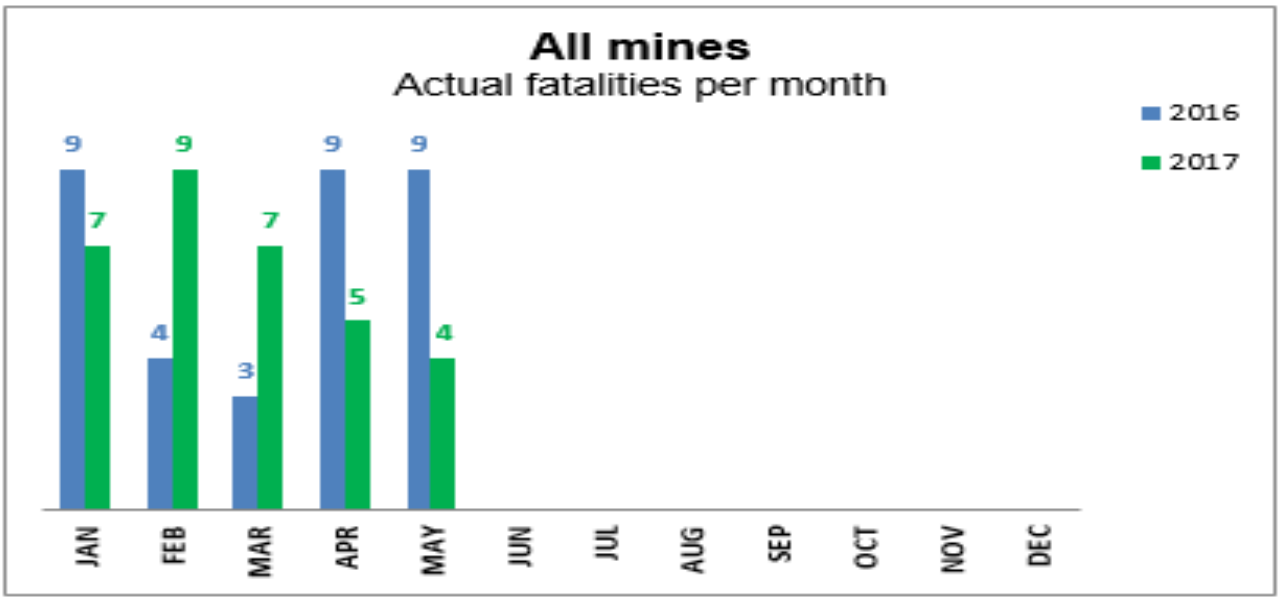
mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

Occupational Health and Safety Report:

May 2017

1. OVERALL FATALITIES PER MONTH

During the month of May 2017, **four (4)** fatalities were reported whilst during the same period in 2016 a total of **nine (9)** mine workers were fatally injured. Fatalities reported for the year up to May 2017 were **thirty two (32)** while **thirty four (34)** were reported over the same period in 2016. This translates to a decrease in fatalities of 6% 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 month of May 2017, **seven (7)** of the **ten (10)** regions managed to mine without a fatality. The Northern Cape, Eastern Cape, Kwa-Zulu Natal and North West (Klerksdorp) regions last reported a fatality on 09/11/2016, 11/10/2015, 05/02/2015 and 25/07/2016 respectively.

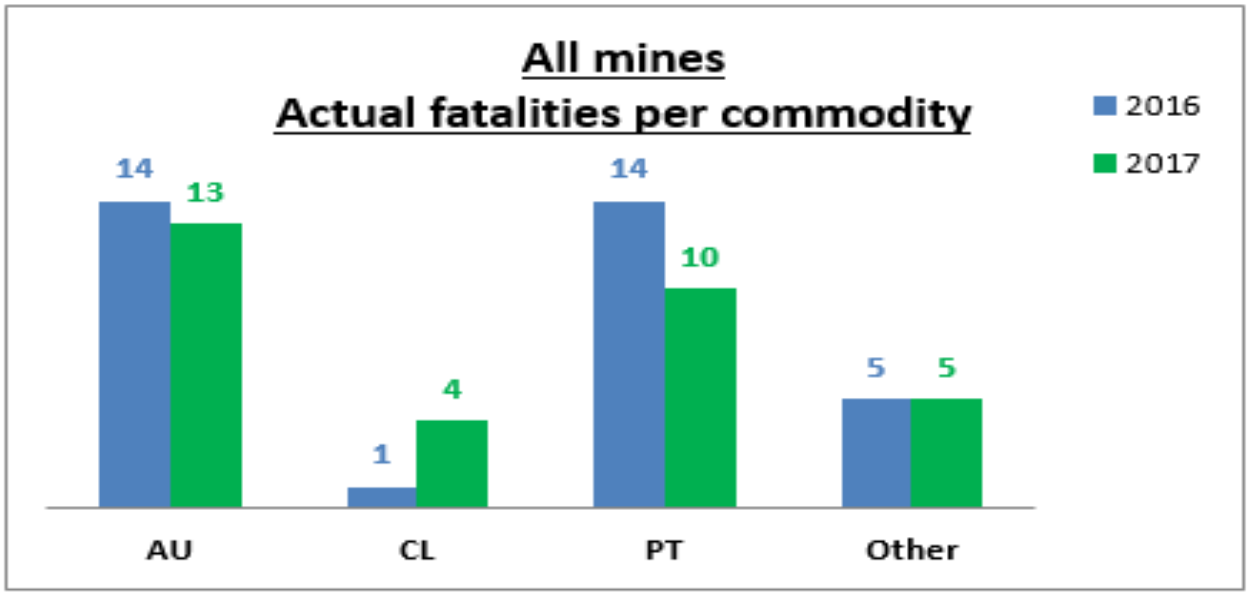
	WC	NC	FS	EC	KZN	MPU	LP	GP	NW-KD	NW-RB	TOT
Jan	2	0	1	0	0	1	0	1	0	2	**7**
Feb	0	0	3	0	0	1	1	2	0	2	**9**
Mar	0	0	1	0	0	2	2	0	0	2	**7**
Apr	0	0	0	0	0	2	0	2	0	1	**5**
May	0	0	1	0	0	0	0	2	0	1	**4**
Total	**2**	**0**	**6**	**0**	**0**	**6**	**3**	**7**	**0**	**8**	**32**

