OCCUPATIONAL HEALTH

1. INTRODUCTION

In terms of section 11(5B) of the Mine Health and Safety Act (MHSA), Act No. 29 of 1996, as amended; the employer must notify the Principal Inspector of mines (PIoMs) of any occurrence at the mine that results in serious illness or death of any person. The employers submit to the PIoMs, the Health Incident Reports (HIRs) DMRE 231 Forms completed by the Occupational Medical Practitioners (OMPs) on monthly basis to report occupational diseases diagnosed amongst mine employees during medical surveillance.

2. OCCUPATIONAL DISEASES REPORTED

During April-September 2023/24, the mines reported **763** occupational diseases from the Health Incident Reports (HIRs), compared to **725** cases reported during the same period in 2022/23.

Calculation of the percentage change:
(**763**-**725**) / **725* 100** = **5.24%**

3. ANALYSIS OF OCCUPATIONAL DISEASES REPORTED PER REGION

TABLE 3.1 Analysis of occupational diseases reported per region: April 2022-June 2022 and April 2021-September 2021

	EC		FS		GR		KZN		LP		Mpu		NC		NWK		NW R		WC		TOTAL		Percentage change
	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	
PTB	0	4	64	29	55	105	5	1	20	14	28	27	6	12	29	61	109	87	1	0	317	340	7.26
Sil+TB	0	0	6	2	3	1	0	0	0	0	0	0	0	0	3	12	0	1	0	0	12	16	33.33
MDR-TB	0	0	1	1	0	2	0	0	0	0	0	1	0	1	0	1	5	5	0	0	6	11	83.33
XDR-TB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Silicosis	0	0	71	48	18	19	0	0	1	0	4	0	0	0	10	24	7	4	0	0	111	95	-14.41
Asbestosis	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	-100.00
CWP	0	0	3	0	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0	4	3	-25.00
COAD	0	0	21	15	3	0	0	0	0	0	2	2	0	0	3	2	6	12	0	0	35	31	-11.43
Occ asthma	0	0	0	0	1	2	0	0	0	0	1	1	2	0	0	0	0	0	0	0	4	3	-25.00
Occ lung cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
NIHL	0	3	23	17	36	77	1	1	10	24	15	3	6	3	15	12	110	104	3	2	219	246	12.33
Occ skin diseases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	#DIV/0!
Platinum salt sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Musculoskeletal disorders	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	9	1	0	0	10	1	-90.00
Progressive massive fibrosis	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	#DIV/0!
Other occ diseases	0	0	1	0	2	2	0	0	0	0	0	0	0	1	0	2	3	6	0	0	6	11	83.33
Total	**0**	**7**	**190**	**112**	**118**	**213**	**6**	**2**	**31**	**38**	**53**	**37**	**14**	**17**	**60**	**114**	**249**	**221**	**4**	**2**	**725**	**763**	**5.24**

4. ANALYSIS OF OCCUPATIONAL DISEASES REPORTED BY COMMODITY

4.1 During April-September 2023/24, the overall total number of occupational diseases reported by the mines have increased by **5.24%** when compared to the same period in 2022/23, as shown on Table 4.1 below.

.

4.2 The analysis of the silicosis cases in gold mines as shown on Figure 6.1; and the noise induced hearing loss (NIHL) cases from gold, platinum, coal, and chrome as illustrated on Table 7.1 to Table 7.4 is evident of the lag time between workplace exposures (e.g., respirable silica bearing dust and noise) and the onset of occupational diseases.

