



THE UNIVERSITY OF  
NEW SOUTH WALES

# **Profile Development Project for the NSW Mining Health and Safety Action Plan to 2008**

Prof Ann Williamson

Department of Aviation  
University of New South Wales

(formerly at NSW Injury Risk Management Research Centre,  
University of New South Wales)

**July 2008**

## Table of Contents

|   |     |
|---|-----|
| Executive Summary .....   | 4   |
| Background:.....  | 6   |
| Aim of this project: .....  | 6   |
| Project approach:.....  | 6   |
| A: Manual Handling and Musculoskeletal Injuries.....  | 7   |
| 1. Workers Compensation claims from NSW WorkCover .....   | 9   |
| Results: Claims from the Coal sector.....   | 9   |
| Results: Claims from the Non-Coal sector .....  | 29  |
| 2. Compensation claims from Coal Services Ltd database .....  | 50  |
| Results: Coal Services.....   | 50  |
| 3. Notifiable musculoskeletal injuries from Department of Primary Industry<br>COMET database.....                   | 61  |
| Results: COMET database .....   | 61  |
| 4. Hospital admissions in NSW related to mining .....   | 62  |
| Method.....   | 62  |
| Results: Hospitalisations.....  | 63  |
| Discussion: Musculoskeletal injuries .....  | 67  |
| B: Unplanned Movement of Plant .....  | 70  |
| In-depth analysis of New workers compensation claims for unplanned<br>movements of plant in the coal sector.....    | 71  |
| In-depth analysis of New workers compensation claims for unplanned<br>movement of plant in the Non-coal sector..... | 81  |
| Discussion: NSW WorkCover workers compensation claims for unplanned<br>movement of plant .....                      | 91  |
| Analysis of Notifiable incidents due to Unplanned movements reported in<br>COMET database .....                     | 92  |
| Discussion: Unplanned movements of plant.....   | 93  |
| C: Vulnerable Workers.....  | 94  |
| Method.....   | 94  |
| Results .....   | 95  |
| Industry Experience .....   | 95  |
| Extremes in Age (young and old).....  | 96  |
| Tenuous employment contract.....  | 97  |
| Remote areas .....  | 97  |
| Indigenous status of employees in the NSW Mining industry .....   | 99  |
| Women in the NSW Mining industry .....  | 103 |
| Non-English-speaking background .....   | 106 |
| Literacy level in NSW mining .....  | 109 |
| Disability in the mining industry.....  | 110 |
| Discussion: Vulnerable Workers.....   | 111 |
| D: Atmospheric Contaminants .....   | 113 |
| Results: Airborne Contaminants.....   | 114 |
| Analysis of Respiratory claims in NSW WorkCover workers compensation<br>.....                                       | 114 |

|  |     |
|--|-----|
| Analysis of Respiratory claims from Coal Services Ltd workers compensation dataset ..... | 116 |
| Discussion: Airborne Contaminants .....  | 118 |
| APPENDIX 1 Extract from Coal Mine Health and Safety Regulation 2006 ..                   | 119 |

## Executive Summary

To support the NSW Mining Industry Health and Safety Action Plan to 2008, information is needed on each of four priority areas identified. The aim of this report was to provide information to characterise the current situation in NSW Mining for each of these priority areas: Manual handling and Musculoskeletal Disorders separately for Coal and Non-Coal sectors, Unplanned movement of Plant, Vulnerable Workers and Atmospheric Contaminants.

### 1. Manual handling and musculoskeletal disorders

Four data sources were used for this analysis: NSW workers compensation data, Coal Services Pty Ltd compensation claims data (coal sector only), Notifiable Incident data from the NSW Department of Primary Industry's COMET dataset and Hospital admission data. The Worker Compensation data provided the best source for monitoring musculoskeletal injury in mining despite limitations in coverage and reporting and difficulties in accessing the data. Nevertheless, all data sources showed similar characteristics of musculoskeletal injury in mining. The patterns of the characteristics of this type of injury highlight some targets for interventions to prevent them. The most common type of musculoskeletal injury involved muscular stress while lifting, handling, carrying or putting down objects, followed by falls on the same level. Muscular stress claims were due to mobile plant and transport, non-powered hand tools or equipment, or materials and substances whereas falls were mainly due to the environment. The age distribution of these injuries differed between coal and non-coal sectors, affecting older workers in the coal sector (40-55 years) and young workers in the non-coal sector (20-49 years). The outcomes of these injuries also differed between sectors. In the coal sector musculoskeletal injuries resulted mainly in temporary disability while a great proportion of those in non-coal had permanent disability outcomes and fewer involved no lost time, suggesting greater severity of injury in this sector. The cost of claims has been increasing in coal but not in the non-coal sector.

### 2. Unplanned movement of plant

Two data sources were used for this analysis: workers compensation data and the COMET dataset. The analysis demonstrated that further investigation is needed to develop the best definition of unplanned movement incidents from the workers compensation dataset since using only Hit by moving object and Vehicle accident almost certainly failed to identify all relevant cases. The analysis showed similar patterns for coal and non-coal sectors, with most cases being due to being Hit by moving objects, but Vehicle accidents resulting in more serious outcomes. In both sectors, mobile plant was the cause of most vehicle accidents and which was also the cause of Hit by moving objects in the coal sector, but in the non-coal sector Non-powered hand tools and equipment were the main cause of this type of unplanned movement injury. The costs of these claims increased markedly over the last two years, mainly due to more high cost claims.

### 3. Vulnerable workers

This analysis looked at a number of categories of potential vulnerable workers in mining in NSW including, low levels of industry experience, young workers and older workers, contractors, remote area employment, indigenous workers, women, workers from non-English speaking backgrounds, low literacy levels and disability. A

range of data sources were used, but most were based on Australian Bureau of Statistics information from the 1996, 2001 and 2006 Censuses. The analysis showed that some groups of vulnerable workers are under-represented in the NSW Mining industry compared to all NSW industry, including young and older workers, women, people from indigenous backgrounds and people with disabilities. It also highlighted the lack of data on the involvement of some potentially vulnerable groups in mining including contractors, employees with little industry experience, employees in remote areas and the low literacy level employees.

#### **4. Atmospheric contaminants**

Workers compensation data from both NSW WorkCover and Coal Services Pty Ltd were used for this analysis. Both datasets contained only a small number of claims for respiratory disorders although the coal sector had a considerably higher number of claims than non-coal. In the coal sector most claims were Other respiratory conditions due to substances as a result of long term contact with chemicals or substances. While this type of claim was also common in the non-coal sector, the majority of claims in this sector were for Asbestosis.

## **Background:**

The *NSW Mining Industry Health and Safety Action Plan to 2008* established priority areas of concern for the mining industry and identified some of the steps needed to address them. The six priority areas established in the Action Plan were: Manual handling and musculoskeletal injuries, Unplanned movement of plant, Contractor safety, Vulnerable workers, Fatigue and Atmospheric contaminants.

The NSW Mine Safety Advisory Council, a tripartite forum made up of representatives of employers, unions, government and independent experts provides support for the Action Plan. A previous project provided the NSW Mine Safety Advisory Council with performance measures for priority areas in order to facilitate measurement of the mining industry's performance and to allow monitoring of progress towards the targets put forward in the National Strategy. In the current project the NSW Mine Safety Advisory Council was seeking to analyse and interpret data and information on four of the priority areas:

- Manual Handling and Musculoskeletal injuries;
- Unplanned Movement of Plant;
- Vulnerable Workers; and
- Atmospheric Contaminants

## **Aim of this project:**

To provide information that can be used for the creation of 'Profiles' on:

- Manual Handling and Musculoskeletal Disorders – Coal
- Manual Handling and Musculoskeletal Disorders – Non-Coal
- Unplanned Movement of Plant
- Vulnerable Workers and
- Atmospheric Contaminants

To provide data that can be used for analysis by the NSW Mine Safety Advisory Council and its working groups.

## **Project approach:**

The project first reviewed available databases for each of the priority issues and then used this analysis to suggest the best sources of data for each of the priority areas in order to assist the work of the industry workshops. Further analysis was then conducted on relevant variables from each of the databases for each of the priority areas.

This report describes the results of this project and details the results of the review of databases and the results of the analysis for each priority area. The report also discusses the data issues identified from this process including directions for further development of data sources to support strategic analysis in the NSW mining industry.

## A: Manual Handling and Musculoskeletal Injuries

The analysis examined the available information on manual handling and musculoskeletal injuries for the coal and non-coal sector separately over four years (financial years 2002/2003 to 2005/2006 inclusive). Four sources of information were examined:

- Workers Compensation claim data provided by NSW WorkCover
- Claims data provided by Coal Services Pty Ltd
- Reports for notifiable injury made under mine safety regulation from the COMET database provided by the NSW Department of Primary Industry, Minerals section.
- NSW hospitalisation data from the Inpatient Statistical collection provided by NSW Health

The definition of manual handling and musculoskeletal injuries was based on the criteria provided in the MSAC project brief and included all cases where injury Mechanism was coded as:

- Slip, trip or fall on the same level
- Exposure to mechanical vibration
- Other muscular stressing (including Muscular stress while lifting, carrying, or putting down objects, Muscular stress while handling objects other than lifting, carrying or putting down and Muscular stress with no objects being handled)
- Repetitive movement with low muscle strain

For all datasets the analysis looked at the annual total number of claims for each type of musculoskeletal injury for 2002 to 2006 and for the WorkCover and Coal Services datasets the analysis also looked at the number of new claims made for each type of injury for each year.

The four datasets contained different types of data and different variables for analysis. These are described in Table 1. The WorkCover dataset contains the most comprehensive range of variables for all mining and coal and non-coal sectors. The Coal Services claims dataset contains the same comprehensive range of variables as the WorkCover dataset, but only for coal mining. The COMET notifiable injuries dataset only includes serious bodily injury that is required to be reported to the NSW Department of Primary Industry under mine safety regulation. The COMET data can be separated into injuries occurring in coal and non-coal sectors, but not all information is available on the outcome of the injury especially the time lost and cost of the injury. The NSW Health hospitalisation dataset includes all musculoskeletal injuries occurring in mining, but it is not possible to break this data down by sector of the industry. The hospitalization dataset contains information about the injury itself, but does not contain information on occupation or the consequences of injury including time lost or cost of the injury.

**Table 1: Characteristics of the four datasets for analysis of musculoskeletal injury data**

| <b>Characteristic</b>  | <b>Workers compensation claim (NSW WorkCover)</b> | <b>Coal Services claims</b>          | <b>COMET injury report (NSW DPI: Minerals)</b> | <b>Hospitalisation cases (NSW Health)</b>                    |
|------------------------|---|--------------------------------------|--|--|
| Criteria for inclusion | Voluntary workers compensation claim              | Voluntary workers compensation claim | Notifiable injury report                       | Injury severity sufficient for hospital stay of $\geq 1$ day |
| Coverage               | Coal/ Non-coal                                    | Coal only                            | Coal/Non-coal                                  | Mining distinguished only                                    |
| Agency of injury       | ✓   | ✓                                    | ✓  | ✓  |
| Occupation             | ✓   | ✓                                    | ✓  | X  |
| Body location          | ✓   | ✓                                    | ✓  | ✓  |
| Age                    | ✓   | ✓                                    | ✓  | ✓  |
| Injury result          | ✓   | ✓                                    | X  |  |
| Time lost              | ✓   | ✓                                    | X  | X  |
| Cost of injury         | ✓   | ✓                                    | X  | X  |

The next four sections contain an in-depth analysis of each of the four datasets including a description of the coverage of the data, where possible an analysis of the characteristics of each type of musculoskeletal injury including the agency of injury, body location of injury, occupation and age of persons injured, result of the injury, time lost and cost of injury. Each section will contain an analysis of the implications of the coverage for strategic planning for the mining industry.

The fifth and final section will contain an overall discussion of the available data for analysis of musculoskeletal injury in NSW and the evidence on trends and activities that have the highest risk for musculoskeletal injury.

## 1. Workers compensation claims from NSW WorkCover

Data for the analysis of workers compensation claims were provided by NSW WorkCover following a specific request from the NSW Mine Safety Advisory Council. The data provided included all mining industry claims where Coal mining was defined by the Australian and New Zealand Standard Industry (ANZSIC) Code 110 and Non-coal mining by ANZSIC codes 120, 131, 141, 142, 151 and 152. Total claims included all claims since 1 July 2002 that had at least one payment in the year. This data was selected as the start point for this analysis as the standard Type of Occurrence coding changed in the dataset from this date making comparisons prior to the change difficult. New claims were those entered into the insurer's system in that year.

### Results: Claims from the Coal sector

The total number of workers compensation claims for the Coal sector for 2002/2003 to 2005/2006 is shown in Table 2. In each year most claims were for other muscular stress and around one-third were for slips, trips or falls on the same level. There were very few claims for injuries due to repetitive movement, low muscle loading in any year. Musculoskeletal claims accounted for just over half of all claims in the coal sector in any year.

**Table 2: Total WorkCover workers compensation claims for each type of musculoskeletal injury for the coal sector showing the number and percentage of claims for each financial year, the total number of mining claims and percentage of all claims that are for musculoskeletal injury.**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 02: Falls on the same level                 | Count  | 244       | 613       | 770       | 1059      | 2686  |
|   | % year | 36.86     | 33.48     | 33.39     | 34.37     | 34.09 |
| 27: Exposure to mechanical vibration        | Count  | 67        | 189       | 239       | 290       | 785   |
|   | % year | 10.12     | 10.32     | 10.36     | 9.41      | 9.96  |
| 41-43: Other muscular stress                | Count  | 349       | 1025      | 1294      | 1726      | 4394  |
|   | % year | 52.72     | 55.98     | 56.11     | 56.02     | 55.76 |
| 44: Repetitive movement, low muscle loading | Count  | 2         | 4         | 3         | 6         | 15    |
|   | % year | 0.30      | 0.22      | 0.13      | 0.19      | 0.19  |
| Total musculoskeletal claims                | Count  | 662       | 1831      | 2306      | 3081      | 7880  |
| Total claims                                | Count  | 1219      | 3541      | 4513      | 6084      | 15357 |
| % musculoskeletal of all claims             | % year | 54.31     | 51.71     | 51.10     | 50.64     | 51.31 |

Table 3 shows the results for new workers compensation claims for musculoskeletal injury for each year. A slightly smaller percentage of all new claims were for musculoskeletal injury compared to total claims. Nevertheless, the distribution of the different types of musculoskeletal new claims was the same as for total claims, with more than half being for Other muscular stress. Comparison of the number of total and new claims for each year showed that for Other muscular stress and Exposure to vibration in the last two years, less than half of the total claims in each year were new claims, although this effect diminished with history since all claims in 2002/2003 were new claims indicating that all older claims had been resolved. For slips and falls on the same level the number of older claims was considerably smaller in each year indicating that they resolve more quickly.

**Table 3: New WorkCover workers compensation claims for each type musculoskeletal injury for the coal sector showing the number and percentage of claims for each financial year, the total number of mining claims and percentage of all claims that are for musculoskeletal injury.**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| Falls same level                           | Count  | 244       | 294       | 259       | 351       | 1148  |
|  | % Year | 36.86     | 30.88     | 33.64     | 37.30     | 34.53 |
| Exposure to mechanical vibration           | Count  | 67        | 104       | 92        | 76        | 339   |
|  | % Year | 10.12     | 10.92     | 11.95     | 8.08      | 10.20 |
| Other muscular stress                      | Count  | 349       | 553       | 419       | 511       | 1832  |
|  | % Year | 52.72     | 58.09     | 54.42     | 54.30     | 55.10 |
| Repetitive movement with low muscle strain | Count  | 2         | 1         | 0         | 3         | 6     |
|  | % Year | 0.30      | 0.11      | 0.00      | 0.32      | 0.18  |
| Total Musculoskeletal claims               | Count  | 662       | 952       | 770       | 941       | 3325  |
|  | % Year | 100       | 100       | 100       | 100       | 100   |
| Total claims                               |        | 1219      | 1840      | 1451      | 1835      | 6345  |
| % claims musculoskeletal                   |        | 54.31     | 51.74     | 53.07     | 51.28     | 52.40 |

The following section focuses on the trends and in-depth analysis of the characteristics of workers compensation claims in the coal sector. This analysis will focus only on new claims rather than total claims in order to avoid the same claims being included in different years.

