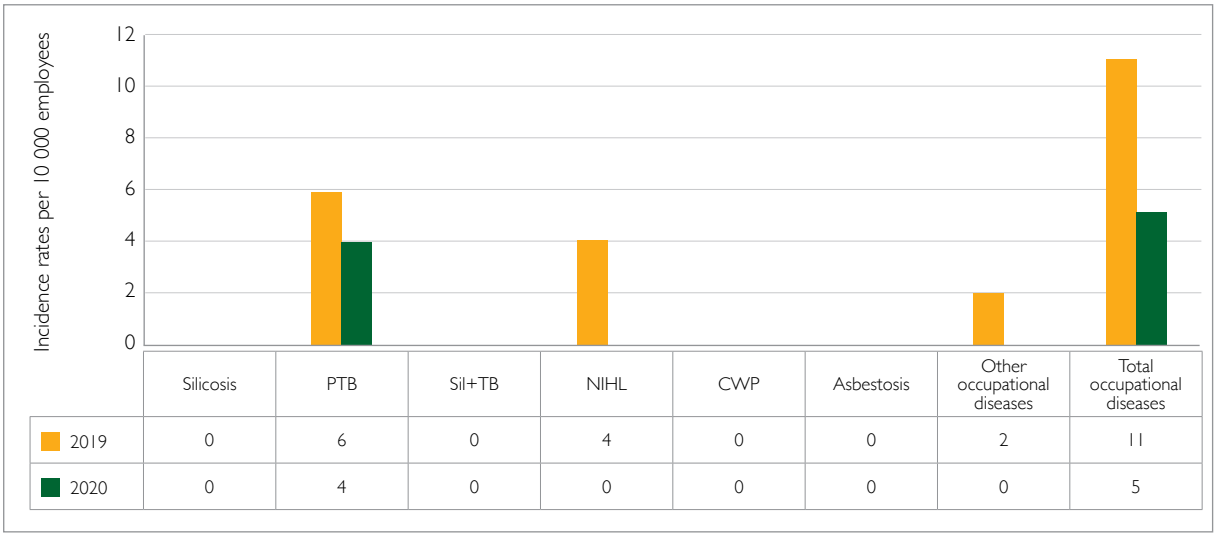
Iron ore mines

The iron ore sector reported a total of 10 occupational diseases cases in 2020 when compared to 24 cases reported in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(g) below shows an overall total of five employees diagnosed with occupational diseases in 2020 from 11 employees in 2019.

The analysis of PTB cases rate per 10 000 employees showed a slight reduction. The iron ore sector continued to implement initiatives which included: improved dust extraction at the ground hanging facilities, improved ventilation and dust extraction at dry drilling rigs, health education and wellness campaigns, monitoring exposures as well as enforcement of wearing PPE by all mine employees.

FIGURE 3.2.2.1.2(g): Occupational diseases incidence rates per 10 000 employees reported from AMRs by iron ore mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	0	6	0	4	0	0	2	11
2020	0	4	0	0	0	0	0	5

The other occupational diseases reported in 2020 was one occupational asthma case and four musculoskeletal disorder cases reported in 2019. There was no significant rate per 10 000 employees shown in the cases mentioned above.

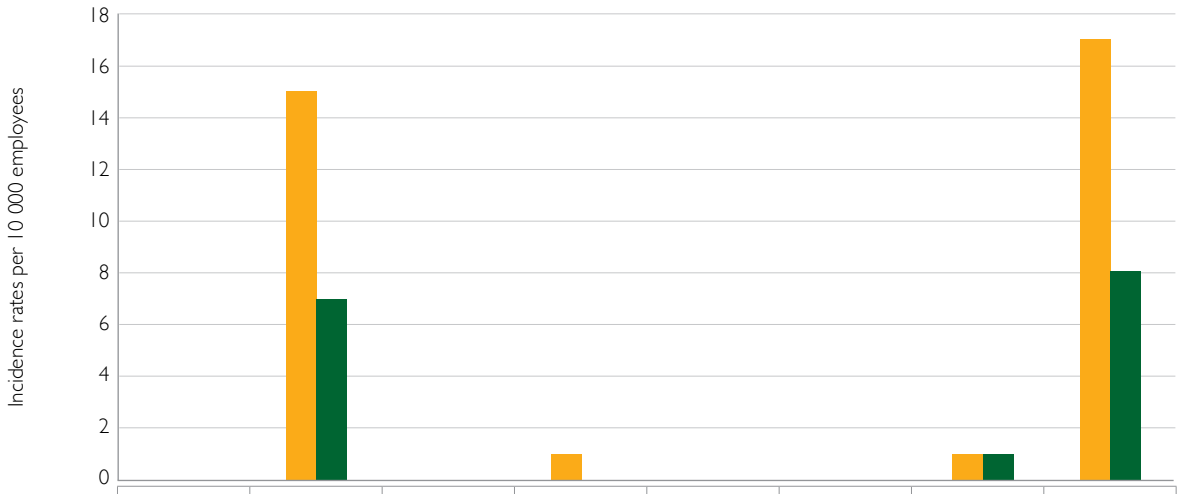
Manganese mines

During 2020, the manganese sector reported a total of 14 occupational diseases cases when compared to 26 cases reported in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(h) below shows an overall total of eight employees diagnosed with occupational diseases in 2020 from 17 employees in 2019.

A reduction was noted in the analysis of the PTB cases rate per 10 000 employees. The manganese sector continued to implement dust suppression methods and regular monitoring of ventilation systems to mitigate airborne pollutants' related risks in preventing potential adverse health effects.

FIGURE 3.2.2.1.2(h): Occupational diseases incidence rates per 10 000 employees reported from AMRs by manganese mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	0	15	0	1	0	0	1	17
2020	0	7	0	0	0	0	1	8

An overall total of two other occupational diseases were reported in both reporting years. The analysis of overall rate trends indicated one case per 10 000 employees diagnosed with other occupational diseases in both reporting periods. The other occupational diseases reported in 2020 included extra PTB and occupational asthma, both had a rate of one case per 10 000 employees. During 2019, the other occupational diseases reported included occupational asthma and occupational lung cancer, both showing a rate of one case per 10 000 employees.

Other mines

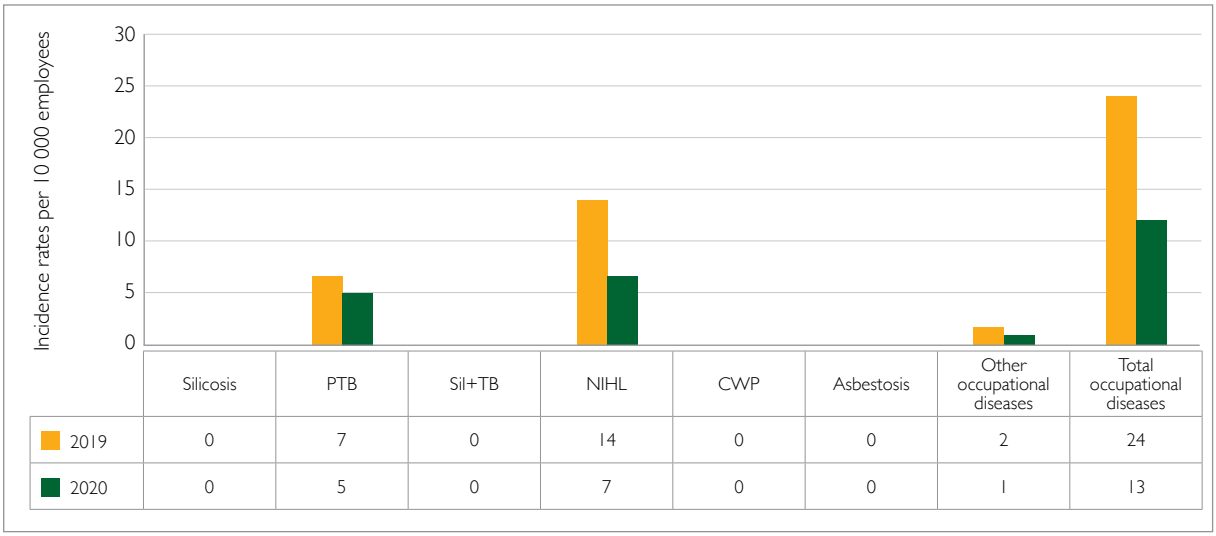
The other mines reported a total of 57 occupational diseases cases in 2020 when compared to 127 cases reported in 2019.

The analysis of occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.1.2(i) below shows an overall total of 13 employees diagnosed with occupational diseases from 24 employees in 2019.

Statistics has shown a reduction in PTB and NIHL cases rates per 10 000 employees. The other mines continued to implement dust action plans including: demarcation of dusty areas, continuous watering down using water carts to reduce exposure to airborne pollutants, and the wearing of dust masks by all mine employees.

The HCP implemented at other mines included: noise areas demarcated with noise hazardous signs, controlling noise at source by ensuring that no machinery emits noise >107db(A) and issuing employees with custom made hearing protection.

FIGURE 3.2.2.1.2(i): Occupational diseases incidence rates per 10 000 employees reported from AMRs by other mines: 2019 and 2020



	Silicosis	PTB	Sil+TB	NIHL	CWP	Asbestosis	Other occupational diseases	Total occupational diseases
2019	0	7	0	14	0	0	2	24
2020	0	5	0	7	0	0	1	13

An overall total of five other occupational diseases were reported in 2020 when compared to 11 cases in 2019. The analysis of overall rate trends indicated one case per 10 000 employees diagnosed with other occupational diseases from two cases in 2019. The significant rate in other occupational diseases was shown in the musculoskeletal disorders cases, whilst the COAD and occupational asthma showed a rate of zero per 10 000 employees.

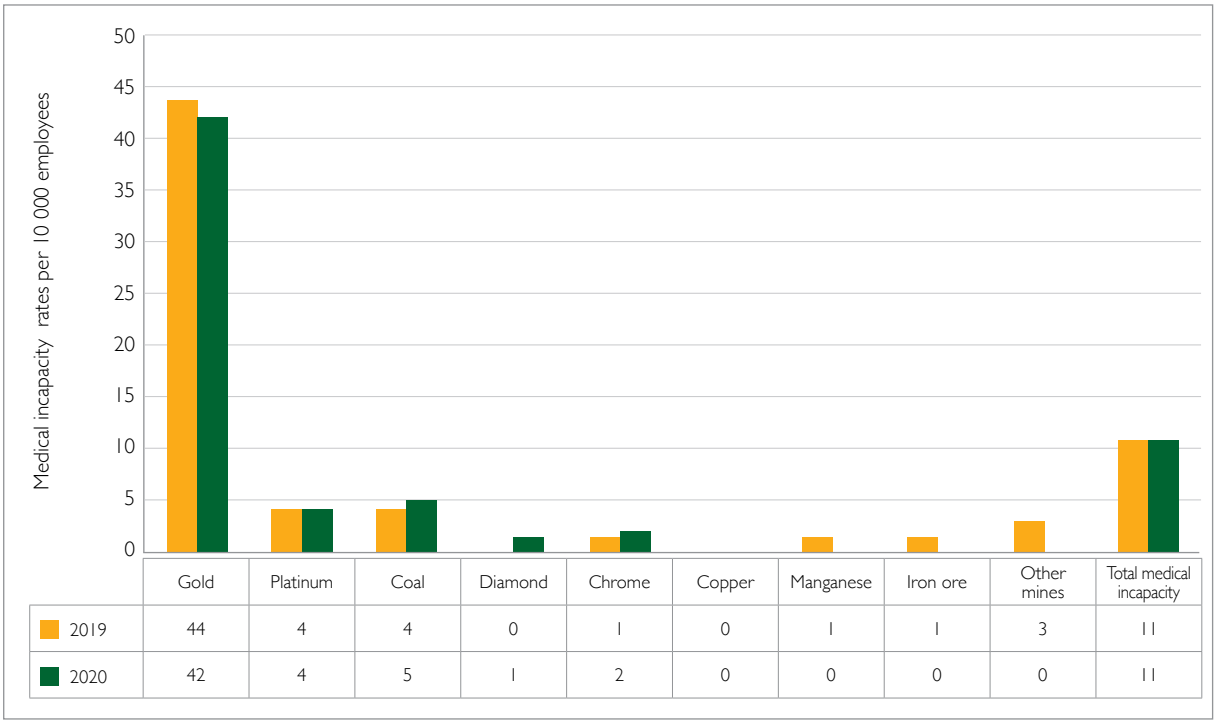
3.2.2.2 Medical incapacity due to occupational and non-occupational diseases

3.2.2.2.1 Medical incapacity due to occupational diseases

During 2020, the mining sector reported a total of 575 medical incapacity cases due to occupational diseases when compared to 594 cases reported in 2019.

The analysis of medical incapacity due to occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.2.1 below shows an overall total of 11 employees for both reporting years.

FIGURE 3.2.2.2.1: Medical incapacity cases due to occupational diseases incidence rate per 10 000 employees by commodity: 2019 and 2020



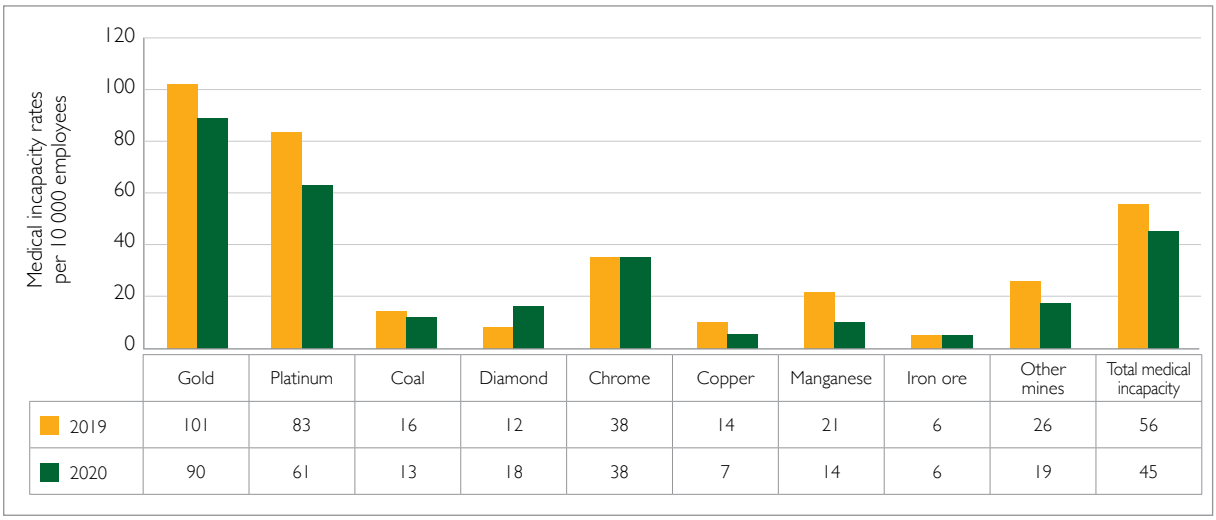
	Gold	Platinum	Coal	Diamond	Chrome	Copper	Manganese	Iron ore	Other mines	Total medical incapacity
2019	44	4	4	0	1	0	1	1	3	11
2020	42	4	5	1	2	0	0	0	0	11

3.2.2.2.2 Medical incapacity due to non-occupational diseases

The mining sector reported a total of 2 371 medical incapacity cases due to non-occupational diseases when compared to 3 065 cases reported in 2019.

The analysis of medical incapacity due to non-occupational diseases rate trends per 10 000 employees as outlined in figure 3.2.2.2.2 below shows an overall total of 45 employees from 56 cases in 2019.

FIGURE 3.2.2.2.2: Medical incapacity cases due to non-occupational diseases incidence rate per 10 000 employees by commodity: 2019 and 2020



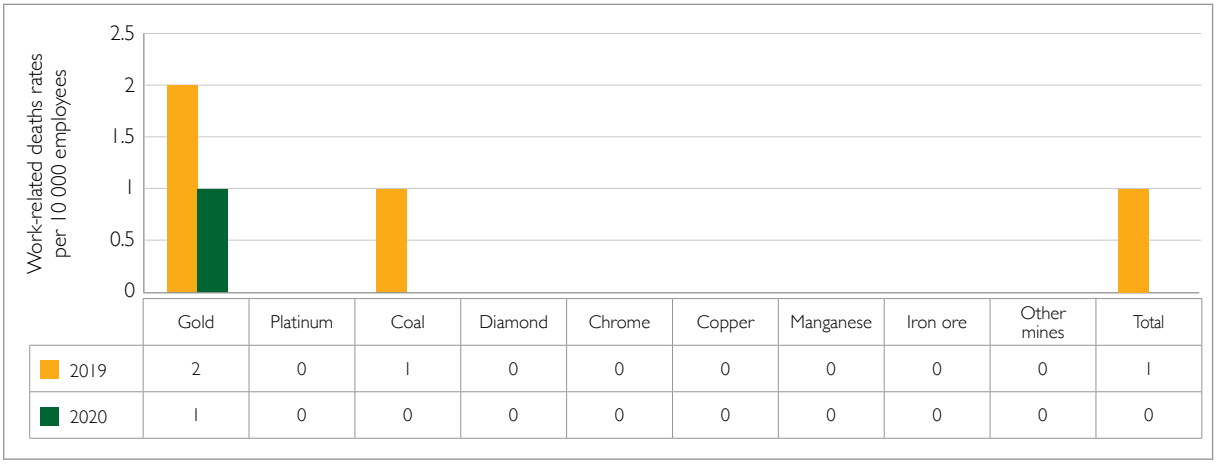
	Gold	Platinum	Coal	Diamond	Chrome	Copper	Manganese	Iron ore	Other mines	Total medical incapacity
2019	101	83	16	12	38	14	21	6	26	56
2020	90	61	13	18	38	7	14	6	19	45

3.2.2.3 Deaths due to work-related diseases

During 2020, the mining sector reported a total of 13 deaths due to work-related diseases when compared to 29 fatalities reported in 2019.

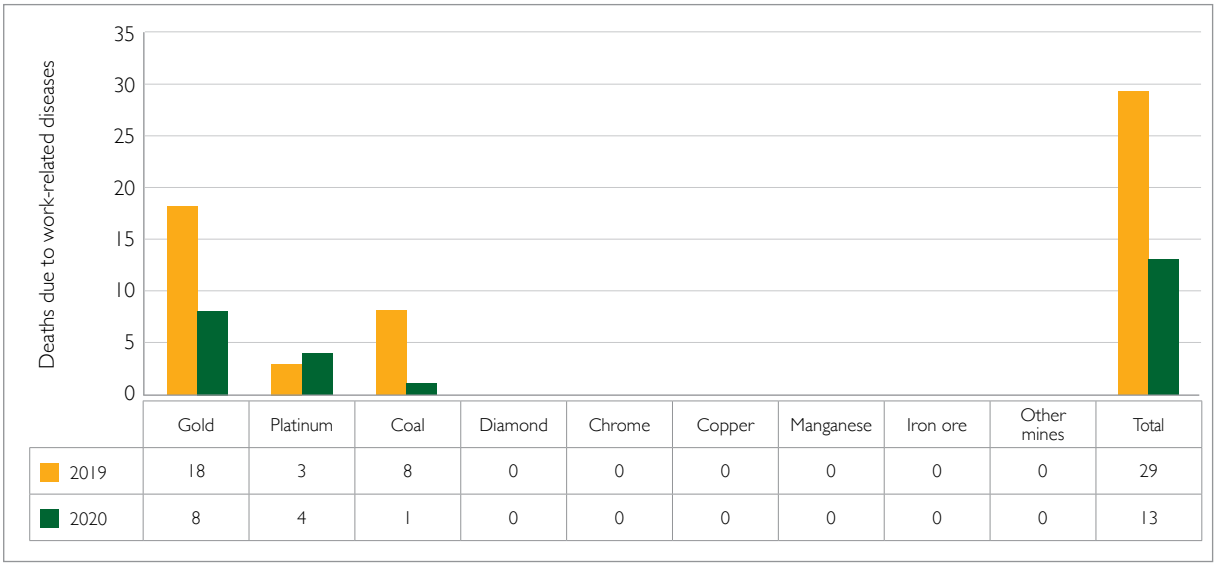
The analysis of deaths due to work-related diseases shows a rate of zero per 10 000 employees when compared to one per 10 000 employees in 2019 as outlined in figure 3.2.2.3 below.

