Safety performance
in the Western Australian mineral industry

Accident and injury statistics
2005-06
Reference

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Further details of publications produced by Resources Safety can be obtained by contacting:
Resources Safety — Publications
Department of Consumer and Employment Protection
Locked Bag 14
CLOISTERS SQUARE WA 6850
Telephone: +61 8 9358 8154
NRS: 13 36 77
Facsimile: +61 8 9325 2280
Email: ResourcesSafety@docep.wa.gov.au
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Statistics generated from Resources Safety’s AXTAT database for the year 2005–06 show a slight but continuing improvement in the overall safety performance of the Western Australian mining industry.

The number of serious injuries recorded since 2001–02 has increased slightly from year to year due primarily to an increase in the reported number of people employed. In 2005–06, the lost time injury frequency rate for serious injuries fell while the actual number of serious injuries reported rose.

There was only a small improvement in the lost time injury frequency rate (LTIFR), supporting the previous year’s suggestion that the curve has plateaued.

For many years the focus has been on lost time injuries (LTIs) and how they can be managed more effectively, both in terms of the individual employee’s welfare and the related issue of workers’ compensation. Much has been achieved in this regard, and it is to industry’s credit that considerable progress has been made in the areas of early return of employees to operational status, on-the-job post-accident rehabilitation and retraining of personnel. However, the number of LTIs reported in recent years has become so small that the value of the LTIFR as an indicator of safety performance is questionable and recorded improvements in the rate are more marginal.

Disabling injuries statistics have been collected since the beginning of fiscal 2001–02. This program was initiated with a view to establishing a more effective safety performance indicator than the current LTI-based system. Allegations that LTIs are ‘managed’ to provide favourable accident reporting data have been made by various parties in recent times. Disabling injuries are generally not amenable to the mechanism alluded to above and are more numerous than LTIs. There were 506 disabling injuries recorded for 2005–06, an decrease of 102 on the 2004–05 figure of 608. The 56,425 employees in the mining industry (an increase of 10%) worked a total of 111.94 million hours. The disabling injury incidence and frequency rates both displayed an improvement at 9.0 and 4.5 respectively.

All of the above suggest that the various indicator numbers are reaching plateaus and any further improvement is likely to be minimal. Equally, a deterioration in performance cannot be discounted. Renewed effort on the part of all stakeholders is required, and new approaches to the issue of accident prevention are necessary to continue to improve safety.

Five mining industry employees lost their lives during the year, three more than for the previous year.

Resources Safety continues to regulate the mining industry by statutory inspections, safety management system and high impact function audits. It plays an important role in providing education, training support and information to industry. During the year, safety meetings, presentations to mine site employees, and briefings to industry safety and health representatives complemented the inspection activities.

Resources Safety is also participating in and assisting with the development of the National Mine Safety Framework, an initiative of the Ministerial Council on Mineral and Petroleum Resources.
There were five fatal accidents during 2005–06 — two were underground at nickel mines, one was underground at a gold mine and two were on the surface at gold mines.

There were 462 LTIs during 2005–06, 37 more than the previous year (425 injuries in 2004–05). The breakdown of the number of injuries by commodity mined is shown in Appendix A.

There was an average workforce of 56,425 employees in 2005–06, an increase of 10% over the previous year (51,207 employees in 2004–05). The breakdown of the number of employees by commodity mined is shown in Appendix A.

The overall LTI duration rate deteriorated slightly by 4% during 2005–06, rising from 19.4 to 20.2. The breakdown of the work days lost for each commodity mined is shown in Appendix A.

The overall LTIFR improved slightly by 2% during 2005–06, falling from 4.2 to 4.1.

The overall injury index deteriorated slightly by 1% during 2005–06, up from 82 to 83.

Serious injuries in the mining industry during 2005–06 totalled 349, which is 33 more than for 2004–05.

The overall serious injury frequency rate improved slightly by 3% during 2005–06, falling from 3.2 to 3.1.

The iron ore sector LTIFR deteriorated by 9% during 2005–06, rising from 2.2 to 2.4.

The bauxite and alumina sector LTIFR deteriorated by 20% during 2005–06, rising from 2.5 to 3.0.

The gold sector LTIFR deteriorated by 13% during 2005–06, rising from 3.9 to 4.4.