3. ANALYSIS OF FATALITIES BY COMMODITY

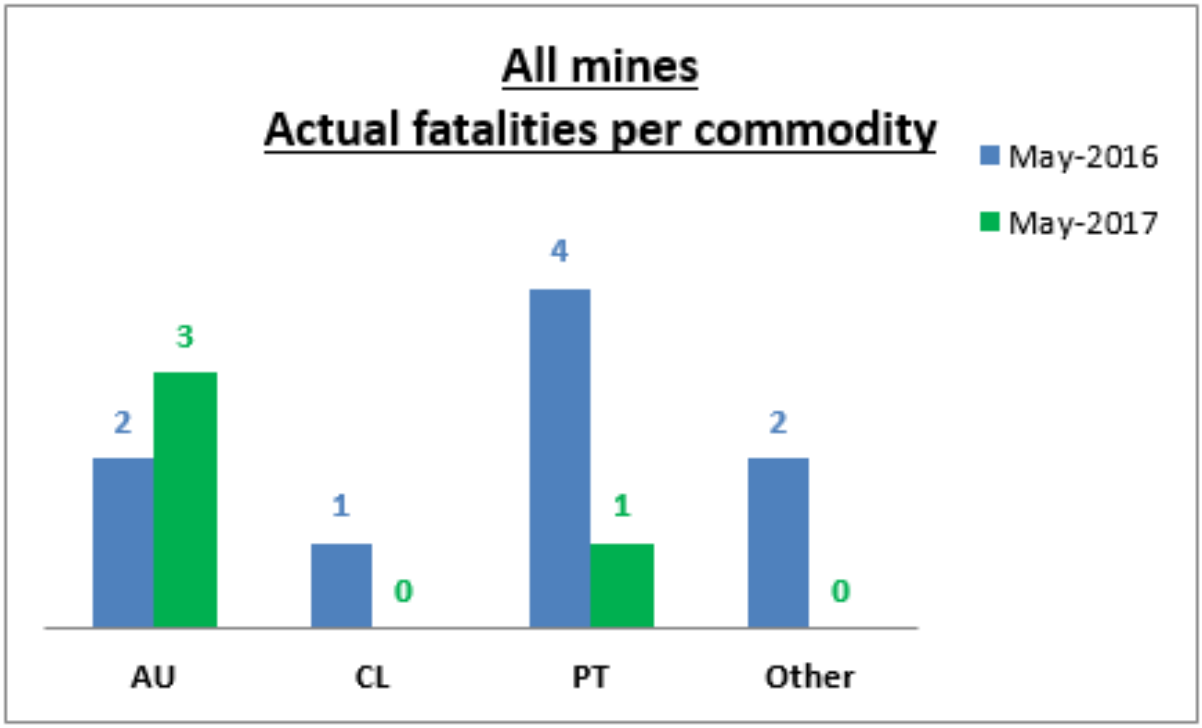
For the purpose of the analysis, commodities are grouped into gold (AU), platinum (PT), coal (CL) and other mines (i.e. chrome, manganese, diamonds, stone, sand, brickworks, etc.).

3.1 The comparison of fatalities year to date for May 2016 and 2017 are reflected on the graph below and shows an increase in fatalities in the coal sector of 400%, while the gold and

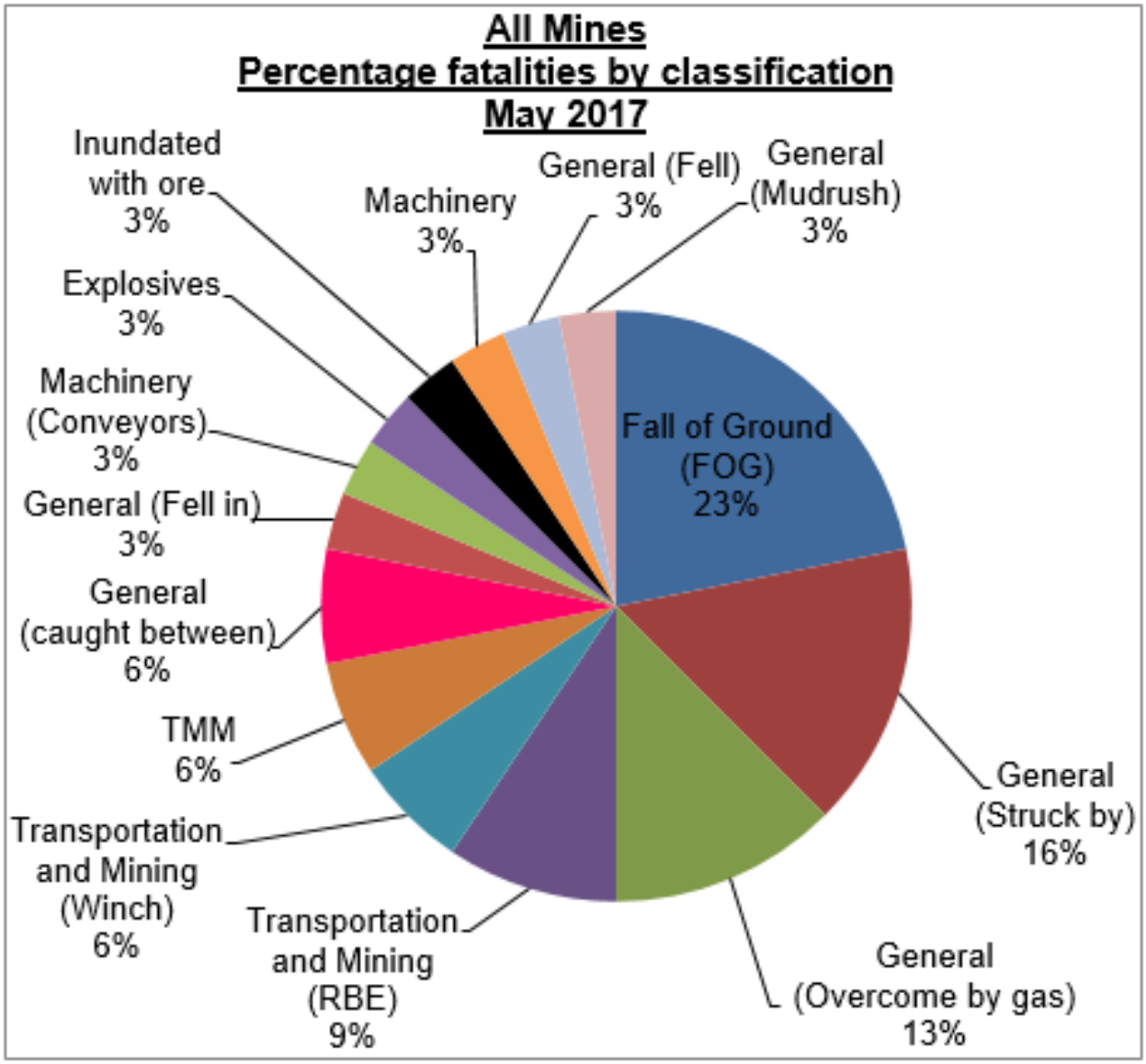
platinum sectors show decreases of 7% and 29% respectively. The other mines sector shows no change.