FIGURE 3.2.2.3(a): Deaths due to work-related diseases incidence rates per 10 000 employees by commodity: 2019 and 2020



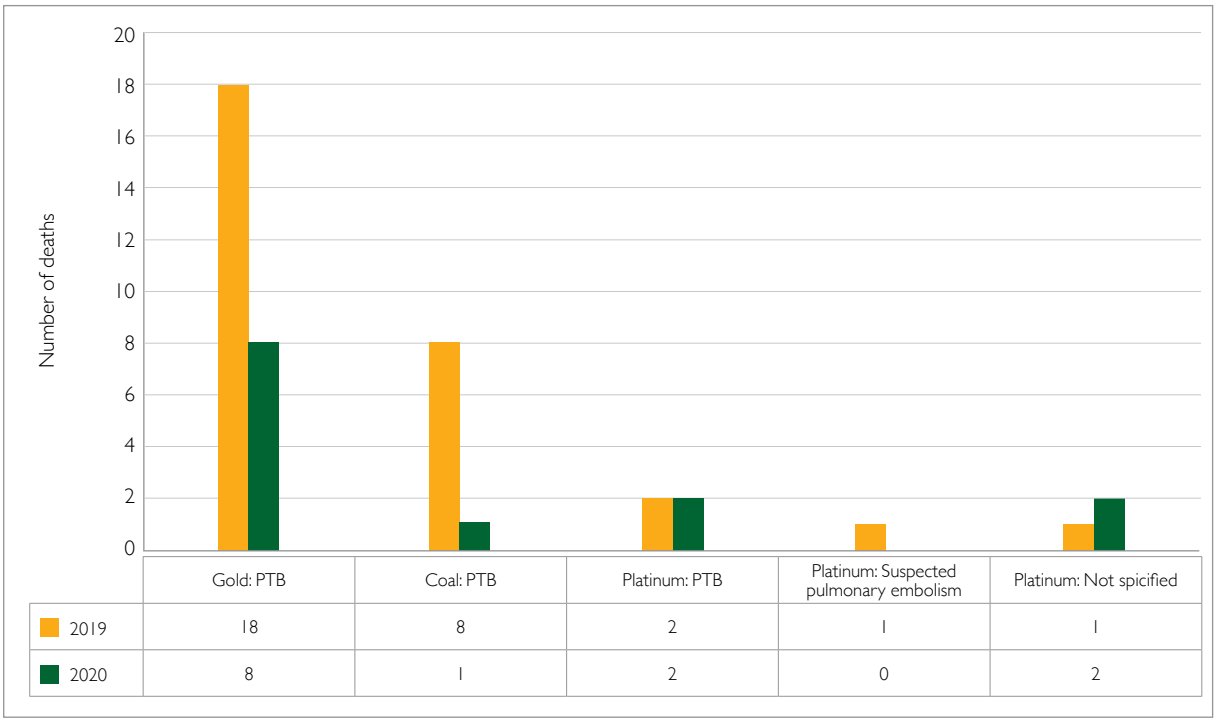
	Gold	Platinum	Coal	Diamond	Chrome	Copper	Manganese	Iron ore	Other mines	Total
2019	2	0	1	0	0	0	0	0	0	1
2020	1	0	0	0	0	0	0	0	0	0

FIGURE 3.2.2.3(b): Total deaths due to work-related diseases by commodity: 2019 and 2020



	Gold	Platinum	Coal	Diamond	Chrome	Copper	Manganese	Iron ore	Other mines	Total
2019	18	3	8	0	0	0	0	0	0	29
2020	8	4	1	0	0	0	0	0	0	13

FIGURE 3.2.2.3(c): Causes of deaths

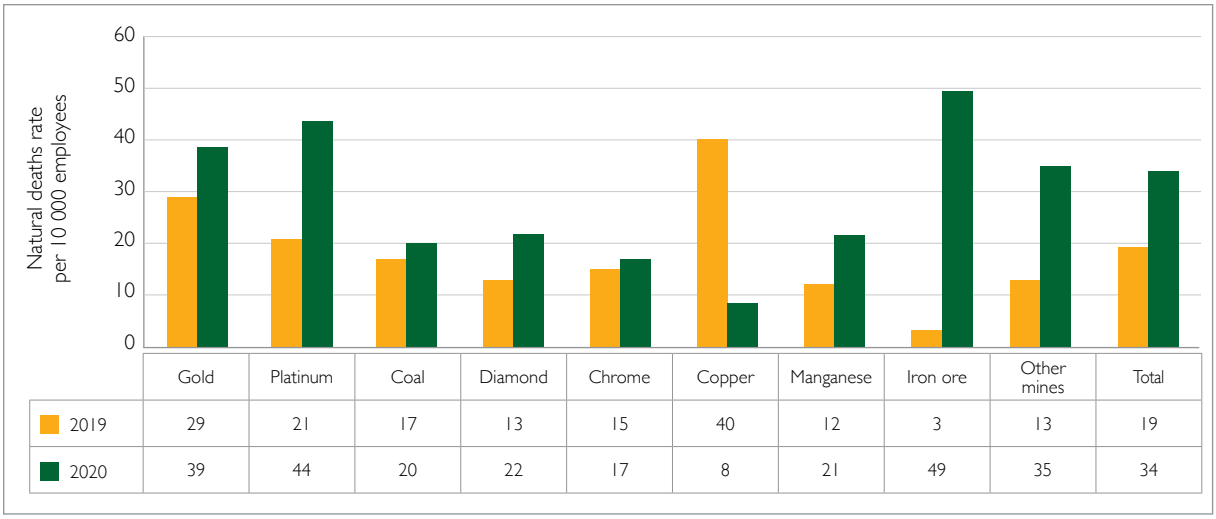


	Gold: PTB	Coal: PTB	Platinum: PTB	Platinum: Suspected pulmonary embolism	Platinum: Not spicified
2019	18	8	2	1	1
2020	8	1	2	0	2

3.2.2.4 Natural deaths

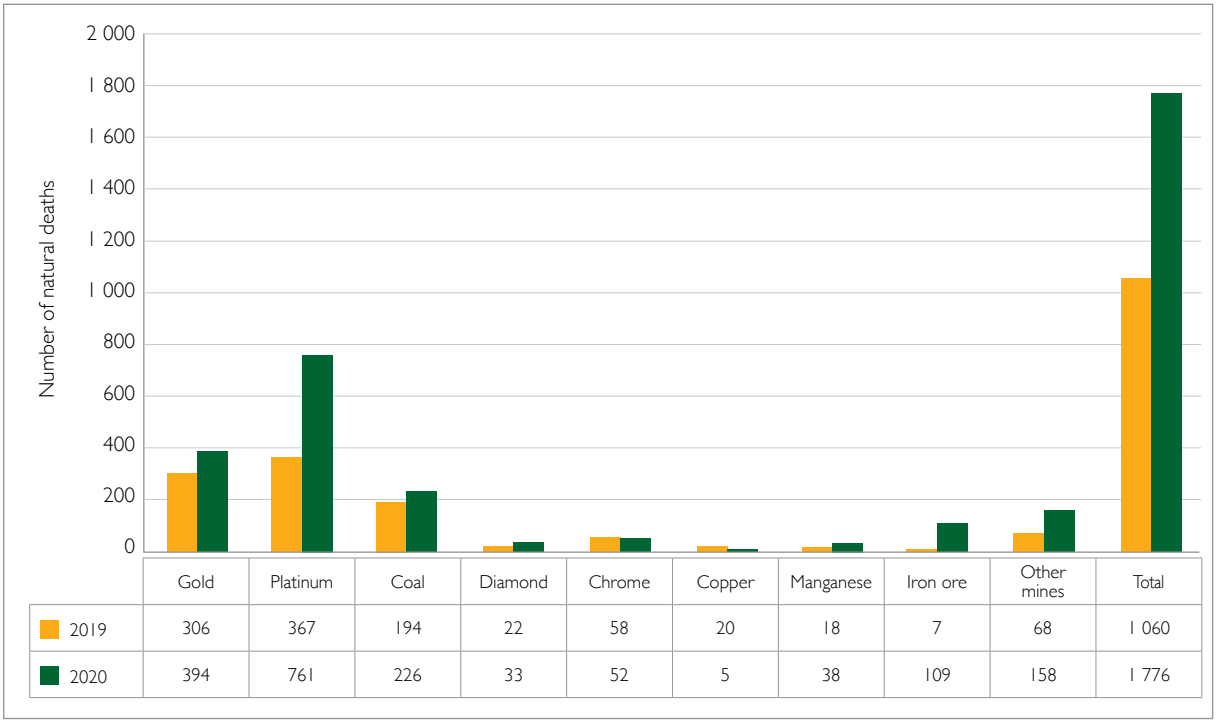
The mining sector reported a total of 1 776 natural deaths in 2020 when compared to 1 060 cases in 2019. The analysis of natural deaths shows a rate of 34 deaths per 10 000 employees when compared to 19 in 2019 as outlined in figure 3.2.2.3.2 below.

FIGURE 3.2.2.4(a): Natural deaths incidence rates per 10 000 employees by commodity: 2019 and 2020



	Gold	Platinum	Coal	Diamond	Chrome	Copper	Manganese	Iron ore	Other mines	Total
2019	29	21	17	13	15	40	12	3	13	19
2020	39	44	20	22	17	8	21	49	35	34

FIGURE 3.2.2.4(b): Total natural deaths by commodity: 2019 and 2020



	Gold	Platinum	Coal	Diamond	Chrome	Copper	Manganese	Iron ore	Other mines	Total
2019	306	367	194	22	58	20	18	7	68	1 060
2020	394	761	226	33	52	5	38	109	158	1 776

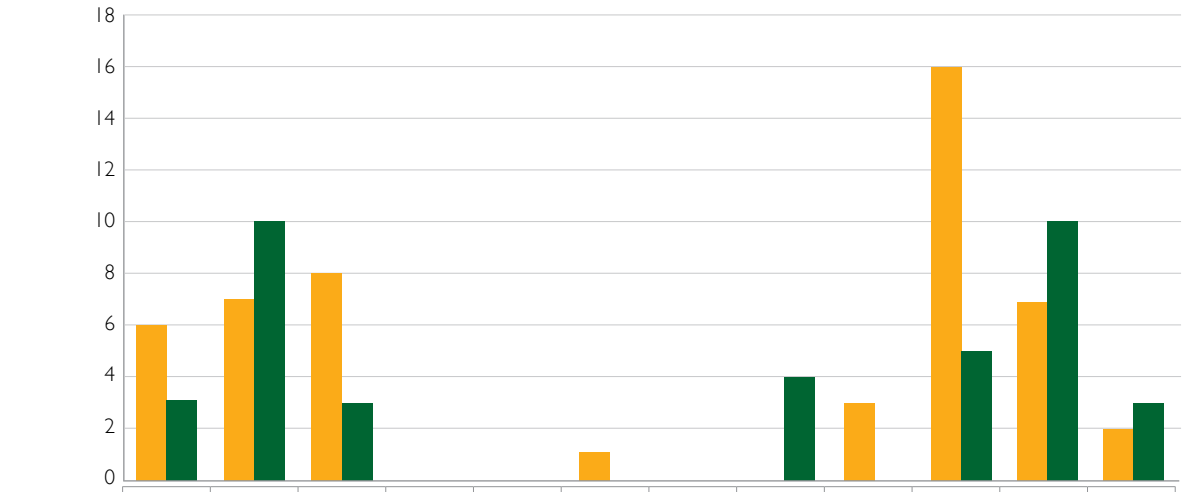
3.3 Medical Inspector's report

The Medical Inspector who is legally appointed in terms of section 49(1)(a)(b) of the MHSA, is responsible for the adjudication on section 20 of the same act. Section 20 allows employees to dispute the decision of the Occupational Medical Practitioner (OMP), or findings of an exit, by lodging a medical appeal to the Medical Inspector. This means that an employee may not lodge an appeal if the employee was found to be fit, or states any other reason not mentioned above. Many employees tend to use the appeal process to complain about compensation and/or labour relations issues. Unfortunately, these complaints cannot be processed as medical appeals, since it would not meet specified requirements. Findings in an exit do not cover issues of unfitness, therefore if an employee's appeal is based on the exit certificate, the reasons should be about the findings in the certificate and not the unfitness.

3.3.1 Medical appeals

The 2020 reporting period was a difficult year because of the COVID-19 pandemic. During this period the Medical Inspector dealt with 152 appeals. Only 50 of these appeals met all the requirements to be handled as section 20 medical appeals. With appellants and second opinion health practitioners unavailable to complete the appeal process, 40 of 50 appeals were finalised during the reporting period.

FIGURE 3.3.1: Appeals received and finalised during 2020

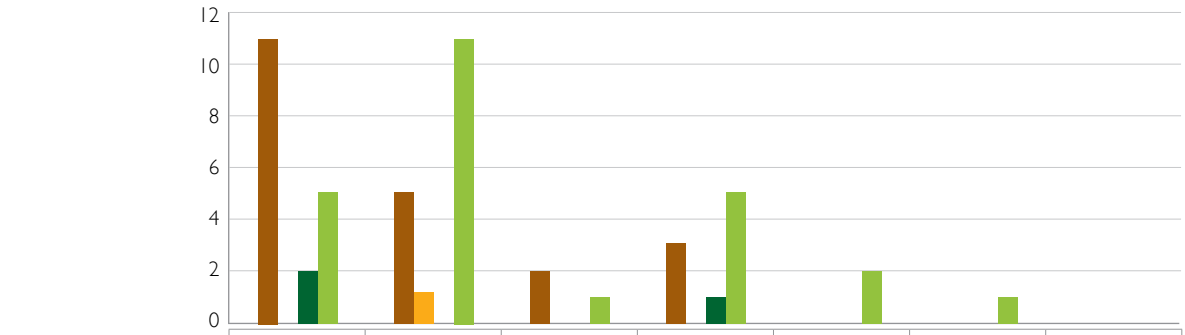


	January	February	March	April	May	June	July	August	September	October	November	December
Received	6	7	8	0	0	1	0	0	3	16	7	2
Finalised	3	10	3	0	0	0	0	4	0	5	10	3

South Africa went into lockdown in March 2020 due to the COVID-19 pandemic and no appeals could be processed from April as most of the stakeholders were not able to fulfil their duties until later in the year. The Medical Inspector managed to finalise 80% of the section 20 appeals received during 2020.

3.3.2 Appeals received per region

FIGURE 3.3.2: Number of appeals per region from January to December 2020



	North West	Free State	Mpumalanga	Gauteng	Northern Cape	Limpopo	KwaZulu-Natal
January-March	11	5	2	3	0	0	0
April-June	0	1	0	0	0	0	0
July-September	2	0	0	1	0	0	0
October-December	5	11	1	5	2	1	0

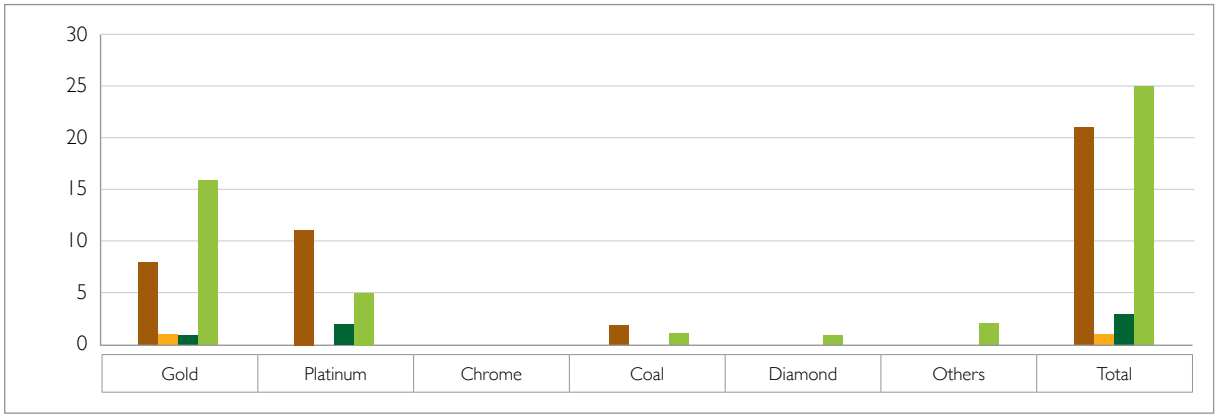
There are five main regions that have consistently contributed to the number of appeals received, but the total number of appeals decreased because of the effects of the national lockdown.

3.3.3 Appeals received per commodity

TABLE 3.3.3: Appeals received per commodity from January to December 2020

	GOLD	PLATINUM	CHROME	COAL	DIAMOND	OTHERS	TOTAL
January-March	8	11	0	2	0	0	**21**
April-June	1	0	0	0	0	0	**1**
July-September	1	2	0	0	0	0	**3**
October-December	16	5	0	1	1	2	**25**
TOTAL	**26**	**18**	**0**	**3**	**1**	**2**	**50**

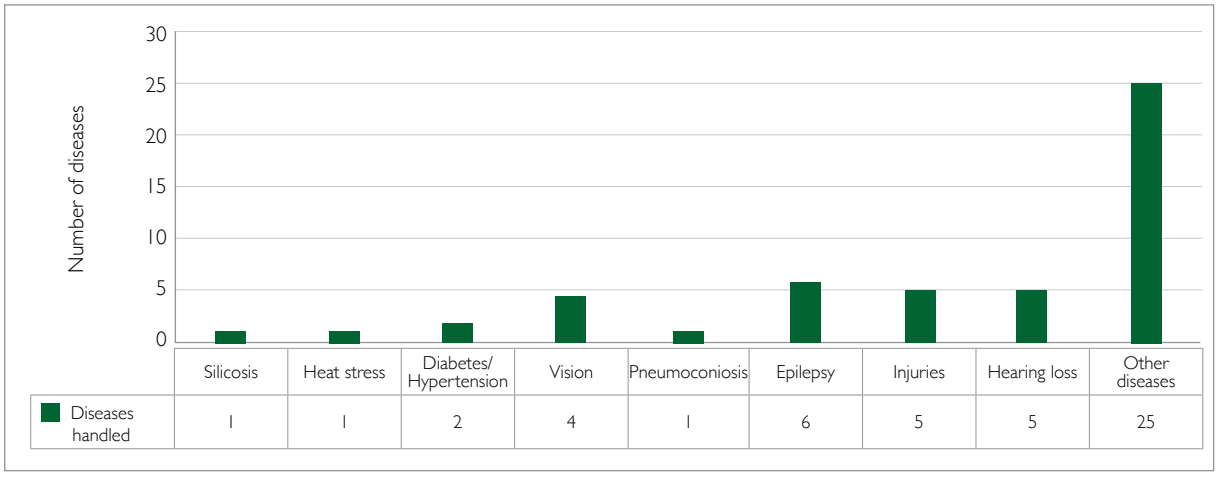
FIGURE 3.3.3: Appeals received per commodity



The gold and platinum commodities contributed most to the medical appeals for 2020. Because of the COVID-19 pandemic and subsequent lockdown, most appeals were received during the periods of January to March 2020 and October to December 2020, while April to September 2020 was relatively quiet.

3.3.4 Diseases handled in the appeals received for 2020

FIGURE 3.3.4: Diseases associated with appeals received for 2020

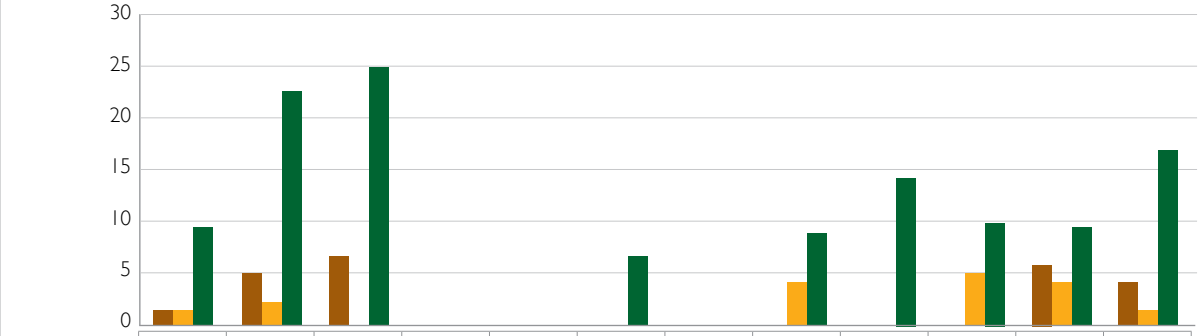


The number of diseases that were handled in the appeals were less when compared to the previous reporting period due to the COVID-19 pandemic. During 2020, the only occupational diseases handled were pneumoconiosis and heat stress. Other diseases in this case included psychiatric, cardiac and renal conditions, amongst others.

3.3.5 Appeal findings

The Medical Inspector handled 152 appeal documents during 2020. Only 50 of these documents met the requirements for section 20 appeals and could be handled to determine the fitness of the employees who appealed. The MHSA gives the Medical Inspector the authority to vary, confirm, or set aside the decision of the OMP.

FIGURE 3.3.5: Appeal findings from January to December 2020



	January	February	March	April	May	June	July	August	September	October	November	December
Fit	1	5	7	0	0	0	0	0	0	0	6	4
Unfit	1	2	0	0	0	0	0	4	0	5	4	1
Other (compliant, compensation and withdrawals	9	23	25	0	0	7	0	8	14	10	9	17

For the reporting period, 46% of the appeals were found to be fit and 34% were found to be unfit. The remaining cases handled were mostly about vulnerable employees who were erroneously declared unfit for their duties while they still had the capability to work. The other cases where fitness status was not in dispute were complaints and compensation matters which were handled differently and were concluded.

3.3.6 Challenges to the appeal process

Most of the challenges pertaining to the appeal process were related to the COVID-19 pandemic and its consequences. Some of the challenges have remained constant as indicated below:

3.3.6.1 Employees

- Employees who had submitted appeals before the commencement of lockdown could not be referred for second opinion examinations.
- Employees were not accessible telephonically.
- Employees were still appealing against unfair labour processes, instead of unfitness.

3.3.6.2 Employers (OMPs):

- Declaring all identified vulnerable employees to be unfit.
- Not managing vulnerable employees as per the DOH guidelines.
- Extended delays in responding to the DMRE when required to provide information on the appeals.