The analysis examines the characteristics of the three main types of musculoskeletal injury claims, slips and falls on the same level, exposure to mechanical vibration and other muscular stress. As there were so few claims for repetitive movement with low muscle strain these claims were not included in this in-depth analysis.

## **In-depth analysis of new workers compensation in the coal sector**

Analysis of the Agency of injury for new workers compensation claims in the coal sector (see Tables 4 to 6) showed that around three-quarters of claims for Falls on same level and for Exposure to mechanical vibration occurred due to environmental agencies, with the remainder occurring due to mobile plant and transport. In contrast, claims for Other muscular stress involved a wider range of agencies, with one-third due to mobile plant and transport, around 20 percent due to non-powered handtools, appliances and equipment and around one in six involved materials and substances. There were no changes in agency involvement for any of the musculoskeletal injury types.

The occupation of claimants for musculoskeletal injuries in the coal sector was fairly similar for each type of injury (see Table 7 to 9). Intermediate Production and Transport Workers made at least half of the claims for each type of injury, with more than three quarters of claims for Exposure to mechanical vibration from this occupational group. Tradespersons and related workers accounted for the next highest number of claims for all injury types. There were again no obvious trends in the occupation of claimants for any of the injury types across the years of the analysis.

Tables 10 to 12 show the body location of the new injury claims for the coal sector varied considerably for each of the injury types. Falls on same level claims were mainly for lower limb injury, with the remainder evenly distributed between upper limb and trunk areas. Exposure to mechanical vibration claims mainly involved the trunk and to a lesser extent the neck, while Other muscular stressing claims mainly involved the trunk and to a lesser extent upper limbs.

Analysis of the age of claimants (Tables 13 to 15) showed very similar distribution for all types of musculoskeletal injury. Most claimants were in the 30 to 59 age group, with a tendency for more claims from older workers in this age range. There were no trends across the years of the analysis in the distribution of the age of claimants.

The amount paid for new musculoskeletal injury claims in the coal sector showed a marked increase for all types of claims in the 2005/2006 financial year (see Tables 16 to 18). Very few claims in the most recent year were recorded as no payment and significantly higher percentages of claims were for more than \$20,000. In all years Exposure to mechanical vibration claims had higher payment than the other two types of injury.

For all years almost all claims resulted in temporary disability of less than six months and very few claims involved permanent disability (see Tables 19 to 21). Consistent with the trends for amount paid, however, there was a notable increase in permanent disability claims in the 2005/2006 year for all types of injury with the percentage of permanent claims increasing from less than one percent to nearly five percent of claims for Other muscular stress.

Analysis of Lost time for new musculoskeletal claims (Table 22 to 24) showed that around two-thirds of all injury types involved no time off. Average time off for Exposure to mechanical vibration claims were highest in all years. For all injury types, however, the mean lost time decreased in the most recent year to the lowest over all years.

**Table 4: Agency of injury for new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 7         | 6         | 12        | 9         | 34    |
|  | % Year | 2.9       | 2.0       | 4.6       | 2.6       | 3.0   |
| 2: Mobile Plant And Transport                      | Count  | 51        | 75        | 42        | 56        | 224   |
|  | % Year | 20.9      | 25.5      | 16.2      | 16.0      | 19.5  |
| 3: Powered Equipment, Tools And Appliances         | Count  | 0         | 2         | 0         | 0         | 2     |
|  | % Year | 0.0       | 0.7       | 0.0       | 0.0       | 0.2   |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 9         | 5         | 5         | 9         | 28    |
|  | % Year | 3.7       | 1.7       | 1.9       | 2.6       | 2.4   |
| 6: Materials And Substances                        | Count  | 0         | 2         | 1         | 0         | 3     |
|  | % Year | 0.0       | 0.7       | 0.4       | 0.0       | 0.3   |
| 7: Environmental Agencies                          | Count  | 176       | 204       | 199       | 277       | 856   |
|  | % Year | 72.1      | 69.4      | 76.8      | 78.9      | 74.6  |
| 9: Other And Unspecified Agencies                  | Count  | 1         | 0         | 0         | 0         | 1     |
|  | % Year | 0.4       | 0.0       | 0.0       | 0.0       | 0.1   |
| Total  | Count  | 244       | 294       | 259       | 351       | 1148  |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table 5: Agency of injury for new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|                                       |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---------------------------------------|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant | Count  | 0         | 1         | 0         | 0         | 1     |
|                                       | % Year | 0.0       | 1.0       | 0.0       | 0.0       | 0.3   |
| 2: Mobile Plant And Transport         | Count  | 14        | 17        | 24        | 13        | 68    |
|                                       | % Year | 20.9      | 16.3      | 26.1      | 17.1      | 20.1  |
| 7: Environmental Agencies             | Count  | 53        | 86        | 68        | 63        | 270   |
|                                       | % Year | 79.1      | 82.7      | 73.9      | 82.9      | 79.6  |
| Total                                 | Count  | 67        | 104       | 92        | 76        | 339   |
|                                       | % Year | 100       | 100       | 100       | 100       | 100   |

**Table 6: Agency of injury for new claims in the coal sector for Other muscular stress showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 52        | 79        | 60        | 63        | 254   |
|  | % Year | 14.9      | 14.3      | 14.3      | 12.3      | 13.9  |
| 2: Mobile Plant And Transport                      | Count  | 113       | 169       | 146       | 144       | 572   |
|  | % Year | 32.4      | 30.6      | 34.8      | 28.2      | 31.2  |
| 3: Powered Equipment, Tools And Appliances         | Count  | 18        | 24        | 12        | 19        | 73    |
|  | % Year | 5.2       | 4.3       | 2.9       | 3.7       | 4.0   |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 67        | 100       | 66        | 121       | 354   |
|  | % Year | 19.2      | 18.1      | 15.8      | 23.7      | 19.3  |
| 5: Chemicals And Chemical Products                 | Count  | 2         | 5         | 1         | 5         | 13    |
|  | % Year | 0.6       | 0.9       | 0.2       | 1.0       | 0.7   |
| 6: Materials And Substances                        | Count  | 52        | 90        | 68        | 84        | 294   |
|  | % Year | 14.9      | 16.3      | 16.2      | 16.4      | 16.0  |
| 7: Environmental Agencies                          | Count  | 15        | 26        | 16        | 21        | 78    |
|  | % Year | 4.3       | 4.7       | 3.8       | 4.1       | 4.3   |
| 8: Animal, Human And Biological Agencies           | Count  | 0         | 2         | 1         | 0         | 3     |
|  | % Year | 0.0       | 0.4       | 0.2       | 0.0       | 0.2   |
| 9: Other And Unspecified Agencies                  | Count  | 30        | 58        | 49        | 54        | 191   |
|  | % Year | 8.6       | 10.5      | 11.7      | 10.6      | 10.4  |
| Total  | Count  | 349       | 553       | 419       | 511       | 1832  |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table 7: Occupation for new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 7         | 5         | 4         | 6         | 22    |
|   | % year | 2.87      | 1.70      | 1.54      | 1.71      | 1.92  |
| 2: Professionals                                    | Count  | 5         | 8         | 1         | 4         | 18    |
|   | % year | 2.05      | 2.72      | 0.39      | 1.14      | 1.57  |
| 3: Associate Professionals                          | Count  | 46        | 38        | 51        | 46        | 181   |
|   | % year | 18.85     | 12.93     | 19.70     | 13.11     | 15.77 |
| 4: Tradespersons And Related Workers                | Count  | 56        | 71        | 55        | 104       | 286   |
|   | % year | 22.95     | 24.15     | 21.24     | 29.63     | 24.91 |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 0         | 4         | 1         | 2         | 7     |
|   | % year | 0         | 1.36      | 0.39      | 0.57      | 0.61  |
| 7: Intermediate Production And Transport Workers    | Count  | 122       | 161       | 142       | 177       | 602   |
|   | % year | 50.00     | 54.76     | 54.83     | 50.43     | 52.44 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 0         | 0         | 0         | 2         | 2     |
|   | % year | 0         | 0         | 0         | 0.57      | 0.17  |
| 9: Labourers And Related Workers                    | Count  | 8         | 7         | 5         | 10        | 30    |
|   | % year | 3.28      | 2.38      | 1.93      | 2.85      | 2.61  |
| Total   | Count  | 244       | 294       | 259       | 351       | 1148  |
|   | % year | 100       | 100       | 100       | 100       | 100   |

**Table 8: Occupation for new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|--|--------|-----------|-----------|-----------|-----------|----------|
| 1: Managers And Administrators                   | Count  | 1         | 2         | 1         | 1         | 5        |
|  | % year | 1.492537  | 1.923077  | 1.086957  | 1.315789  | 1.474926 |
| 3: Associate Professionals                       | Count  | 2         | 8         | 3         | 1         | 14       |
|  | % year | 2.985075  | 7.692308  | 3.26087   | 1.315789  | 4.129794 |
| 4: Tradespersons And Related Workers             | Count  | 17        | 13        | 12        | 10        | 52       |
|  | % year | 25.37313  | 12.5      | 13.04348  | 13.15789  | 15.33923 |
| 7: Intermediate Production And Transport Workers | Count  | 47        | 80        | 76        | 64        | 267      |
|  | % year | 70.14925  | 76.92308  | 82.6087   | 84.21053  | 78.76106 |
| 9: Labourers And Related Workers                 | Count  | 0         | 1         | 0         | 0         | 1        |
|  | % year | 0         | 0.961538  | 0         | 0         | 0.294985 |
| Total  | Count  | 67        | 104       | 92        | 76        | 339      |
|  | % year | 100       | 100       | 100       | 100       | 100      |

**Table 9: Occupation for new claims in the coal sector for Other muscular stress showing number and percentage of claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|---|--------|-----------|-----------|-----------|-----------|----------|
| 1: Managers And Administrators                      | Count  | 4         | 5         | 7         | 7         | 23       |
|   | % year | 1.146132  | 0.904159  | 1.670644  | 1.369863  | 1.255459 |
| 2: Professionals                                    | Count  | 6         | 9         | 4         | 3         | 22       |
|   | % year | 1.719198  | 1.627486  | 0.954654  | 0.587084  | 1.200873 |
| 3: Associate Professionals                          | Count  | 39        | 60        | 52        | 49        | 200      |
|   | % year | 11.17479  | 10.84991  | 12.4105   | 9.589041  | 10.91703 |
| 4: Tradespersons And Related Workers                | Count  | 103       | 157       | 117       | 135       | 512      |
|   | % year | 29.51289  | 28.3906   | 27.92363  | 26.41879  | 27.9476  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 3         | 3         | 1         | 6         | 13       |
|   | % year | 0.859599  | 0.542495  | 0.238663  | 1.174168  | 0.709607 |
| 7: Intermediate Production And Transport Workers    | Count  | 183       | 307       | 220       | 300       | 1010     |
|   | % year | 52.43553  | 55.51537  | 52.50597  | 58.70841  | 55.131   |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 1         | 1         | 3         | 2         | 7        |
|   | % year | 0.286533  | 0.180832  | 0.71599   | 0.391389  | 0.382096 |
| 9: Labourers And Related Workers                    | Count  | 10        | 11        | 15        | 9         | 45       |
|   | % year | 2.86533   | 1.98915   | 3.579952  | 1.761252  | 2.456332 |
| Total   | Count  | 349       | 553       | 419       | 511       | 1832     |
|   | % year | 100       | 100       | 100       | 100       | 100      |

**Table 10: Body location of new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|                    |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--------------------|--------|-----------|-----------|-----------|-----------|-------|
| Head               | Count  | 1         | 9         | 4         | 2         | 16    |
|                    | % year | 0.41      | 3.06      | 1.54      | 0.57      | 1.39  |
| Neck               | Count  | 3         | 2         | 4         | 3         | 12    |
|                    | % year | 1.23      | 0.68      | 1.54      | 0.85      | 1.05  |
| Trunk              | Count  | 45        | 65        | 46        | 67        | 223   |
|                    | % year | 18.44     | 22.11     | 17.76     | 19.09     | 19.43 |
| Upper limb         | Count  | 47        | 51        | 46        | 51        | 195   |
|                    | % year | 19.26     | 17.35     | 17.76     | 14.53     | 16.99 |
| Lower limb         | Count  | 126       | 154       | 148       | 205       | 633   |
|                    | % year | 51.64     | 52.38     | 57.14     | 58.40     | 55.14 |
| Multiple locations | Count  | 22        | 13        | 11        | 23        | 69    |
|                    | % year | 9.02      | 4.42      | 4.25      | 6.55      | 6.01  |
| Total              | Count  | 244       | 294       | 259       | 351       | 1148  |
|                    | % year | 100       | 100       | 100       | 100       | 100   |

**Table 11: Body location of new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|                    |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--------------------|--------|-----------|-----------|-----------|-----------|-------|
| Head               | Count  | 0         | 0         | 0         | 1         | 1     |
|                    | % year | 0.00      | 0.00      | 0.00      | 1.32      | 0.29  |
| Neck               | Count  | 25        | 18        | 24        | 17        | 84    |
|                    | % year | 37.31     | 17.31     | 26.09     | 22.37     | 24.78 |
| Trunk              | Count  | 31        | 60        | 40        | 39        | 170   |
|                    | % year | 46.27     | 57.69     | 43.48     | 51.32     | 50.15 |
| Upper limb         | Count  | 4         | 5         | 2         | 5         | 16    |
|                    | % year | 5.97      | 4.81      | 2.17      | 6.58      | 4.72  |
| Lower limb         | Count  | 1         | 5         | 3         | 3         | 12    |
|                    | % year | 1.49      | 4.81      | 3.26      | 3.95      | 3.54  |
| Multiple locations | Count  | 6         | 16        | 23        | 11        | 56    |
|                    | % year | 8.96      | 15.38     | 25.00     | 14.47     | 16.52 |
| Total              | Count  | 67        | 104       | 92        | 76        | 339   |
|                    | % year | 100       | 100       | 100       | 100       | 100   |

**Table 12: Body location of new claims in the coal sector for Other muscular stress showing number and percentage of claims for each year**

|                        |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|------------------------|--------|-----------|-----------|-----------|-----------|-------|
| Neck                   | Count  | 5         | 18        | 18        | 20        | 61    |
|                        | % year | 1.43      | 3.25      | 4.30      | 3.91      | 3.33  |
| Trunk                  | Count  | 183       | 285       | 204       | 254       | 926   |
|                        | % year | 52.44     | 51.54     | 48.69     | 49.71     | 50.55 |
| Upper limb             | Count  | 93        | 152       | 108       | 130       | 483   |
|                        | % year | 26.65     | 27.49     | 25.78     | 25.44     | 26.36 |
| Lower limb             | Count  | 48        | 64        | 60        | 74        | 246   |
|                        | % year | 13.75     | 11.57     | 14.32     | 14.48     | 13.43 |
| Multiple locations     | Count  | 20        | 33        | 29        | 33        | 115   |
|                        | % year | 5.73      | 5.97      | 6.92      | 6.46      | 6.28  |
| Respiratory in general | Count  | 0         | 1         | 0         | 0         | 1     |
|                        | % year | 0.00      | 0.18      | 0.00      | 0.00      | 0.05  |
| Total                  | Count  | 349       | 553       | 419       | 511       | 1832  |
|                        | % year | 100       | 100       | 100       | 100       | 100   |