3.2 In May 2017, the gold sector reported **three (3)** fatalities while the platinum sector reported **one (1)**. The coal and other mines sectors reported no fatalities.



4. ANALYSIS OF FATALITIES BY CLASSIFICATION



4.1 FOG (Fall of Ground) (23%)

There were **seven (7)** fatalities reported in this category this year. None were reported in May 2017. **Five (5)** were gravity related while **two (2)** were seismic related.

4.2 General (Struck by) (16%)

There were **five (5)** fatalities reported in this category this year, **three (3)** in the gold mines, **one (1)** in a coal mine and **one (1)** in a platinum mine. One (1) was reported in May 2017. The now deceased a Locomotive Guard was fatally injured when he was struck by a diamond drill steel that was loaded in the last hopper of the train span together with ore and jumpers, whilst travelling in the Loco Guard Car to the station to tip ore. The diamond drill steel in the last hopper got hooked by the installed box front.

4.3 General (Overcome by gas) (13%)

There were **four (4)** fatalities reported in this category this year. **Two (2)** were reported in May 2017, at a gold mine. The now deceased the Mine Owner and his Assistant were fatally injured as a result of being overcome by harmful gases whilst in the process of measuring the water level underground.

4.4 Transportation and Mining (RBE (Rail Bound Equipment)) (9%)

There were **three (3)** fatalities reported in this category this year, **two (2)** at a gold mine and **one (1)** at a platinum. One (1) was reported in May 2017. The now deceased a Loco Operator was fatally injured when he was caught between the hopper and a fixed structure during tipping operations.

4.5 Transportation and Mining (Winch) (6%)

There were **two (2)** fatalities reported in this category this year, **one (1)** at a gold mine and a platinum mine each. None were reported in May 2017.

4.6 Trackless Mobile Machinery (TMM) (6%)

There were **two (2)** fatalities reported in this category this year, **one (1)** at a gold mine and a chrome mine each. None were reported in May 2017.

4.7 General (Caught between) (6%)

There were **two (2)** fatalities reported in this category this year, **one (1)** at a coal mine and a diamond mine each. None were reported in May 2017.

4.8 General (Fell in) (3%)

There was **one (1)** fatality reported in this category this year at a gold mine. None were reported in May 2017.

4.9 Machinery (Conveyors) (3%)

There was **one (1)** fatality reported in this category this year at a colliery. None were reported in May 2017.

4.10 Explosives (3%)

There was **one (1)** fatality reported in this category this year at a platinum mine. None were reported in May 2017.

4.11 Inundated with ore (3%)

There was **one (1)** fatality reported in this category this year at a gold mine. None were reported in May 2017.

4.12 Machinery (3%)

There was **one (1)** fatality reported in this category this year at a diamond mine. None were reported in May 2017.

4.13 General (Fell) (3%)

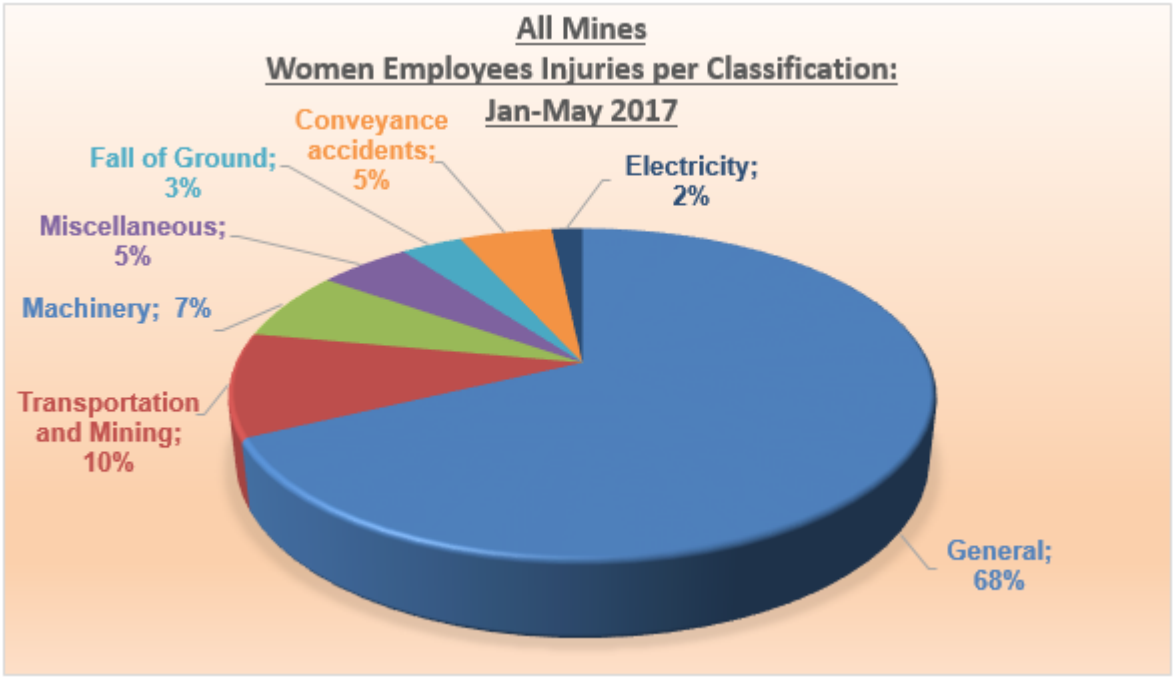
There was **one (1)** fatality reported in this category this year at a platinum mine. None were reported in May 2017.