3.3.6.3 Second opinion doctors

- No access to employees because of lockdown restrictions.
- Inability to provide appointment dates.
- No budget provided for second opinion assessments.

3.3.6.4 Section 20 of the MHSA

- Outdated and against medical law and ethics.
- Open to different interpretations.

3.4 Reporting on TB and HIV

The following report reflects an analysis based on TB and HIV data received from the mines. For the 2020 reporting period, data was received from 775 mines representing 482 068 employees, compared to 754 mines with 449 246 employees in 2019.

3.4.1 Compliance for all mines

TABLE 3.4.1(a): Compliance for all mines per commodity: 2020

MEASURE	GOLD	COAL	PLATINUM	DIAMOND	OTHER COMMODITIES	TOTAL
	Number of mines: 72	Number of mines: 135	Number of mines: 64	Number of mines: 89	Number of mines 415	Total mines: 775
	Employees: 88 595	Employees: 112 173	Employees: 165 579	Employees: 13 595	Employees: 102 126	Employees: 482 068
Integrated HIV and TB policy	63	132	61	85	371	**712** (91.9%)
Integrated HIV and TB programme	39	128	57	7	225	**456** (58.8%)
HIV and TB programme budget	40	101	59	6	156	**362** (46.7%)
Monitoring and evaluation system for TB and HIV programmes	39	129	59	7	210	**444** (57.3%)

Total compliance of the integrated HIV and TB policy decreased from 94.0% in 2019 to 91.9% in 2020, and compliance of the integrated HIV and TB programme remains low at 58.8%. The overall HIV and TB programme budget remained constant at 46.7%. The diamond sector remains the worst performer in terms of compliance of HIV and TB programmes budget, as well as monitoring and evaluation while the coal and platinum sectors were the best performers with regard to compliance.

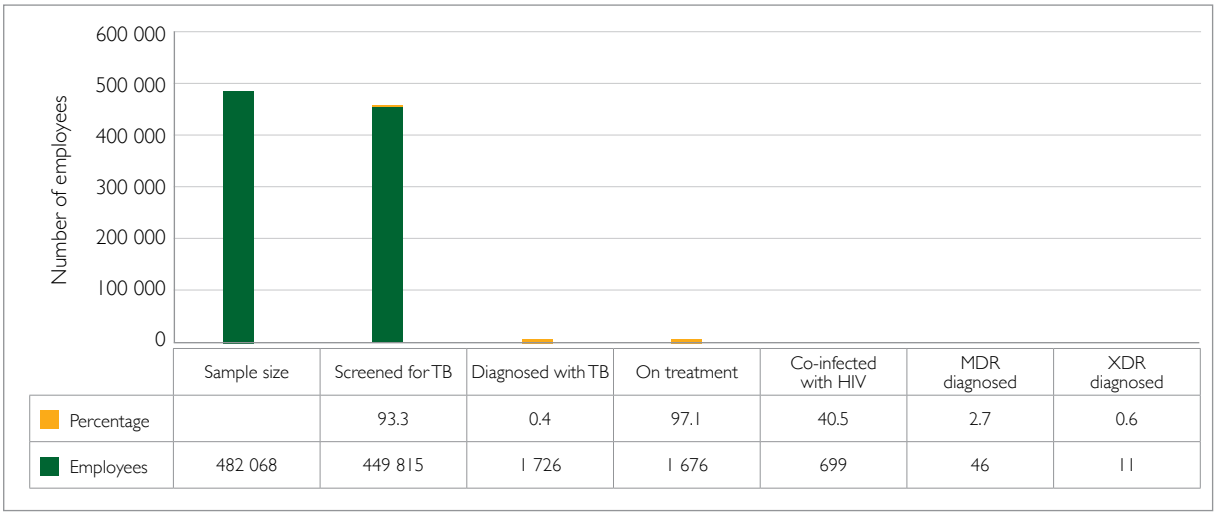
TABLE 3.4.1(b): HIV counselling and testing (HCT) services and TB programme data elements for all commodities in 2020

DATA ELEMENTS	GOLD	COAL	PLATINUM	DIAMOND	OTHER COMMODITIES	TOTAL
	Number of mines: 72	Number of mines: 135	Number of mines: 64	Number of mines: 89	Number of mines 415	Total mines: 775
	Employees: 88 595	Employees: 112 173	Employees: 165 579	Employees: 13 595	Employees: 102 126	Employees: 482 068
Counselled for HIV	56 988 64.3%	71 297 63.6%	154 125 93.1%	7 712 56.7%	64 344 63.0%	354 466 73.5%
Tested for HIV	40 406 70.9%	33 701 47.3%	92 025 59.7%	6 251 81.1%	36 932 57.4%	209 315 59.1%
HIV positive	1 288 3.2%	1 199 3.6%	7 435 8.1%	101 1.6%	661 1,8%	10 684 5,1%
Co-infected with TB and HIV	362 34.9%	39 27.3%	249 63.8%	8 50.0%	41 29.5%	699 40.4%
Living with HIV and on antiretroviral (ARV)	14 649	5 172	60 826	576	4195	85 418
Screened for TB	85 397 96.4%	96 988 86.5%	162 392 98.1%	12 655 93.1%	92 383 90.5%	449 815 93.3%
Diagnosed with TB	1 038 1.2%	143 0.1%	390 0.2%	16 0.1%	139 0.2%	1 726 0.4%
On TB treatment	1 033 99.5%	142 99.3%	370 94.9%	16 100.0%	115 82.7%	1 676 97.3%
Diagnosed with multidrug-resistant TB (MDR-TB)	20 1.9%	4 2.8%	9 2.3%	1 6.3%	12 8.6%	46 2.7%
Diagnosed with extensively drug-resistant TB (XDR-TB)	0 0.0%	0 0.0%	1 0.3%	1 6.3%	9 6.5%	11 0.6%

About 0.4% of employees were diagnosed with TB when compared to 0.3% employees diagnosed with TB in 2019. The increase is small and might be linked to the slight increase in the number of mines that have submitted their DMR164 data.

3.4.2 TB programme and TB/HIV co-infection in all mines

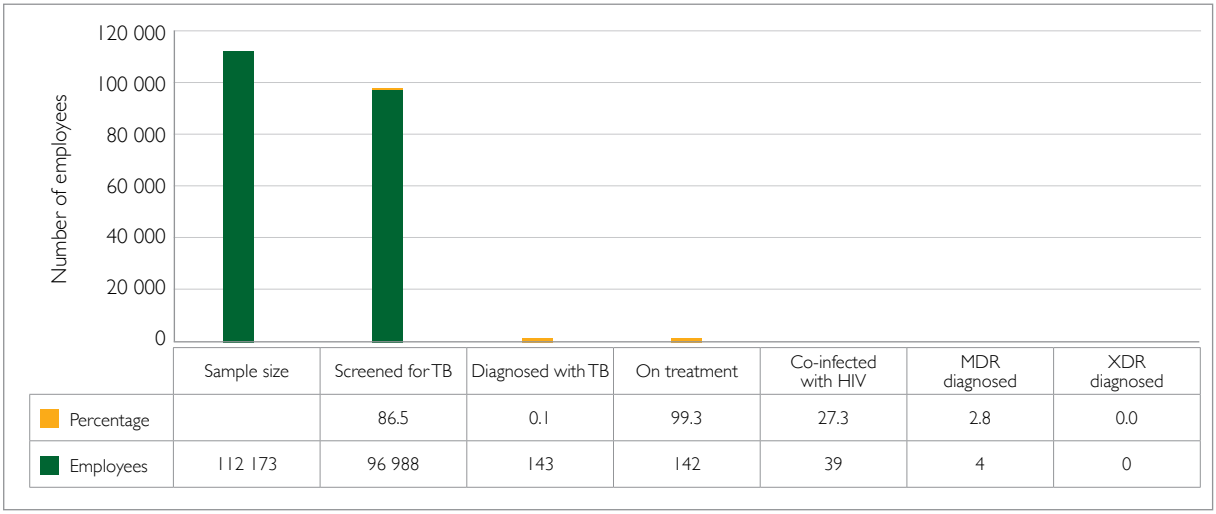
FIGURE 3.4.2: TB programme and TB/HIV co-infection per commodity



	Sample size	Screened for TB	Diagnosed with TB	On treatment	Co-infected with HIV	MDR diagnosed	XDR diagnosed
Percentage		93.3	0.4	97.1	40.5	2.7	0.6
Employees	482 068	449 815	1 726	1 676	699	46	11

Mines are still in line with the UNAIDS 90:90:90 strategy for TB, whereby employees screened for TB were at 94.5%. The overall co-infection rate has decreased from 63.8% in 2019 to 40.5% in 2020.

FIGURE 3.4.2(a): Coal



	Sample size	Screened for TB	Diagnosed with TB	On treatment	Co-infected with HIV	MDR diagnosed	XDR diagnosed
Percentage		86.5	0.1	99.3	27.3	2.8	0.0
Employees	112 173	96 988	143	142	39	4	0

The coal sector has not achieved the first 90 of the UNAIDS 90-90-90 strategy for TB, as TB screening decreased to 86.5% with 0.1% of employees being diagnosed with TB. The co-infection rate was reduced from 46.3% in 2019 to 27.3% in 2020.

FIGURE 3.4.2(b): Diamonds

	Sample size	Screened for TB	Diagnosed with TB	On treatment	Co-infected with HIV	MDR diagnosed	XDR diagnosed
Percentage		93.1	0.1	100.0	50.0	6.3	6.3
Employees	13 595	12 655	16	16	8	1	1

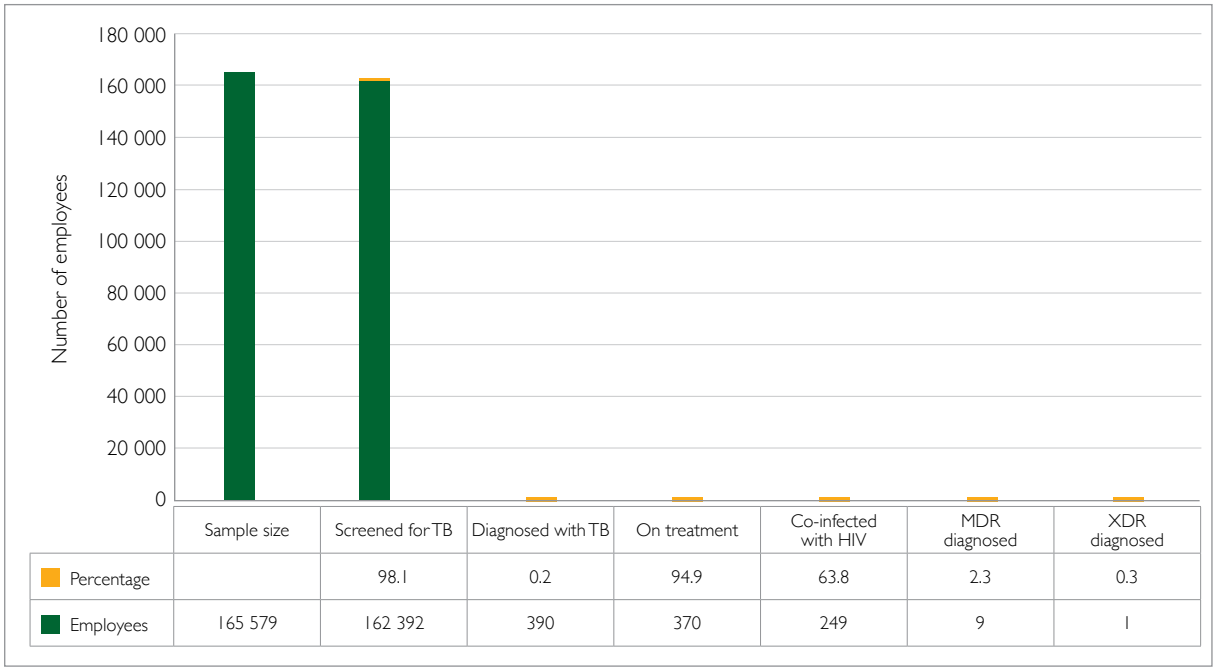
In the diamond sector, TB screening is still above 90%, although it has decreased from 98.6% in 2019 to 93.1% in 2020. The number of employees diagnosed with TB remain constant at 0.1%. The co-infection rate increased from 21.1% in 2019 to 50% in 2020.

FIGURE 3.4.2(c): Gold

	Sample size	Screened for TB	Diagnosed with TB	On treatment	Co-infected with HIV	MDR diagnosed	XDR diagnosed
Percentage		96.4	1.2	99.5	34.9	1.9	0.0
Employees	88 595	85 397	1 038	1 033	362	20	0

The gold sector has experienced a decline from 98.6% in 2019 to 96.4% in 2020 in terms of TB screening. Employees diagnosed with TB have doubled from at 0.6% in 2019 to 1.2% in 2020. This might be due to the COVID-19 pandemic, which has negatively affected TB programmes and thus resulted in more TB cases. The co-infection rate has reduced from 74% in 2019 to 34.9% in 2020.

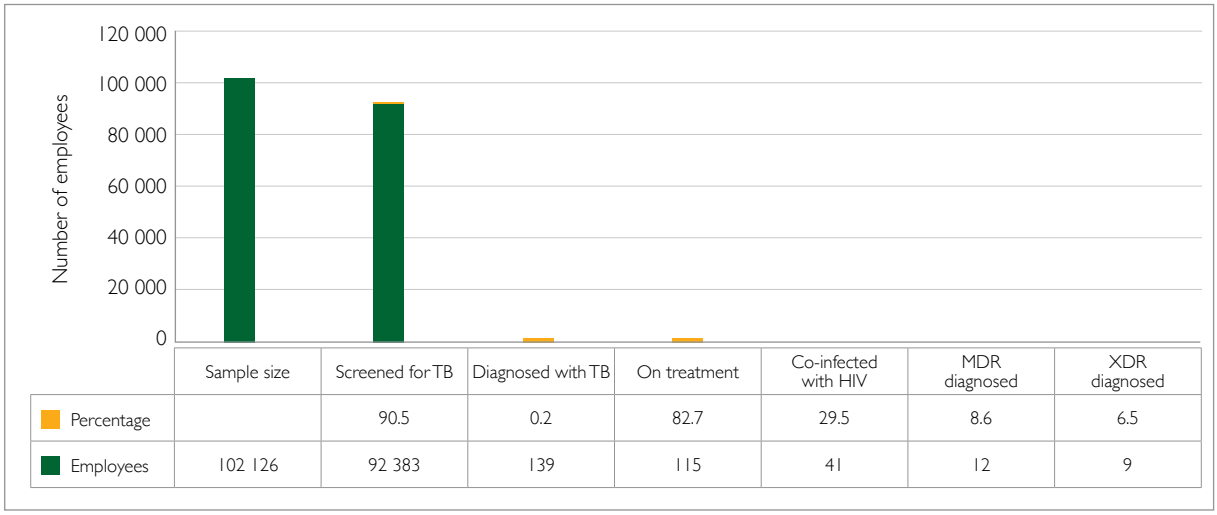
FIGURE 3.4.2(d): Platinum



	Sample size	Screened for TB	Diagnosed with TB	On treatment	Co-infected with HIV	MDR diagnosed	XDR diagnosed
Percentage		98.1	0.2	94.9	63.8	2.3	0.3
Employees	165 579	162 392	390	370	249	9	1

The platinum sector data indicates a slight decline in TB screening from 99.6% in 2019 to 98.1% in 2020. Despite the COVID-19 pandemic, the platinum sector has managed to halve TB cases from 0.4% in 2019 to 0.2% in 2020.

FIGURE 3.4.2(e): Other commodities

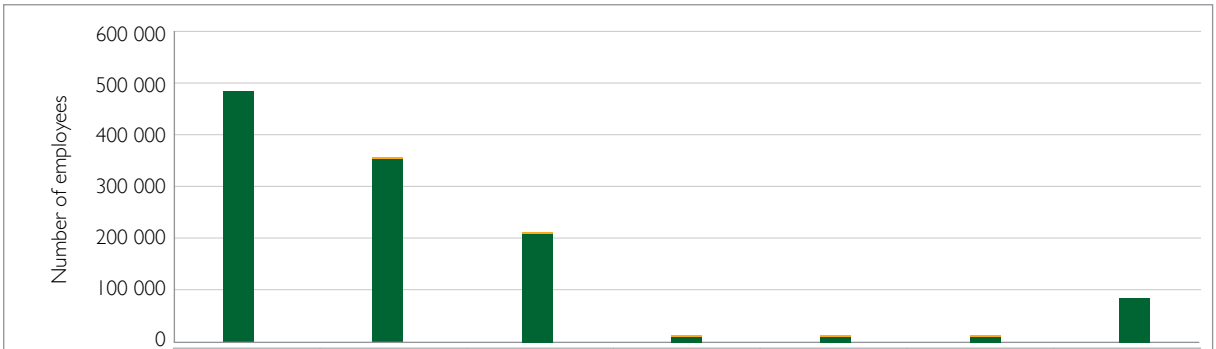


	Sample size	Screened for TB	Diagnosed with TB	On treatment	Co-infected with HIV	MDR diagnosed	XDR diagnosed
Percentage		90.5	0.2	82.7	29.5	8.6	6.5
Employees	102 126	92 383	139	115	41	12	9

Other commodities have remained consistent in terms of TB and HIV management, whereby the TB screening was at 90.5% with only 0.2% of employees being diagnosed with TB in 2020. This might not be a true reflection as most small mines could not provide the required data.

3.4.3 HCT services in all mines

FIGURE 3.4.3: HCT services in all mines

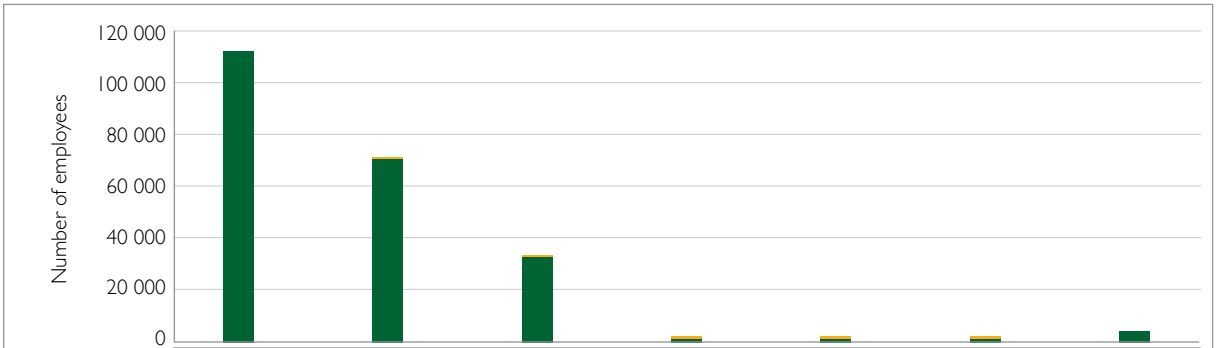


	Sample size	Counselled for HIV	Tested for HIV	HIV positive	As a percentage of those counselled	As a percentage of total population	On ARVs
Percentage		73.5	59.1	5.1	3.0	2.2	
Number of Employees	482 068	354 466	209 315	10 684	10 684	10 684	85 418

For the 2020 reporting period, HIV counselling improved from 70.2% in 2019 to 75.5%. Less employees, at 58.1%, opted to get tested for HIV in 2020. The UNAIDS 90-90-90 strategy has not been achieved, and the COVID-19 pandemic has disrupted strategies that were put in place to improve this percentage. Employees are tested on a voluntary basis, and thus testing is not mandatory.

3.4.4 HCT services per commodities

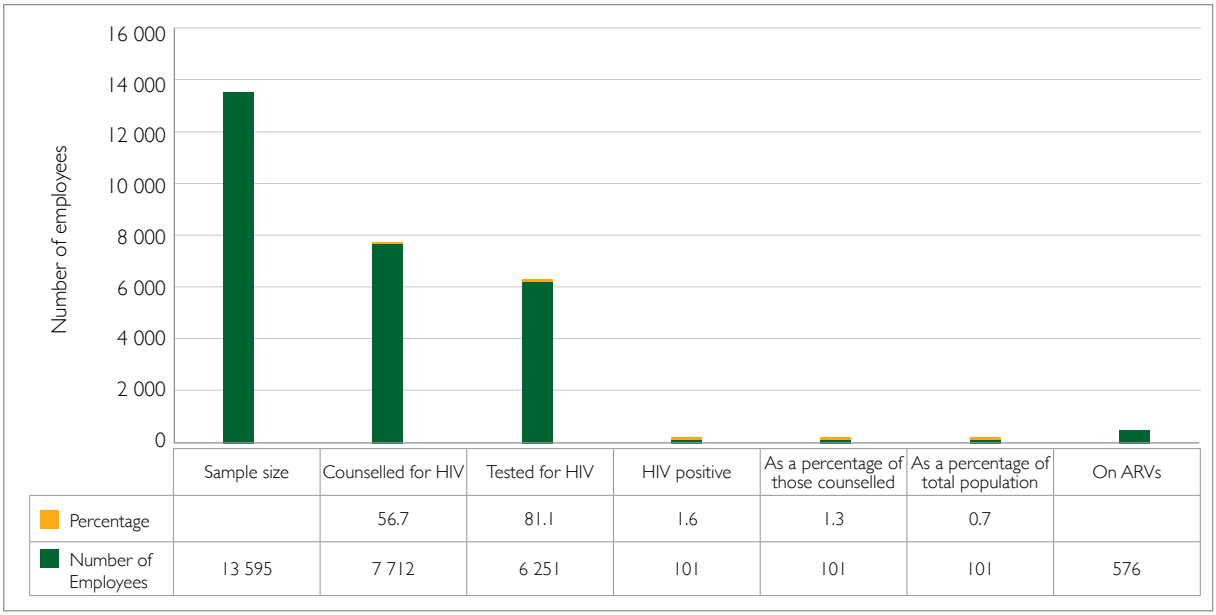
FIGURE 3.4.4(a): Coal



	Sample size	Counselled for HIV	Tested for HIV	HIV positive	As a percentage of those counselled	As a percentage of total population	On ARVs
Percentage		63.6	47.3	3.6	1.7	1.1	
Number of Employees	112 173	71 297	33 701	1 199	1 199	1 199	5 172

The testing of employees for HIV in the coal sector has significantly decreased from 70.7% in 2019 to 47.3% in 2020. There was also a decrease in employees who tested positive for HIV at 3.6% in 2020 from 5.4% in 2019.