The nickel sector LTIFR improved by 16% during 2005–06, falling from 7.0 to 5.9.
Appendix A

Western Australian mines 2005–06

462 injuries

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of employees</th>
<th>Percentage of injuries</th>
<th>Percentage of million hours worked</th>
<th>Percentage of work days lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron ore</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Bauxite &amp; alumina</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Gold (surface)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Nickel (surface)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Gold (underground)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Mineral sands</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Base metals</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Diamonds</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Salt</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Coal</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Tin, tantalum &amp; lithium</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Construction materials</td>
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<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>
Appendix B

Serious injuries underground 2005–06

54 injuries

Part of body

- Leg
- Hand
- Neck
- Back
- Arm
- Multiple
- Trunk NOC
- Head
- Foot and toes
- Eye

Nature of injury

- Sprain/strain
- Fracture
- Laceration
- Crushing
- Bruise/contusion
- Dislocation
- Multiple
- Amputation
- Effects of chem/fumes
- Pain

Location of accident

- U/g prod/dev
- U/g access/haul
- U/g dumping
- U/g workshop
- U/g pump chamber
- U/g storage

Type of accident

- Slip/trip
- Rockfall
- Over/stren mov
- Stepping
- C/by between
- Fall from height
- S/by object
- S/against object
- Veh/mob collision
- C/by machine
- C/w sharp object
- C/w chem/fumes
- Veh/mob jolt/jar
Appendix C

Serious injuries surface 2005–06

295 injuries

Part of body

- Leg
- Back
- Arm
- Hand
- Trunk NOC
- Foot and toes
- Multiple
- Neck
- Head
- Non-physical

Nature of injury

- Sprain/strain
- Fracture
- Bruise/contusion
- Laceration
- Crushing
- Burn
- Pain
- Amputation
- Dislocation
- Multiple
- Effects of chem/fumes
- Puncture wound
- Other

Location of accident

- Treatment plant
- Open pit
- Workshop
- Surface general
- Administration
- Crushed ore
- Power generation
- Railway
- Other

Type of accident

- Over/stran mov
- Slip/trip
- S/by object
- C/by between
- Fall getting on/off
- Stepping
- Veh/mob jolt/jar
- Fall from height
- C/w tool
- Veh/mob rollover
- S/against object
- C/w hot substance
- C/by machine
- Other
Appendix D

Metalliferous underground injuries 2005–06

66 injuries

### Part of body

- Leg
- Arm
- Hand
- Neck
- Back
- Multiple
- Head
- Trunk NOC
- Foot and toes
- Eye

### Nature of injury

- Sprain/strain
- Fracture
- Bruise/contusion
- Laceration
- Crushing
- Dislocation
- Multiple
- Amputation
- Pain
- Effects of chem/fumes

### Location of accident

- U/g prod/dev
- U/g access/haul
- U/g dumping
- U/g workshop
- U/g storage
- U/g pump chamber

### Type of accident

- Slip/trip
- Rockfall
- Over/stren mov
- C/by between
- Slipping
- S/by object
- Fall from height
- C/by machine
- S/against object
- Veh/mob collision
- Fall getting on/off
- C/w sharp object
- Veh/mob jolt/jar
- C/w chem/fumes
Appendix E

Metalliferous surface injuries 2005–06

385 injuries

Part of body

Nature of injury

Location of accident

Type of accident
Appendix F

Gold underground injuries 2005–06

24 injuries

Part of body

Nature of injury

Location of accident

Type of accident
Appendix G

Gold surface injuries 2005–06

85 injuries

Part of body

Nature of injury

Location of accident

Type of accident
Appendix H

Iron ore injuries 2005–06

72 injuries

Part of body

Nature of injury

Location of accident

Type of accident
Appendix I

Bauxite and alumina injuries 2005–06

56 injuries

Part of body

Nature of injury

Location of accident

Type of accident
Appendix J

Nickel underground injuries 2005–06

39 injuries

Part of body

Nature of injury

Location of accident

Type of accident
Appendix K

Nickel surface injuries 2005–06

72 injuries

**Part of body**

- Back: 20%
- Leg: 15%
- Arm: 12%
- Hand: 11%
- Trunk NOC: 10%
- Multiple: 8%
- Eye: 7%
- Neck: 6%
- Head: 4%