4.14 General (Mudrush) (3%)

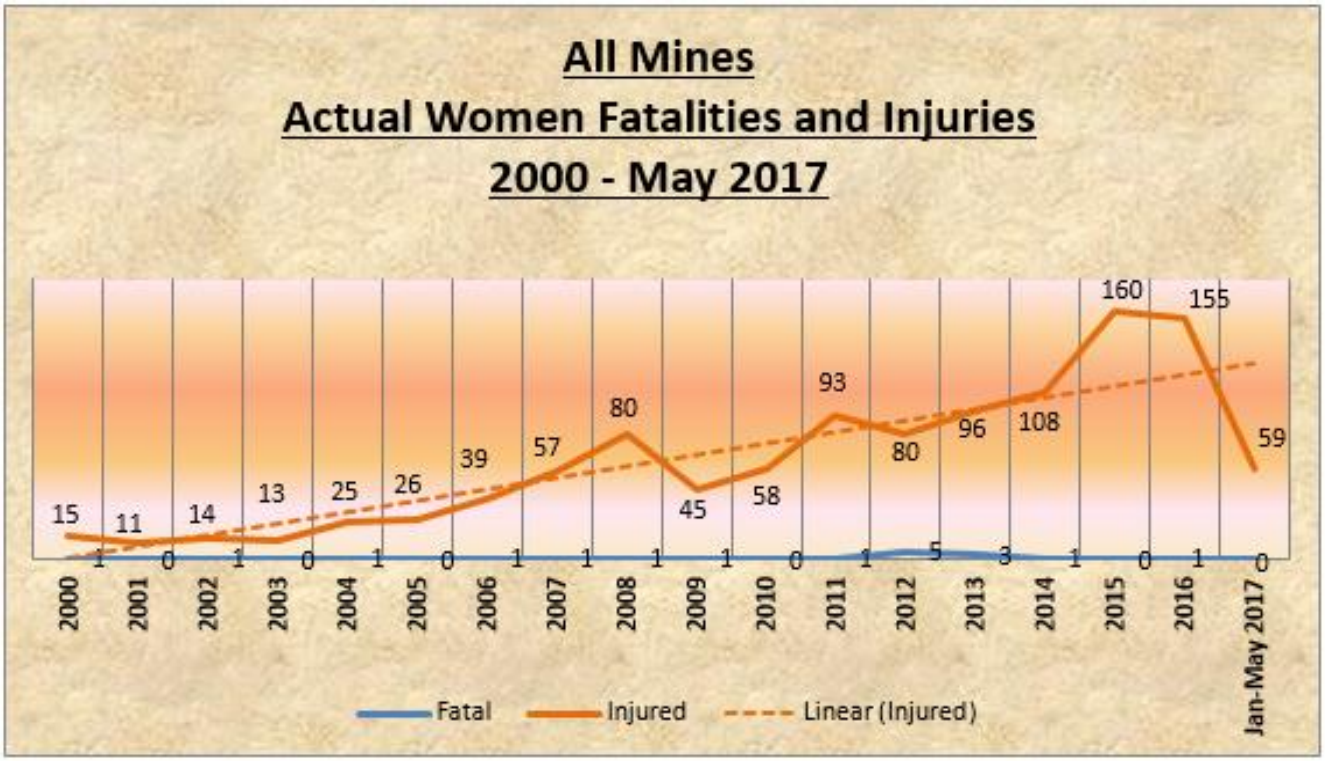
There was **one (1)** fatality reported in this category this year at a coal mine. None were reported in May 2017.