**Table 13: Age group of new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 2         | 0         | 0         | 5         | 7     |
|           | % year | 0.82      | 0.00      | 0.00      | 1.42      | 0.61  |
| 20-29 yrs | Count  | 10        | 14        | 15        | 36        | 75    |
|           | % year | 4.10      | 4.76      | 5.79      | 10.26     | 6.53  |
| 30-39 yrs | Count  | 46        | 64        | 41        | 65        | 216   |
|           | % year | 18.85     | 21.77     | 15.83     | 18.52     | 18.82 |
| 40-49 yrs | Count  | 90        | 96        | 95        | 125       | 406   |
|           | % year | 36.89     | 32.65     | 36.68     | 35.61     | 35.37 |
| 50-59 yrs | Count  | 95        | 119       | 106       | 117       | 437   |
|           | % year | 38.93     | 40.48     | 40.93     | 33.33     | 38.07 |
| 60-65 yrs | Count  | 1         | 1         | 1         | 3         | 6     |
|           | % year | 0.41      | 0.34      | 0.39      | 0.85      | 0.52  |
| Total     | Count  | 244       | 294       | 258       | 351       | 1147  |
|           | % year | 100       | 100       | 100       | 100       | 100   |

**Table 14: Age group of new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 0         | 0         | 0         | 1         | 1     |
|           | % year | 0.00      | 0.00      | 0.00      | 1.32      | 0.29  |
| 20-29 yrs | Count  | 3         | 1         | 7         | 2         | 13    |
|           | % year | 4.48      | 0.96      | 7.61      | 2.63      | 3.83  |
| 30-39 yrs | Count  | 18        | 22        | 25        | 17        | 82    |
|           | % year | 26.87     | 21.15     | 27.17     | 22.37     | 24.19 |
| 40-49 yrs | Count  | 28        | 48        | 32        | 36        | 144   |
|           | % year | 41.79     | 46.15     | 34.78     | 47.37     | 42.48 |
| 50-59 yrs | Count  | 18        | 33        | 28        | 20        | 99    |
|           | % year | 26.87     | 31.73     | 30.43     | 26.32     | 29.20 |
| Total     | Count  | 67        | 104       | 92        | 76        | 339   |
|           | % year | 100       | 100       | 100       | 100       | 100   |

**Table 15: Age group of new claims in the coal sector for Other muscular stress showing number and percentage of claims for each year**

|           |        | <b>2002/2003</b> | <b>2003/2004</b> | <b>2004/2005</b> | <b>2005/2006</b> | <b>Total</b> |
|-----------|--------|------------------|------------------|------------------|------------------|--------------|
| 15-19 yrs | Count  | 1                | 2                | 1                | 1                | 5            |
|           | % year | 0.29             | 0.36             | 0.24             | 0.20             | 0.27         |
| 20-29 yrs | Count  | 17               | 37               | 27               | 47               | 128          |
|           | % year | 4.87             | 6.69             | 6.44             | 9.20             | 6.99         |
| 30-39 yrs | Count  | 62               | 103              | 75               | 121              | 361          |
|           | % year | 17.77            | 18.63            | 17.90            | 23.68            | 19.71        |
| 40-49 yrs | Count  | 144              | 214              | 149              | 161              | 668          |
|           | % year | 41.26            | 38.70            | 35.56            | 31.51            | 36.46        |
| 50-59 yrs | Count  | 122              | 190              | 167              | 179              | 658          |
|           | % year | 34.96            | 34.36            | 39.86            | 35.03            | 35.92        |
| 60-65 yrs | Count  | 3                | 7                | 0                | 2                | 12           |
|           | % year | 0.86             | 1.27             | 0.00             | 0.39             | 0.66         |
| Total     | Count  | 349              | 553              | 419              | 511              | 1832         |
|           | % year | 100              | 100              | 100              | 100              | 100          |

**Table 16: Total paid for new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|                      |        | <b>2002/2003</b> | <b>2003/2004</b> | <b>2004/2005</b> | <b>2005/2006</b> | <b>Total</b> |
|----------------------|--------|------------------|------------------|------------------|------------------|--------------|
| No payment           | Count  | 35               | 24               | 22               | 1                | 82           |
|                      | % year | 14.34            | 8.16             | 8.49             | 0.28             | 7.14         |
| \$1-\$100            | Count  | 20               | 21               | 20               | 14               | 75           |
|                      | % year | 8.20             | 7.14             | 7.72             | 3.99             | 6.53         |
| \$101-\$500          | Count  | 64               | 93               | 77               | 78               | 312          |
|                      | % year | 26.23            | 31.63            | 29.73            | 22.22            | 27.18        |
| \$501-\$1000         | Count  | 33               | 41               | 37               | 32               | 143          |
|                      | % year | 13.52            | 13.95            | 14.29            | 9.12             | 12.46        |
| \$1001-\$5000        | Count  | 54               | 62               | 56               | 100              | 272          |
|                      | % year | 22.13            | 21.09            | 21.62            | 28.49            | 23.69        |
| \$5001-\$10000       | Count  | 23               | 20               | 18               | 42               | 103          |
|                      | % year | 9.43             | 6.80             | 6.95             | 11.97            | 8.97         |
| \$10001-\$20000      | Count  | 13               | 20               | 19               | 36               | 88           |
|                      | % year | 5.33             | 6.80             | 7.34             | 10.26            | 7.67         |
| >\$20000             | Count  | 2                | 13               | 10               | 48               | 73           |
|                      | % year | 0.82             | 4.42             | 3.86             | 13.68            | 6.36         |
| Total                | Count  | 244              | 294              | 259              | 351              | 1148         |
|                      | % year | 100              | 100              | 100              | 100              | 100          |
| Mean total paid (\$) | Mean   | 2250.10          | 3575.62          | 3488.76          | 9734.55          | 5157.38      |
|                      | s.d.   | 4145.03          | 8829.89          | 7582.13          | 23761.09         | 14773.22     |
|                      | n      | 244              | 294              | 259              | 351              | 1148         |

**Table 17: Total paid for new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|----------------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment           | Count  | 16        | 6         | 13        | 1         | 36       |
|                      | % year | 23.88     | 5.77      | 14.13     | 1.32      | 10.62    |
| \$1-\$100            | Count  | 7         | 6         | 6         | 4         | 23       |
|                      | % year | 10.45     | 5.77      | 6.52      | 5.26      | 6.78     |
| \$101-\$500          | Count  | 15        | 23        | 14        | 14        | 66       |
|                      | % year | 22.39     | 22.12     | 15.22     | 18.42     | 19.47    |
| \$501-\$1000         | Count  | 6         | 16        | 14        | 7         | 43       |
|                      | % year | 8.96      | 15.38     | 15.22     | 9.21      | 12.68    |
| \$1001-\$5000        | Count  | 14        | 35        | 28        | 12        | 89       |
|                      | % year | 20.90     | 33.65     | 30.43     | 15.79     | 26.25    |
| \$5001-\$10000       | Count  | 3         | 8         | 6         | 12        | 29       |
|                      | % year | 4.48      | 7.69      | 6.52      | 15.79     | 8.55     |
| \$10001-\$20000      | Count  | 4         | 5         | 6         | 12        | 27       |
|                      | % year | 5.97      | 4.81      | 6.52      | 15.79     | 7.96     |
| >\$20000             | Count  | 2         | 5         | 5         | 14        | 26       |
|                      | % year | 2.99      | 4.81      | 5.43      | 18.42     | 7.67     |
| Total                | Count  | 67        | 104       | 92        | 76        | 339      |
|                      | % year | 100       | 100       | 100       | 100       | 100      |
| Mean total paid (\$) | Mean   | 2437.49   | 3722.49   | 3679.76   | 13914.63  | 5741.89  |
|                      | s.d.   | 5290.16   | 7465.48   | 6982.45   | 27263.54  | 14835.89 |
|                      | n      | 67        | 104       | 92        | 76        | 339      |

**Table 18: Total paid for new claims in the coal sector for Other muscular stress showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|----------------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment           | Count  | 69        | 56        | 36        | 3         | 164      |
|                      | % year | 19.77     | 10.13     | 8.59      | 0.59      | 8.95     |
| \$1-\$100            | Count  | 31        | 45        | 27        | 18        | 121      |
|                      | % year | 8.88      | 8.14      | 6.44      | 3.52      | 6.60     |
| \$101-\$500          | Count  | 82        | 151       | 113       | 109       | 455      |
|                      | % year | 23.50     | 27.31     | 26.97     | 21.33     | 24.84    |
| \$501-\$1000         | Count  | 61        | 78        | 71        | 72        | 282      |
|                      | % year | 17.48     | 14.10     | 16.95     | 14.09     | 15.39    |
| \$1001-\$5000        | Count  | 75        | 150       | 116       | 131       | 472      |
|                      | % year | 21.49     | 27.12     | 27.68     | 25.64     | 25.76    |
| \$5001-\$10000       | Count  | 15        | 31        | 26        | 65        | 137      |
|                      | % year | 4.30      | 5.61      | 6.21      | 12.72     | 7.48     |
| \$10001-\$20000      | Count  | 12        | 24        | 16        | 59        | 111      |
|                      | % year | 3.44      | 4.34      | 3.82      | 11.55     | 6.06     |
| >\$20000             | Count  | 4         | 18        | 14        | 54        | 90       |
|                      | % year | 1.15      | 3.25      | 3.34      | 10.57     | 4.91     |
| Total                | Count  | 349       | 553       | 419       | 511       | 1832     |
|                      | % year | 100       | 100       | 100       | 100       | 100      |
| Mean total paid (\$) | Mean   | 1931.22   | 2881.43   | 3252.54   | 10737.00  | 4976.45  |
|                      | s.d.   | 4698.20   | 7471.08   | 9687.50   | 31319.77  | 18130.24 |
|                      | n      | 349       | 553       | 419       | 511       | 1832     |

**Table 19: Injury Outcome for new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 2         | 2         | 2         | 13        | 19    |
|  | % year | 0.82      | 0.68      | 0.77      | 3.70      | 1.66  |
| 3: Temporary disability – 6 months and over  | Count  | 0         | 7         | 2         | 2         | 11    |
|  | % year | 0.00      | 2.38      | 0.77      | 0.57      | 0.96  |
| 4: Temporary disability – Less than 6 months | Count  | 242       | 285       | 255       | 336       | 1118  |
|  | % year | 99.18     | 96.94     | 98.46     | 95.73     | 97.39 |
| Total  | Count  | 244       | 294       | 259       | 351       | 1148  |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table20: Injury Outcome for new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 1         | 0         | 0         | 2         | 3     |
|  | % year | 1.49      | 0.00      | 0.00      | 2.63      | 0.88  |
| 3: Temporary disability – 6 months and over  | Count  | 2         | 7         | 3         | 2         | 14    |
|  | % year | 2.99      | 6.73      | 3.26      | 2.63      | 4.13  |
| 4: Temporary disability – Less than 6 months | Count  | 64        | 97        | 89        | 72        | 322   |
|  | % year | 95.52     | 93.27     | 96.74     | 94.74     | 94.99 |
| Total  | Count  | 67        | 104       | 92        | 76        | 339   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table21: Injury Outcome for new claims in the coal sector for Other muscular stress showing number and percentage of claims for each year**

|  |        | <b>2002/2003</b> | <b>2003/2004</b> | <b>2004/2005</b> | <b>2005/2006</b> | <b>Total</b> |
|--|--------|------------------|------------------|------------------|------------------|--------------|
| 2: Permanent disability                      | Count  | 5                | 3                | 2                | 23               | 33           |
|  | % year | 1.43             | 0.54             | 0.48             | 4.50             | 1.80         |
| 3: Temporary disability – 6 months and over  | Count  | 3                | 12               | 6                | 2                | 23           |
|  | % year | 0.86             | 2.17             | 1.43             | 0.39             | 1.26         |
| 4: Temporary disability – Less than 6 months | Count  | 341              | 538              | 411              | 486              | 1776         |
|  | % year | 97.71            | 97.29            | 98.09            | 95.11            | 96.94        |
| Total  | Count  | 349.00           | 553              | 419              | 511              | 1832         |
|  | % year | 100              | 100              | 100              | 100              | 100          |

**Table22: Lost time for new claims in the coal sector for Falls on same level showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                 | Count  | 176       | 196       | 183       | 240       | 795   |
|                      | % year | 72.13     | 66.67     | 70.66     | 68.38     | 69.25 |
| One day or less      | Count  | 2         | 1         | 0         | 0         | 3     |
|                      | % year | 0.82      | 0.34      | 0.00      | 0.00      | 0.26  |
| 2 to 3 days          | Count  | 2         | 1         | 4         | 5         | 12    |
|                      | % year | 0.82      | 0.34      | 1.54      | 1.42      | 1.05  |
| 4 to 5 days          | Count  | 1         | 0         | 3         | 7         | 11    |
|                      | % year | 0.41      | 0.00      | 1.16      | 1.99      | 0.96  |
| 6-7 days             | Count  | 2         | 2         | 2         | 13        | 19    |
|                      | % year | 0.82      | 0.68      | 0.77      | 3.70      | 1.66  |
| >1 - 2 weeks         | Count  | 5         | 7         | 3         | 9         | 24    |
|                      | % year | 2.05      | 2.38      | 1.16      | 2.56      | 2.09  |
| >2 - 3 weeks         | Count  | 8         | 4         | 1         | 11        | 24    |
|                      | % year | 3.28      | 1.36      | 0.39      | 3.13      | 2.09  |
| >3 - 4 weeks         | Count  | 4         | 8         | 7         | 7         | 26    |
|                      | % year | 1.64      | 2.72      | 2.70      | 1.99      | 2.26  |
| >4 to 8 weeks        | Count  | 23        | 30        | 19        | 30        | 102   |
|                      | % year | 9.43      | 10.20     | 7.34      | 8.55      | 8.89  |
| >8 to 12 weeks       | Count  | 7         | 13        | 16        | 13        | 49    |
|                      | % year | 2.87      | 4.42      | 6.18      | 3.70      | 4.27  |
| >12 to 16 weeks      | Count  | 7         | 10        | 7         | 9         | 33    |
|                      | % year | 2.87      | 3.40      | 2.70      | 2.56      | 2.87  |
| >16 to 26 weeks      | Count  | 7         | 12        | 10        | 5         | 34    |
|                      | % year | 2.87      | 4.08      | 3.86      | 1.42      | 2.96  |
| >6 mths to 1 yr      | Count  | 0         | 10        | 4         | 2         | 16    |
|                      | % year | 0.00      | 3.40      | 1.54      | 0.57      | 1.39  |
| Missing              | Count  | 2         | 2         | 2         | 13        | 19    |
|                      | % year | 0.8       | 0.7       | 0.8       | 3.7       | 1.7   |
| Total                | Count  | 244       | 294       | 259       | 351       | 1148  |
|                      | % year | 100       | 100       | 100       | 100       | 100   |
| Mean lost time (wks) | Mean   | 2.01      | 3.83      | 2.85      | 1.95      | 2.65  |
|                      | s.d.   | 4.47      | 8.29      | 6.25      | 4.38      | 6.10  |
|                      | n      | 242       | 292       | 257       | 338       | 1129  |