**Nature of injury**

- Sprain/strain: 40%
- Fracture: 35%
- Laceration: 10%
- Bruise/contusion: 5%
- Muscular/skeletal NOC: 3%
- Foreign body: 2%
- Concussion: 1%
- Superficial NOC: 1%
- Dislocation: 1%
- Multiple: 1%
- Burn: 1%
- Infection: 1%

**Location of accident**

- Treatment plant: 35%
- Open pit: 25%
- Surface general: 10%
- Workshop: 10%
- Administration: 5%
- Crushed ore: 5%
- Power generation: 5%
- Other: 5%

**Type of accident**

- Over/stron mov: 25%
- Slip/trip: 15%
- S/by object: 10%
- S/against object: 10%
- Veh/mob rollover: 10%
- C/by between: 10%
- Fall from height: 10%
- Veh/mob jolt/jar: 5%
- C/w foreign body: 5%
- C/w hot substance: 5%
- C/w tool: 5%
- Stepping: 5%
- Other: 5%
Disabling injuries 2005–06

506 injuries

In addition to the 462 LTIs during 2005–06, there were 506 disabling injuries (DIs) reported (505 in metalliferous mines and one in coal mines), bringing the total number of reportable injuries to 968. A breakdown of these data with performance indicators is shown in the tables below.

Of the disabling injuries, 300 resulted in the injured person being disabled for two weeks or more.

Disabling injuries during 2005–06

<table>
<thead>
<tr>
<th>Mines</th>
<th>No. of employees</th>
<th>Disabling injuries</th>
<th>All injuries (DIs and LTIs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of injuries</td>
<td>Incidence</td>
<td>Frequency</td>
</tr>
<tr>
<td>Metalliferous surface</td>
<td>50,446</td>
<td>365</td>
<td>7.2</td>
</tr>
<tr>
<td>Metalliferous underground</td>
<td>5,228</td>
<td>140</td>
<td>26.8</td>
</tr>
<tr>
<td>Metalliferous total</td>
<td>55,674</td>
<td>505</td>
<td>9.07</td>
</tr>
<tr>
<td>Coal total</td>
<td>751</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>TOTAL MINING</td>
<td>56,425</td>
<td>506</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Disabling injuries by mineral mines during 2005–06

<table>
<thead>
<tr>
<th>Mines</th>
<th>No. of employees</th>
<th>Disabling injuries</th>
<th>All injuries (DIs and LTIs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of injuries</td>
<td>Incidence</td>
<td>Frequency</td>
</tr>
<tr>
<td>Gold</td>
<td>12,051</td>
<td>178</td>
<td>14.8</td>
</tr>
<tr>
<td>Iron ore</td>
<td>14,428</td>
<td>62</td>
<td>4.3</td>
</tr>
<tr>
<td>Bauxite and alumina</td>
<td>9,757</td>
<td>100</td>
<td>10.2</td>
</tr>
<tr>
<td>Nickel</td>
<td>9,682</td>
<td>120</td>
<td>12.4</td>
</tr>
<tr>
<td>Mineral sands</td>
<td>2,831</td>
<td>20</td>
<td>7.1</td>
</tr>
<tr>
<td>Base metals</td>
<td>1,881</td>
<td>5</td>
<td>2.7</td>
</tr>
<tr>
<td>Diamonds</td>
<td>1,483</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Salt</td>
<td>838</td>
<td>1</td>
<td>1.2</td>
</tr>
<tr>
<td>Coal</td>
<td>751</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Tin, tantalum and lithium</td>
<td>540</td>
<td>3</td>
<td>5.6</td>
</tr>
<tr>
<td>Construction materials</td>
<td>371</td>
<td>1</td>
<td>2.7</td>
</tr>
<tr>
<td>Other</td>
<td>1,812</td>
<td>13</td>
<td>7.2</td>
</tr>
<tr>
<td>TOTAL MINING</td>
<td>56,425</td>
<td>506</td>
<td>9.0</td>
</tr>
</tbody>
</table>

Disabling injury (DI) — a work injury, not a lost time injury, that results in the injured person being unable to fully perform his or her ordinary occupation (regular job) any time after the day or shift on which the injury occurred, and where either alternative or light duties are performed.

This category would include where the injured person:

- is placed in a different occupation or job, whether on full or restricted work hours
- remains in his or her normal occupation or job, but is not able to perform the full range of work duties
- remains in his or her normal occupation or job, but on restricted hours.