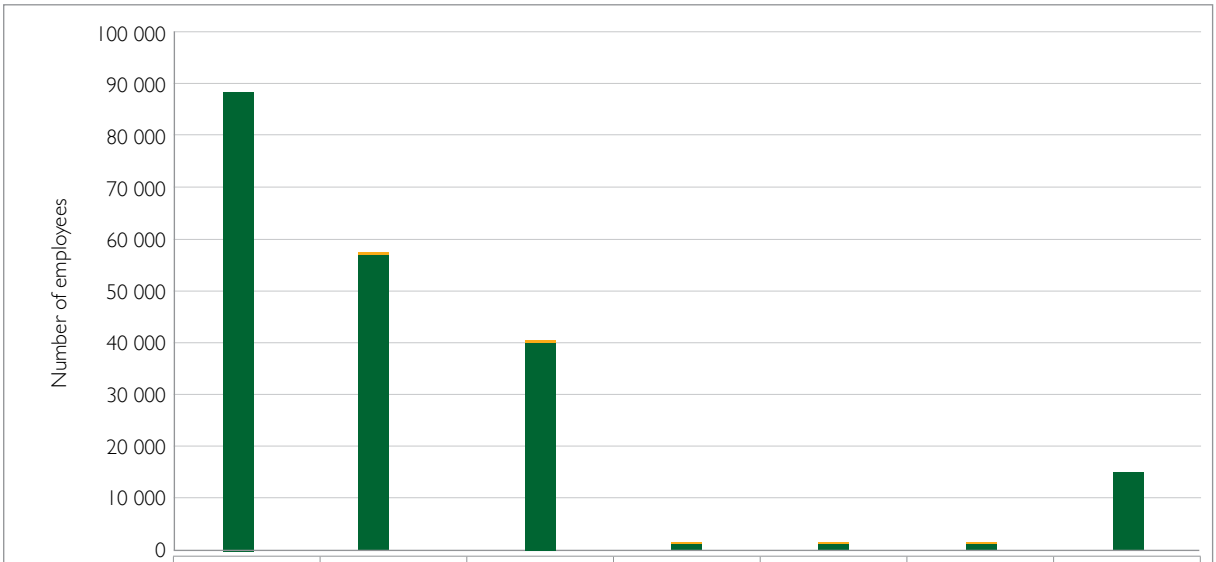
FIGURE 3.4.4(b): Diamonds



	Sample size	Counselled for HIV	Tested for HIV	HIV positive	As a percentage of those counselled	As a percentage of total population	On ARVs
Percentage		56.7	81.1	1.6	1.3	0.7	
Number of Employees	13 595	7 712	6 251	101	101	101	576

Employees who agreed to be tested for HIV increased from 53.9% in 2019 to 81.1% in 2020.The positivity rate has remained constant between 1.4% and 1.6%.

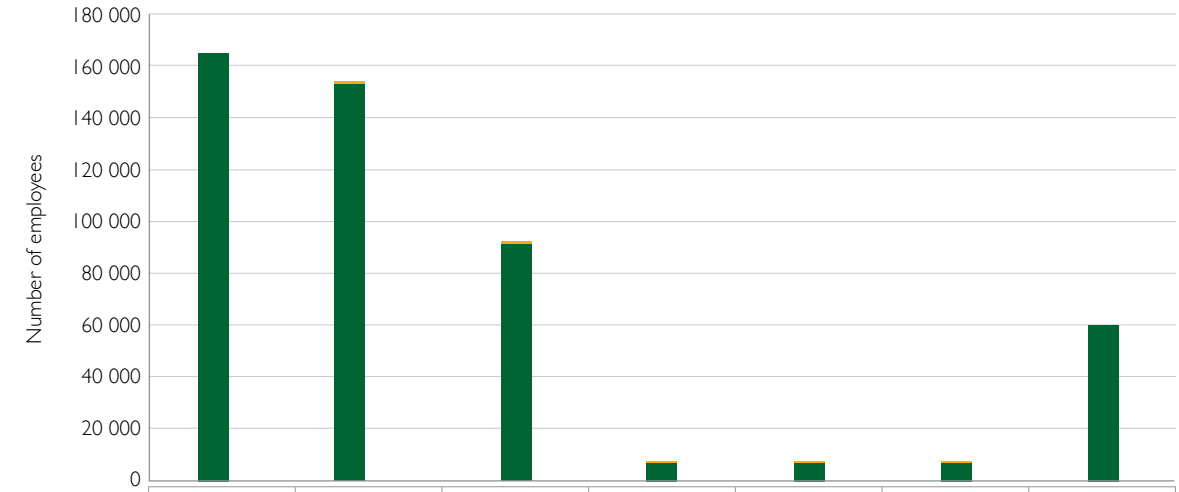
FIGURE 3.4.4(c): Gold



	Sample size	Counselled for HIV	Tested for HIV	HIV positive	As a percentage of those counselled	As a percentage of total population	On ARVs
Percentage		64.3	70.9	3.2	2.3	1.5	
Number of Employees	88 595	56 988	40 406	1 288	1 288	1 288	14,649

The HIV testing rate has remained constant at 70.9% and only 3.2% of employees tested positive for HIV in 2020 when compared to 5.4% of employees in 2019.

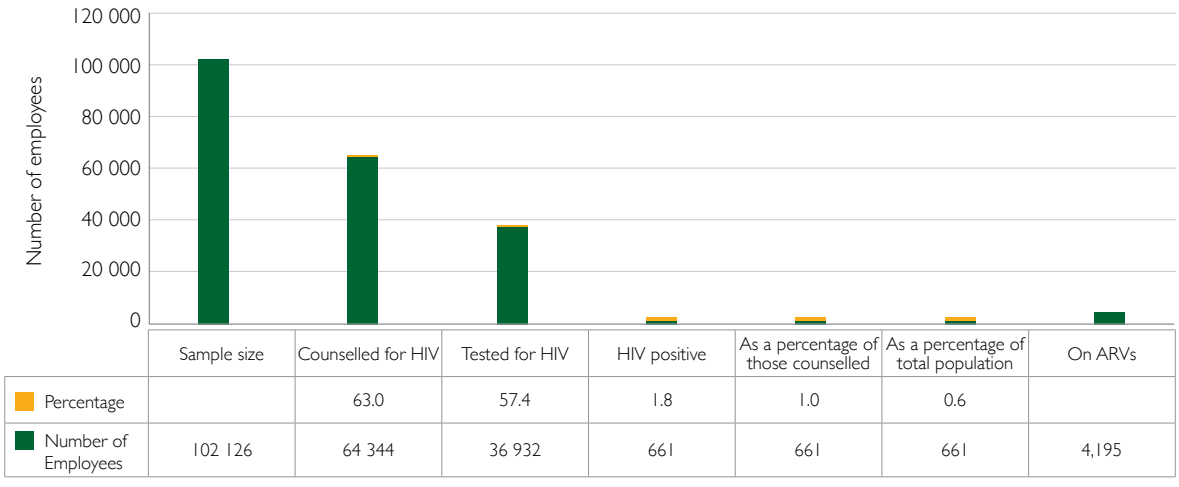
FIGURE 3.4.4(d): Platinum



	Sample size	Counselled for HIV	Tested for HIV	HIV positive	As a percentage of those counselled	As a percentage of total population	On ARVs
Percentage		93.1	59.7	8.1	4.8	4.5	
Number of Employees	165 579	154 125	92 025	7 435	7 435	7 435	60 826

Counselling in the platinum sector has remained high at 93.1% in 2020, but there was a reduction from 76.1% in 2019 to 59.7% in 2020 of employees who were tested for HIV. The platinum sector has consistently performed well over the years with reference to the management of TB and HIV.

FIGURE 3.4.4(e): Other commodities



	Sample size	Counselled for HIV	Tested for HIV	HIV positive	As a percentage of those counselled	As a percentage of total population	On ARVs
Percentage		63.0	57.4	1.8	1.0	0.6	
Number of Employees	102 126	64 344	36 932	661	661	661	4,195

Other commodities are usually smaller mines which depend on mobile and government clinics for HIV counselling and testing. Data submitted indicated that the HIV positive rates have decreased from 2.2% in 2019 to 1.8% in 2020, but this might be affected by paucity of data during lockdown.

TABLE 3.4.4: Trends of data elements for reporting years: 2013 to 2020

DATA ELEMENTS	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE	TOTAL LABOUR FORCE
	2013	2014	2015	2016	2017	2018	2019	2020
	423 032	465 923	476 625	455 681	473 972	493 054	449 246	482 068
Counselled for HIV	**229 151** (54.2%)	**259 297** (55.7%)	**299 566** (62.9%)	**299 444** (65.7%)	**329 562** (69.5%)	**360 994** (73.2%)	**315 381** (70.2%)	**354 466** (73.5%)
Tested for HIV	**192 557** (84%)	**183 202** (70.7%)	**191 333** (63.9%)	**192 517** (64.3%)	**206 033** (62.5%)	**205 596** (57.0%)	**210 456** (66.7%)	**209 315** (59.1%)
HIV positive	**17 384** (9.0%)	**19 084** (10.4%)	**21 913** (11.5%)	**16 243** (8.4%)	**16 293** (7.9%)	**15 630** (7.6%)	**13 101** (6.2%)	**10 684** (5.1%)
Co-infected with TB and HIV	**2 905** (80.9%)	**2 820** (63.2%)	**3 063** (72.7%)	**2 359** (62.1%)	**1 719** (66.6%)	**1 441** 69.7%)	**895** (63.8%)	**699** (40.4%)
Living with HIV and on ARV	**28 887**	**24 740**	**27 272**	**38 804**	**39 308**	**42 002**	**12 858**	**85 418**
Screened for TB	**308 403** (72.9%)	**376 718** 80.8%)	**422 670** (88.7%)	**437 436** (96.0%)	**455 242** (96.0%)	**474 429** (96.2%)	**437 199** (97.3%)	**449 815** (93.3%)
Diagnosed with TB	**3 593** (1.2%)	**4 461** (1.2%)	**4 211** (1.0%)	**3 799** (0.9%)	**2 581** (0.6%)	**2 066** (0.4%)	**1 403** (0.3%)	**1 726** (0.4%)
On TB treatment	**3 483**	**3 999**	**4 367**	**3 687**	**2 414**	**1 899**	**1 729**	**1 676**
Diagnosed with MDR-TB	**149** (4.1%)	**190** (4.3%)	**112** (2.7%)	**123** (3.2%)	**114** (4.4%)	**71** (3.4%)	**86** (6.1%)	**46** (2.7%)
Diagnosed with XDR-TB	**11** (0.3%)	**18** (0.4%)	**14** (0.3%)	**13** (0.3%)	**12** (0.5%)	**8** (0.4%)	**8** 0.6%	**11** (0.6%)

The COVID-19 pandemic affected the TB and HIV programmes at the mines, which resulted in a decrease in TB screening and an increase in employees diagnosed with TB. TB screening has remained above 90% in line with the UNAIDS 90:90:90 strategy for TB. New strategies to deal with TB and HIV management during COVID-19 need to be investigated.

PART 4

STATE OF SAFETY IN THE SOUTH AFRICAN MINING INDUSTRY

4. STATE OF SAFETY IN THE SOUTH AFRICAN MINING INDUSTRY

4.1 Accident statistics

The South African mining industry is still plagued by challenges of injuries and fatalities resulting from mining activities, as indicated in the tables below. The South African mining tripartite stakeholders consisting of Government that regulates the mining industry, mine employers and mine employees, continue to work towards an enviable state of zero harm.

4.2 Analysis of accidents and injuries

In terms of section 47(2) of the MHSA, the Minister of Mineral Resources and Energy has, by notice in the Government Gazette, established regions in South Africa for the purpose of administering this act.

4.2.1 Fatalities per region

Table 4.2.1 below shows the total number of fatalities reported 2020 were 60 whilst the fatalities reported in 2019 were 51. It is a regrettable 18% increase in the number of fatalities reported when comparing 2020 to 2019. Although most regions reported an increase in the number of fatalities during 2020, it should be noted that fatalities reported in North West: Klerksdorp and North West: Rustenburg, decreased by 20% and 40% respectively.

TABLE 4.2.1: Fatalities per region

	FATALITIES REPORTED IN 2019	FATALITIES REPORTED IN 2020*	PERCENTAGE CHANGE
ALL MINES	51	60	18
Eastern Cape	0	0	**0**
Free State	5	8	**60**
Gauteng	7	14	**100**
KwaZulu-Natal	1	1	**0**
Limpopo	4	8	**100**
Mpumalanga	8	11	**38**
Northern Cape	1	2	**100**
North West: Klerksdorp	5	4	**-20**
North West: Rustenburg	20	12	**-40**
Western Cape	0	0	**0**

* provisional

4.2.2 Injuries per region

The total number of injuries reported per region decreased by 29% when the total reported injuries were 1 747 for 2020 when compared to 2 452 in 2019 as shown in table 4.2.2 below. Injuries reported in the Eastern Cape and the Western Cape increased by 300% and 25% respectively.

TABLE 4.2.2: Injuries per region

	INJURIES REPORTED IN 2019	INJURIES REPORTED IN 2020*	PERCENTAGE CHANGE
ALL MINES	**2 452**	**1 747**	**-29**
Eastern Cape	1	4	**300**
Free State	227	191	**-16**
Gauteng	405	335	**-17**
KwaZulu-Natal	32	19	**-41**
Limpopo	162	131	**-19**
Mpumalanga	223	146	**-35**
Northern Cape	91	89	**-2**
North West: Klerksdorp	165	95	**-42**
North West: Rustenburg	1 134	722	**-36**
Western Cape	12	15	**25**

* provisional

4.2.3 Fatalities per commodity

There was an increase in fatalities reported in the gold, coal, and other mining sectors of 44%, 57% and 150% respectively when comparing 2020 to 2019. A decrease of 20% in the platinum sector and 50% in the chrome sector are commendable whilst the fatalities reported in the diamond, copper, iron ore and manganese sectors remained unchanged.

TABLE 4.2.3: Fatalities per commodity

	FATALITIES REPORTED IN 2019	FATALITIES REPORTED IN 2020*	PERCENTAGE CHANGE
ALL MINES	**51**	**60**	**18**
Gold	18	26	**44**
Platinum	20	16	**-20**
Coal	7	11	**57**
Diamonds	0	0	**0**
Copper	0	0	**0**
Chrome	4	2	**-50**
Iron ore	0	0	**0**
Manganese	0	0	**0**
Other mines	2	5	**150**

* provisional

4.2.4 Injuries per commodity

It is noteworthy that the number of injuries reported per commodity decreased by 29%. Whilst most commodities had a decrease in the total injuries reported when comparing 2020 with 2019, it should be noted that there was an increase in the injuries reported in the chrome and iron ore sectors of 11% and 19% respectively.

TABLE 4.2.4: Injuries per commodity

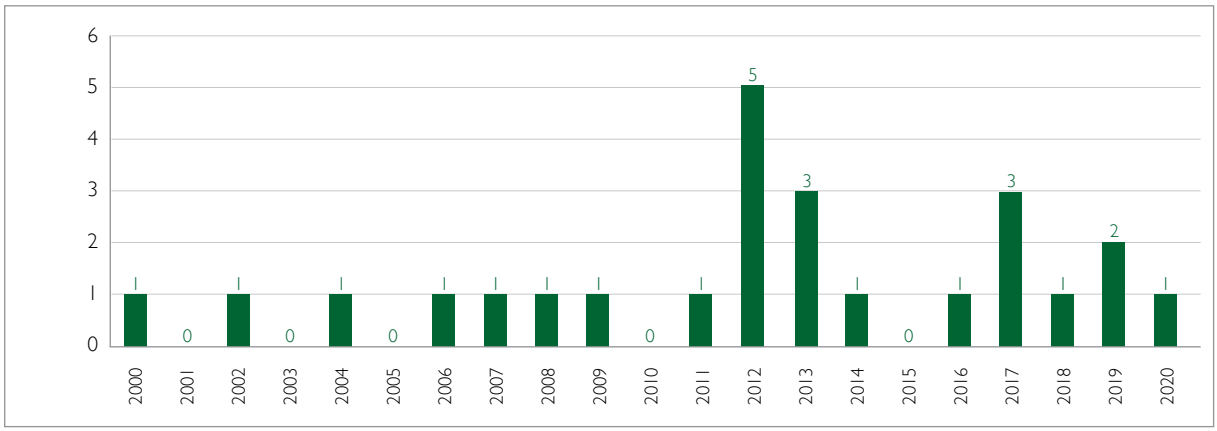
	INJURIES REPORTED IN 2019	INJURIES REPORTED IN 2020*	PERCENTAGE CHANGE
ALL MINES	**2 452**	**1 747**	**-29**
Gold	766	606	**-21**
Platinum	1 156	752	**-35**
Coal	224	123	**-45**
Diamonds	45	42	**-7**
Copper	6	5	**-17**
Chrome	76	84	**11**
Iron ore	21	25	**19**
Manganese	31	26	**-16**
Other mines	127	84	**-34**

* provisional

4.2.5 Fatalities: WIM

One woman was fatally injured in 2020 when compared to two women in 2019. This translates to a decrease of 200% year-on-year. Although a fatality of a mine worker is regrettable, irrespective of gender, figure 4.2.6 shows that since the year 2000, there were no fatalities of women for the years 2001, 2003, 2005, 2010 and 2015.

FIGURE 4.2.5: Actual fatalities - WIM from 2000 to 2020



4.2.6 Injuries: WIM

There has been an increase in the number of injuries involving WIM. The injuries that were reported involving women were mainly in the general accident classification (66%). These accidents were linked to slipping and falling, material handling and being struck by object.