**Table23: Lost time for new claims in the coal sector for Exposure to mechanical vibration showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                 | Count  | 46        | 71        | 67        | 53        | 237   |
|                      | % year | 68.66     | 68.27     | 72.83     | 69.74     | 69.91 |
| One day or less      | Count  | 1         | 0         | 1         | 0         | 2     |
|                      | % year | 1.49      | 0.00      | 1.09      | 0.00      | 0.59  |
| 2 to 3 days          | Count  | 0         | 1         | 0         | 5         | 6     |
|                      | % year | 0.00      | 0.96      | 0.00      | 6.58      | 1.77  |
| 4-5 days             | Count  | 0         | 0         | 0         | 0         | 0     |
|                      | % year | 0         | 0         | 0         | 0         | 0     |
| 6-7 days             | Count  | 1         | 0         | 0         | 2         | 3     |
|                      | % year | 1.49      | 0.00      | 0.00      | 2.63      | 0.88  |
| >1 - 2 weeks         | Count  | 0         | 3         | 1         | 1         | 5     |
|                      | % year | 0.00      | 2.88      | 1.09      | 1.32      | 1.47  |
| >2 - 3 weeks         | Count  | 1         | 0         | 1         | 4         | 6     |
|                      | % year | 1.49      | 0.00      | 1.09      | 5.26      | 1.77  |
| >3 - 4 weeks         | Count  | 1         | 2         | 2         | 1         | 6     |
|                      | % year | 1.49      | 1.92      | 2.17      | 1.32      | 1.77  |
| >4 to 8 weeks        | Count  | 5         | 11        | 4         | 5         | 25    |
|                      | % year | 7.46      | 10.58     | 4.35      | 6.58      | 7.37  |
| >8 to 12 weeks       | Count  | 3         | 2         | 8         | 1         | 14    |
|                      | % year | 4.48      | 1.92      | 8.70      | 1.32      | 4.13  |
| >12 to 16 weeks      | Count  | 2         | 2         | 2         | 2         | 8     |
|                      | % year | 2.99      | 1.92      | 2.17      | 2.63      | 2.36  |
| >16 to 26 weeks      | Count  | 5         | 3         | 3         | 0         | 11    |
|                      | % year | 7.46      | 2.88      | 3.26      | 0.00      | 3.24  |
| >6 mths to 1 yr      | Count  | 2         | 9         | 3         | 2         | 16    |
|                      | % year | 2.99      | 8.65      | 3.26      | 2.63      | 4.72  |
| Missing              | Count  | 1         | 0         | 0         | 2         | 3     |
|                      | % year | 1.5       | 0         | 0         | 2.6       | 0.9   |
| Total                | Count  | 67        | 104       | 92        | 76        | 339   |
|                      | % year | 100       | 100       | 100       | 100       | 100   |
| Mean lost time (wks) | Mean   | 3.73      | 4.59      | 3.40      | 2.23      | 3.58  |
|                      | s.d.   | 7.20      | 9.81      | 7.62      | 6.78      | 8.14  |
|                      | n      | 66        | 104       | 92        | 74        | 336   |

**Table24: Lost time for new claims in the coal sector for Other muscular stress showing number/percentage claims each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                 | Count  | 262       | 419       | 325       | 369       | 1375  |
|                      | % year | 75.07     | 75.77     | 77.57     | 72.21     | 75.05 |
| One day or less      | Count  | 4         | 3         | 4         | 4         | 15    |
|                      | % year | 1.15      | 0.54      | 0.95      | 0.78      | 0.82  |
| 2 to 3 days          | Count  | 4         | 1         | 4         | 5         | 14    |
|                      | % year | 1.15      | 0.18      | 0.95      | 0.98      | 0.76  |
| 4 to 5 days          | Count  | 6         | 8         | 2         | 11        | 27    |
|                      | % year | 1.72      | 1.45      | 0.48      | 2.15      | 1.47  |
| 6-7 days             | Count  | 5         | 3         | 2         | 23        | 33    |
|                      | % year | 1.43      | 0.54      | 0.48      | 4.50      | 1.80  |
| >1 - 2 weeks         | Count  | 12        | 6         | 6         | 22        | 46    |
|                      | % year | 3.44      | 1.08      | 1.43      | 4.31      | 2.51  |
| >2 - 3 weeks         | Count  | 4         | 8         | 4         | 8         | 24    |
|                      | % year | 1.15      | 1.45      | 0.95      | 1.57      | 1.31  |
| >3 - 4 weeks         | Count  | 3         | 10        | 6         | 12        | 31    |
|                      | % year | 0.86      | 1.81      | 1.43      | 2.35      | 1.69  |
| >4 to 8 weeks        | Count  | 24        | 33        | 31        | 31        | 119   |
|                      | % year | 6.88      | 5.97      | 7.40      | 6.07      | 6.50  |
| >8 to 12 weeks       | Count  | 13        | 25        | 17        | 11        | 66    |
|                      | % year | 3.72      | 4.52      | 4.06      | 2.15      | 3.60  |
| >12 to 16 weeks      | Count  | 2         | 14        | 3         | 7         | 26    |
|                      | % year | 0.57      | 2.53      | 0.72      | 1.37      | 1.42  |
| >16 to 26 weeks      | Count  | 7         | 11        | 9         | 6         | 33    |
|                      | % year | 2.01      | 1.99      | 2.15      | 1.17      | 1.80  |
| >6 mths to 1 yr      | Count  | 3         | 12        | 6         | 1         | 22    |
|                      | % year | 0.86      | 2.17      | 1.43      | 0.20      | 1.20  |
| >1 year              | Count  | 0         | 0         | 0         | 1         | 1     |
|                      | % year | 0.00      | 0.00      | 0.00      | 0.20      | 0.05  |
| Missing              | Count  | 5         | 3         | 2         | 23        | 33    |
|                      | % year | 1.4       | 0.5       | 0.5       | 4.5       | 1.8   |
| Total                | Count  | 349       | 553       | 419       | 511       | 1832  |
|                      | % year | 100       | 100       | 100       | 100       | 100   |
| Mean lost time (wks) | Mean   | 1.70      | 2.51      | 1.96      | 1.42      | 1.93  |
|                      | s.d.   | 4.65      | 6.55      | 5.50      | 4.48      | 5.46  |
|                      | n      | 344       | 550       | 417       | 488       | 1799  |

## Results: Claims from the Non-Coal sector

As shown in Table 25, the largest group of musculoskeletal claims from the Non-coal sector is for Other muscular stress. In addition claims for this type of injury have also increased over the past three years. In contrast, claims for Repetitive movement have decreased markedly over the past four years. Claims for falls on the same level have remained the same and account for around one in five claims. There were very few claims for Exposure to mechanical vibration in the Non-Coal sector. Musculoskeletal claims account for around 40 percent of all workers compensation claims in the Non-coal sector.

**Table 25: Total WorkCover workers compensation claims for each type of musculoskeletal injury for the Non-Coal sector showing the number and percentage of claims for each financial year, the total number of mining claims and percentage of all claims that are for musculoskeletal injury.**

|   |         | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|---------|-----------|-----------|-----------|-----------|-------|
| 02: Falls on the same level                 | Count   | 66        | 92        | 134       | 122       | 414   |
|   | % Year  | 20.95     | 20.04     | 22.45     | 21.71     | 21.42 |
| 27: Exposure to mechanical vibration        | Count   | 4         | 7         | 10        | 5         | 26    |
|   | % Year  | 1.27      | 1.53      | 1.68      | 0.89      | 1.35  |
| 41-43: Other Muscular stress                | Count   | 171       | 291       | 407       | 407       | 1276  |
|   | % Year  | 54.29     | 63.40     | 68.17     | 72.42     | 66.01 |
| 44: Repetitive movement, low muscle loading | Count   | 74        | 69        | 46        | 28        | 217   |
|   | % Year  | 23.49     | 15.03     | 7.71      | 4.98      | 11.23 |
| Total musculoskeletal                       | Count   | 315       | 459       | 597       | 562       | 1933  |
| Total claims                                | Count   | 801       | 1248      | 1451      | 1370      | 4870  |
| % musculoskeletal of all claims             | % Years | 39.33     | 36.78     | 41.14     | 41.02     | 39.69 |

New musculoskeletal claims in the Non-Coal sector (see Table 26) show the same distribution of types of injury as seen for Total claims, with Other muscular stressing being most common and Exposure to mechanical vibration being very uncommon. The numbers of cases for Falls on same level and Other muscular stressing were fairly similar across the years of this analysis, but the number of Repetitive movement claims reduced markedly from 2002/2003 to 2005/2006. For most injury types new claims accounted for around two-thirds of total workers compensation claims in most years. Repetitive movement injury claims were the exception as there were around twice as many old claims as new claims for this type of injury in most years. New musculoskeletal claims accounted for a similar percentage of all new claims as for the total number of musculoskeletal claims.

**Table 26: New WorkCover Workers Compensation claims for each type of musculoskeletal injury for the Non-Coal sector showing the number and percentage of claims for each financial year, the total number of mining claims and percentage of all claims that are for musculoskeletal injury.**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| Falls on same level                        | Count  | 66        | 65        | 90        | 79        | 300   |
|  | % year | 20.95     | 22.11     | 23.88     | 25.24     | 23.08 |
| Exposure to mechanical vibration           | Count  | 4         | 5         | 7         | 0         | 16    |
|  | % year | 1.27      | 1.70      | 1.85      | 0         | 1.23  |
| Other muscular stressing                   | Count  | 171       | 206       | 264       | 228       | 869   |
|  | % year | 54.29     | 70.07     | 69.84     | 72.84     | 66.85 |
| Repetitive movement with low muscle strain | Count  | 74        | 18        | 17        | 6         | 115   |
|  | % year | 23.49     | 6.12      | 4.50      | 1.92      | 8.85  |
| Total musculoskeletal claims               | Count  | 315       | 294       | 378       | 313       | 1300  |
|  | % year | 100       | 100       | 100       | 100       | 100   |
| Total claims                               |        | 798       | 813       | 898       | 789       | 3298  |
| % claims musculoskeletal                   |        | 39.47     | 36.16     | 42.09     | 39.67     | 39.42 |

The next section contains a description of the trends and in-depth analysis of the characteristics of workers compensation claims for musculoskeletal injury in the Non-coal sector. As for the previous analysis of the coal sector claims, the analysis focused on new claims.

For this sector as there were comparatively few claims for Exposure to mechanical vibration these claims were not included in the in-depth analysis.

### **In-depth analysis of new musculoskeletal workers compensation injury in the Non-coal sector**

Analysis of the Agency of injury for musculoskeletal injuries in the Non-coal sector (see Table 27 to 29) showed that the largest group of claims for Falls on same level and Repetitive movement injury claims were due to environmental agencies. Other muscular stressing claims involved mostly non-powered handtools, appliances and equipment and to a lesser extent to mobile plant and transport and materials and substances. It is notable, however that a considerable percentage of claims of each type were coded to Other and unspecified agencies. This was especially so for Repetitive movement injury claims where nearly half of cases did not have a specified agency code.

The occupations of claimant for all types of musculoskeletal injury for Non-coal (Table 30 to 32) were most commonly Intermediate production and transport workers or Labourers and related workers. There were no clear trends in claims across occupational groups during the analysis period.

The most common body location differed for each type of musculoskeletal injury (see Table 33 to 35). Around half of claims for Falls on same level involved lower limb injury, with injuries to upper limb accounting for nearly one-quarter of claims. For Other muscular stressing claims, over half involved the trunk and around one-quarter involved upper limb injury. Claims for Repetitive movement injury involved upper limbs and trunk, but around one in five involved multiple locations.

The ages of claimants for musculoskeletal injury claims for the Non-coal sector were fairly evenly distributed across the 20 to 49 age group for falls on the same level and Other muscular stressing injury types (see Table 36 to 38). Repetitive movement injury claims tended to involve older claimants, especially in the 40 to 49 years age group.

The total paid for each type of musculoskeletal injury claim is detailed in Tables 39 to 41. The results show that almost all musculoskeletal claims in the Non-coal sector involved some compensation payment. Even though around half of the claims for each type of injury were paid less than \$5,000 in total, a significant percentage of claims were for more than \$10,000. Claims for Other muscular stressing involved the highest overall amount, however, the average total claim for this type of injury decreased by around 75 percent between 2002/2003 and 2005/2006. The average amount paid for Repetitive movement injuries also decreased across the analysis period although the number of claims also decreased markedly.

Analysis of the Injury outcomes for Non-coal claims showed that the majority of musculoskeletal injury claims were temporary and involved less than six months (see Table 42 to 44). A notable minority of Falls on same level and Other muscular stressing injuries involved permanent disability. Furthermore, in 2002/2003 the majority of Repetitive movement injuries resulted in permanent disability although this decreased markedly over the study period such that none of the claims for this type of injury in 2005/2006 involved permanent disability.

Lost time injury for Non-coal musculoskeletal injury claims showed that around 40 percent of claims for Falls on same level and Other muscular stressing and around 25 percent of Repetitive movement injury claims incurred no lost time (Table 45 to 47). Only around 12 to 18 percent involved 1 to 5 days off but less than five percent involved six months or more lost time. Mean lost time was highest for Repetitive movement injury, although it was very variable between the years. Falls on same level and Other muscular stressing had very similar mean lost time with around three weeks time lost per claim on average for both injury types.