4.15 Women Employees

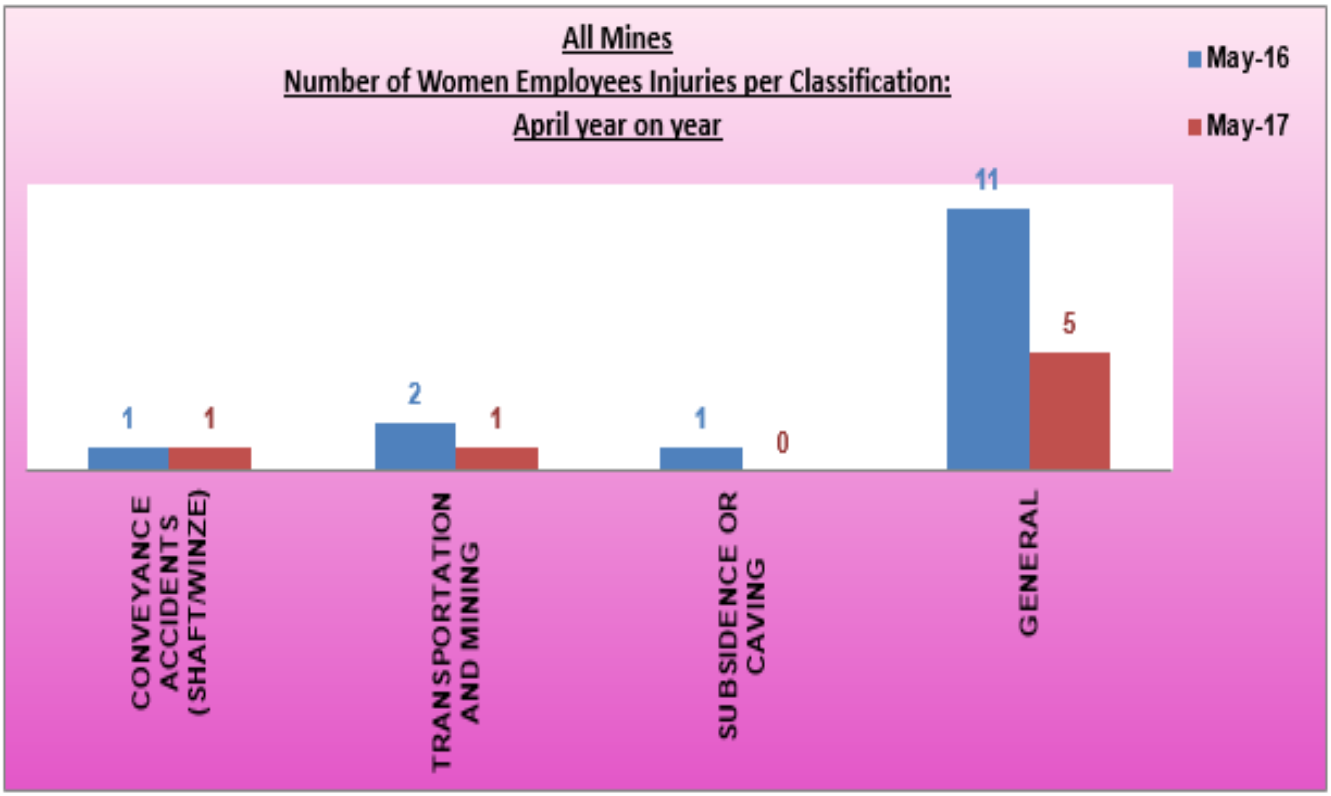
The number of women employees has steadily increased in the South African mining industry and the graph below shows a classification of injuries to women employees across all commodities from 2000 to May 2017:



The graph below shows the number of injuries and fatalities to women employees across all commodities since 2000 to May 2017:



The graph below shows the comparison of injuries to women employees across all commodities in May 2016 and May 2017:



5. FATALITIES AND INJURIES

5.1 FATALITIES

	Jan-May 2016	Jan-May 2017
Gold Mines	**14**	**13**
Anglo Gold Ashanti	**3**	**0**
Western Deep Levels East	3	0
Sibanye Gold	**6**	**4**
Beatrix 3 MU1	0	2
Cooke 4	0	0
Ezulwini	1	0
Rand Uranium	2	0
Kloof	1	1
Beatrix West Unit 3	1	0
Beatrix 4# - Oryx Mine	0	1
Driefontein	1	0
Gold Fields	**0**	**2**
South Deep: Twin Shaft	0	2
Harmony	**4**	**2**
Masimong	2	1
Bambanani	0	1
Kusasalethu	1	0
Phakisa	1	0
Other Gold Mines	**1**	**5**
Evander Gold Mine	0	1
DRD Gold: Ergo Mining	0	1
Fairview Gold Mine	0	1
Primrose Gold Mine	0	2
Mintails	1	0
Platinum Mines	**14**	**10**
Impala	**7**	**3**
20 Shaft	0	1
Marula Platinum-Clapham Shaft	0	1
1 Shaft	2	1
14 Shaft	5	0
Lonmin	**2**	**3**
K3 Shaft	0	1
Newman Shaft	0	1
Marikana	1	0

		Jan-May 2017
4B Shaft	0	1
Roland Shaft	1	0
Anglo Platinum	**3**	**1**
Tumela Mine	2	1
Khuseleka	1	0
Other Platinum Mines	**2**	**3**
Northam Platinum	0	1
Atlatsa Resources	1	1
Sibanye Platinum	0	1
Bafokeng Rasimone	1	0
Coal Mines	**1**	**4**
Anglo Thermal Coal	**0**	**1**
Goedehoop Colliery	0	1
Other Coal Mines	**1**	**3**
Bankfontein Colliery	0	1
Matla Colliery	0	1
HCI	0	1
Sigma Colliery	1	0
Other mines	**5**	**5**
Mosselbaai Refinery	0	2
Kolomela	1	0
Sishen	1	0
Blaaubosch Diamond Mine	0	1
Sefateng Chrome	0	1
PPC	1	0
Petra Diamonds	0	1
Foskor	1	0
Samancor	1	0
TOTAL	**34**	**32**

5.2 MINE INJURIES

The table below reflects the number of injury accidents that were reported for January to May 2016 and 2017 per the classification of the accident.