Occupational Health and Safety Report
Safety: FY 2023/24 Q2 (Apr-Sep 2023)

TABLE 4.1 Analysis of occupational diseases reported by commodity: April-September 2023/24 and April-September 2022/23

	Gold		Platinum		Coal		Diamond		Copper		Chrome		Iron Ore		Manganese		Other mines		TOTAL	
	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24	Q2 2022/23	Q2 2023/24
PTB	149	195	117	95	29	26	4	5	1	1	9	6	4	2	1	4	3	6	317	340
Sil+TB	12	15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	16
MDR-TB	1	4	5	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	6	11
XDR-TB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Silicosis	101	91	9	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	111	95
Asbestosis	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
CWP	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	0	0	4	3
COAD	27	16	6	12	2	3	0	0	0	0	0	0	0	0	0	0	0	0	35	31
Occ asthma	1	1	0	0	1	1	0	1	0	0	0	0	2	0	0	0	0	0	4	3
Occ lung cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NIHL	80	102	119	116	8	4	0	3	0	8	2	3	2	1	1	1	7	8	219	246
Occ skin diseases	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Platinum salt sensitivity	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Musculoskeletal disorders	0	0	9	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1
Progressive massive fibrosis	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Other occ diseases	3	4	3	6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	11
Total	374	433	269	242	45	37	4	10	1	9	11	9	8	4	2	5	11	14	725	763
	15.78		-10.04		-17.78		150.00		800.00		-18.18		-50.00		150.00		27.27		5.24	

5. ANALYSIS OF OCCUPATIONAL DISEASES BY DISEASE CLASSIFICATION GROUPS

5.1 OCCUPATIONAL LUNG DISEASES (OLD)

An overall total of **504** occupational lung diseases (OLD) reported by mines during April-September 2023/24 shows an increase of **2.86%,** compared to **490** cases reported during the same period in 2022/23. The OLD reported include the following: Pulmonary tuberculosis (PTB), Silico-tuberculosis (Sil+TB), Multidrug-resistant TB (MDR TB); Extremely-drug resistant TB (XDR-TB), Silicosis, Asbestosis, Coal workers' pneumoconiosis (CWP) Chronic obstructive airways disease (COAD), Occupational asthma, Occupational lung cancer and Progressive massive fibrosis (PMF).

5.1.1 SILICOSIS

A decrease of **14.41 %** is noted on the **95** silicosis cases reported by mines during April-September 2023/24, compared to **111** cases reported during the same period in 2022/23. The gold sector reported **91** cases whilst **four** cases were reported from the platinum sector. The coal sector reported **three** cases of coal workers' pneumoconiosis (CWP), which is a decrease of **25.00%**.

.