## Agency

**Table 27: Agency of injury for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 2         | 2         | 3         | 3         | 10    |
|  | % year | 3.03      | 3.08      | 3.33      | 3.80      | 3.33  |
| 2: Mobile Plant And Transport                      | Count  | 2         | 5         | 9         | 4         | 20    |
|  | % year | 3.03      | 7.69      | 10.00     | 5.06      | 6.67  |
| 3: Powered Equipment, Tools And Appliances         | Count  | 0         | 1         | 0         | 3         | 4     |
|  | % year | 0.00      | 1.54      | 0.00      | 3.80      | 1.33  |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 8         | 6         | 10        | 11        | 35    |
|  | % year | 12.12     | 9.23      | 11.11     | 13.92     | 11.67 |
| 5: Chemicals And Chemical Products                 | Count  | 0         | 1         | 1         | 0         | 2     |
|  | % year | 0.00      | 1.54      | 1.11      | 0.00      | 0.67  |
| 6: Materials And Substances                        | Count  | 8         | 9         | 9         | 4         | 30    |
|  | % year | 12.12     | 13.85     | 10.00     | 5.06      | 10.00 |
| 7: Environmental Agencies                          | Count  | 33        | 31        | 43        | 43        | 150   |
|  | % year | 50.00     | 47.69     | 47.78     | 54.43     | 50.00 |
| 8: Animal, Human And Biological Agencies           | Count  | 1         | 0         | 1         | 4         | 6     |
|  | % year | 1.52      | 0.00      | 1.11      | 5.06      | 2.00  |
| 9: Other And Unspecified Agencies                  | Count  | 12        | 10        | 14        | 7         | 43    |
|  | % year | 18.18     | 15.38     | 15.56     | 8.86      | 14.33 |
| Total  | Count  | 66        | 65        | 90        | 79        | 300   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table 28: Agency of injury for new claims in the Non-coal sector for Other muscle stressing showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 13        | 15        | 16        | 17        | 61    |
|  | % year | 7.60      | 7.28      | 6.06      | 7.46      | 7.02  |
| 2: Mobile Plant And Transport                      | Count  | 30        | 31        | 48        | 40        | 149   |
|  | % year | 17.54     | 15.05     | 18.18     | 17.54     | 17.15 |
| 3: Powered Equipment, Tools And Appliances         | Count  | 9         | 9         | 12        | 8         | 38    |
|  | % year | 5.26      | 4.37      | 4.55      | 3.51      | 4.37  |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 36        | 61        | 85        | 58        | 240   |
|  | % year | 21.05     | 29.61     | 32.20     | 25.44     | 27.62 |
| 5: Chemicals And Chemical Products                 | Count  | 1         | 3         | 1         | 1         | 6     |
|  | % year | 0.58      | 1.46      | 0.38      | 0.44      | 0.69  |
| 6: Materials And Substances                        | Count  | 24        | 38        | 49        | 52        | 163   |
|  | % year | 14.04     | 18.45     | 18.56     | 22.81     | 18.76 |
| 7: Environmental Agencies                          | Count  | 8         | 7         | 7         | 6         | 28    |
|  | % year | 4.68      | 3.40      | 2.65      | 2.63      | 3.22  |
| 8: Animal, Human And Biological Agencies           | Count  | 1         | 3         | 1         | 6         | 11    |
|  | % year | 0.58      | 1.46      | 0.38      | 2.63      | 1.27  |
| 9: Other And Unspecified Agencies                  | Count  | 49        | 39        | 45        | 40        | 173   |
|  | % year | 28.65     | 18.93     | 17.05     | 17.54     | 19.91 |
| Total  | Count  | 171       | 206       | 264       | 228       | 869   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table 29: Agency of injury for new claims in the Non-coal sector for Repetitive movement, with low muscle strain showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 1         | 1         | 0         | 0         | 2     |
|  | % year | 1.35      | 5.56      | 0.00      | 0.00      | 1.74  |
| 2: Mobile Plant And Transport                      | Count  | 3         | 4         | 0         | 0         | 7     |
|  | % year | 4.05      | 22.22     | 0.00      | 0.00      | 6.09  |
| 3: Powered Equipment, Tools And Appliances         | Count  | 1         | 0         | 4         | 3         | 8     |
|  | % year | 1.35      | 0.00      | 23.53     | 50.00     | 6.96  |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 2         | 1         | 2         | 1         | 6     |
|  | % year | 2.70      | 5.56      | 11.76     | 16.67     | 5.22  |
| 6: Materials And Substances                        | Count  | 1         | 0         | 1         | 0         | 2     |
|  | % year | 1.35      | 0.00      | 5.88      | 0.00      | 1.74  |
| 7: Environmental Agencies                          | Count  | 37        | 0         | 0         | 0         | 37    |
|  | % year | 50.00     | 0.00      | 0.00      | 0.00      | 32.17 |
| 9: Other And Unspecified Agencies                  | Count  | 29        | 12        | 10        | 2         | 53    |
|  | % year | 39.19     | 66.67     | 58.82     | 33.33     | 46.09 |
| Total  | Count  | 74        | 18        | 17        | 6         | 115   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

## Occupation

**Table 30: Occupation of claimant for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 2         | 3         | 4         | 3         | 12    |
|   | % year | 3.03      | 4.62      | 4.44      | 3.80      | 4.00  |
| 2: Professionals                                    | Count  | 4         | 2         | 4         | 8         | 18    |
|   | % year | 6.06      | 3.08      | 4.44      | 10.13     | 6.00  |
| 3: Associate Professionals                          | Count  | 1         | 2         | 6         | 3         | 12    |
|   | % year | 1.52      | 3.08      | 6.67      | 3.80      | 4.00  |
| 4: Tradespersons And Related Workers                | Count  | 9         | 15        | 11        | 15        | 50    |
|   | % year | 13.64     | 23.08     | 12.22     | 18.99     | 16.67 |
| 5: Advanced Clerical And Service Workers            | Count  | 1         | 0         | 0         | 0         | 1     |
|   | % year | 1.52      | 0.00      | 0.00      | 0.00      | 0.33  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 5         | 0         | 1         | 6         | 12    |
|   | % year | 7.58      | 0.00      | 1.11      | 7.59      | 4.00  |
| 7: Intermediate Production And Transport Workers    | Count  | 31        | 24        | 26        | 22        | 103   |
|   | % year | 46.97     | 36.92     | 28.89     | 27.85     | 34.33 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 1         | 0         | 1         | 1         | 3     |
|   | % year | 1.52      | 0.00      | 1.11      | 1.27      | 1.00  |
| 9: Labourers And Related Workers                    | Count  | 12        | 19        | 37        | 21        | 89    |
|   | % year | 18.18     | 29.23     | 41.11     | 26.58     | 29.67 |
| Total   | Count  | 66        | 65        | 90        | 79        | 300   |
|   | % year | 100       | 100       | 100       | 100       | 100   |

**Table 31: Occupation of claimant for new claims in the Non-coal sector for Other muscle stressing showing number and percentage of claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 5         | 8         | 5         | 7         | 25    |
|   | % year | 2.92      | 3.88      | 1.89      | 3.07      | 2.88  |
| 2: Professionals                                    | Count  | 11        | 5         | 11        | 13        | 40    |
|   | % year | 6.43      | 2.43      | 4.17      | 5.70      | 4.60  |
| 3: Associate Professionals                          | Count  | 6         | 3         | 6         | 8         | 23    |
|   | % year | 3.51      | 1.46      | 2.27      | 3.51      | 2.65  |
| 4: Tradespersons And Related Workers                | Count  | 24        | 25        | 39        | 37        | 125   |
|   | % year | 14.04     | 12.14     | 14.77     | 16.23     | 14.38 |
| 5: Advanced Clerical And Service Workers            | Count  | 1         | 1         | 1         | 0         | 3     |
|   | % year | 0.58      | 0.49      | 0.38      | 0.00      | 0.35  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 5         | 6         | 4         | 1         | 16    |
|   | % year | 2.92      | 2.91      | 1.52      | 0.44      | 1.84  |
| 7: Intermediate Production And Transport Workers    | Count  | 74        | 86        | 92        | 85        | 337   |
|   | % year | 43.27     | 41.75     | 34.85     | 37.28     | 38.78 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 1         | 4         | 0         | 1         | 6     |
|   | % year | 0.58      | 1.94      | 0.00      | 0.44      | 0.69  |
| 9: Labourers And Related Workers                    | Count  | 43        | 68        | 106       | 76        | 293   |
|   | % year | 25.15     | 33.01     | 40.15     | 33.33     | 33.72 |
| Other   | Count  | 1         | 0         | 0         | 0         | 1     |
|   | % year | 0.58      | 0.00      | 0.00      | 0.00      | 0.12  |
| Total   | Count  | 171       | 206       | 264       | 228       | 869   |
|   | % year | 100       | 100       | 100       | 100       | 100   |

**Table 32: Occupation of claimant for new claims in the Non-coal sector for Repetitive movement with low muscle strain showing number and percentage of claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 2         | 1         | 0         | 0         | 3     |
|   | % year | 2.70      | 5.56      | 0.00      | 0.00      | 2.61  |
| 2: Professionals                                    | Count  | 1         | 1         | 1         | 2         | 5     |
|   | % year | 1.35      | 5.56      | 5.88      | 33.33     | 4.35  |
| 3: Associate Professionals                          | Count  | 0         | 0         | 2         | 0         | 2     |
|   | % year | 0.00      | 0.00      | 11.76     | 0.00      | 1.74  |
| 4: Tradespersons And Related Workers                | Count  | 1         | 1         | 2         | 2         | 6     |
|   | % year | 1.35      | 5.56      | 11.76     | 33.33     | 5.22  |
| 5: Advanced Clerical And Service Workers            | Count  | 0         | 1         | 1         | 0         | 2     |
|   | % year | 0.00      | 5.56      | 5.88      | 0.00      | 1.74  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 1         | 0         | 3         | 1         | 5     |
|   | % year | 1.35      | 0.00      | 17.65     | 16.67     | 4.35  |
| 7: Intermediate Production And Transport Workers    | Count  | 24        | 11        | 1         | 0         | 36    |
|   | % year | 32.43     | 61.11     | 5.88      | 0.00      | 31.30 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 2         | 0         | 1         | 0         | 3     |
|   | % year | 2.70      | 0.00      | 5.88      | 0.00      | 2.61  |
| 9: Labourers And Related Workers                    | Count  | 43        | 3         | 6         | 1         | 53    |
|   | % year | 58.11     | 16.67     | 35.29     | 16.67     | 46.09 |
| Total   | Count  | 74        | 18        | 17        | 6         | 115   |
|   | % year | 100       | 100       | 100       | 100       | 100   |

## Body location

**Table 33: Body location of injury for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|                    |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--------------------|--------|-----------|-----------|-----------|-----------|-------|
| Head               | Count  | 0         | 3         | 6         | 3         | 12    |
|                    | % year | 0.00      | 4.69      | 6.67      | 3.80      | 4.03  |
| Neck               | Count  | 0         | 2         | 2         | 1         | 5     |
|                    | % year | 0.00      | 3.13      | 2.22      | 1.27      | 1.68  |
| Trunk              | Count  | 12        | 10        | 14        | 14        | 50    |
|                    | % year | 18.46     | 15.63     | 15.56     | 17.72     | 16.78 |
| Upper limbs        | Count  | 12        | 17        | 19        | 18        | 66    |
|                    | % year | 18.46     | 26.56     | 21.11     | 22.78     | 22.15 |
| Lower limbs        | Count  | 37        | 29        | 43        | 39        | 148   |
|                    | % year | 56.92     | 45.31     | 47.78     | 49.37     | 49.66 |
| Multiple locations | Count  | 4         | 3         | 6         | 4         | 17    |
|                    | % year | 6.16      | 4.69      | 6.67      | 5.06      | 5.70  |
| Total              | Count  | 65        | 64        | 90        | 79        | 298   |
|                    | % year | 100       | 100       | 100       | 100       | 100   |

**Table 34: Body location of injury for new claims in the Non-coal sector for Other muscular stressing showing number and percentage of claims for each year**

|                    |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--------------------|--------|-----------|-----------|-----------|-----------|-------|
| Neck               | Count  | 2         | 6         | 9         | 5         | 22    |
|                    | % year | 1.20      | 3.03      | 3.50      | 2.23      | 2.60  |
| Trunk              | Count  | 112       | 121       | 148       | 137       | 518   |
|                    | % year | 67.07     | 61.11     | 57.59     | 61.16     | 61.23 |
| Upper limbs        | Count  | 30        | 46        | 67        | 57        | 200   |
|                    | % year | 17.96     | 23.23     | 26.07     | 25.45     | 23.64 |
| Lower limbs        | Count  | 14        | 17        | 22        | 11        | 64    |
|                    | % year | 8.38      | 8.59      | 8.56      | 4.91      | 7.57  |
| Multiple locations | Count  | 9         | 8         | 11        | 14        | 42    |
|                    | % year | 5.39      | 4.05      | 4.28      | 6.25      | 4.97  |
| Total              | Count  | 167       | 198       | 257       | 224       | 846   |
|                    | % year | 100       | 100       | 100       | 100       | 100   |

**Table 35: Body location of injury for new claims in the Non-coal sector for Repetitive movement with low muscle strain showing number and percentage of claims for each year**

|                    |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--------------------|--------|-----------|-----------|-----------|-----------|-------|
| Neck               | Count  | 4         | 0         | 1         | 0         | 5     |
|                    | % year | 5.48      | 0.00      | 5.88      | 0.00      | 4.42  |
| Trunk              | Count  | 25        | 6         | 1         | 3         | 35    |
|                    | % year | 34.25     | 33.33     | 5.88      | 60.00     | 30.97 |
| Upper limbs        | Count  | 20        | 7         | 12        | 2         | 41    |
|                    | % year | 27.40     | 38.89     | 70.59     | 40.00     | 36.28 |
| Lower limbs        | Count  | 8         | 0         | 2         | 0         | 10    |
|                    | % year | 10.96     | 0.00      | 11.76     | 0.00      | 8.85  |
| Multiple locations | Count  | 16        | 5         | 1         | 0         | 22    |
|                    | % year | 21.92     | 27.78     | 5.88      | 0.00      | 19.47 |
| Total              | Count  | 73        | 18        | 17        | 5         | 113   |
|                    | % year | 100       | 100       | 100       | 100       | 100   |

## Age group

**Table 36: Age group of claimant for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| Missing   | Count  | 1         | 1         | 3         | 0         | 5     |
|           | % year | 1.52      | 1.54      | 3.33      | 0.00      | 1.67  |
| 15-19 yrs | Count  | 1         | 1         | 5         | 1         | 8     |
|           | % year | 1.52      | 1.54      | 5.56      | 1.27      | 2.67  |
| 20-29 yrs | Count  | 12        | 16        | 22        | 22        | 72    |
|           | % year | 18.18     | 24.62     | 24.44     | 27.85     | 24.00 |
| 30-39 yrs | Count  | 21        | 18        | 29        | 22        | 90    |
|           | % year | 31.82     | 27.69     | 32.22     | 27.85     | 30.00 |
| 40-49 yrs | Count  | 15        | 19        | 14        | 18        | 66    |
|           | % year | 22.73     | 29.23     | 15.56     | 22.78     | 22.00 |
| 50-59 yrs | Count  | 15        | 8         | 15        | 14        | 52    |
|           | % year | 22.73     | 12.31     | 16.67     | 17.72     | 17.33 |
| 60-65 yrs | Count  | 1         | 2         | 2         | 2         | 7     |
|           | % year | 1.52      | 3.08      | 2.22      | 2.53      | 2.33  |
| Total     | Count  | 66        | 65        | 90        | 79        | 300   |
|           | % year | 100       | 100       | 100       | 100       | 100   |

**Table 37: Age group of claimant for new claims in the Non-coal sector for Other muscular stressing showing number and percentage of claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 2         | 10        | 4         | 5         | 21    |
|           | % year | 1.17      | 4.85      | 1.52      | 2.19      | 2.42  |
| 20-29 yrs | Count  | 39        | 32        | 56        | 47        | 174   |
|           | % year | 22.81     | 15.53     | 21.21     | 20.61     | 20.02 |
| 30-39 yrs | Count  | 41        | 64        | 93        | 51        | 249   |
|           | % year | 23.98     | 31.07     | 35.23     | 22.37     | 28.65 |
| 40-49 yrs | Count  | 50        | 62        | 62        | 84        | 258   |
|           | % year | 29.24     | 30.10     | 23.48     | 36.84     | 29.69 |
| 50-59 yrs | Count  | 34        | 33        | 36        | 36        | 139   |
|           | % year | 19.88     | 16.02     | 13.64     | 15.79     | 16.00 |
| 60-65 yrs | Count  | 2         | 4         | 8         | 3         | 17    |
|           | % year | 1.17      | 1.94      | 3.03      | 1.32      | 1.96  |
| Total     | Count  | 169       | 205       | 259       | 226       | 858   |
|           | % year | 100       | 100       | 100       | 100       | 100   |

**Table 38: Age group of claimant for new claims in the Non-coal sector for Repetitive movement with low muscle strain showing number and percentage of claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 20-29 yrs | Count  | 2         | 3         | 3         | 1         | 9     |
|           | % year | 2.70      | 16.67     | 17.65     | 16.67     | 7.83  |
| 30-39 yrs | Count  | 9         | 4         | 5         | 4         | 22    |
|           | % year | 12.16     | 22.22     | 29.41     | 66.67     | 19.13 |
| 40-49 yrs | Count  | 32        | 5         | 7         | 1         | 45    |
|           | % year | 43.24     | 27.78     | 41.18     | 16.67     | 39.13 |
| 50-59 yrs | Count  | 26        | 5         | 2         | 0         | 33    |
|           | % year | 35.14     | 27.78     | 11.76     | 0.00      | 28.70 |
| 60-65 yrs | Count  | 4         | 1         | 0         | 0         | 5     |
|           | % year | 5.41      | 5.56      | 0.00      | 0.00      | 4.35  |
| Total     | Count  | 73        | 18        | 17        | 6         | 114   |
|           | % year | 100       | 100       | 100       | 100       | 100   |