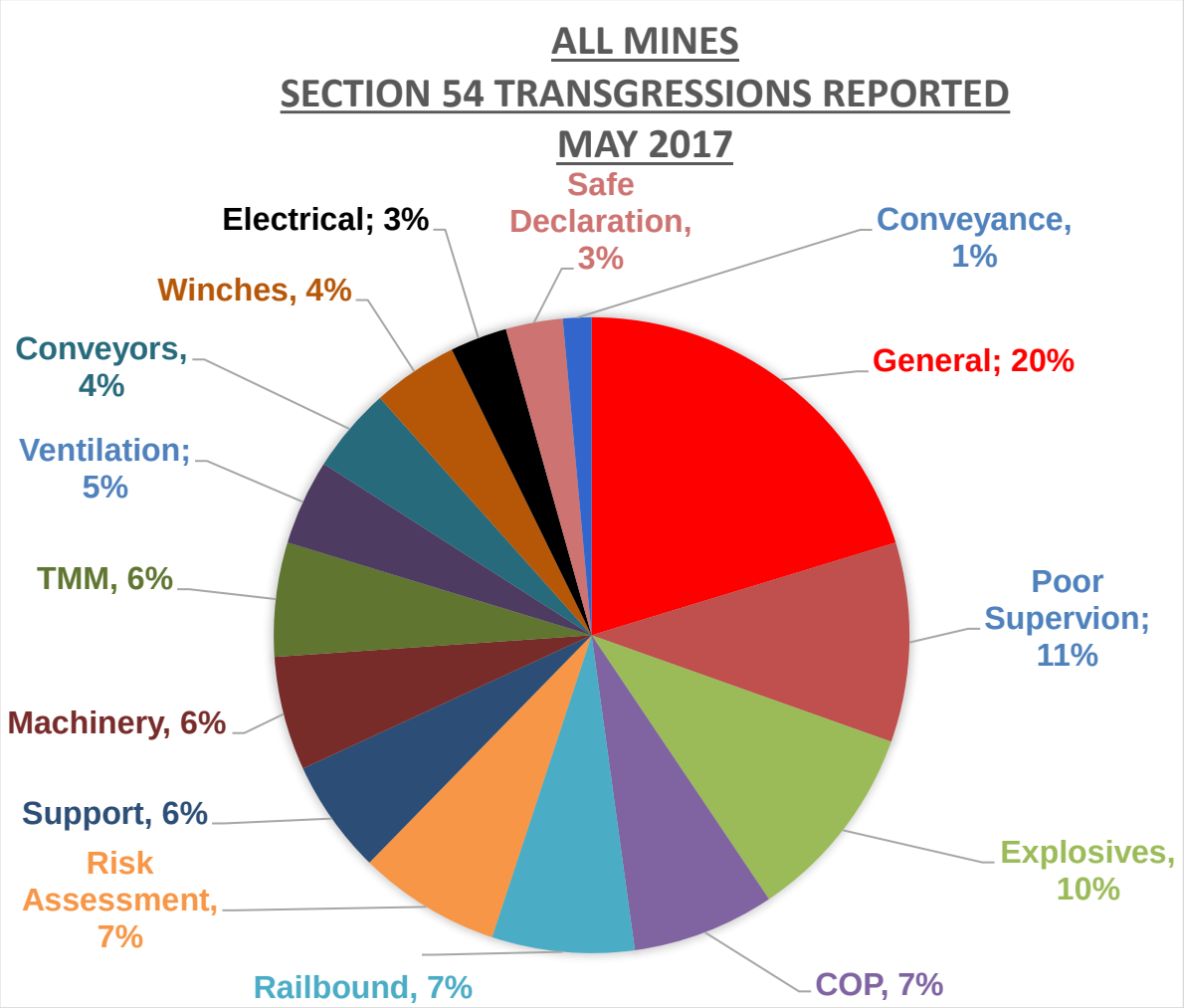
	INJURIES		
	Jan-May 2016	Jan-May 2017	%change
FALL OF GROUND	**210**	**169**	**-20**
Rockburst	32	28	-13
Strainburst	22	12	-45
Gravity	156	129	-17
MACHINERY	**82**	**82**	**0**
Conveyor belts	20	20	0
Drives, belts, chains	12	7	-42
Portable power tools	39	37	-5
Other	11	18	64
TRACKBOUND TRANSPORT	**81**	**63**	**-22**
Locomotive	20	9	-55
Locomotive drawn vehicle	20	22	10
Rerailing	3	3	-200
Coupling/uncoupling	14	13	-7
Rocker arm shovel	11	7	-36
Personnel transport	5	4	-20
Hand trammed	7	3	-57
Other Transport	1	2	100
WINCHES	**40**	**48**	**20**
Scraper Winch Installation	33	35	6
Single drum winch	0	5	500
Double drum winch	5	5	0
Mono rope/rail	2	3	50
TRACKLESS MOBILE MACHINES	**67**	**49**	**-27**
Mechanical loaders	5	7	40
Tractor/trailer	1	2	100
Coal mining machines	3	1	-67
Transporters	23	16	-30
Motor vehicles	9	6	-33
T&M lifting machines	13	8	-38
T&M mobile drilling machines	10	7	-30
Other TMM	3	2	-33
GENERAL	**609**	**522**	**-14**
Fall of material/rolling rock	88	82	-7
Manual handling of material	188	163	-13
Manual handling of mineral	27	28	4

Occupational Health and Safety Report:

May 2017

	Jan-May 2016	Jan-May 2017	%change
Falling in/from	26	12	-54
Slipping and falling	188	143	-24
Burning and scalding	12	12	0
Splinters	11	10	-9
Dust, gas and fumes	7	19	171
Inundation/drowning	1	2	100
Struck by ventilation door	9	6	-33
Struck by any object manual handling	52	45	-13
Conveyance accidents (shaft/winze)	**15**	**17**	13
Electricity (Not causing fires)	**7**	**4**	**-43**
Fires	**2**	**4**	**100**
Explosives	**6**	**3**	**-50**
Occupational Disease	**1**	**0**	**-100**
Heat sickness	**0**	**1**	**100**
Miscellaneous	**39**	**38**	**-3**
TOTAL	**1158**	**1000**	**-14**

6. SECTION 54 TRANSGRESSIONS REPORTED DURING THE MONTH



6.1 General (20%)

This category of transgressions accounted for most of the section 54 transgressions observed in May 2017 and the areas covered were:

The areas covered in this category of transgressions were:

- unsafe erecting and dismantling of scaffolding were observed;
- unsafe and poor access controls at the plant were observed;
- employees were exposed to ammonia smell which was not monitored;
- top barricade was not installed in a travelling way;
- poor barring of the sidewall was observed in the panel;
- employees were working within measured distances of 0,5m and 0,8m from the crest;
- a walkway was constructed within distances measured to be 0,5m and 0,8m from the crest;
- poor water control was observed in the haulage;
- poor house-keeping was observed at the entrance of the panel;

- there was no designated walkway from the plant to the pit. Pedestrians and Trackless Mobile Machinery were using the same roadway;
- box fronts were leaking water and the pneumatic switches were not locked out;
- chairlift counter weight was immersed in mud;
- the ore pass area was not barricaded and employees passing were exposed to the tipping area; and
- the call bell unit was situated next to the shaft, not in front of the shaft, in case something falling in the shaft the Operator would not be able to call for help.