5.1.2 PULMONARY TUBERCULOSIS (PTB)

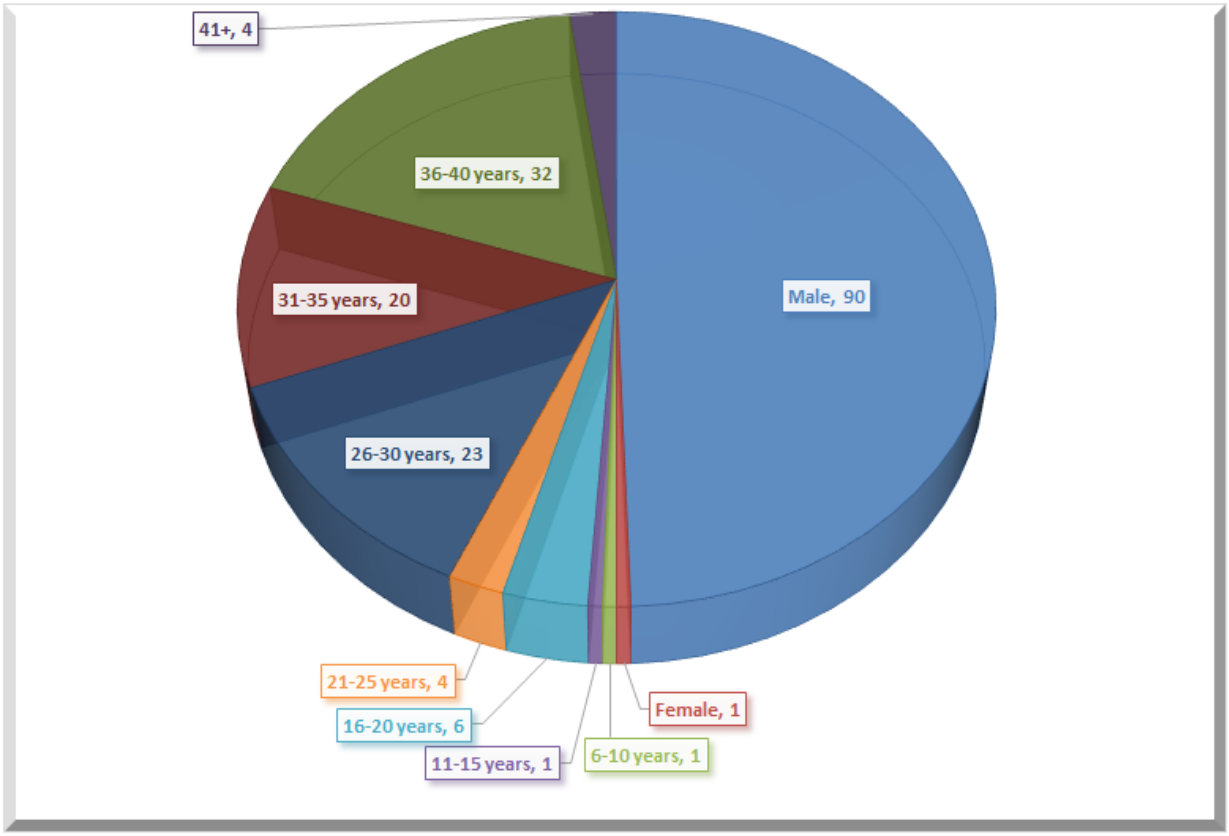
There is an increase of **7.26%** on the **340** total pulmonary tuberculosis (PTB) cases reported by mines during April-September 2023/24, compared to **317**cases reported during the same period in 2022/23**.** The cases were reported as follows**: 195** from gold, **95** from platinum, and **26** from the coal sector. The mines reported **11** cases of multidrug-resistant TB (MDR-TB) and no cases of extensively drug-resistant TB (XDR TB) were reported.

5.2 NOISE-INDUCED HEARING LOSS (NIHL)

An increase of **12.33%** is noted on the **246** total noise-induced hearing loss (NIHL) cases reported by mines during April-September 2023/24, compared to **219** cases reported during the same period in 2022/23. The cases were reported as follows: **116** from platinum which is the highest; **102** from gold, **four** from coal, and **three** from the chrome sector.

6. ANALYSIS OF SILICOSIS CASES REPORTED FROM GOLD MINES BY YEARS OF SERVICE

FIGURE 6.1 Analysis of silicosis cases reported from gold mines by years of service: April-September 2023/24



A total of **91** silicosis cases were reported from the gold sector during April-September 2023/24, as illustrated on Figure 6.1 above. The analysis showed one case with **≥6-10 years of service**, and **90** cases ranged from **≥11-15 years** to **≥41 years** of service in the mining industry. **One** female employee was reported during this period.

7. ANALYSIS OF NOISE INDUCED HEARING LOSS CASES REPORTED BY COMMODITY, PERCENTAGE LOSS OF HEARING (PLH) AND YEARS OF SERVICE: APRIL-SEPTEMBER 2023/24

Table 7.1 Analysis of noise-induced hearing loss (NIHL) from gold mines: April-September 2023/24

		Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
Gold	1 - 5	1	0	0	0	0	0	0	0	0	1
	6 - 10	1	0	1	0	0	0	0	0	0	2
	11-15	2	3	0	0	0	0	0	1	0	6
	16 - 20	4	2	0	0	0	0	0	0	0	6
	21-25	5	1	1	0	0	1	0	0	0	8
	26-30	12	3	1	0	0	0	0	0	0	16
	31-35	16	3	3	2	0	1	0	0	0	25
	36-40	15	10	0	2	1	2	0	0	1	31
	41+	3	1	1	0	1	0	0	1	0	7
	Total	59	23	7	4	2	4	0	2	1	102

Years of service

The gold sector reported **102** noise induced hearing loss (NIHL) cases during April-September 2023/24 as shown on table 7.1 above. **One** case had **≥10-15%** percentage loss of hearing with **1-5 years** of service in the mining industry. **Two** cases had **6-10 years** of service with a PLH of **≥10-15%** and **≥21-25%**, respectively.