**Total amount paid**

**Table 39: Total paid for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|----------------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment           | Count  | 1         | 0         | 0         | 1         | 2        |
|                      | % year | 1.52      | 0.00      | 0.00      | 1.27      | 0.67     |
| \$1-\$100            | Count  | 7         | 4         | 5         | 2         | 18       |
|                      | % year | 10.61     | 6.15      | 5.56      | 2.53      | 6.00     |
| \$101-\$500          | Count  | 16        | 17        | 28        | 16        | 77       |
|                      | % year | 24.24     | 26.15     | 31.11     | 20.25     | 25.67    |
| \$501-\$1000         | Count  | 7         | 9         | 11        | 12        | 39       |
|                      | % year | 10.61     | 13.85     | 12.22     | 15.19     | 13.00    |
| \$1001-\$5000        | Count  | 20        | 20        | 28        | 22        | 90       |
|                      | % year | 30.30     | 30.77     | 31.11     | 27.85     | 30.00    |
| \$5001-\$10000       | Count  | 3         | 5         | 6         | 7         | 21       |
|                      | % year | 4.55      | 7.69      | 6.67      | 8.86      | 7.00     |
| \$10001-\$20000      | Count  | 8         | 5         | 5         | 10        | 28       |
|                      | % year | 12.12     | 7.69      | 5.56      | 12.66     | 9.33     |
| >\$20000             | Count  | 4         | 5         | 7         | 9         | 25       |
|                      | % year | 6.06      | 7.69      | 7.78      | 11.39     | 8.33     |
| Total                | Count  | 66        | 65        | 90        | 79        | 300      |
|                      | % year | 100       | 100       | 100       | 100       | 100      |
| Mean total paid (\$) | Mean   | 7885.69   | 7251.59   | 4522.40   | 7525.81   | 6644.55  |
|                      | s.d.   | 20472.29  | 20405.86  | 8525.79   | 12475.72  | 15635.24 |
|                      | n      | 66        | 65        | 90        | 79        | 300      |

**Table 40: Total paid for new claims in the Non-coal sector for Other muscular stressing showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|----------------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment           | Count  | 2         | 0         | 1         | 2         | 5        |
|                      | % year | 1.17      | 0.00      | 0.38      | 0.88      | 0.58     |
| \$1-\$100            | Count  | 16        | 8         | 7         | 8         | 39       |
|                      | % year | 9.36      | 3.88      | 2.65      | 3.51      | 4.49     |
| \$101-\$500          | Count  | 33        | 49        | 64        | 54        | 200      |
|                      | % year | 19.30     | 23.79     | 24.24     | 23.68     | 23.01    |
| \$501-\$1000         | Count  | 19        | 29        | 41        | 34        | 123      |
|                      | % year | 11.11     | 14.08     | 15.53     | 14.91     | 14.15    |
| \$1001-\$5000        | Count  | 37        | 51        | 72        | 72        | 232      |
|                      | % year | 21.64     | 24.76     | 27.27     | 31.58     | 26.70    |
| \$5001-\$10000       | Count  | 19        | 22        | 29        | 26        | 96       |
|                      | % year | 11.11     | 10.68     | 10.98     | 11.40     | 11.05    |
| \$10001-\$20000      | Count  | 10        | 13        | 18        | 14        | 55       |
|                      | % year | 5.85      | 6.31      | 6.82      | 6.14      | 6.33     |
| >\$20000             | Count  | 35        | 34        | 31        | 18        | 118      |
|                      | % year | 20.47     | 16.50     | 11.74     | 7.89      | 13.58    |
| Total                | Count  | 0         | 0         | 1         | 0         | 1        |
|                      | % year | 0.00      | 0.00      | 0.38      | 0.00      | 0.12     |
| Total                | Count  | 171       | 206       | 264       | 228       | 869      |
|                      | % year | 100       | 100       | 100       | 100       | 100      |
| Mean Total paid (\$) | Mean   | 31314.26  | 15534.22  | 15034.34  | 8296.40   | 16588.53 |
|                      | s.d.   | 72469.32  | 37818.66  | 57231.23  | 28847.75  | 51363.60 |
|                      | n      | 171       | 206       | 264       | 228       | 869      |

**Table 41: Total paid for new claims in the Non-coal sector for Repetitive movement with low muscle strain showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total     |
|----------------------|--------|-----------|-----------|-----------|-----------|-----------|
| \$1-\$100            | Count  | 1         | 0         | 0         | 0         | 1         |
|                      | % year | 1.35      | 0.00      | 0.00      | 0.00      | 0.87      |
| \$101-\$500          | Count  | 5         | 4         | 3         | 0         | 12        |
|                      | % year | 6.76      | 22.22     | 17.65     | 0.00      | 10.43     |
| \$501-\$1000         | Count  | 0         | 1         | 0         | 1         | 2         |
|                      | % year | 0.00      | 5.56      | 0.00      | 16.67     | 1.74      |
| \$1001-\$5000        | Count  | 5         | 1         | 6         | 5         | 17        |
|                      | % year | 6.76      | 5.56      | 35.29     | 83.33     | 14.78     |
| \$5001-\$10000       | Count  | 4         | 2         | 3         | 0         | 9         |
|                      | % year | 5.41      | 11.11     | 17.65     | 0.00      | 7.83      |
| \$10001-\$20000      | Count  | 2         | 2         | 2         | 0         | 6         |
|                      | % year | 2.70      | 11.11     | 11.76     | 0.00      | 5.22      |
| >\$20000             | Count  | 57        | 8         | 3         | 0         | 68        |
|                      | % year | 77.03     | 44.44     | 17.65     | 0.00      | 59.13     |
| Total                | Count  | 74        | 18        | 17        | 6         | 115       |
|                      | % year | 100       | 100       | 100       | 100       | 100       |
| Mean Total paid (\$) | Mean   | 117622.00 | 45111.70  | 11199.15  | 2936.65   | 84556.90  |
|                      | s.d.   | 114609.70 | 79455.92  | 15994.40  | 1570.79   | 107224.90 |
|                      | n      | 74        | 18        | 17        | 6         | 115       |

## Injury Outcome

**Table 42: Injury Outcome for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 6         | 5         | 8         | 12        | 31    |
|  | % year | 9.09      | 7.69      | 8.89      | 15.19     | 10.33 |
| 3: Temporary disability – 6 months and over  | Count  | 0         | 1         | 1         | 2         | 4     |
|  | % year | 0.00      | 1.54      | 1.11      | 2.53      | 1.33  |
| 4: Temporary disability – Less than 6 months | Count  | 60        | 59        | 81        | 65        | 265   |
|  | % year | 90.91     | 90.77     | 90.00     | 82.28     | 88.33 |
| Total  | Count  | 66        | 65        | 90        | 79        | 300   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table 43: Injury Outcome for new claims in the Non-coal sector for Other muscular stressing showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 30        | 33        | 25        | 20        | 108   |
|  | % year | 17.54     | 16.02     | 9.47      | 8.77      | 12.43 |
| 3: Temporary disability - 6 months and over  | Count  | 6         | 6         | 8         | 7         | 27    |
|  | % year | 3.51      | 2.91      | 3.03      | 3.07      | 3.11  |
| 4: Temporary disability - Less than 6 months | Count  | 135       | 167       | 231       | 201       | 734   |
|  | % year | 78.95     | 81.07     | 87.50     | 88.16     | 84.46 |
| Total  | Count  | 171       | 206       | 264       | 228       | 869   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table 44: Injury Outcome for new claims in the Non-coal sector for Repetitive movement with low muscle strain showing number and percentage of claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 58        | 7         | 4         | 0         | 69    |
|  | % year | 78.38     | 38.89     | 23.53     | 0.00      | 60.00 |
| 3: Temporary disability - 6 months and over  | Count  | 0         | 3         | 2         | 0         | 5     |
|  | % year | 0.00      | 16.67     | 11.76     | 0.00      | 4.35  |
| 4: Temporary disability - Less than 6 months | Count  | 16        | 8         | 11        | 6         | 41    |
|  | % year | 21.62     | 44.44     | 64.71     | 100.00    | 35.65 |
| Total  | Count  | 74        | 18        | 17        | 6         | 115   |
|  | % year | 100       | 100       | 100       | 100       | 100   |

## Lost time

**Table 45: Lost time for new claims in the Non-coal sector for Falls on same level showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                 | Count  | 27        | 23        | 35        | 31        | 116   |
|                      | % year | 40.91     | 35.38     | 38.89     | 39.24     | 38.67 |
| One day or less      | Count  | 5         | 7         | 2         | 4         | 18    |
|                      | % year | 7.58      | 10.77     | 2.22      | 5.06      | 6.00  |
| 2 to 5 days          | Count  | 7         | 8         | 12        | 8         | 35    |
|                      | % year | 10.61     | 12.31     | 13.33     | 10.13     | 11.67 |
| 6 to 7 days          | Count  | 6         | 5         | 8         | 12        | 31    |
|                      | % year | 9.09      | 7.69      | 8.89      | 15.19     | 10.33 |
| >1 - 2 weeks         | Count  | 6         | 6         | 7         | 4         | 23    |
|                      | % year | 9.09      | 9.23      | 7.78      | 5.06      | 7.67  |
| >2 - 3 weeks         | Count  | 4         | 0         | 5         | 0         | 9     |
|                      | % year | 6.06      | 0.00      | 5.56      | 0.00      | 3.00  |
| >3 - 4 weeks         | Count  | 3         | 1         | 4         | 5         | 13    |
|                      | % year | 4.55      | 1.54      | 4.44      | 6.33      | 4.33  |
| >4 to 8 weeks        | Count  | 4         | 8         | 4         | 7         | 23    |
|                      | % year | 6.06      | 12.31     | 4.44      | 8.86      | 7.67  |
| >8 to 12 weeks       | Count  | 2         | 3         | 4         | 4         | 13    |
|                      | % year | 3.03      | 4.62      | 4.44      | 5.06      | 4.33  |
| >12 to 16 weeks      | Count  | 0         | 3         | 4         | 1         | 8     |
|                      | % year | 0.00      | 4.62      | 4.44      | 1.27      | 2.67  |
| >16 to 26 weeks      | Count  | 2         | 0         | 4         | 1         | 7     |
|                      | % year | 3.03      | 0.00      | 4.44      | 1.27      | 2.33  |
| >6 mths to 1 yr      | Count  | 0         | 1         | 0         | 2         | 3     |
|                      | % year | 0.00      | 1.54      | 0.00      | 2.53      | 1.00  |
| >1 year              | Count  | 0         | 0         | 1         | 0         | 1     |
|                      | % year | 0.00      | 0.00      | 1.11      | 0.00      | 0.33  |
| Missing              | Count  | 6         | 5         | 8         | 12        | 31    |
|                      | % year | 9.09      | 7.69      | 8.89      | 15.19     | 10.33 |
| Total                | Count  | 66        | 65        | 90        | 79        | 300   |
|                      | % year | 100       | 100       | 100       | 100       | 100   |
| Mean Lost time (wks) | Mean   | 1.86      | 3.05      | 3.70      | 3.18      | 3.01  |
|                      | s.d.   | 3.71      | 6.74      | 7.81      | 6.47      | 6.49  |
|                      | n      | 60        | 60        | 82        | 67        | 269   |

**Table 46: Lost time for new claims in the Non-coal sector for Other muscular stressing showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total  |
|----------------------|--------|-----------|-----------|-----------|-----------|--------|
| None                 | Count  | 79        | 85        | 118       | 106       | 388    |
|                      | % year | 46.20     | 41.26     | 44.70     | 46.49     | 44.65  |
| One day or less      | Count  | 9         | 14        | 14        | 12        | 49     |
|                      | % year | 5.26      | 6.80      | 5.30      | 5.26      | 5.64   |
| 2 to 5 days          | Count  | 17        | 22        | 22        | 30        | 93     |
|                      | % year | 12.1      | 10.70     | 8.33      | 13.15     | 10.61  |
| 6 to 7 days          | Count  | 30        | 35        | 26        | 20        | 111    |
|                      | % year | 17.544    | 16.990    | 9.848     | 8.772     | 12.773 |
| >1 - 2 weeks         | Count  | 11        | 6         | 19        | 16        | 52     |
|                      | % year | 6.433     | 2.913     | 7.197     | 7.018     | 5.984  |
| >2 - 3 weeks         | Count  | 3         | 5         | 9         | 9         | 26     |
|                      | % year | 1.754     | 2.427     | 3.409     | 3.947     | 2.992  |
| >3 - 4 weeks         | Count  | 3         | 5         | 6         | 4         | 18     |
|                      | % year | 1.754     | 2.427     | 2.273     | 1.754     | 2.071  |
| >4 to 8 weeks        | Count  | 7         | 12        | 19        | 8         | 46     |
|                      | % year | 4.094     | 5.825     | 7.197     | 3.509     | 5.293  |
| >8 to 12 weeks       | Count  | 1         | 6         | 12        | 5         | 24     |
|                      | % year | 0.585     | 2.913     | 4.545     | 2.193     | 2.762  |
| >12 to 16 weeks      | Count  | 3         | 6         | 2         | 2         | 13     |
|                      | % year | 1.754     | 2.913     | 0.758     | 0.877     | 1.496  |
| >16 to 26 weeks      | Count  | 0         | 6         | 10        | 9         | 25     |
|                      | % year | 0.000     | 2.913     | 3.788     | 3.947     | 2.877  |
| >6 mths to 1 yr      | Count  | 3         | 2         | 7         | 6         | 18     |
|                      | % year | 1.754     | 0.971     | 2.652     | 2.632     | 2.071  |
| >1 year              | Count  | 3         | 2         | 0         | 1         | 6      |
|                      | % year | 1.754     | 0.971     | 0.000     | 0.439     | 0.690  |
| Missing              | Count  | 30        | 35        | 26        | 20        | 111    |
|                      | % year | 17.54     | 16.99     | 9.85      | 8.77      | 12.77  |
| Total                | Count  | 171       | 206       | 264       | 228       | 869    |
|                      | % year | 100       | 100       | 100       | 100       | 100    |
| Mean Lost time (wks) | Mean   | 3.43      | 3.75      | 3.48      | 3.47      | 3.53   |
|                      | s.d.   | 12.28     | 11.44     | 7.79      | 11.27     | 10.54  |
|                      | n      | 141       | 171       | 238       | 208       | 758    |

**Table 47: Lost time for new claims in the Non-coal sector for Repetitive movement with low muscle strain showing number and percentage of claims for each year**