6.2 Poor Supervision (11%)

The areas covered in this category of transgressions were:

- there was no record of training of employees available;
- one person was appointed for two different legal responsibilities;
- mine plans were outdated and not complying to Mine Health and Safety Act Regulations Chapter 17;
- the Mine Health and Safety Act Section 3.1(a) Appointee was visiting the mine once in a calendar month;
- the Shiftboss had failed to provide logbook/records when requested;
- the reports of the Safety Officer and Ventilation and Occupational Hygiene Engineer were not signed by relevant people and poor document control was observed; and
- employees were allowed to load material on top of hoppers and inside the guard car which was against the mine standard.

6.3 Explosives (10%)

The areas covered in this category of transgressions were:

1. short holes were drilled closer than 15cm from sockets;
2. two sockets were not properly cleaned, where one of them contained a piece of blasted fuse and the other one had a shothole drilled closer than 15cm from it;
3. explosives Elephant bag full of fuses was left unlocked and unattended at the panel;
4. more than ten fuses were left at the ventilation column and were not counted for at the fuse box;
5. two shotholes were drilled 7cm and 10cm respectively closer to sockets and one was marked 10cm to a socket; and
6. The Miner had not plugged the sockets on the face, against mine procedure; 2.explosives were being transported to the face whilst drilling was still in progress.

6.4 COP (Code of Practice) (7%)

The areas covered in this category of transgressions were:

- the COP perused was not adequately protecting the health and safety of employees;
- the COP was not complying with the guideline of the Chief Inspector of Mines;
- a COP was found inadequate to protect the health and safety of employees (another incident at a different operation);

- the revision date on the Trackless Mobile Machinery COP was two months ago (March 2017); and
- the Trackless Mobile Machinery COP was outdated and three more COPs were not drawn up in accordance to the guidelines while the COP for Right to Refuse Dangerous Work and Right to Leave Dangerous Working place was not available.

6.5 Railbound (7%)

The areas covered in this category of transgressions were:

- guard cars of the locomotives were not screened off on the front and at the back, there was no related standard and no baseline risk assessment;
- material cars were stacked inside the fouling area;
- materials were protruding on the side of the material cars;
- two rail switches were not fully switching; and
- rail switches were not closing completely.

6.6 Risk Assessment (7%)

The areas covered in this category of transgressions were:

- the mine procedure for enforcement guidelines of conducting risk assessment was found inadequate;
- risk assessments for Codes of Practice and relevant procedures were not conducted;
- risk assessments for Codes of Practice and relevant procedures were not conducted;
- poor document control and inadequate baseline risk assessment were observed; and
- risk assessment was inadequate to protect the health and safety of employees.

6.7 Support (6%)

The areas covered in this category of transgressions were:

- temporary safety net was not installed throughout the entire length of the panel such that eight holes were drilled under unsupported roof and a panel was left unsupported and not barricaded off after the fire incident dated 22 January 2016;
- the mine had misrepresented fixing the support transgressions from the previous Inspector's visit;
- roofbolt spacing was measured 1.7m and 2.1m on strike against mine standard of 1.5m; and
- two shear zone structures were not supported as per mine standard.

6.8 Machinery (6%)

The areas covered in this category of transgressions were:

- unsafe guarding of rotating parts of machinery was observed;
- two-leg chain sling did not have a safety latch;

- no inspection was conducted on electrical portable equipment including control; and
- an electrically powered locomotive battery lifting hoist was not locked and not unattended and substandard chain block was left unattended at the panel.

6.9 TMM (Trackless Mobile Machinery) (6%)

The areas covered in this category of transgressions were:

- the height at the accident scene was measured to be 1.73m against the Mandatory Code of Practice for Trackless Mobile Machinery of 1.8m;
- TMM keys were not being brought back by personnel who had signed them out, TMM key control register was not being adhered to and supervisors were not over-inspecting to monitor the key control system;
- TMM keys were not issued according to the key control procedure regarding key issuing times, TMM operators were being issued with more than one TMM key, TMM operators were not returning the TMM keys as per key control register book, and supervisors were not over-inspecting and not monitoring the key control system; and
- employees were observed working in close proximity of mobile machine.

6.10 Ventilation (5%)

The areas covered in this category of transgressions were:

- there were no ventilation curtains installed at the top and bottom of the panel as required by the mine standard;
- wet bulb and dry bulb temperatures were measured to be 32°C with a stagnant air flow; and
- a booster fan was found to be recirculating.

6.11 Conveyors (4%)

The areas covered in this category of transgressions were:

- conveyor belt guards were not effective;
- a conveyor belt was operated with a "no-go" finding, one checklist was used for belts and the operator was not conversant with the meaning of "Go But" and "No Go" on the checklist; and
- safety devices of conveyor belts were not tested.

6.12 Winches (4%)

The areas covered in this category of transgressions were:

- winches were leaking oil and grease, face winches at two panels were not locked and centre gully winch tip barricade was not covering the entire tip area;
- winch starter boxes were secured with bolt and nut which provided easy access to live electrical wires; and
- there was no winch safety wire and the winch guard was broken.

6.13 Electrical (3%)

The areas covered in this category of transgressions were:

- poor cable laying of high voltage cables was observed; and
- a level switch at shaft bottom was not activating the pump.

6.14 Safe Declaration (3%)

The areas covered in this category of transgressions were:

- in the past three days, the panel was declared safe but gases, ventilation, temperature and explosives were not checked. The safe declaration document on the day of inspection was not properly filled in; and
- the Miner was not declaring a working area safe and employees were not signing the safety declaration book.

6.15 Conveyance (1%)

The area covered in this category of transgressions was that a rock winder skip was spilling ore into the shaft.

7. OCCUPATIONAL MEDICINE

7.1 Overall occupational diseases/illness per month

During May 2017, a total of 417 occupational diseases/illness were reported from Health Incident Reports (HIRs), when compared to a total of 367 reported during the same period in 2016.

7.2 Analysis of occupational disease trends by region

There is an increase of 13.6% (14%) on the total occupational diseases/illness reported by seven (7) regions during May 2017 when compared to the total of cases reported by eight (8) regions during the same period in 2016.