FIGURE 4.2.6(a): Number of injuries to WIM from 2001 to 2020

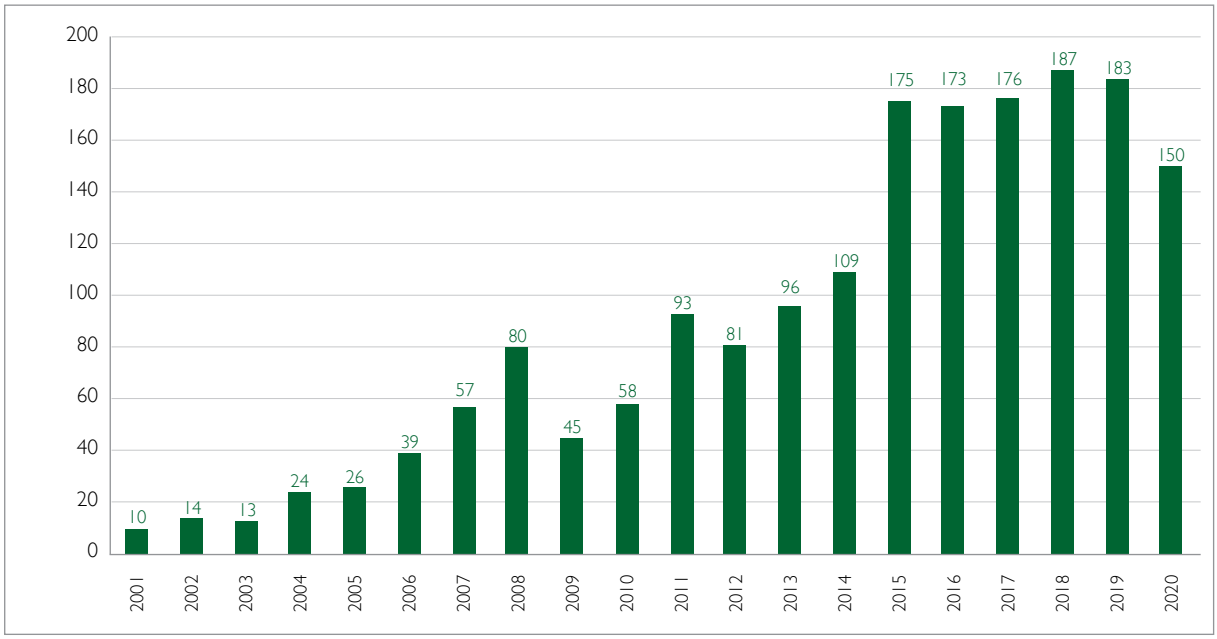
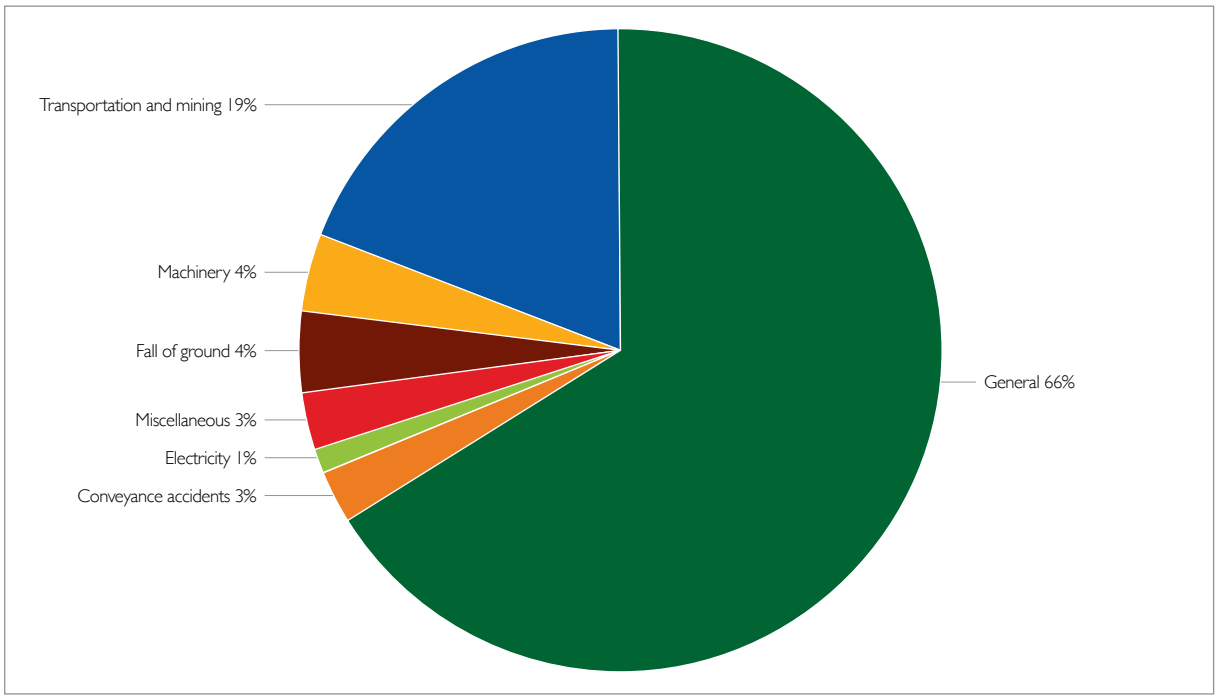


FIGURE 4.2.6(b): Classification of injuries to WIM from 2001 to 2020



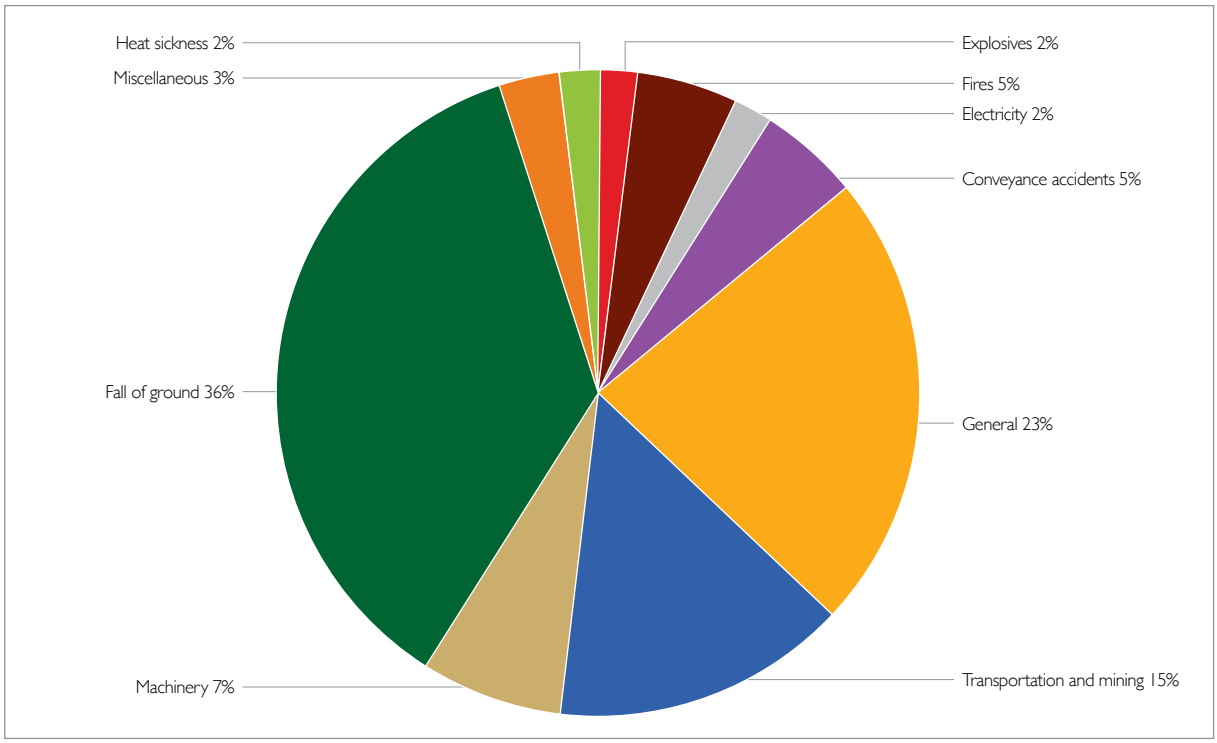
4.2.7 Fatalities classified by casualty classification

The 60 fatalities that were reported in 2020 are indicated in table 4.2.7. The total number of fatality classification groups for the year 2020 followed the same trend as that of the preceding year, 2019. The highest three fatality classification groups for 2020 were: FOG (22 in 2020 vs 20 in 2019), transportation and mining (T&M) (nine in 2020 vs 18 in 2019) and general (14 in 2020 vs 5 in 2019).

TABLE 4.2.7: Fatalities classified by casualty classification

	1 JANUARY TO 31 DECEMBER 2019	1 JANUARY TO 31 DECEMBER 2020	PERCENTAGE CHANGE
FOG	**20**	**22**	**10**
Rockburst	2	7	**250**
Strainburst	2	0	**-100**
Gravity	16	15	**-6**
MACHINERY	**1**	**4**	**300**
Conveyor belts	1	1	**0**
Portable power tools	0	1	**100**
Other machinery (not included in trackless mobile machines (TMM))	0	2	**200**
T&M	**18**	**9**	**-50**
Railbound	**5**	**2**	**-60**
Locomotive	2	1	**-50**
Locomotive drawn vehicle	1	0	**-100**
Coupling/uncoupling	2	1	**-50**
Winches	**3**	**3**	**0**
Scraper winch installation	3	2	**-33**
Single drum winch	0	1	**100**
TMM	**10**	**4**	**-60**
Mechanical loaders	1	0	**-100**
Transporters	7	3	**-57**
Motor vehicles	1	0	**-100**
T&M lifting machines	0	1	**100**
Other TMM	1	0	**-100**
GENERAL	**5**	**14**	**180**
Fall of material/rolling rock	0	2	**200**
Manual handling of material	0	1	**100**
Falling in/from	4	5	**25**
Slipping and falling	1	2	**100**
Dust, gas and fumes	0	2	**200**
Inundation/drowning	0	1	**100**
Struck by object - manual handling	0	1	**100**
CONVEYANCE ACCIDENTS	**1**	**3**	**200**
ELECTRICITY (not causing fires)	**3**	**1**	**-67**
FIRES	**0**	**3**	**300**
EXPLOSIVES	**2**	**1**	**-50**
HEAT SICKNESS	**0**	**1**	**100**
MISCELLANEOUS	**1**	**2**	**100**
TOTAL	**51**	**60**	**18**

FIGURE 4.2.7: Fatalities classified by casualty classification



4.2.7.1 Analysis of fatalities by casualty classification

4.2.7.1.1 Breakdown of fatalities classified under FOG (36%)

There were 22 fatalities classified under FOG in 2020 compared to 20 fatalities reported in 2019. This translates to an increase of 10% year-on-year. Seven of the FOG fatalities reported in 2020 were seismic-related, compared to four reported in 2019, while fifteen FOG fatalities reported in 2020 were gravity related when compared to 16 reported in 2019.

4.2.7.1.2 Breakdown of fatalities classified under machinery (7%)

There were four fatalities classified under machinery in 2020 when compared to one fatality reported in 2019. This translates to an increase of 300% year-on-year.

4.2.7.1.3 Breakdown of fatalities classified under T&M (15%)

There were nine fatalities classified under T&M in 2020 compared to 18 reported in 2019. This translates to a decrease of 47% year-on-year. Fatalities reported under this classification during 2020 included two fatalities that were rail-bound equipment (RBE) related, three that were related to winches and 10 fatalities that were TMM related.

4.2.7.1.4 Breakdown of fatalities classified under general (23%)

The general classification of accidents is detailed under item 4.2.9 below.

4.2.7.1.5 Breakdown of fatalities classified under conveyance accidents (5%)

There were three fatalities classified under conveyance accidents in 2020 when compared to one fatality reported in 2019. This translates to an increase of 200% year-on-year.

4.2.7.1.6 Breakdown of fatalities classified under electricity (-2%)

There was one fatality classified under electricity in 2020 and three fatalities reported in 2019. This translates to a decrease of 67% year-on-year.

4.2.7.1.7 Breakdown of fatalities under fires (5%)

There were three fatalities classified under fires in 2020 when compared to zero fatalities reported in 2019. This translates to an increase of 300% year-on-year.

4.2.7.1.8 Breakdown of fatalities classified under explosives (2%)

There was one fatality classified under explosives in 2020 compared to two fatalities reported in 2019. This translates to a decrease of 50% year-on-year.

4.2.7.1.9 Breakdown of fatalities under heat sickness (2%)

There was one fatality classified under heat sickness in 2020 compared to zero fatalities reported in 2019. This translates to an increase of 100% year-on-year.

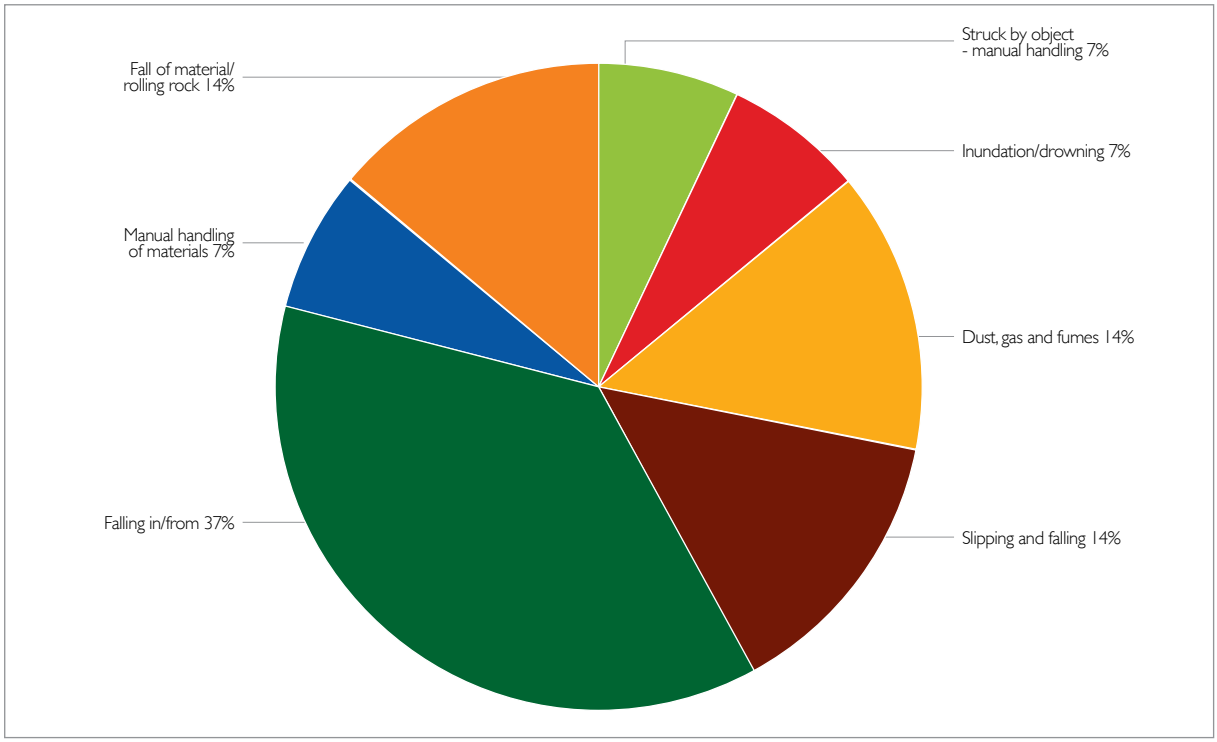
4.2.7.1.10 Breakdown of fatalities under miscellaneous (3%)

There were two fatalities classified under miscellaneous in 2020 and one fatality reported in 2019. This translates to an increase of 100% year-on-year. The miscellaneous classification of fatalities refers to fatalities that are still pending the outcome of investigations, inquiries or post-mortem examinations.

4.2.8 Accidents classified by casualty classification

The classification of general accidents (23%) shows a regression of 133% from the five reported in 2019 to 14 reported in 2020. Two were sub-classified under fall of material/rolling rock in 2020 compared to zero in 2019, one was sub-classified under manual handling of material in 2020 compared to zero in 2019, five were sub-classified under falling in/from in 2020 compared to four in 2019, two were sub-classified under slipping and falling in 2020 compared to one in 2019, two were sub-classified under dust, gas and fumes in 2020 compared to zero in 2019, one was sub-classified under inundation/drowning in 2020 compared to zero in 2019 and one was sub-classified under struck by object-manual handling in 2020 compared to zero in 2019.

FIGURE 4.2.8: Sub-classification of general-type accidents



4.2.9 Injuries classified by casualty classification

The total number of injuries recorded in 2020 show an improvement of 29% to the total number of injuries recorded in 2019. Most of these injuries are repeat incidents which can be prevented.

TABLE 4.2.9: Injuries classified by casualty classification

	1 JANUARY TO 31 DECEMBER 2019	1 JANUARY TO 31 DECEMBER 2020	PERCENTAGE CHANGE
FOG	**385**	**294**	**-24**
Seismic	80	72	**-10**
Strainburst	35	45	**29**
Gravity	270	177	**-34**
MACHINERY	**153**	**122**	**-20**
Conveyor belts	28	29	**4**
Drives, belts and chains	19	11	**-42**
Portable power tools	75	60	**-20**
Other machinery (not included in TMM)	31	22	**-29**
T&M	**294**	**302**	**3**
Railbound	**142**	**128**	**-10**
Locomotive	33	19	**-42**
Locomotive drawn vehicle	37	27	**-27**
Re-railing	15	14	**-7**
Coupling/uncoupling	40	32	**-20**
Rocker arm shovel	5	11	**120**

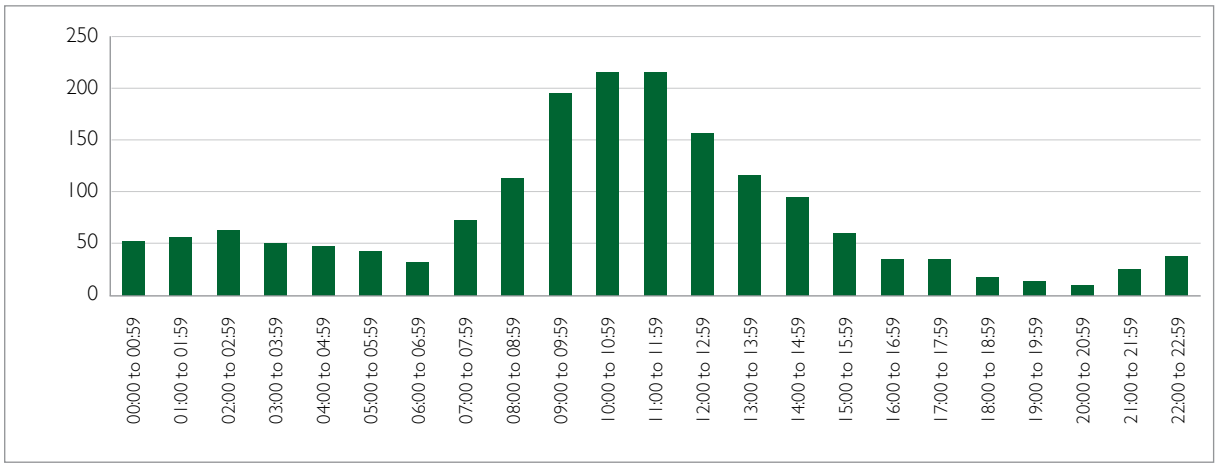
	1 JANUARY TO 31 DECEMBER 2019	1 JANUARY TO 31 DECEMBER 2020	PERCENTAGE CHANGE
Personnel transport	7	6	**-14**
Hand trammed	9	5	**-44**
Other transport (specify)	6	2	**-67**
Winches	**132**	**90**	**-32**
Scraper winch installation	107	57	**-47**
Single drum winch	5	6	**20**
Double drum winch	9	15	**67**
Mono-rope/rail	11	12	**9**
TMM	**144**	**101**	**-30**
Tractor/trailer	2	2	**0**
Coal mining machines	2	4	**100**
Mechanical loaders	13	10	**-23**
Transporters	50	35	**-30**
Motor vehicles	15	19	**27**
T&M lifting machines	16	14	**-13**
T&M mobile drilling machines	44	25	**-43**
Other transport and mining equipment	12	7	**-42**
GENERAL	**1 248**	**768**	**-38**
Fall of material/rolling rock	169	109	**-36**
Manual handling of material	276	190	**-31**
Manual handling of mineral	52	38	**-27**
Falling in/from	48	26	**-46**
Slipping and falling	345	187	**-46**
Burning and scalding	48	27	**-44**
Splinters	39	24	**-38**
Dust, gas and fumes	66	43	**-35**
Inundation/drowning	2	3	**50**
Struck by ventilation door	16	8	**-50**
Struck by object - manual handling	187	113	**-40**
CONVEYANCE ACCIDENTS	**41**	**24**	**-41**
ELECTRICITY (not causing fires)	**16**	**12**	**-25**
FIRES	**2**	**0**	**-100**
EXPLOSIVES	**10**	**3**	**-70**
OCCUPATIONAL DISEASES (non-diving)	**2**	**0**	**-100**
HEAT SICKNESS	**4**	**7**	**75**
MISCELLANEOUS	**21**	**24**	**14**
TOTAL	**2 452**	**1 747**	**-29**

* provisional

4.2.10 Accidents classified by time of occurrence

Statistics show that accidents in 2020, when classified by time of occurrence, mainly took place between 07:00 and 14:00. This period is during the day shift when there are more people at work. Most underground workers start the morning shift at 06:00, and number of accidents peak at mid-shift between 10:00 and 11:00.

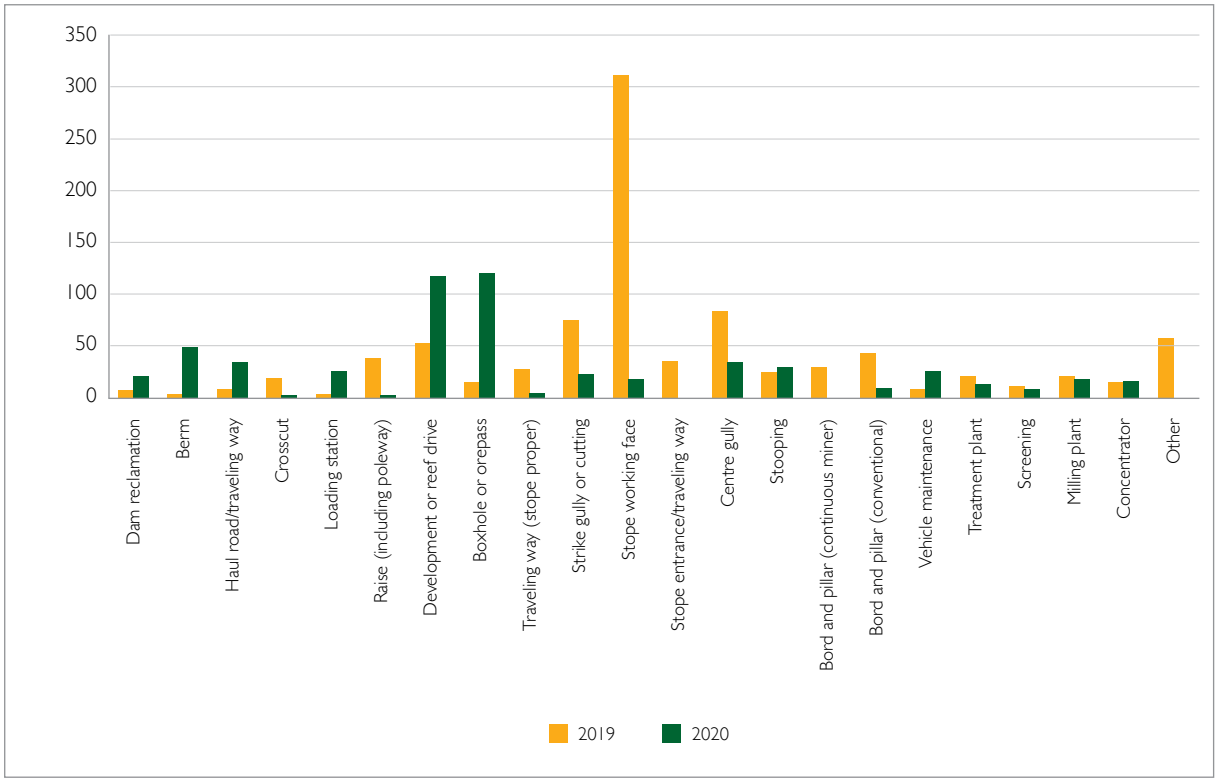
FIGURE 4.2.10: Accidents classified by time of occurrence



4.2.11 Accidents classified by location

Most accidents occurred at the stope working face, crosscut or draw point, haulage and opencast. These are areas with considerable concentration, working towards the set production targets.