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                 | Count  | 11        | 6         | 9         | 4         | 30    |
|                      | % year | 14.86     | 33.33     | 52.94     | 66.67     | 26.09 |
| One day or less      | Count  | 1         | 0         | 0         | 0         | 1     |
|                      | % year | 1.35      | 0.00      | 0.00      | 0.00      | 0.87  |
| 2 to 3 days          | Count  | 0         | 0         | 0         | 1         | 1     |
|                      | % year | 0.00      | 0.00      | 0.00      | 16.67     | 0.87  |
| 4 to 5 days          | Count  | 0         | 0         | 0         | 0         | 0     |
|                      | % year | 0         | 0         | 0         | 0         | 0     |
| 6 to 7 days          | Count  | 58        | 7         | 4         | 0         | 69    |
|                      | % year | 78.38     | 38.89     | 23.53     | 0.00      | 60.00 |
| >1 - 2 weeks         | Count  | 2         | 1         | 0         | 0         | 3     |
|                      | % year | 2.70      | 5.56      | 0.00      | 0.00      | 2.61  |
| >2 - 3 weeks         | Count  | 0         | 1         | 0         | 1         | 2     |
|                      | % year | 0.00      | 5.56      | 0.00      | 16.67     | 1.74  |
| >3 - 4 weeks         | Count  | 0         | 0         | 0         | 0         | 0     |
|                      | % year | 0         | 0         | 0         | 0         | 0     |
| >4 to 8 weeks        | Count  | 0         | 0         | 1         | 0         | 1     |
|                      | % year | 0.00      | 0.00      | 5.88      | 0.00      | 0.87  |
| >8 to 12 weeks       | Count  | 2         | 0         | 0         | 0         | 2     |
|                      | % year | 2.70      | 0.00      | 0.00      | 0.00      | 1.74  |
| >12 to 16 weeks      | Count  | 0         | 0         | 1         | 0         | 1     |
|                      | % year | 0.00      | 0.00      | 5.88      | 0.00      | 0.87  |
| >16 to 26 weeks      | Count  | 0         | 0         | 0         | 0         | 0     |
|                      | % year | 0         | 0         | 0         | 0         | 0     |
| >6 mths to 1 yr      | Count  | 0         | 2         | 2         | 0         | 4     |
|                      | % year | 0.00      | 11.11     | 11.76     | 0.00      | 3.48  |
| >1 year              | Count  | 0         | 1         | 0         | 0         | 1     |
|                      | % year | 0.00      | 5.56      | 0.00      | 0.00      | 0.87  |
| Missing              | Count  | 58        | 7         | 4         | 0         | 69    |
|                      | % year | 78.38     | 38.89     | 23.53     | 0.00      | 60.00 |
| Total                | Count  | 74        | 18        | 17        | 6         | 115   |
|                      | % year | 100       | 100       | 100       | 100       | 100   |
| Mean Lost time (wks) | Mean   | 1.40      | 15.71     | 5.76      | 0.50      | 5.94  |
|                      | s.d.   | 3.25      | 29.90     | 10.78     | 1.03      | 16.37 |
|                      | n      | 16        | 11        | 13        | 6         | 46    |

## 2. Compensation claims from Coal Services Pty Ltd database

Data for the analysis of Workers Compensation claims to the Coal Mines Insurance Scheme were provided by Coal Services Pty Ltd. The data provided included:

- all open claims during the 1 January 2002 to 31 December 2006 including claims with an earlier date of injury
- New claim with a date of injury during 1 January 2002 to 31 December 2006

### Results: Coal Services

Analysis of the total number of Workers Compensation claims in the Coal Services dataset showed that more than half of the musculoskeletal claims were for Other muscular stressing claims and almost all of the remainder were claims for Falls on same level. (see Table 48) There were no claims for Exposure to mechanical vibration in this dataset and very few claims for Repetitive movement, low muscle loading injury. Across the years of the analysis, musculoskeletal injuries accounted for almost half of all claims, although they were less common amongst the longest claims with just less than one-third of claims prior to 1990 being due to musculoskeletal injury.

**Table 48: Total Coal Services Workers Compensation claims for each type of musculoskeletal injury showing number and percentage of claims for each year, total number of mining claims and percentage of all claims that are for musculoskeletal injury**

|  |        | <1990 | 1990 - 1999 | 2000-2001 | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|--|--------|-------|-------------|-----------|-------|-------|-------|-------|-------|-------|
| Slip same level fall                   | Count  | 45    | 414         | 350       | 467   | 361   | 336   | 400   | 395   | 2768  |
|  | % year | 37.19 | 38.62       | 36.80     | 42.15 | 38.53 | 39.72 | 42.78 | 42.38 | 40.10 |
| Exposure to mechanical vibration       | Count  | 0     | 0           | 0         | 0     | 0     | 0     | 0     | 0     | 0     |
|  | % year | 0     | 0           | 0         | 0     | 0     | 0     | 0     | 0     | 0     |
| Other muscular stressing               | Count  | 76    | 655         | 600       | 640   | 576   | 509   | 534   | 537   | 4127  |
|  | % year | 62.81 | 61.10       | 63.09     | 57.76 | 61.47 | 60.17 | 57.11 | 57.62 | 59.79 |
| Repetitive movt-low muscle strain      | Count  | 0     | 3           | 1         | 1     | 0     | 1     | 1     | 0     | 7     |
|  | % year | 0     | 0.28        | 0.11      | 0.09  | 0     | 0.12  | 0.11  | 0     | 0.10  |
| <b>Total musculoskeletal</b>           | Count  | 121   | 1072        | 951       | 1108  | 937   | 846   | 935   | 932   | 6902  |
| <b>Total claims</b>                    | Count  | 387   | 2307        | 1876      | 2334  | 1904  | 1816  | 1983  | 2014  | 14621 |
| <b>% musculoskeletal of all claims</b> | % year | 31.27 | 46.47       | 50.69     | 47.47 | 49.2  | 46.59 | 47.15 | 46.28 | 47.21 |

New Workers Compensation claims recorded in the Coal Services dataset showed a very similar pattern of musculoskeletal injury as for Total claims (see Table 49). Other muscular stressing accounted for more than half of the claims in each year and the remainder were claims for Falls on same level. Again nearly half of all claims in the

dataset were for musculoskeletal injury. There were no trends across the years of the analysis with the distribution of different types of injury remaining the same across the years. Comparison of the total and new claims showed that new claims accounted for almost all of the claims in each year in this dataset.

**Table 49: New Coal Services Workers Compensation claims for each type of musculoskeletal injury showing number and percentage of injury claims reported in each year.**

| Type of Musculoskeletal claim       |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|-------------------------------------|--------|-------|-------|-------|-------|-------|-------|
| Falls on same level                 | Count  | 456   | 356   | 330   | 394   | 391   | 1927  |
|                                     | % year | 42.18 | 38.99 | 40.10 | 43.54 | 42.87 | 41.58 |
| Exposure to mechanical vibration    | Count  | 0     | 0     | 0     | 0     | 0     | 0     |
|                                     | % year | 0     | 0     | 0     | 0     | 0     | 0     |
| Other muscle stressing              | Count  | 624   | 557   | 492   | 510   | 521   | 2704  |
|                                     | % year | 57.72 | 61.01 | 59.78 | 56.35 | 57.13 | 58.35 |
| Repetitive movt-low muscle load     | Count  | 1     | 0     | 1     | 1     | 0     | 3     |
|                                     | % year | 0.09  | 0.00  | 0.12  | 0.11  | 0.00  | 0.06  |
| <b>Total musculoskeletal claims</b> | Count  | 1081  | 913   | 823   | 905   | 912   | 4634  |
| <b>Total claims</b>                 | Count  | 2282  | 1862  | 1776  | 1924  | 1976  | 9820  |
| <b>% claims musculoskeletal</b>     | % year | 47.37 | 49.03 | 46.34 | 47.04 | 46.15 | 47.19 |

The next section describes the in-depth analysis of the characteristics of new claims from the Coal Services workers compensation dataset. This analysis includes only Falls on the same level and Other muscular stressing as they accounted for almost all of the musculoskeletal claims in the dataset.

## **In-depth analysis of new claims in the Coal Services workers compensation dataset**

Analysis of the Agency of injury for the Coal Services claims showed that the greatest and increasing percentage of Falls on same level claims were attributed to Environmental agencies. A much smaller and decreasing percentage of these falls related claims were attributed to mobile plant and transport (see Table 50). Around one-third of Other muscular stressing claims were attributed to Mobile plant and transport with approximately one-third equally distributed between Non-powered handtools, appliances and equipment and Materials and substances (see Table 51).

Both types of injury claims occurred mainly for Plant, machine operators and drivers or to a lesser extent for Tradespersons (see Tables 52 and 53). The age grouping for both injury types were also similar with more than half of claims involving claimants between 40 and 59 years (see Tables 56 and 57). The two injury types differed, however in the Body location affected Falls on same level mainly involved lower limbs (see Table 54) whereas Other muscular stressing mainly involved the trunk (see Table 55).

Analysis of the outcomes of each type of musculoskeletal injury claim showed that relatively few claims were classified as Permanent partial incapacity, and for both types of injury, the number decreased over the period of the analysis (see Tables 60 and 61). For both injury types, almost all claims involved at least some payment with around three-quarters of claims paid less than \$5,000 and around one-third paid less than \$500 (see Table 58 and 59). Around one-third of claims for both injury types involved some lost time (see Tables 62 and 63).

**Table 50: New Coal Services Workers Compensation claims for Falls from same height - Agency of injury for each year**

| <b>Agency</b>                                   |        | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> |
|---|--------|-------------|-------------|-------------|-------------|-------------|
| Machinery and Fixed plant                       | Count  | 10          | 5           | 10          | 8           | 7           |
|   | % year | 2.19        | 1.40        | 3.03        | 2.03        | 1.79        |
| Mobile plant and transport                      | Count  | 96          | 75          | 64          | 61          | 48          |
|   | % year | 21.05       | 21.07       | 19.39       | 15.48       | 12.28       |
| Powered equipment, tools and appliances         | Count  | 1           | 1           | 1           | 0           | 0           |
|   | % year | 0.22        | 0.28        | 0.30        | 0.00        | 0.00        |
| Non-powered handtools, appliances and equipment | Count  | 16          | 7           | 3           | 9           | 10          |
|   | % year | 3.51        | 1.97        | 0.91        | 2.28        | 2.56        |
| Materials and substances                        | Count  | 1           | 2           | 2           | 2           | 0           |
|   | % year | 0.22        | 0.56        | 0.61        | 0.51        | 0.00        |
| Environmental agencies                          | Count  | 332         | 265         | 250         | 314         | 326         |
|   | % year | 72.81       | 74.44       | 75.76       | 79.70       | 83.38       |
| Animal, human and biological agencies           | Count  | 0           | 1           | 0           | 0           | 0           |
|   | % year | 0.00        | 0.28        | 0.00        | 0.00        | 0.00        |
| Total   | Count  | 456         | 356         | 330         | 394         | 391         |
|   | % year | 100         | 100         | 100         | 100         | 100         |

**Table 51: New Coal Services Workers Compensation claims for Other muscular stressing - Agency of injury showing number and percentages for each year**

| <b>Agency</b>                                   |        | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>Total</b> |
|---|--------|-------------|-------------|-------------|-------------|-------------|--------------|
| Machinery and Fixed plant                       | Count  | 98          | 81          | 73          | 66          | 66          | 384          |
|   | % year | 15.71       | 14.54       | 14.84       | 12.94       | 12.67       | 14.20        |
| Mobile plant and transport                      | Count  | 208         | 171         | 181         | 164         | 162         | 886          |
|   | % year | 33.33       | 30.70       | 36.79       | 32.16       | 31.09       | 32.77        |
| Powered equipment, tools and appliances         | Count  | 32          | 26          | 13          | 16          | 12          | 99           |
|   | % year | 5.13        | 4.67        | 2.64        | 3.14        | 2.30        | 3.66         |
| Non-powered handtools, appliances and equipment | Count  | 113         | 110         | 84          | 104         | 113         | 524          |
|   | % year | 18.11       | 19.75       | 17.07       | 20.39       | 21.69       | 19.38        |
| Chemicals and Chemical products                 | Count  | 14          | 4           | 3           | 5           | 0           | 26           |
|   | % year | 2.24        | 0.72        | 0.61        | 0.98        | 0.00        | 0.96         |
| Materials and substances                        | Count  | 97          | 92          | 86          | 93          | 92          | 460          |
|   | % year | 15.54       | 16.52       | 17.48       | 18.24       | 17.66       | 17.01        |
| Environmental agencies                          | Count  | 25          | 30          | 17          | 16          | 25          | 113          |
|   | % year | 4.01        | 5.39        | 3.46        | 3.14        | 4.80        | 4.18         |
| Other and unspecified agencies                  | Count  | 37          | 43          | 35          | 46          | 51          | 212          |
|   | % year | 5.93        | 7.72        | 7.11        | 9.02        | 9.79        | 7.84         |
| Total   | Count  | 624         | 557         | 492         | 510         | 521         | 2704         |
|   | % year | 100         | 100         | 100         | 100         | 100         | 100          |

**Table 52: New Coal Services Workers Compensation claims for Falls from same height – distribution of Occupational grouping showing number and percentages for each year**

| Occupation                           |        | 2002  | 2003  | 2004  | 2005  | 2006  |
|--------------------------------------|--------|-------|-------|-------|-------|-------|
| Managers and administrators          | Count  | 10    | 8     | 6     | 7     | 3     |
|                                      | % year | 2.19  | 2.25  | 1.82  | 1.78  | 0.77  |
| Professionals                        | Count  | 6     | 4     | 3     | 5     | 5     |
|                                      | % year | 1.32  | 1.12  | 0.91  | 1.27  | 1.28  |
| Para-Professionals                   | Count  | 71    | 43    | 52    | 57    | 53    |
|                                      | % year | 15.57 | 12.08 | 15.76 | 14.47 | 13.55 |
| Tradespersons                        | Count  | 117   | 93    | 61    | 99    | 94    |
|                                      | % year | 25.66 | 26.12 | 18.48 | 25.13 | 24.04 |
| Sales and Personal service workers   | Count  | 0     | 1     | 0     | 0     | 3     |
|                                      | % year | 0     | 0.28  | 0     | 0     | 0.77  |
| Plant, Machine Operators and Drivers | Count  | 245   | 196   | 204   | 218   | 222   |
|                                      | % year | 53.73 | 55.06 | 61.82 | 55.33 | 56.78 |
| Labourers and related workers        | Count  | 2     | 2     | 0     | 1     | 1     |
|                                      | % year | 0.44  | 0.6   | 0.00  | 0.25  | 0.30  |
| nec                                  | Count  | 5     | 9     | 4     | 7     | 10    |
|                                      | % year | 1.10  | 2.5   | 1.21  | 1.77  | 2.60  |
| Total                                | Count  | 456   | 356   | 330   | 394   | 391   |
|                                      | % year | 100   | 100   | 100   | 100   | 100   |