Table 7.2 Analysis of noise-induced hearing loss (NIHL) from platinum mines: April-September 2023/24

		Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
Platinum	1 - 5	2	0	0	0	0	0	0	0	0	2
	6 - 10	2	0	0	0	0	0	0	0	0	2
	11-15	9	1	1	0	0	0	0	0	0	11
	16 - 20	16	2	1	0	1	1	0	0	0	21
	21-25	10	3	1	1	0	0	0	0	0	15
	26-30	9	2	2	1	0	0	0	1	0	15
	31-35	8	3	2	0	0	0	0	1	1	15
	36-40	14	10	3	1	0	0	1	0	0	29
	41+	4	1	0	1	0	0	0	0	0	6
	Total	74	22	10	4	1	1	1	2	1	116

Table 7.2 above shows **116** noise induced hearing loss (NIHL) cases reported from the platinum sector during April-September 2023/24. Two cases had a PLH of ≥10-15% with ≥1-5 years of service, and two cases had a PLH of ≥10-15% with ≥6-10 years of service in the mining industry.

Table 7.3 Analysis of noise-induced hearing loss (NIHL) from coal mines: April-September 2023/24

		Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
Coal	1 - 5	0	0	0	0	0	0	0	0	0	0
	6 - 10	0	0	0	0	0	0	0	0	0	0
	11-15	0	0	0	0	0	0	0	0	0	0
	16 - 20	0	1	0	0	0	0	0	0	0	1
	21-25	0	1	1	0	0	0	0	0	0	2
	26-30	0	0	0	0	0	0	0	0	0	0
	31-35	1	0	0	0	0	0	0	0	0	1
	36-40	0	0	0	0	0	0	0	0	0	0
	41+	0	0	0	0	0	0	0	0	0	0
	Total	1	2	1	0	0	0	0	0	0	4

Table 7.3 above shows four NIHL cases reported from the coal sector during April-September 2023/24.

Table 7.4 Analysis of noise-induced hearing loss (NIHL) from chrome mines: April-September 2023/24

Chrome	Years of service	Percentage loss of hearing (PLH)									
		10-15%	16-20%	21-25%	26-30%	31-35%	36-40%	41-45%	46-50%	>50%	Total
	1 - 5	0	0	0	0	0	0	0	0	0	0
	6 - 10	0	0	0	0	0	0	0	0	0	0
	11-15	0	0	0	0	0	0	0	0	0	0
	16 - 20	1	0	0	0	0	0	0	0	0	1
	21-25	1	1	0	0	0	0	0	0	0	2
	26-30	0	0	0	0	0	0	0	0	0	0
	31-35	0	0	0	0	0	0	0	0	0	0
	36-40	0	0	0	0	0	0	0	0	0	0
	41+	0	0	0	0	0	0	0	0	0	0
	Total	2	1	0	0	0	0	0	0	0	3

During April-September 2023/24, the chrome sector reported three cases of NIHL as shown on Table 7.4 above.

Figure 7.5 Analysis of NIHL cases by workplace (gold, platinum, coal, and chrome mines): April-September 2023/24