FIGURE 4.2.11: Accidents classified by location



4.3 Enforcement

4.3.1 Section 54 instructions to deal with dangerous conditions

TABLE 4.3.1(a): Section 54 instructions

SECTION 54 OF THE MHSA	
Number of notices issued	456
Number of transgressions identified	3 479
Number of instructions issued	2 115

TABLE 4.3.1(b): Section 54 transgressions identified

NO	CATEGORIES OF SECTION 54 TRANSGRESSIONS	SECTION 54 TRANSGRESSIONS IDENTIFIED
1.	FOG	298
2.	TMM	306
3.	Mining practices / standard operating procedure	199
4.	RBE	140
5.	Conveyor belts	409
6.	Winches	138
7.	Machinery	86
8.	Safe declaration	117
9.	Emergency preparedness	99
10.	COPs	145
11.	Explosives	38
12.	Ventilation	78
13.	Supervision	278
14.	Legal appointments	81
15.	Shafts	27
16.	Training	63
17.	Electricity	36
18.	Risk assessment	191
19.	Airborne pollutants	40
20.	Occupational hygiene	19
21.	Medical surveillance / COVID-19 COP	170
22.	Drilling / rigging	34
23.	Work conditions	7
24.	Statutory reporting / sub-standard reports	6
25.	Fires	9
26.	Exemptions / permissions / approvals / authorisations	1
27.	PPE	51
28.	Safety devices	8
29.	Mud-rush	54

NO	CATEGORIES OF SECTION 54 TRANSGRESSIONS	SECTION 54 TRANSGRESSIONS IDENTIFIED
30.	Lamp room / refuge bay	15
31.	Waiting place	66
32.	Noise	1
33.	Driving with cell phone	2
34.	House-keeping / barring / barricade	52
35.	Mine permit / unauthorised access	7
36.	Traffic management	6
37.	Blasting	56
38.	Road condition / haul roads / illumination	34
39.	Substandard support	110
40.	Lifting equipment	2
TOTAL		**3 479**

4.3.2 Section 55 instructions to order compliance

TABLE 4.3.2(a): Section 55 instructions

SECTION 55 OF THE MHSA	
Number of notices issued	451
Number of transgressions identified	1 622
Number of instructions issued	1 080

TABLE 4.3.2(b): Section 55 transgressions identified

NO	CATEGORIES OF SECTION 55 TRANSGRESSIONS	SECTION 55 TRANSGRESSIONS IDENTIFIED
1.	COPs	305
2.	TMM	161
3.	Legal appointments	106
4.	Conveyor belts	188
5.	Occupational hygiene	30
6.	Machinery / lifting equipment	64
7.	Risk assessment	123
8.	Training	39
9.	Electricity	49
10.	FOG	73
11	Supervision	89
12.	Medical surveillance / COVID-19 COP	70
13.	RBE	17
14.	Dust	5
15.	Emergency preparedness	30
16.	Statutory reporting	36

NO	CATEGORIES OF SECTION 55 TRANSGRESSIONS	SECTION 55 TRANSGRESSIONS IDENTIFIED
17.	PPE	26
18.	Explosives	30
19.	Working conditions	36
20.	Standard operating procedure	19
21.	Ventilation	6
22.	Shafts	0
23.	Safe declaration	63
24.	Mining practices	10
25.	General	17
26.	Noise	6
27.	Mine plans	0
28.	Health and safety policy	3
29.	Surveying	0
30.	Logbooks	5
31.	Fires	0
32.	Exemptions / permissions / approvals / authorisation	7
33.	Winches	6
34.	Health and safety representatives	3
35.	Inspector instructions	0
36.	Fatigue management	0
TOTAL		**1 622**

PART 5

MINE SURVEYING IN THE SOUTH AFRICAN MINING INDUSTRY

5. MINE SURVEYING IN THE SOUTH AFRICAN MINING INDUSTRY

5.1 Activities of the Mine Surveying Directorate

TABLE 5.1: Completed tasks for the financial year as compared with the previous financial year

ACTIVITIES	PLANNED	COMPLETED	PERFORMANCE ANALYSIS
Mine surveying inspections (underground and surface mines)	304	245	The Directorate could not meet its targets due to the COVID-19 pandemic and the subsequent lockdown restrictions.
Underground inspections (control measurements)	152	114	The inspectors could not meet their targets due to the COVID-19 pandemic, the subsequent lockdown and travel restrictions.
	RECEIVED	**COMPLETED**	
Permissions and exemptions	44	53	Applications received towards the end of the previous reporting period were only completed during the current reporting period.
SURFACE UTILISATION APPLICATIONS			
	Received	**Completed**	**Performance analysis**
	89	110	Applications received towards the end of the previous reporting period were only completed during the current reporting period. Applications lacking the required information were either returned to the region or the applicant with a request to provide the required information.

5.2 Surveying matters

The Directorate works closely with the regional offices in maintaining surveying and mapping standards by monitoring compliance by mines to the relevant MHSA regulations, and through the administration of departmental copies of the statutory mine plans that mines deposit at the regional offices. The Directorate regularly comments and makes recommendations regarding the safe utilisation of land for township development and the processing of applications for permissions and exemptions in the provision of the MHSA.

This Directorate further performs underground check measurements in restricted mining areas where surface structures require protection, and checks measurements of underground workings to determine the accurate representation of plans of such workings. During underground visits, refuge bays are inspected to check if it can sustain life as prescribed in the regulations.

5.3 Special surveys

No special surveys were performed during the period under review, other than the verification of the accuracy of survey data and plans submitted by candidates undertaking the trial survey projects as part of their Mine Surveyor's Certificate of Competency (MSCC) examinations.

5.4 Section 55 instructions issued

A total of seven section 55 notices in terms of the MHSA were issued for the period under review for the following contraventions:

- No appointment of a competent person at the mine.
- Inaccurate plans.

- No existing plans at the mine.
- Competent person(s) to be appointed on a full-time basis.

5.5 Mapping services

The Sub-directorate Geographic Information System (GIS) and Mapping Service administers the archiving, retrieval and safe-keeping of prescribed mine plans, departmental copies and survey records of mines that have closed.

It also provides clients with information on the undermining status of land for township development and other purposes, as well as making the mine plans of closed-down mines available to mine owners or their representatives.

The Sub-directorate is in the process of replacing hard copy topographical plans with electronic topographical plans, which will reduce the turnaround time for comments and recommendations on proposed township developments.

PART 6

TRAINING AND EXAMINATIONS

6. TRAINING AND EXAMINATIONS

6.1 Implemented training

During the reporting period, there were no development of the skills and knowledge base of the MHSI staff due to the COVID-19 pandemic and its restrictions.

6.2 Training interventions

6.2.1 Assistant inspector programme

- The Department had nine Assistant Inspectors at the commencement of the reporting period.
- All Assistant Inspectors are at various stages of obtaining their GCC in their respective disciplines.

6.2.2 Bursary scheme

- There were no MHSI bursary holders during the reporting period.

6.3 Examinations

6.3.1 Written candidates vs certificates issued per examination category

TABLE 6.3.1: Number of candidates and certificates issued per examination category

TYPE OF CERTIFICATES	NUMBER OF CANDIDATES	CERTIFICATES ISSUED
Mine Engineer's (Electrical and Mechanical) Certificate	188	30
Mine Manager's Certificate	463	15
Mine Overseer's Certificate	245	45
Mine Surveyor's Certificate	241	5
Winding Engine Driver's Certificate	0	0
TOTAL	**1 137**	**95**

PART 7

ACTIVITIES OF THE INSPECTORATE

7. ACTIVITIES OF THE INSPECTORATE

7.1 Regional operations: Central and Coastal Regions

The Central and Coastal regional operations consist of the Gauteng and KwaZulu-Natal regions. The major commodities mined are gold, coal and industrial minerals. Numerous base minerals are also mined and there are crushers, quarries and borrow pits. The total number of operating mines in these regions are 166.

Occupational health performance

Employees are still over-exposed to airborne pollutants which causes silicosis and CWP, amongst others. Most employees are also over-exposed to high noise levels resulting in a high number of NIHL cases reported in the sector.

The total number of occupational diseases cases reported decreased from 655 cases in 2019 to 351 cases reported in 2020. The main occupational diseases in 2020 were PTB, NIHL and silicosis which were 147, 116 and 73 cases respectively. It is encouraging to note that there was a slight improvement in the number of diseases reported by both Gauteng and KwaZulu-Natal regions year-on-year. The Gauteng region had the third highest number of reported occupational diseases which were 339 cases accounting for approximately 17% of the total national occupational diseases reported by the mining sector.

Occupational safety performance

Regrettably, a total of 12 fatalities occurred during the period under review when compared to 15 fatalities during the same period in 2019, this is an improvement of 20% year-on-year. A total of 580 mining accidents were reported in 2020 compared to 739 accidents during the previous reporting period, translating into a 22% year-on-year improvement in the number of mine accidents over the reporting period.

In dealing with the above accidents that led to fatalities and injuries at mines, the Central and Coastal regional operations completed 89 mine investigations. The outstanding mine inquiries and investigations could not be completed mainly because of the non-availability of the legal representatives of the mines and organised labour, as well as COVID-19 restrictions on movement and gatherings. The outstanding inquiries will be prioritised in the next financial year.

Enforcement

During the period under review, a total of 2 395 inspections and audits were conducted at mines in the Central and Coastal regional operations.

As part of the enforcement measures during the said inspections and audits, 77 section 54 and 102 section 55 notices were issued in terms of the MHSA. The notices issued under section 54 deal with dangerous conditions at mines, while those issued under section 55 order compliance to the provisions of the MHSA.

Strategies adopted for improving status-quo

Working under difficult conditions imposed by COVID-19, we still believe that zero harm amongst mineworkers is possible. The inspectors continue working with all stakeholders to implement initiatives to protect the occupational health and safety of mineworkers as per the MHSA.

It is of great concern that mines continue reporting on fatalities of mineworkers due to occupational related accidents and diseases. Prior to COVID-19, working with mining companies and labour unions, the DMRE made significant strides in improving health and safety for mine employees, as well as the sustainable downward trend in occupational diseases, injuries and fatalities over the years.

Regrettably, the pandemic did not spare the mining sector, and based on statistics, the impact of COVID-19 in the mining sector, like in many sectors, is glaring. Our heartfelt condolences are extended to the families

of all the workers in the mining and energy sectors who lost their lives to COVID-19, and we wish speedy recoveries to those who have tested positive.

The Central and Coastal regional operations will strive to improve visibility at the mines as a pro-active measure to enforce compliance at the mines. Strategies will focus on increased inspections, audits and investigations with the aim of revealing system failures in terms of the MHSA and, where applicable, appropriate enforcement action will be taken if necessary. Inspectors will continue to monitor compliance and demand all mines to implement:

- Engineering controls to reduce exposure levels to air-borne pollutants.
- Buy Quiet Policy to ensure that employees are not exposed to high levels of noise.
- National HIV and TB strategies to achieve the UNAIDS 90:90:90 targets, especially because it had the highest number of reported occupational diseases cases.
- Effective strategies to ensure the elimination of employee over-exposure to health hazards and mine accidents that lead to injuries and fatalities.

During the reporting period, the CIOM issued a guideline in accordance with section 9 of the MHSA, to compel all mine employers to prepare and implement a COP for the prevention, mitigation and management of the COVID-19 outbreak. Inspectors continue to conduct inspections and monitoring compliance with measures to prevent, mitigate and manage the spread of COVID-19 among mineworkers.

The DMRE convened a virtual meeting on 26 November 2020, to review the state of occupational health and safety in the South African mining industry. The meeting was attended by the Minister of Mineral Resources and Energy, senior officials of the DMRE, the mining industry and sector labour organisations. The attendees expressed concern over the increased number of fatalities in the mining industry, cautioned against complacency and called for greater co-operation amongst all stakeholders.

7.1.1 Gauteng

The Gauteng province is the economic hub of South Africa and it is divided into urban, peri-urban, agricultural, industrial and mining areas. The population is the largest in the country resulting in an increased need for resources such as land resulting in communities encroaching into mining lease areas.

The region has 110 active mines ranging from small, medium and large scale mining operations. These operations are underground and surface operations as well as rehabilitation and reclamation projects, mining slime dumps and waste rock dumps. Several minerals are mined in Gauteng namely gold, uranium, coal, diamonds, aggregate, sand, iron ore, fluorspar, clay and silica.

Underground gold mining operations are amongst the deepest mines in the world and it represents the largest health and safety risk due to it ranging from ultra-deep, deep, medium, shallow to surface outcrop mining. In addition to depth, the orebody is characterised by narrow tabular, steep and massive formations that are influenced by major geological features, radioactive material and high quartzite silica content.

The region experienced an increase in fatalities when compared to the previous reporting period. This can mostly be attributed to maintenance and explosion related occurrences with an odd lightening associated death. These fatalities were: four explosion related accidents, four falling from heights, which were maintenance associated, and five FOG related accidents. Other fatalities were scraper ropes, inundation by ore, loco and transport accidents. The injuries reduced by more than 25% when compared to the previous reporting period.

Whilst the region was focusing on the COVID-19 pandemic, the industry focused its attention in combating the pandemic and therefore normal health screening was reduced in order to comply with national health protocols. Underground mines were the most affected by COVID-19 with 95% of these being underground gold mines. In the region 36 480 tests were conducted; the positive cases detected were 3 569 mine employees; the recovery cases were 3 484 and there were 65 deaths.

Whilst the region has a 97% recovery rate, the most noticeable improvement of 26% was in regard to health incident reporting.

7.1.1.1 Topical issues and matters of interest

Health and safety engagements within the bilateral and tripartite forums:

- Promoting the attendance of regional tripartite forums for surface and underground operations.
- Occupational health and hygiene milestone forums.
- Engagement with executives and management of mine employers.
- Engagement with organised labour and workplace safety representatives.
- Attendance of health and safety committee meetings.
- Individual, or discipline focussed, trouble shooting engagements with responsible mine officials.

Health and safety campaigns:

- Annual health and safety days.
- Attending and promoting health and safety campaigns such as TB Day and World Acquired Immune Deficiency Syndrome (AIDS) Day.
- Conduct regular visible felt leadership (VFL) programmes.
- Engagement with mines at safety meetings.
- Health, wellness and hygiene promotion and monthly awareness campaigns.
- WIM awareness programmes including sexual harassment and gender-based violence (GBV).

Inspections focusing on physical conditions and underground challenges:

- Hauling, transport and tramming inspections.
- Focusing on elements to reduce seismicity and FOG accidents.
- Major challenges with regard to clean mining, over-breaking and offline mining.
- Ventilation and environmental conditions including cyanide handling.
- Medical surveillance and readiness of the employees.
- COVID-19, HIV/AIDS, TB and sexually transmitted infections (STIs) indicators including heat-related illnesses.
- Chronic disease management and defaulters tracing.
- Over-exposure to chemical and physical agents such as noise, dust and thermal stressors.
- Underground and surface fires with possibilities of explosions.

Audits focusing predominantly on health and safety systems including COVID-19:

- Health and safety planning regimes.
- Labour, staffing and manning of allocation in working places.
- Frequency and quality of service department inspections and audits.
- Accreditation, calibration and affiliation of service providers for the general, or overall, maintenance of medical equipment.
- Service departments' reports and recommendations adherence by stakeholders.
- Review and evaluation of legal appointments, policies, procedures and standards.
- Enforcement of COPs including the minimum standard of fitness to perform work at a mine; the management of medical incapacity due to ill-health and injury; the prevention, mitigation and management of COVID-19 outbreak; and personal protective equipment for women in the South African mining industry
- Third party audits and maintenance work by contractors.

Illegal mining and plant invasions:

- Illegal mining activities in operational mines, the sabotaging of ventilation systems, fires, explosives, the disruption of services and random blasting underground, have an adverse effect on the health and safety at mines.

- Illegal mining further compromising the integrity of main infrastructure
- Pollution, the disruption of water resources, illegal dumping of waste material, the use of mercury and the illegal electricity connections is the result of the processing of gold bearing material by illegal miners in residential areas.

7.1.1.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	1 120	40
Actual	1 751	52
Percentage compliance	156	130

7.1.1.3 Total accidents reported

Fatal accidents	14
> 14 day accidents	355
1 to 13 day reportable accidents	203

7.1.1.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	86	0	86
Completed	86	0	86
Percentage completed	100	0	100

7.1.1.5 Disaster-type accidents

No disaster-type accidents were reported.

However, a near miss accident involving large numbers of employees were reported at Sibanye Stillwater Kloof Gold mines on 29 March 2021, where seven employees were involved in a seismic-related accident. One employee was unfortunately fatally injured at this incident.

7.1.1.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
69	54

7.1.1.7 Administrative fines

No administrative fines were recommended by the PI.

7.1.1.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	40	40	100
Mining and prospecting rights	7	7	100
Closure certificates	6	6	100
Environmental management	7	7	100
Complaints	15	6	40

7.1.1.9 Strategies adopted for improving status-quo

- Lack of care or inadequacy of duty among managers and supervisors.
- Day-to-day entries and risks, which should be identified by line supervision and safety officers, were not recorded.
- Water control and management is very poor if pumping is not done and this is resulting in excessive water and mud accumulations.
- Ventilation and environmental controls are key focus areas to prevent the average increase of ambient temperature in the atmosphere.
- Inspectors are unable to be pro-active when many inspections and follow-up audits result in instructions being issued. The focus shifts to boardroom engagements and discussions with regard to the instructions issued.
- Although mining operations have fair health and safety systems in place, there is a lack of ownership and implementation. As a result of this, the functions and responsibilities of the section 4.1 appointees have been taken over by the safety departments of the mines.
- Responsible personnel are unable to account for deviations and challenges since the safety department has taken ownership of the documentation without proper plans being developed by the responsible managers or supervisors.
- Health and safety committee structures are unable to have meaningful pro-active participation, due to boardroom discussions in preparation for a section 11.5 presentation or an accident investigation.
- Managers are not visible at the working place where their skills and expertise are most needed since they are engaged in boardroom discussions.

7.1.2 KwaZulu-Natal

7.1.2.1 Topical issues and matters of interest

The KwaZulu-Natal province is situated along the borders of Lesotho, Swaziland and Mozambique. Most mineral resources are found in rural areas in the region where land is owned by rural communities and structured tribal authorities. Mining in these areas often gives rise to challenges ranging from corporate social responsibilities, to health and safety.

The mineral resources consist mainly of sand and aggregates where most mining operations are in these commodities. Ilmenite, rutile and zircon are mined on a large scale for their titanium and zirconium contents from aeolian beach dunes in the northern parts of the region. The region is also rich in other minerals such as aluminium, anthracite, limestone, shale and calcitic marbles. The coal mined in the province is of high quality and is mined by both opencast and underground mining methods.

The region has for many years experienced a challenge in retaining competent and experienced staff as required in terms of the MHSA across respective operations. It should be noted that more than 90% of the mining operations in the region are trackless, thereby making the implementation of chapter 8 of the MHSA more relevant in the region, particularly by the responsible employers.

During the reporting period, the region had less accidents and incidents reported, with zero fatalities recorded. The latter can be attributed to the national lockdown in response to the COVID-19 pandemic. We regrettably lost valuable members of our families, communities and fellow colleagues due to the virus where 13 mine workers unfortunately lost their lives during the reporting period.

Illegal mining remains a challenge for both community members and mine employees particularly in the Pongola area of the region. Two incidents were reported in March 2021 where a group of illegal miners took over one of the shafts at Klipwal Gold Mines. The region continues to engage with the employer and the SAPS to reach an amicable resolution in the matter. Historically, the area is poverty stricken with minimal employment opportunities in and around the mine. As a result, the employer has adopted the corporative employment strategy until a permanent solution is realised.

The decline in commodity prices presented challenges to both the aggregate and coal mining sectors. The region also bore the negative implication of poor market performance in that the focus had to be aligned to struggling mining operations. The latter resulted in retrenchments of mine employees in several operations that would under normal circumstances employ the majority of the workforce in the region. One has to appreciate that section 189 has an indirect negative effect on both the health and safety of employees emphasised by the uncertainty presented by the COVID-19 pandemic at a workplace.