The table and graph below illustrate the progressive performance of each region with regards to the number of occupational diseases/illness reported on HIRs. During May 2017, Gauteng reported most cases, followed by North West Klerksdorp, Free State, North West Rustenburg, Mpumalanga, Limpopo and Northern Cape regions. Eastern Cape, Kwazulu-Natal and Western Cape regions did not report any occupational diseases.

7.3 Analysis of Health Incident Reports per common disease group

7.3.1 Pulmonary tuberculosis (PTB)

Pulmonary tuberculosis (PTB) cases have increased by 7.5% (8%) when compared to the same period during the previous year.

7.3.2 Silicosis

Silicosis cases reported have increased by 20.8% (21%) when compared to the same period during the previous year.

7.3.3 Noise-induced hearing loss (NIHL)

Noise-induced hearing loss (NIHL) cases have decreased by 26% when compared to the same period during the previous year.

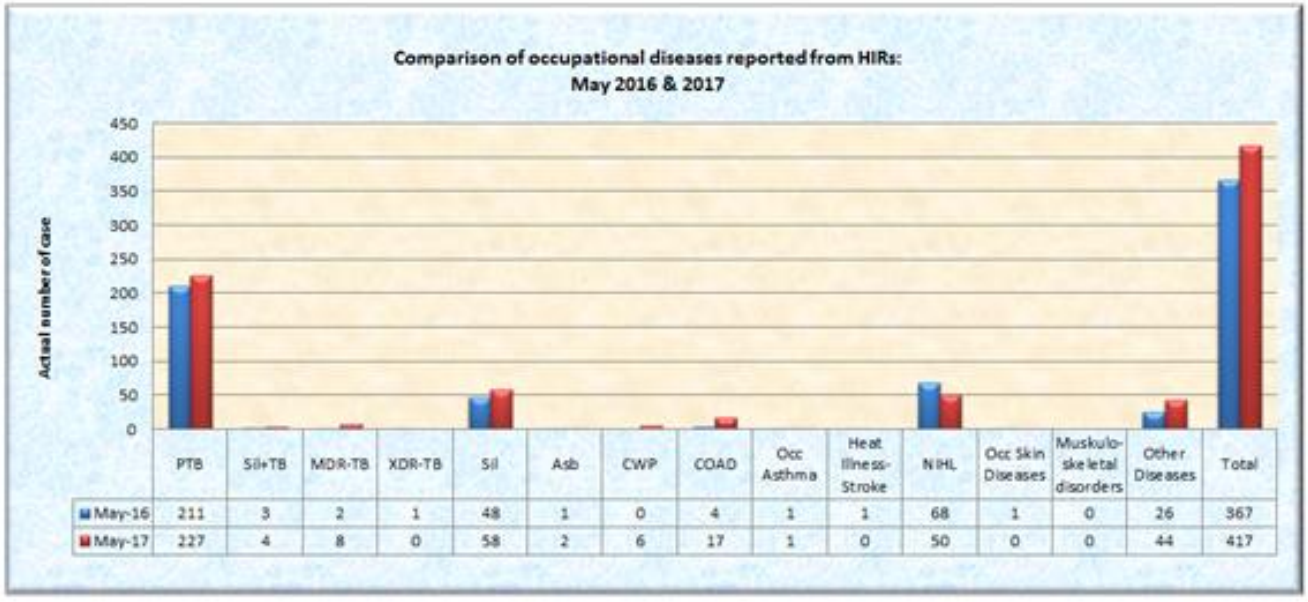
7.4 Conclusion

The analysis of occupational disease trends from the health incident reports show an overall decrease on occupational disease reported when compared to the same period of the previous year. It must also be noted that reported occupational diseases/illness are based on the system of medical surveillance which is not conducted at the same time on mines.

Table 7.2.1 Comparison of occupational diseases/illness reported on Health Incident Reports (HIRs) per region: May 2016 and 2017|

	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	% Change TOTAL
Region	EC		FS		GR		KZN		LP		Mpu		NC		NW K		NW R		WC		TOTAL	TOTAL	
PTB	0	0	19	29	50	69	2	0	13	1	5	26	6	6	0	54	116	42	0	0	211	227	8
Sil+TB	0	0	1	1	2	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	4	33
MDR-TB	0	0	2	2	0	4	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	8	300
XDR-TB	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	-100
Sil	0	0	31	26	6	13	0	0	0	0	1	2	0	0	4	11	6	6	0	0	48	58	21
Asb	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	1	2	100
CWP	0	0	0	0	0	0	0	0	0	1	0	5	0	0	0	0	0	0	0	0	0	6	600
COAD	0	0	1	10	2	6	0	0	0	0	0	1	1	0	0	0	0	0	0	0	4	17	325
Occ Asthma	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
Heat Illness-Stroke	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	-100
NIHL	0	0	14	2	12	20	0	0	1	9	2	4	5	2	1	9	33	4	0	0	68	50	-26
Occ Skin Diseases	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	-100
Muskulo-skeletal disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other Diseases	0	0	0	1	9	37	0	0	0	0	0	1	0	0	17	5	0	0	0	0	26	44	69
Total	0	0	68	71	83	151	2	0	14	13	10	42	12	9	22	79	156	52	0	0	367	417	14

Graph 7.2.1 Analysis of occupational diseases/illness reported from Health Incident Reports (HIRs) nationally: May 2016 and 2017



Verification source: Health Incident Reports submitted by regions: May 2016 and 2017

8. STATUS REPORT ON THE MINE HEALTH AND SAFETY COUNCIL (MHSC) AWARD SCHEME 2017

Table 8.1 Mines that have achieved the safety awards:

No	Mine	Award	Date recorded	Last fatality
1	Impala Platinum 14 Shaft	Million (1)	24/02/2017	23/01/2016
2	Mototolo Platinum: Lebowa	Thousand (9)	08/03/2017	Never
3	Thorncliffe Mine	Thousand (10)	14/03/2017	28/11/2007
4	Tselentis Colliery	Thousand (16)	12/04/2017	05/09/1991
5	Dorstfontein Colliery West	Thousand (4)	21/04/2017	15/03/2012