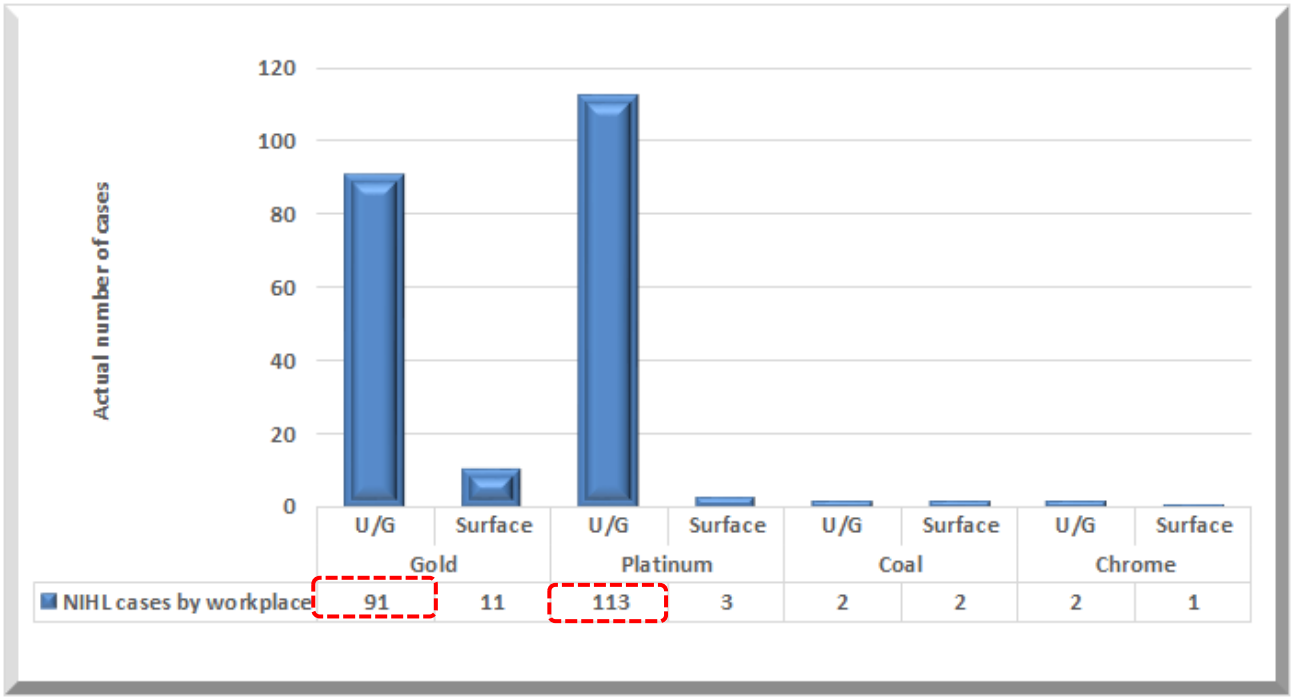


Figure 7.5 above indicates most of noise induced hearing loss (NIHL) reported from platinum and gold mines are reported from underground employees. The coal mines had equal number of cases from underground and surface employees, whilst the chrome mines had two cases from underground employees and one case reported from a surface employee.

The workplace is deemed an important variable to be manipulated in generating quantifiable results and the type of conclusions that can be drawn from the statistical analysis of NIHL in the mining industry. The aggregated NIHL stats by workplace highlight key focus areas for mines on the implementation of hearing conservation programmes and informs the Mine Health and Safety Inspectorate (MHSI) planning for focused noise audits/inspections.

8. ANALYSIS OF DEATHS DUE TO WORK-RELATED DISEASES

No cases of deaths due to work-related diseases were reported by mines for both reporting periods.

9. CONCLUSION

During April-September 2023/24, statistics shows a slight increase on the total occupational diseases reported. An increase is noted on occupational lung diseases (OLD) reported, particularly cases of pulmonary tuberculosis, silico-tuberculosis (Sil+TB), multidrug-resistant tuberculosis (MDR-TB), and progressive massive fibrosis (PMF). The cases of noise induced hearing loss (NIHL) and other occupational diseases reported have shown an increase. There is a slight decrease on the silicosis cases reported from gold mines. A significant decrease is noted on the cases of musculoskeletal disorders (MSDs) reported.

10. RECOMMENDATIONS

The mines should continue to put more focus on implementing engineering controls to reduce major health risks which include airborne pollutants such as silica dust and coal dust, noise, vibration, and heat. Furthermore, the mines' risk management should prioritize measures to mitigate the harmful effects of ergonomic hazards, particularly in the gold and platinum sector.