Employers would resort to pillar-extraction methods in order to keep continuous feed to operational plant capacities. However, in most cases this approach proved not to be the employer's initial plan as submitted with the Environmental Assessment Plan (EMP). A directive has since been issued to employers to engage with the PI for consideration. This prevented significant accidents and/or incidents as a result of pillar-extraction based on a financial decision versus a geotechnical decision appraised by the relevant subject experts.

7.1.2.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	528	44
Actual	531	61
Percentage compliance	101	139

7.1.2.3 Total accidents reported

Fatal accidents	0
> 14 day accidents	19
1 to 13 day reportable accidents	0

7.1.2.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	3	0	3
Completed	3	0	3
Percentage completed	100	0	100

7.1.2.5 Disaster-type accidents

No disaster-type accidents were reported.

7.1.2.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
8	48

7.1.2.7 Administrative fines

No administrative fines were recommended by the PI.

7.1.2.8 Land-use applications and complaints

No land-use applications and complaints were received.

7.1.2.9 Strategies adopted for improving status-quo

The KwaZulu-Natal region had an improved health and safety performance cumulatively. The collaboration with all stakeholders in the South African mining industry has proven to be progressive and indeed saved lives. The goal of zero harm remains a priority and the realisation of "every mine worker returning from work unharmed every day" can be seen in the near future. As a region, we are encouraged by the demonstrated efforts and commitment of stakeholders, towards a safer mining environment for all.

The regional occupational medical and hygiene inspectors have strengthened measures with the OMPs, as well as both full-time and part-time hygienists to strengthen safety strategies in respective operations. Particularly since the promulgation of the COP for the mitigation and management of COVID-19 outbreak on 11 May 2020. The recovery rate in the region is at a recorded average of 98% to date, which is commendable.

During the reporting period, visibility in operations remains critical and has yielded positive results. Officials engaged with stakeholders and dealt with the doubt and misconceptions regarding the reporting of the COVID-19 positive cases, as well as the compliance measures required in strategies to contain the spreading of the virus. The latter approach is also applicable to our regional staff who are also not immune to the virus. It is a value system imbedded in striving to maintain a safer working environment in the region.

7.2 Regional operations: Central, Coastal and North-Eastern Regions

The Regional Operations: Central, Coastal and North-eastern regions consists of the Eastern Cape, the Free State, Limpopo and Mpumalanga regions and this is the first time reporting on the Eastern Cape. The major commodities mined are coal, platinum, gold, copper and industrial minerals. Numerous base minerals are also mined and there are many crushers, quarries and borrow pits in these regions.

Occupational health performance

The total number of occupational diseases reported in these regions were 738 cases in 2020 when compared to 1 048 cases in 2019. This is a 30% decrease, or 310 cases, in the number of occupational diseases reported during the period under review.

The main occupational diseases reported by mines were PTB (472 cases in 2019 and 327 cases in 2020), NIHL (200 cases in 2019 and 200 cases in 2020) and silicosis (132 cases in 2019 and 113 cases in 2020). There was a 60% decrease in CWP cases from 45 in 2019 to 18 in 2020. PTB continues to be the highest reported occupational disease in these regions. Mining companies must improve their respective case findings and procure mine equipment that generates less noise and dust levels to ensure compliance with legislation. Programmes should be implemented to ensure that employees diagnosed with TB, complete their treatment. It must be aligned to the UNAIDS 90:90:90 strategy for TB.

Occupational safety performance

Regrettably, there were 27 fatalities reported in 2020 when compared to 17 fatalities in 2019. This corresponds to a 59% increase year-on-year. All regional offices had an increase in fatalities during the reporting period except for the Eastern Cape which had zero fatalities. The analysis of fatalities indicated that FOG and general type accidents were the major contributors. These classifications contributed to 48% of fatalities reported in the regions.

The number of injuries reported was 487 injuries in 2020 when compared to 613 injuries in 2019 and this corresponds to a decrease of 21%. The major contributors for these injuries were general type accidents, T&M and FOG with 52%, 20% and 14% respectively. General accidents include manual handling of material, drowning and inundation, as well as slipping and falling.

The regions successfully implemented the Occupational Health and Safety (OHS) Improvement Strategy Action Plan to enforce compliance with health and safety measures. The strategy addresses the issue of unacceptable loss of life and injuries at mines, by emphasising roof fall accidents, T&M-related accidents and investigations.

Safety achievements

Overall, there were mines performing well and did not have any fatalities during the reporting period. These mines are true examples that zero harm can be achieved in the sector and all stakeholders must work together to achieve zero harm.

COVID-19 cases and deaths

The regions are monitoring compliance to the lockdown levels and the COP on the prevention, mitigation and management of the COVID-19 outbreak. The total positive cases reported as at 26 March 2021 were 15 045 with the Eastern Cape, Free State, Limpopo and Mpumalanga reported 31, 2 725, 5 847 and 6 442, respectively. Regrettably the corresponding death cases for each region were 0, 38, 50 and 69, respectively, which adds to 157 deaths in total.

Topical issues and matters of interest

During the reporting period, a number of complaints were received regarding mines blasting close to communities and township developments. The complaints usually include damages to properties due to ground vibration, air blasting and dust.

The number of candidates who wrote the Legal Knowledge and Plant Engineering examinations in November 2020 were 83 and 105, respectively, when compared to 150 and 193 in 2019, respectively. The significant decrease in the candidates writing these examinations was due to COVID-19 restrictions. There were 33 registered candidates that did not write any of the subjects. The number of candidates that passed the Legal Knowledge and Plant Engineering examinations in 2020 were 37 and 25, respectively. The corresponding pass rate for the two subjects was 45% and 24%. This was the lowest pass rate for Plant Engineering in the past five years.

Illegal mining

The Director-General of the DMRE and the Mpumalanga Provincial Commissioner of the SAPS established a task team to address the scourge of illegal mining in the Mpumalanga region. This task team focusses on precious metals and coal mining. Consequently, the work of the Mpumalanga Illicit Mining Stakeholder Forum was suspended to prevent a possible overlap or duplication of functions and resources.

The above stakeholder forum consists of the DMRE, the Department of Home Affairs and Immigration, the Directorate: Priority Crime Investigation (Hawks), SAPS Barberton, Crime Intelligence, the State Security Agency, the Department of Justice, local municipalities, Community Policing Forums, organised labour, and the following mining companies: Galaxy Gold Reefs Mining Gold, Barberton Mines, Evander Gold Mines, Transvaal Gold Mines Estates and Vantage Goldfields.

The Central, Coastal and North-eastern regional operations will continue to embark on a zero tolerance to non-compliance through the implementation of the OHS Improvement Strategy Action Plan. This will be achieved through the following:

- Convene meetings with Chief Executive Officers (CEOs) of mining companies, professional associations in the mining sector and labour leadership to ensure that health and safety strategies are implemented.
- Implementation of the COP on the prevention, mitigation and management of the COVID-19 outbreak.
- Focussing on strategies to reduce noise levels as well as exposure levels to respirable crystalline silica by implementing effective engineering controls.

- Focussing on mines with employees in the HEG A exposure group ensuring that these mines develop engineering controls to reduce the OEL of those employees. This will also lead to the withdrawal of employees who are over-exposed to noise and silica dust.
- Improve TB case findings and, encourage and monitor employees to complete their treatment courses.

7.2.1 Eastern Cape

The Eastern Cape is situated in the south-eastern part of South Africa and is surrounded by the Western Cape, the Northern Cape, the Free State and KwaZulu-Natal provinces. It is the second largest of the nine provinces in South Africa in terms of area (approximately 169 580 square kilometres) and the fourth largest in terms of population. The province includes the former homelands of Transkei and Ciskei, and is inhabited by almost seven million people who speak mainly IsiXhosa, English and Afrikaans.

There are approximately 400 registered mines in the Eastern Cape with medium and high-risk operations. Operational mining takes place in hard rock quarries, as well as many gravel and clay quarries that provide material to the construction industry.

7.2.1.1 Topical issues and matters of interest

Consequent to the COVID-19 pandemic, and the Nelson Mandela and Buffalo metropolitan areas being declared COVID-19 'hotspot' areas in 2020, 31 mine workers were reported to have contracted the disease in the Eastern Cape mining sector with a 100% recovery rate during the period under review.

The underground coal mine, located near Indwe, continues to remain closed as a consequence of ownership issues. Renewed interest is noted in the Molteno coal fields and various minerals in the Mt Ayliff area.

7.2.1.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	186	0
Actual	276	0
Percentage compliance	148	0

It should be noted that group audits were neither planned nor done as a consequence of the restrictions due to the COVID-19 pandemic.

7.2.1.3 Total accidents reported

Fatal accidents	0
> 14 day accidents	4
1 to 13 day reportable accidents	13

7.2.1.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	3	0	3
Completed	3	0	3
Percentage completed	100	0	100

7.2.1.5 Disaster-type accidents

No disaster-type accidents were reported.

7.2.1.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
22	7

7.2.1.7 Administrative fines

No administrative fines were recommended by the PI.

7.2.1.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	9	9	100
Mining and prospecting rights	18	18	100
Mining Permits	123	123	100
Closure certificates	6	6	100
Environmental management	40	40	100
Complaints	4	4	100

7.2.1.9 Strategies adopted for improving status-quo

- While the COVID-19 pandemic restricted gatherings under the DMA, regional tripartite forums were commenced from the second quarter.
- Several community meetings were attended with the Mineral Regulation branch of the DMRE, to discuss many issues related to mining, especially concerns relating to blasting operations.
- Due to staff movement restrictions, the region continued using virtual meeting options to conduct business.
- Inspectors performed more inspections due to gatherings and/or group audits being prohibited due to the COVID-19 outbreak.

7.2.2 Free State

Although gold is the major commodity that is mined in the Free State region, other commodities such as coal, diamonds, aggregates, bentonite and sand are also mined at a lesser scale. Major gold mining companies are Harmony Gold and Sibanye Stillwater. Mining takes place in Sasolburg, Welkom, Odendaalsrus, Virginia, Theunissen, Allanridge and Koffiefontein.

7.2.2.1 Topical issues and matters of interest

Various strategies were adopted and implemented to reduce the scourge of the COVID-19 pandemic. Inspectors at the region are on standby for care and maintenance during the duration of the pandemic and subsequent lockdown. The management of the mines continued as they were ramping up production from 50% to 100% to cover the reduction in production which was caused by COVID-19 pandemic lockdown levels which happened from the end of March 2020.

Illegal mining activities have been reduced drastically as a result of old shafts that have been filled with rubble and slime therefore restricting ventilation in the shafts and preventing access to food for underground illegal miners.

Regional tripartite forums and different sub-committees are working well amongst the different stakeholders, and a WIM sub-committee was established.

7.2.2.2 *Inspections and audits*

CATEGORY	INSPECTIONS	AUDITS
Planned	768	44
Actual	891	24
Percentage compliance	116	55

7.2.2.3 *Total accidents reported*

Fatal accidents	8
> 14 day accidents	191
1 to 13 day reportable accidents	102

7.2.2.4 *Investigations and inquiries*

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	159	8	167
Completed	159	7	166
Percentage completed	100	88	99

7.2.2.5 *Disaster-type accidents*

No disaster-type accidents were reported.

7.2.2.6 *Statutory notices*

SECTION 54 NOTICES	SECTION 55 NOTICES
44	28

7.2.2.7 *Administrative fines*

No administrative fines were recommended by the PI.

7.2.2.8 *Land-use applications and complaints*

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	0	0	0
Mining and prospecting rights	40	40	100
Closure certificates	22	19	86
Environmental management	32	32	100
Complaints	4	4	100

7.2.2.9 *Strategies adopted for improving status-quo*

- Continuation of focused inspections and audits on profiled high-risk mines.
- Continued robust engagement by all stakeholders in tripartite meetings and sub-committee meetings.
- MOSH – enforcement of in stope roof bolting and netting at mines.
- MOSH – enforcement of the use of winch covers for dust.
- Enforcement and monitoring of the respective occupational hygiene and medicine programmes at mines through auditing and inspections.
- Participating in working groups to monitor and mitigate occupational diseases.

- Close partnerships with other government departments, trade unions and other key stakeholders.
- Focused audits and inspections of safety management systems, and the implementation thereof.
- Quarterly workshops on health and safety with key stakeholders.
- Enforcement instructions for the stoppages of unsafe practices and workplaces.

7.2.3 Limpopo

A wide variety of minerals are mined in the Limpopo region with coal, copper, chrome and platinum being the main commodities. Numerous base minerals are also mined and there are a large number of crushers and quarries in the region.

There was an increase in the number of fatalities during the reporting period and a remarkable reduction in the number of reportable injuries was noted during the same period. There was also a significant reduction in the number of occupational diseases reported in 2020 when compared to 2019.

7.2.3.1 Topical issues and matters of interest

Illegal mining has escalated, especially in the Sekhukhune and Giyani areas, where chrome and gold are mined from old mine dumps and outcrops respectively. Inspectors are facing threats of violence from perpetrators.

The COVID-19 pandemic affected mines in the area negatively, with a few mines closing as a result of the pandemic and the subsequent lockdown.

A major accident occurred when three employees were fatally injured in the shaft. At the time of the incident, four employees were on the stage bailing pumping water from the shaft bottom as part of normal care and maintenance activities. They had completed 16 water bailing cycles and on the 17th cycle from underground, the underlay kibble on the north side of the shaft failed to automatically reduce speed when it approached the bank doors and was pulled into the shaft headgear and collided into the headgear crash beam. The winder rope sheared on impact and the kibble fell back down the shaft, colliding with the stage below. The stage was approximately 980m below surface at the time.

Due to extensive damage to the stage and stage ropes, rescue operations were difficult. Mine Rescue Services (MRS) deployed rescue teams with specialised equipment to assist with the rescue and recovery operation. One employee was rescued from underground through the use of an emergency lifting machine (ELM) supplied by MRS.

During the rescue operations, two employees were located and were declared deceased. The fourth employee, also deceased, was located later due to the extensive damage to the stage and stage ropes. All three bodies were recovered by the end of the week.

7.2.3.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	800	44
Actual	733	13
Percentage compliance	92	30

The frequency of inspections and audits are determined from the analysis of accident statistics at mines as well as instructions issued. Inspections and audits were conducted and focussed on measures to eliminate fatalities and injuries. Furthermore, COVID-19 related matters were addressed during these inspections and audits.

7.2.3.3 *Total accidents reported*

Fatal accidents	8
> 14 day accidents	131
1 to 13 day reportable accidents	233

Seven fatalities were reported during 2020. It is encouraging to note that there was a decrease in the number of reportable accidents where 129 injuries were reported during 2020. Mines are commended for reporting all accidents as required by the regulations.

There has been a significant reduction in occupational health incidents. A total of 69 occupational diseases were reported during 2020 when compared to 169 occupational diseases reported in 2019. The most common occupational diseases reported continue to be PTB and NIHL.

At the time of reporting, the region had 5 865 confirmed COVID-19 positive cases and 50 related deaths.

7.2.3.4 *Investigations and inquiries*

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	94	2	96
Completed	94	2	96
Percentage completed	100	100	100

Mines are encouraged to ensure that the SAMRASS forms are duly completed as required by the regulations. There is a concern regarding the quality of some section 11.5 investigations submitted to the region. Reports are submitted without including any findings and recommendations.

7.2.3.5 *Disaster-type accidents*

No disaster-type accidents were reported.

7.2.3.6 *Statutory notices*

SECTION 54 NOTICES	SECTION 55 NOTICES
67	27

A total of 67 section 54 notices were issued, with 154 transgressions identified resulting in 343 instructions being issued, and 27 section 55 notices were issued, where 49 transgressions were identified resulting in 68 instructions being issued.

Section 54 and 55 instructions were issued on issues relating to:

- Safe declaration books / unsafe areas declared safe.
- FOGs / substandard support in face areas and brows.
- Face preparations.
- Drilling closer to sockets.
- Explosives management.
- Winches (rigging, locking out, signalling arrangements).
- TMM.
- Conveyor belt installations (pre-start alarms, trip wires).
- Rock engineering reports and recommendations disregarded.
- Legal appointments and supervision.
- Predetermined risk assessments.
- COPs not adhered to.

Most section 54 instructions issued, resulted in parts of working places, activities or equipment being stopped until remedial measures were put in place and present to the PI, or a plan of action was implemented. The challenge ahead is to revive a safe working culture amongst employees, as most deviations identified reflect on the level of discipline in the working places.

7.2.3.7 Administrative fines

No administrative fines were recommended by the PI.

Even though no administrative fines were imposed during the reporting period, there has been a noticeable improvement when working places were stopped.

7.2.3.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	13	13	100
Mining and prospecting rights	89	89	100
Closure certificates	21	21	100
Environmental management	2	2	100
Complaints	9	9	100

In addition, a total of 75 mining permit applications were processed and finalised within the prescribed time-frames.

7.2.3.9 Strategies adopted for improving status-quo

The region believes that the visibility of inspectors through regular inspections and audits, is a pro-active way to ensure compliance with health and safety standards. The strategy is to conduct purposeful inspections to identify any failure and weaknesses in the health and safety systems of the mines.

Inspectors will continue to engage and support mines with their respective health and safety strategies and other initiatives. Co-operation from mine employers, mine employees, communities affected by mining operations and the inspectorate will continue to be encouraged, to ensure that there are effective and efficient ways and strategies in dealing with health and safety relating to mining operations in the region.

Mines are encouraged to continue to develop and implement strategies to deal with occupational diseases. The inspectorate continues to support efforts and initiatives to combat TB-HIV/ AIDS and lately, COVID-19 through various interventions.

Although, the performance on health and safety during 2020 was not as expected, the level of commitment and effort that has been shown by all the stakeholders is commendable and encouraging.

7.2.4 Mpumalanga

The Mpumalanga region is surrounded by a number of provinces namely Gauteng, Kwazulu-Natal, the Free State and Limpopo, as well as neighbouring countries, Mozambique and Swaziland. A wide variety of minerals are mined in the Mpumalanga region with coal as the main commodity. The region also has many brickworks, crushers and quarries.

7.2.4.1 Topical issues and matters of interest

During the reporting period several mines in the region were operating in close proximity to the hosting communities. Some of these mines were conducting blasting operations within 500m from the communities without a permission granted in terms of chapter 4 of the MHSA.

Some community members lodged complaints to the DMRE about these activities exposing them to excessive noise, dust, blast vibrations and damages to their houses as a result of the mining operations.

Mine employers were advised to apply for permission to conduct blasting operations within 500m from structures. The application requirements include: a copy of the risk assessment, a copy of a signed mine plan and proof of consultation with the affected stakeholders.

The community complaints received by the office also includes affected community members who resides outside of the 500m radius but who are also affected by the blasting operations. Due to the scale of the community complaints the region was receiving, a directive namely the opencast mines operating within close proximity of the community within a radius of 500m to 2km, was issued by the PI on 27 February 2020. The aim of this instruction was to make mines aware that blasting operations affect communities outside the 500m radius as per section 5(b) of the MHSA.

The employer must ensure that persons who are not employees, but who may be directly affected by the activities at the mine, are not exposed to any hazard to their health and safety. Mines were advised to have a risk assessment done for all communities that are residing in close proximity to their respective operations, compile a procedure on how the health and safety of the communities will be protected, and how the community complaints will be handled. Mines must submit a copy of their procedures to the region.

Inspectors are encouraged to continue to check if these mines have this procedure in place during their routine inspections. Furthermore, mines that have communities residing in less than 500m radius are advised to either relocate those families to safer areas away from the operations, or consider adapting in the procedures to include blast designs that will result in an air blast limit of less than 115dB and, vibrations limits of less than 5mm/s. The inspectorate will continue to work closely with mines and communities that were identified to have challenges.

Since the national lockdown was announced and the DMA regulations published, the region took measures to protect the health and safety of mine employees in preventing the spread of COVID-19 through the issuing to of several directives with the aim to assist the mines, reduce exposure and combat the infection rate at the mines.

7.2.4.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	1 280	44
Actual	1 262	0
Percentage compliance	99	0

7.2.4.3 Total accidents reported

Fatal accidents	11
> 14 day accidents	146
1 to 13 day reportable accidents	46

7.2.4.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	11	0	11
Completed	11	0	11
Percentage completed	100	0	100

7.2.4.5 Disaster-type accidents

No disaster-type accidents were reported.

7.2.4.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
87	46

7.2.4.7 Administrative fines

Number of fines recommended by Inspector	1
Value of fines recommended by Inspector	R1 000 000.00
Number of fines set aside by PI	0
Value of fines set aside by PI	R0.00
Number of fines imposed by PI	0
Value of fines imposed by PI	R0.00
Appeals	0
Value of fines paid	R0.00

7.2.4.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	0	0	0
Mining and prospecting rights	51	51	100
Closure certificates	2	2	100
Environmental management	0	0	0
Complaints	18	18	100

7.2.4.9 Strategies adopted for improving status-quo

Compliance information, regional challenges and areas of excellence are shared at the virtual regional tripartite forums. The region identified that general accidents are still a major contributor to reportable accidents. A high number of FOG and TMM accidents, particularly at coal mines, is still of great concern.