OCCUPATIONAL SAFETY

1. NUMBER OF FATALITIES PER FY QUARTER 2 (April - September 2023)

During the period of April to September 2023, **twenty four (24)** fatalities were reported whilst during the same period in 2022 **twenty six (26)** mine workers were fatally injured. This translates to an improvement in the number of fatalities of 8% year on year.

2. STATISTICS OF FATALITIES BY REGION

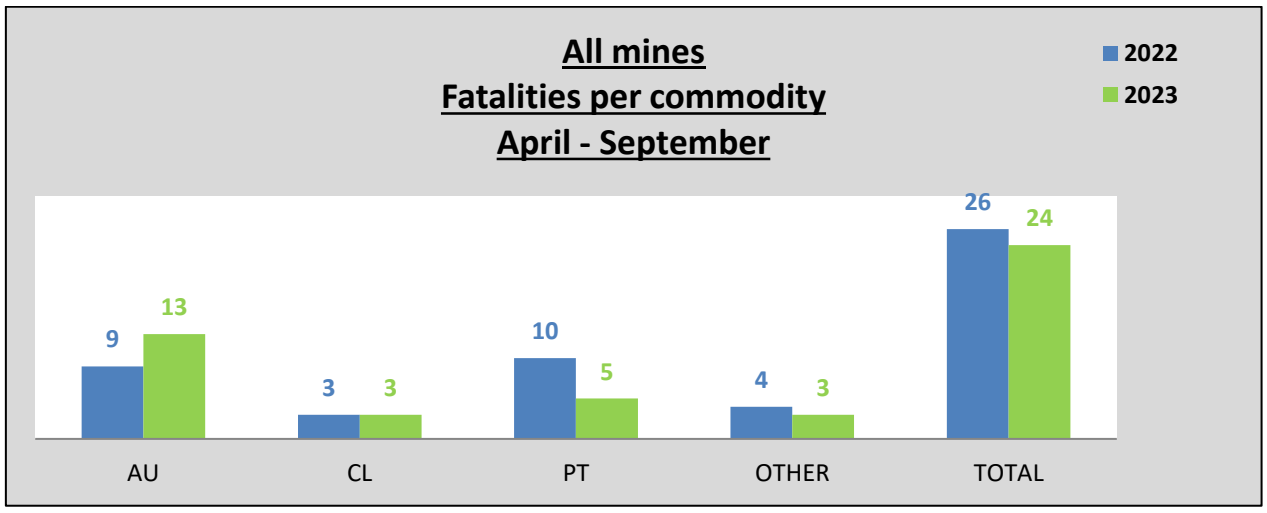
The table below illustrates the progressive performance of each region with regard to fatalities. During the period of April to September 2023, **four (4)** of the **ten (10)** regions had not reported any fatalities.

FATALITIES PER REGION – APRIL TO SEPTEMBER 2023											
	WC	NC	FS	EC	KZN	MP	LP	GP	NW-KLD	NW-RST	TOTAL
FOG								7		1	8
TRANSPORTATION AND MINING						1	1			1	3
GENERAL	1				1	1		7		1	11
MISCELLANEOUS	1					1					2
TOTAL	2	0	0	0	1	3	1	14	0	3	24