The inspectorate will increase visibility at the mines as a pro-active way of enforcing compliance at the mines. Focused inspections, audits and investigations will be conducted with the aim of revealing system failures in terms of mine health and safety. Appropriate enforcement actions will be taken if necessary.

The activities of the region will focus on the prevention of FOG accidents and slope failures, as well as transport in mining and machinery related accidents, with the emphasis on the enforcement of the new regulations and the implementation of new COPs, housekeeping and material handling.

It was noted with concern that some mines do not have integrated TB and HIV/AIDS programmes and these mines are encouraged to have such programmes in place. The on-site wellness programmes remain a challenge to the small mines. These mines are encouraged to use local municipal clinics where possible. Although occupational diseases such as PTB and CWP are still reported in high numbers, it should be noted that most of these employees have been working in the mining industry for 20 years or longer. Mines are encouraged, as per the 2024 MHSC occupational health milestones, to improve the current preventive measures.

Mines are audited on the implementation of COPs. Employees working without having undergone initial and periodic medical surveillance will be withdrawn from work and appropriate action will be taken against employers. The region will endeavour to ensure that mines put strategies in place to curb the increasing number of PTB and CWP cases among employees.

In terms of exposure to airborne pollutants and noise, there is still a sizeable number of employees who are still exposed to airborne pollutants HEG A and HEG B. These employees will be withdrawn from such areas and investigations will be conducted. Mines are encouraged to implement strategies to reduce over-exposure to airborne pollutants. Mines are also advised to adopt current leading best practices available to the industry, to reduce over-exposures to airborne pollutants.

7.3 Regional operations: Western and Coastal Regions

The Western and Coastal regional operations consist of the Northern Cape, North-West: Klerksdorp, North-West: Rustenburg and the Western Cape regions. A wide variety of minerals are mined in these regions namely PGM, chrome, gold, iron ore, manganese, diamonds, granite, dimension stones, sand and aggregates. Different mining methods are used in these regions such as opencast mining and block caving sub-level open stoping. Offshore mining takes place in the coastal areas of the Northern Cape and the Western Cape. Many of the underground mines are concentrated in the North West province. The mining of PGMs is mainly in North West: Rustenburg region and remnant gold mining is in North West: Klerksdorp region. Iron ore and manganese are mined in the Northern Cape and aggregates are mined in the Western Cape.

During the period under review, the Western and Coastal regional operations conducted a total of 1 827 inspections and 135 audits at mines. As part of the enforcement measures during the inspections and audits, 181 notices were issued in terms of section 54, and 246 notices were issued in terms of section 55 of the MHSA. The notices issued under section 54 dealt with dangerous conditions at mines, while those issued under section 55 ordered compliance to the provisions of the MHSA.

Regrettably, a total of 17 fatalities were reported in both 2020 and in 2019. The reported fatality figures represent an improvement of 32% in 2020 when compared to 25% reported during 2019. A total of 976 injuries were reported in 2020 compared to 1 720 injuries reported in 2019. This translates to a 43% year-on-year reduction in injuries during the reporting period.

In dealing with the above fatalities and injuries, the Western and Coastal regional operations completed four inquiries and 113 investigations. The outstanding mine inquiries and investigations could not be completed due to the COVID-19 protocols which had to be observed.

7.3.1 Northern Cape

The Northern Cape region is the largest of South Africa's nine provinces in terms of area and the smallest in terms of population. The province covers a total area of 372 889km2 with a population of 1 237 217 as of the census of 2011/2015. Mining in the region is dominated by opencast mines. These mines require machines to haul waste and ore to dumping sites and plants respectively. Because machines are used in most of the operations, accidents in the region are mostly machinery related.

The region hosts a total of eight underground operations. The dominant mining method used at these mines is board and pillar, and sub-level open caving. Mines using these methods, use machines for ore and waste transportation and are therefore not as labour intensive when compared with the gold and platinum mining operations in other regions. Minerals that are mined in this region are manganese, iron ore, diamonds, base metals, rose quarts, gypsum, tiger's eye, granite, feldspar and salt.

7.3.1.1 Topical issues and matters of interest

The region established forums to discuss trends and inspection findings as part of education and information sharing with the mining industry. This also include information gathered during inquiries and investigations.

7.3.1.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	360	48
Actual	241	31
Percentage compliance	67	65

7.3.1.3 Total accidents reported

Fatal accidents	2
> 14 day accidents	95
1 to 13 day reportable accidents	163

7.3.1.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	14	0	14
Completed	14	0	14
Percentage completed	100	0	100

7.3.1.5 Disaster-type accidents

No disaster-type accidents were reported.

However, a near miss accident involving large numbers of employees were reported on 17 November 2020. A geotechnical failure occurred on the south pit western high wall slope (ore footwall) at Vedanta Gamsberg mine in the Northern Cape. At the time of the failure, ten employees were trapped because the access/exit ramp was rendered inaccessible by the failed material. Initially eight employees were rescued from the pit and two employees remained unaccounted for. The proto team managed to locate one of the employees using the South African Police Service (SAPS) sniffer dogs but unfortunately, the employee succumbed to his injuries. Rescue/recovery operations to locate the last trapped miner are still ongoing.

7.3.1.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
36	17

7.3.1.7 Administrative fines

No administrative fines were recommended by the PI.

7.3.1.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	0	0	0
Mining and prospecting rights	161	161	100
Closure certificates	11	11	100
Environmental management	37	37	100
Complaints	26	26	100

7.3.1.9 Strategies adopted for improving status-quo

Key to the strategies that the region adopted is stakeholder participation and the recognition of those that continuously strive to ensure that employees return to their families unharmed. The regional office collaborated with the provincial government through the Provincial Joint Operations and Intelligence Structure (PROV JOINTS) to address the risk posed by COVID-19 to mine employees and the wider community. The PROV JOINTS structure workshops were held together with the DOH to assess the regional mining industry measures to deal with the COVID-19 pandemic.

The working relationship amongst stakeholders remains core to the regional strategies. Regional tri-partite meetings continue to be held and it is attended by mines in both the Calvinia/Springbok areas as well as those in the Kimberley area. The region will also continue with safety campaigns in line with the regional risk-based approach.

7.3.2 North West: Klerksdorp

North-West: Klerksdorp is surrounded by the Free State, Gauteng and the Northern Cape provinces. Gold is predominantly mined in underground mines which are labour intensive. The rest of the mines in the region are surface diamond diggings situated around Wolmaransstad, Bloemhof, Schweizer-Reneke, Vryburg, Taung, Ottosdal and Christiana. Other minerals that are being mined include uranium, limestone, fluorspar, sand and clay. These minerals are commonly mined using surface mining methods which are less labour-intensive compared to underground mines.

7.3.2.1 Topical issues and matters of interest

At the time of reporting Kalgold achieved 3 800 000 fatality free shifts (FFS) to date, and Moab Khotsong achieved 1 000 000 FFS in 2019 and 2 000 000 FFS in 2021.

7.3.2.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	612	44
Actual	564	45
Percentage compliance	92	102

7.3.2.3 Total accidents reported

Fatal accidents	4
> 14 day accidents	95
1 to 13 day reportable accidents	77

7.3.2.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	43	1	44
Completed	43	0	43
Percentage completed	100	-100	98

7.3.2.5 Disaster-type accidents

No disaster-type accidents were reported.

7.3.2.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
59	108

7.3.2.7 Administrative fines

Number of fines recommended by Inspector	1
Value of fines recommended by Inspector	R20 000
Number of fines set aside by PI	0
Value of fines set aside by PI	0
Number of fines imposed by PI	1
Value of fines imposed by PI	R20 000
Appeals	0
Value of fines paid	R20 000

7.3.2.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	1	1	100
Mining and prospecting rights	4	4	100
Closure certificates	7	7	100
Environmental management	0	0	0
Complaints	7	7	100

7.3.2.9 Strategies adopted for improving status-quo

The North West: Klerksdorp region will continue to conduct frequent mine visits, investigations and audits on mines with poor health and safety statistics. One of the strategies that will be adopted is to ensure that all the mine managers conduct a follow-up on action plans committed and/or presented to the region.

The region categorised mines in terms of their health and safety performance, and mines that were classified as a high risk will be consulted and visited without neglecting the low-risk mines. Mines that are categorised as high risk have been instructed to make presentations to the PI on strategies to turn their safety performance around and these mines are required to deal specifically with the high-risk agencies and activities.

The regional office will regularly follow up on compliance to all CIOM instructions regarding, Pillar Mining, Winders, and conveyance, second escape routes and Covid-19. The office will also monitor old mines that have been sold to international companies to ensure that they comply with the South African Mining Legislations.

7.3.3 North West: Rustenburg

The North-West: Rustenburg region is bordered by the Limpopo and Gauteng provinces, the North West: Klerksdorp region and Botswana. A wide variety of minerals are being mined in this region with the PGMs and chrome being the main commodities. Mining operations in this region are mainly labour-intensive underground mining operations complimented by surface slate and granite quarries.

7.3.3.1 Topical issues and matters of interest

The COVID-19 pandemic is undoubtedly the defining global health crisis of our time, with government and health services alike, racing to slow the spread of the virus. The mines in the region had put measures in place to ensure that employees were protected from the disease by continuing working in safe environments.

A vigorous testing capacity was enhanced for all operations and surrounding communities were also catered for in order to suppress the rate of infections in the area. Operations put forward stringent COVID-19 screening procedures at all strategic ingress and egress points of their respective operations thus lowering the infection rate of employees to COVID-19.

The COVID-19 pandemic will have long-term consequences on health and safety in the mining sector. This is a result of the impact on local suppliers and economic activities in communities, mining capex forecasts and current investments.

7.3.3.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	1 188	24
Actual	705	30
Percentage compliance	59	125

7.3.3.3 Total accidents reported

Fatal accidents	12
> 14 day accidents	722
1 to 13 day reportable accidents	203

7.3.3.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	41	4	56
Completed	41	4	51
Percentage completed	100	100	91

7.3.3.5 *Disaster-type accidents*

No disaster-type accidents were reported.

7.3.3.6 *Statutory notices*

SECTION 54 NOTICES	SECTION 55 NOTICES
83	110

7.3.3.7 *Administrative fines*

Number of fines recommended by Inspector	1
Value of fines recommended by Inspector	0
Number of fines set aside by PI	1
Value of fines set aside by PI	0
Number of fines imposed by PI	0
Value of fines imposed by PI	0
Appeals	0
Value of fines paid	0

7.3.3.8 *Land-use applications and complaints*

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	These are handled by the Directorate: Mineral Regulation of the North-West: Klerksdorp region		
Mining and prospecting rights			
Closure certificates			
Environmental management			
Complaints	265	265	100

7.3.3.9 *Strategies adopted for improving status-quo*

The region experienced an increase in reported FOG accidents of which some occurred between installed support units. The main drive is to continue the emphasis on the implementation of aerial coverage support. The involvement of multi-disciplinary teams in the planning phase prior to the mining of old workings and white areas, will be ensured through the scrutiny of the pre-planning minutes and the mine plans to ensure proper mining discipline. Observations of repetitive transgressions in working places during inspections and audits, will be dealt with in accordance with stringent measures of enforcement. Furthermore, where supervision is poor, the withdrawal of incompetent legally appointed supervisors will be applied. Inputs and instructions of service departments will be further enforced to ensure that such recommendations are timeously considered to address high risks.

It has been noted that mining services provided by contractors are often poorly managed by the employers in terms of the line of reporting and supervision. The adoption of best practices is encouraged to allow for compliance to health and safety measures in the best way possible, through inspections and the constant monitoring of control measures put in place.

Quarterly meetings with appointed engineers to address machinery challenges, particularly with regard to the RBE and TMM, will be held to ensure the effectiveness of remedial measures implemented in preventing the recurrence of accidents. The region takes cognisance of the occupational health hazard exposures by profiling high-risk mines.

Awareness letters on all health and safety related matters are regularly communicated through the Regional Tripartite Forums for all mines. The region enforces the total implementation of legislative requirements pertaining to health. More attention is given to ensure that the spread of COVID-19 is prevented and mitigated as mandated by conducting targeted inspections to address COVID-19 investigations, and other medical investigations.

7.3.4 Western Cape

A wide variety of mining methods are used in the region ranging from offshore installations, quarries and underwater mining. The region does not have any underground mines at present. There are also brickworks in the region where clay, which is mined during the summer, is used to make bricks. During the winter period, some brickworks close due to the danger of slippery roadways which is enforced by the Western Cape region.

Diamonds are mined in the region through underwater and beach mining. Underwater mining requires divers that use pumps with suction pipes to transfer the mineral to classifiers. Beach mining uses excavators and dump trucks.

Reportable injuries in the Western Cape region are normally low when compared to other regions. This is primarily because of the structural nature and configuration of the mines in the Western Cape region.

7.3.4.1 Topical issues and matters of interest

With COVID-19 spreading throughout the world, and countries enforcing lockdown measures, the South African mining industry had to take immediate action to put procedures and measures in place to combat the spread of COVID-19. The compounding challenge for the Western Cape region was the accelerated rate of infection in the surrounding communities. This further presented a challenge to mines to ensure that these communities are capacitated to comply with COVID-19 protocols.

7.3.4.2 Inspections and audits

CATEGORY	INSPECTIONS	AUDITS
Planned	264	44
Actual	317	29
Percentage compliance	120	66

7.3.4.3 Total accidents reported

Fatal accidents	0
> 14 day accidents	15
1 to 13 day reportable accidents	6

7.3.4.4 Investigations and inquiries

	INVESTIGATIONS	INQUIRIES	TOTAL
Initiated	15	0	15
Completed	15	0	15
Percentage completed	100	0	100

7.3.4.5 Disaster-type accidents

No disaster-type accidents were reported.

7.3.4.6 Statutory notices

SECTION 54 NOTICES	SECTION 55 NOTICES
3	11

7.3.4.7 Administrative fines

No administrative fines were recommended by the PI.

7.3.4.8 Land-use applications and complaints

	RECEIVED	COMPLETED	PERCENTAGE
Township developments	29	29	100
Mining and prospecting rights	5	5	100
Closure certificates	4	4	100
Environmental management	8	8	100
Complaints	0	0	0

7.3.4.9 Strategies adopted for improving status-quo

The mining industry in the Western Cape is dominated by small surface mines and quarries. In many of these mines there is a lack of qualified personnel. Part of the regional strategy is to ensure that workshops held at mines are attended by competent supervisors in conjunction with state qualifications authorities to upskill the supervisors.

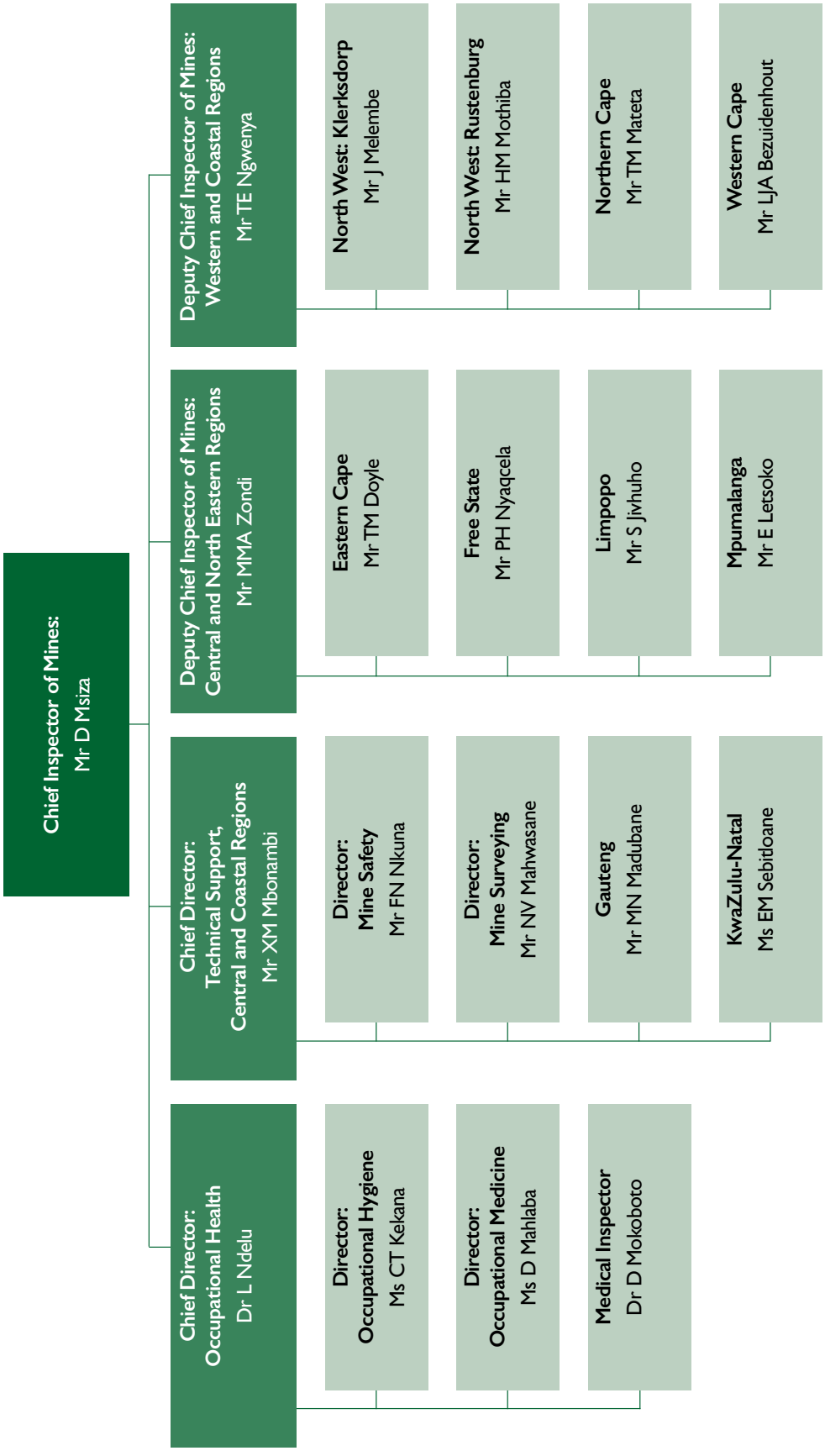
To improve health and safety statistics, regional meetings will be held with mine owners on an individual basis to discuss concerns regarding non-compliance and accidents. Regional Tri-partite meetings play a crucial role in ensuring that health and safety concerns are communicated to all mines in the region. The region aims to ensure that these meetings are continuously held at pre-determined intervals to address any topical issues and to identify targeted areas of concern.

PART 8

ANNEXURES

8. ANNEXURES

ANEXURE A: Organogram of the MHSI for the period ending 31 March 2021



ANNEXURE B: Contact list for the period ending 31 March 2021

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ANEXURE C: Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AMR(s)	Annual Medical Report(s)
AQI	Air Quality Index
ARV	Antiretroviral
CEO(s)	Chief Executive Officers(s)
CIOM	Chief Inspector of Mines
COAD	Chronic obstructive airways disease
COP(s)	Code(s) of Practice
COVID-19	Corona Virus Infection Disease 2019
CSM	Cold stress management
CWP	Coal workers' pneumoconiosis
dB	Decibels
DB	Dry bulb
DMA	Disaster Management Act, 2002 (Act 57 of 2002)
DMRE	Department of Mineral Resources and Energy
DOH	Department of Health
ELM	Emergency lifting machines
EMP	Environmental Assessment Plan
FFS	Fatality free shifts
FOG(s)	Fall(s) of ground
GBV	Gender-based violence
GCC	Government Certificate of Competency
GIS	Geographic Information System
HCP	Hearing conservation programme
HCT	HIV counselling and testing
HEG	Homogenous exposure group
HIV	Human Immunodeficiency Virus
HPD(s)	Hearing protection device(s)
IBMQI	Industrywide *Buy* and *Maintain Quiet* Initiative (IBMQI)
IPT	Isoniazid Prophylaxis Therapy
LDH	Load haul dump
MDR-TB	Multidrug-resistant TB
MHSA	Mine Health and Safety Act, 1996 (Act 29 of 1996), as amended
MHSC	Mine Health and Safety Council
MHSI	Mine Health and Safety Inspectorate

MOSH	Mine Occupational Safety and Health
MQA	Mining Qualifications Authority
MRS	Mine Rescue Services
MSCC	Mine Surveyors' Certificate of Competency
NIHL	Noise-induced hearing loss
OEL	Occupational exposure limit
OEM	Original equipment manufacturer
OMP(s)	Occupational Medical Practitioner(s)
OHS	Occupational Health and Safety
PGMs	Platinum Group Metals
PI	Principal Inspector of Mines
PPE	Personal protective equipment
PROV JOINTS	Provincial Joint Operations and Intelligence Structure
PTB	Pulmonary tuberculosis
RBE	Rail-bound equipment
SAMRASS	South African Mines Reportable Accidents Statistical System
SAPS	South African Police Service
Sil+TB	Silico-tuberculosis
STIs	Sexually transmitted infections
T&M	Transportation and mining
TB	Tuberculosis
TMM	Trackless mobile machines
TWA	Time weighted averages
UNAIDS	Joint United Nations Programme on HIV/AIDS
VFL	Visible felt leadership
WB	Wet bulb
WIM	Women in Mining
XDR-TB	Extensively drug-resistant TB

NOTES

NOTES

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