3. ANALYSIS OF FATALITIES BY COMMODITY

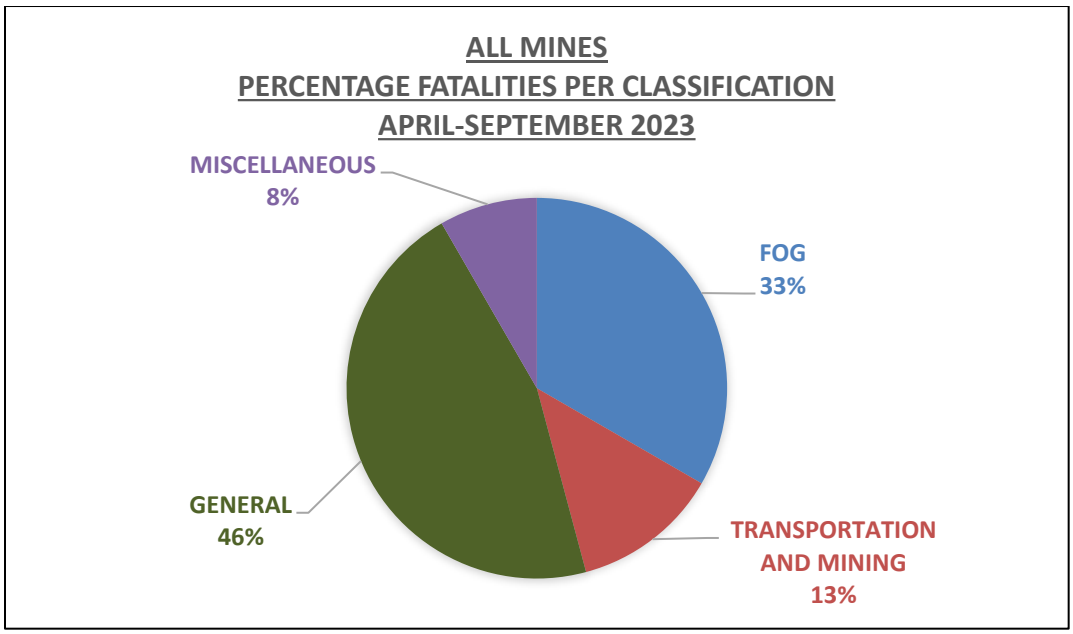
For the purpose of the analysis, commodities are grouped into gold (AU), platinum (PT), coal (CL) and other mines (i.e. aggregates, lime and sand).

3.1 The comparison of fatalities for the period April to September 2022 and 2023 are reflected on the graph below and shows an increase of 44% in the gold sector, the platinum and other mines sectors show decreases of 50% and 25% respectively, while the coal sector shows no change.



4. ANALYSIS OF FATALITIES BY CLASSIFICATION – ALL MINES

The graph below shows the provisional causes of fatalities per classification for the period under review, April-September 2023:



4.1 General (46%)

There were **eleven (11)** fatalities reported in this category during this period. **Six (6)** were reported in the gold sector, **two (2)** in the coal sector, **one (1)** in the platinum sector and **two (2)** in the other mines sector.

4.1.1 Sub-classification of general fatalities

Struck by	4
Gas inhalation	1
Slip and fall	2
Fell through	1
Smoke inhalation	1
Drowning	1
Fell in	1
TOTAL	**11**

4.2 Fall of Ground (FOG) (33%)

There were **eight (8)** fatalities reported in this category during this period. Seven (7) were reported in the gold sector and one (1) in the platinum sector. **Four (4)** were seismic related in the gold sector and the rest were gravity induced.

4.3 Transportation and mining (13%)

There were **three (3)** fatalities reported in this category during this period. **One (1)** railbound equipment related was reported in the gold sector, **one (1)** winch related was reported in the platinum sector and **one (1)** trackless mobile machine (Utility Vehicle) related was reported in the platinum sector.

4.4 Miscellaneous (8%)

Miscellaneous classification refers to fatalities where the cause is yet to be determined, following investigations, inquiries or post-mortems. There were **two (2)** fatalities reported in this category during this period, **one (1)** in the coal sector and **one (1)** in the other mines sector. In the first incident at a coal mine, the now deceased woman Drill Operator was found on the floor of the drill rig cabin by the Drill Assistant. The now deceased had just relocated the drill rig for the next hole to be drilled and she had told her Assistant that she was taking a fatigue break. Her Assistant went out at the same time to measure the holes that had been drilled. When the Assistant got back in the cab, the now deceased was discovered. The ambulance was called but the now deceased could not be resuscitated. In the second incident at a lime mine, the now deceased Mobile Crusher Operator was found lying half in the crusher, already deceased. It would appear that he was removing clay from the crusher and he had opened the crusher to gain access.

5. CONCLUSION

For the period under review, general fatalities are the highest. Always conducting risk assessments before carrying out any task, getting employees to undergo behavioural safety training and active supervision among others, can eliminate these general fatalities.