**Table 53: New Coal Services Workers Compensation claims for Other muscular stressing – distribution of Occupational grouping showing number and percentages for each year**

|                                      |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|--------------------------------------|--------|-------|-------|-------|-------|-------|-------|
| Managers and administrators          | Count  | 5     | 9     | 5     | 8     | 8     | 35    |
|                                      | % year | 0.80  | 1.62  | 1.02  | 1.57  | 1.54  | 1.29  |
| Professionals                        | Count  | 12    | 10    | 2     | 3     | 5     | 32    |
|                                      | % year | 1.92  | 1.80  | 0.41  | 0.59  | 0.96  | 1.18  |
| Para-Professionals                   | Count  | 62    | 64    | 60    | 54    | 49    | 289   |
|                                      | % year | 9.94  | 11.49 | 12.20 | 10.59 | 9.40  | 10.69 |
| Tradespersons                        | Count  | 186   | 136   | 137   | 128   | 136   | 723   |
|                                      | % year | 29.81 | 24.42 | 27.85 | 25.10 | 26.10 | 26.74 |
| Clerks                               | Count  | 2     | 0     | 0     | 0     | 0     | 2     |
|                                      | % year | 0.32  | 0.00  | 0.00  | 0.00  | 0.00  | 0.07  |
| Sales and Personal Service workers   | Count  | 2     | 4     | 0     | 3     | 4     | 13    |
|                                      | % year | 0.32  | 0.72  | 0.00  | 0.59  | 0.77  | 0.48  |
| Plant, Machine Operators and Drivers | Count  | 341   | 319   | 279   | 302   | 311   | 1552  |
|                                      | % year | 54.65 | 57.27 | 56.71 | 59.22 | 59.69 | 57.40 |
| Labourers and related workers        | Count  | 4     | 2     | 1     | 2     | 0     | 9     |
|                                      | % year | 0.64  | 0.36  | 0.20  | 0.39  | 0.00  | 0.33  |
| nec                                  | Count  | 10    | 13    | 8     | 10    | 8     | 49    |
|                                      | % year | 1.60  | 2.33  | 1.63  | 1.96  | 1.54  | 1.81  |
| Total                                | Count  | 624   | 557   | 492   | 510   | 521   | 2704  |
|                                      | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 54: New Coal Services Workers Compensation claims for Falls from same height – distribution of Body location of injury showing number and percentages for each year**

| Body location      |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|--------------------|--------|-------|-------|-------|-------|-------|-------|
| Head               | Count  | 3     | 6     | 6     | 4     | 1     | 20    |
|                    | % year | 0.66  | 1.69  | 1.82  | 1.02  | 0.26  | 1.04  |
| Neck               | Count  | 6     | 2     | 4     | 6     | 6     | 24    |
|                    | % year | 1.32  | 0.56  | 1.21  | 1.52  | 1.53  | 1.25  |
| Trunk              | Count  | 102   | 70    | 59    | 69    | 69    | 369   |
|                    | % year | 22.37 | 19.66 | 17.88 | 17.51 | 17.65 | 19.15 |
| Upper limbs        | Count  | 74    | 56    | 60    | 52    | 54    | 296   |
|                    | % year | 16.23 | 15.73 | 18.18 | 13.20 | 13.81 | 15.36 |
| Lower limbs        | Count  | 234   | 206   | 189   | 236   | 250   | 1115  |
|                    | % year | 51.32 | 57.87 | 57.27 | 59.90 | 63.94 | 57.86 |
| Multiple locations | Count  | 37    | 16    | 12    | 27    | 11    | 103   |
|                    | % year | 8.11  | 4.49  | 3.64  | 6.85  | 2.81  | 5.35  |
| Total              | Count  | 456   | 356   | 330   | 394   | 391   | 1927  |
|                    | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 55: New Coal Services Workers Compensation claims for Muscular stressing – distribution of Body location of injury showing number and percentages for each year**

| Body location      |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|--------------------|--------|-------|-------|-------|-------|-------|-------|
| Neck               | Count  | 20    | 17    | 18    | 20    | 19    | 94    |
|                    | % year | 3.21  | 3.05  | 3.66  | 3.92  | 3.65  | 3.48  |
| Trunk              | Count  | 326   | 299   | 247   | 279   | 252   | 1403  |
|                    | % year | 52.24 | 53.68 | 50.20 | 54.71 | 48.37 | 51.89 |
| Upper limbs        | Count  | 174   | 127   | 144   | 123   | 147   | 715   |
|                    | % year | 27.88 | 22.80 | 29.27 | 24.12 | 28.21 | 26.44 |
| Lower limbs        | Count  | 73    | 75    | 64    | 59    | 82    | 353   |
|                    | % year | 11.70 | 13.46 | 13.01 | 11.57 | 15.74 | 13.05 |
| Multiple locations | Count  | 31    | 39    | 18    | 29    | 21    | 138   |
|                    | % year | 4.97  | 7.00  | 3.66  | 5.69  | 4.03  | 5.10  |
| Systemic locations | Count  | 0     | 0     | 1     | 0     | 0     | 1     |
|                    | % year | 0.00  | 0.00  | 0.20  | 0.00  | 0.00  | 0.04  |
| Total              | Count  | 624   | 557   | 492   | 510   | 521   | 2704  |
|                    | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 56: New Coal Services Workers Compensation claims for Falls from same height – distribution of Age group of claimant showing number and percentages for each year**

| Age group   |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|-------------|--------|-------|-------|-------|-------|-------|-------|
| 15-19 years | Count  | 2     | 0     | 0     | 6     | 2     | 10    |
|             | % year | 0.44  | 0.00  | 0.00  | 1.52  | 0.51  | 0.52  |
| 20-29 years | Count  | 12    | 15    | 22    | 25    | 43    | 117   |
|             | % year | 2.63  | 4.21  | 6.67  | 6.35  | 11.00 | 6.07  |
| 30-39 years | Count  | 97    | 66    | 60    | 74    | 75    | 372   |
|             | % year | 21.27 | 18.54 | 18.18 | 18.78 | 19.18 | 19.30 |
| 40-49 years | Count  | 162   | 138   | 116   | 145   | 138   | 699   |
|             | % year | 35.53 | 38.76 | 35.15 | 36.80 | 35.29 | 36.27 |
| 50-59 years | Count  | 183   | 137   | 131   | 143   | 132   | 726   |
|             | % year | 40.13 | 38.48 | 39.70 | 36.29 | 33.76 | 37.68 |
| 60-65 years | Count  | 0     | 0     | 1     | 1     | 1     | 3     |
|             | % year | 0     | 0     | 0.30  | 0.25  | 0.26  | 0.16  |
| Total       | Count  | 456   | 356   | 330   | 394   | 391   | 1927  |
|             | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 57: New Coal Services Workers Compensation claims for Other muscular stressing – distribution of Age group of claimant showing number and percentages for each year**

| Age group   |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|-------------|--------|-------|-------|-------|-------|-------|-------|
| 15-19 years | Count  | 2     | 3     | 1     | 1     | 3     | 10    |
|             | % year | 0.32  | 0.54  | 0.20  | 0.20  | 0.58  | 0.37  |
| 20-29 years | Count  | 22    | 30    | 28    | 37    | 55    | 172   |
|             | % year | 3.53  | 5.39  | 5.69  | 7.25  | 10.56 | 6.36  |
| 30-39 years | Count  | 124   | 109   | 92    | 98    | 121   | 544   |
|             | % year | 19.87 | 19.57 | 18.70 | 19.22 | 23.22 | 20.12 |
| 40-49 years | Count  | 254   | 214   | 198   | 170   | 172   | 1008  |
|             | % year | 40.71 | 38.42 | 40.24 | 33.33 | 33.01 | 37.28 |
| 50-59 years | Count  | 222   | 198   | 173   | 203   | 164   | 960   |
|             | % year | 35.58 | 35.55 | 35.16 | 39.80 | 31.48 | 35.50 |
| 60-65 years | Count  | 0     | 3     | 0     | 1     | 6     | 10    |
|             | % year | 0.00  | 0.54  | 0.00  | 0.20  | 1.15  | 0.37  |
| Total       | Count  | 624   | 557   | 492   | 510   | 521   | 2704  |
|             | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 58: New Coal Services Workers Compensation claims for Falls on same level – Total amount paid per claim showing number and percentages for each year**

|                 |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|-----------------|--------|-------|-------|-------|-------|-------|-------|
| No payment      | Count  | 29    | 15    | 10    | 15    | 7     | 76    |
|                 | % year | 6.36  | 4.21  | 3.03  | 3.81  | 1.79  | 3.95  |
| \$1-\$100       | Count  | 42    | 22    | 27    | 29    | 18    | 138   |
|                 | % year | 9.21  | 6.18  | 8.18  | 7.36  | 4.62  | 7.17  |
| \$101-500       | Count  | 127   | 114   | 98    | 118   | 132   | 589   |
|                 | % year | 27.85 | 32.02 | 29.70 | 29.95 | 33.85 | 30.58 |
| \$501-\$1000    | Count  | 47    | 46    | 42    | 50    | 56    | 241   |
|                 | % year | 10.31 | 12.92 | 12.73 | 12.69 | 14.36 | 12.51 |
| \$1001-\$5000   | Count  | 85    | 70    | 65    | 84    | 76    | 380   |
|                 | % year | 18.64 | 19.66 | 19.70 | 21.32 | 19.49 | 19.73 |
| \$5001-\$10000  | Count  | 30    | 24    | 22    | 33    | 32    | 141   |
|                 | % year | 6.58  | 6.74  | 6.67  | 8.38  | 8.21  | 7.32  |
| \$10001-\$20000 | Count  | 29    | 23    | 19    | 28    | 25    | 124   |
|                 | % year | 6.36  | 6.46  | 5.76  | 7.11  | 6.41  | 6.44  |
| >\$20000        | Count  | 67    | 42    | 47    | 37    | 44    | 237   |
|                 | % year | 14.69 | 11.80 | 14.24 | 9.39  | 11.28 | 12.31 |
| Total           | Count  | 456   | 356   | 330   | 394   | 390   | 1926  |
|                 | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 59: New Coal Services Workers Compensation claims for Other muscular stressing – Total amount paid per claim showing number and percentages for each year**

|                 |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|-----------------|--------|-------|-------|-------|-------|-------|-------|
| No payment      | Count  | 39    | 22    | 17    | 20    | 24    | 122   |
|                 | % year | 6.25  | 3.95  | 3.46  | 3.93  | 4.61  | 4.52  |
| \$1-\$100       | Count  | 44    | 30    | 31    | 24    | 34    | 163   |
|                 | % year | 7.05  | 5.39  | 6.31  | 4.72  | 6.53  | 6.03  |
| \$101-500       | Count  | 148   | 162   | 139   | 147   | 123   | 719   |
|                 | % year | 23.72 | 29.08 | 28.31 | 28.88 | 23.61 | 26.61 |
| \$501-\$1000    | Count  | 100   | 72    | 72    | 79    | 91    | 414   |
|                 | % year | 16.03 | 12.93 | 14.66 | 15.52 | 17.47 | 15.32 |
| \$1001-\$5000   | Count  | 139   | 128   | 118   | 117   | 142   | 644   |
|                 | % year | 22.28 | 22.98 | 24.03 | 22.99 | 27.26 | 23.83 |
| \$5001-\$10000  | Count  | 48    | 40    | 23    | 44    | 35    | 190   |
|                 | % year | 7.69  | 7.18  | 4.68  | 8.64  | 6.72  | 7.03  |
| \$10001-\$20000 | Count  | 18    | 35    | 34    | 32    | 24    | 143   |
|                 | % year | 2.88  | 6.28  | 6.92  | 6.29  | 4.61  | 5.29  |
| >\$20000        | Count  | 88    | 68    | 57    | 46    | 48    | 307   |
|                 | % year | 14.10 | 12.21 | 11.61 | 9.04  | 9.21  | 11.36 |
| Total           | Count  | 624   | 557   | 491   | 509   | 521   | 2702  |
|                 | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 60: New Coal Services Workers Compensation claims for Falls on same level – Injury outcome showing number and percentages for each year**

|                              |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|------------------------------|--------|-------|-------|-------|-------|-------|-------|
| Permanent partial incapacity | Count  | 17    | 17    | 11    | 2     | 3     | 50    |
|                              | % year | 3.73  | 4.78  | 3.33  | 0.51  | 0.77  | 2.59  |
| Temporary incapacity         | Count  | 439   | 339   | 319   | 392   | 388   | 1877  |
|                              | % year | 96.27 | 95.22 | 96.67 | 99.49 | 99.23 | 97.41 |
| Total                        | Count  | 456   | 356   | 330   | 394   | 391   | 1927  |
|                              | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 61: New Coal Services Workers Compensation claims for Other muscular stressing – Injury outcome showing number and percentages for each year**

| Injury result                |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|------------------------------|--------|-------|-------|-------|-------|-------|-------|
| Permanent partial incapacity | Count  | 26    | 26    | 12    | 12    | 2     | 78    |
|                              | % year | 4.17  | 4.67  | 2.44  | 2.35  | 0.38  | 2.88  |
| Temporary incapacity         | Count  | 598   | 531   | 480   | 498   | 519   | 2626  |
|                              | % year | 95.83 | 95.33 | 97.56 | 97.65 | 99.62 | 97.12 |
| Total                        | Count  | 624   | 557   | 492   | 510   | 521   | 2704  |
|                              | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 62: New Coal Services Workers Compensation claims for Falls on same level – Lost time per claim showing number and percentages for each year**

| Lost Time |        | 2002  | 2003  | 2004  | 2005  | 2006  | Total |
|-----------|--------|-------|-------|-------|-------|-------|-------|
|           | Count  | 1     | 0     | 1     | 1     | 0     | 3     |
|           | % year | 0.22  | 0.00  | 0.30  | 0.25  | 0.00  | 0.16  |
| No        | Count  | 295   | 224   | 214   | 269   | 264   | 1266  |
|           | % year | 64.69 | 62.92 | 64.85 | 68.27 | 67.52 | 65.70 |
| Yes       | Count  | 160   | 132   | 115   | 124   | 127   | 658   |
|           | % year | 35.09 | 37.08 | 34.85 | 31.47 | 32.48 | 34.15 |
| Total     | Count  | 456   | 356   | 330   | 394   | 391   | 1927  |
|           | % year | 100   | 100   | 100   | 100   | 100   | 100   |

**Table 63: New Coal Services Workers Compensation claims for Other muscular stressing – Lost time per claim showing number and percentages for each year**

| <b>Lost Time</b> |        | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>2006</b> | <b>Total</b> |
|------------------|--------|-------------|-------------|-------------|-------------|-------------|--------------|
|                  | Count  | 0           | 0           | 0           | 1           | 0           | 1            |
|                  | % year | 0.00        | 0.00        | 0.00        | 0.20        | 0.00        | 0.04         |
| No               | Count  | 415         | 363         | 336         | 356         | 379         | 1849         |
|                  | % year | 66.51       | 65.17       | 68.29       | 69.80       | 72.74       | 68.38        |
| Yes              | Count  | 209         | 194         | 156         | 153         | 142         | 854          |
|                  | % year | 33.49       | 34.83       | 31.71       | 30.00       | 27.26       | 31.58        |
| Total            | Count  | 624         | 557         | 492         | 510         | 521         | 2704         |
|                  | % year | 100         | 100         | 100         | 100         | 100         | 100          |

### 3. Notifiable musculoskeletal injuries from NSW Department of Primary Industry COMET database

Data for analysis of musculoskeletal injuries notified to the NSW Department of Primary Industry (NSW DPI) under Mine Safety regulation were provided by the NSW DPI. Cases are notified to the NSW DPI for a range of specific serious bodily injuries. For this analysis musculoskeletal injuries were located by including any serious bodily injury cases where mechanism was classified as:

- Falls from the same level (including trips and slips)
- Exposure to mechanical vibration
- Other muscular stress

Cases were located for each type of musculoskeletal injury for each year and for coal and Non-coal sectors separately.

#### Results: COMET database

Only a small number of musculoskeletal cases were located from the COMET database for both the coal and Non-coal sectors (see Table 64). They represented only a small percentage of the total number of cases reported to COMET each year. More cases were reported from the Coal sector than the Non-coal sector. Most cases involved a Fall on the same level.

**Table 64: Musculoskeletal injuries for the Coal and Non-coal sector for each year reported in the COMET dataset**

|                                  | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------------------|-----------|-----------|-----------|-----------|-------|
| <b>Coal sector</b>               |           |           |           |           |       |
| Falls from the same level        | 8         | 12        | 5         | 6         | 31    |
| Exposure to mechanical vibration | 0         | 1         | 0         | 0         | 1     |
| Other muscular stress            | 1         | 0         | 0         | 0         | 1     |
| Total musculoskeletal            | 9         | 13        | 5         | 6         | 33    |
| Total cases in COMET             | 250       | 278       | 266       | 333       | 1127  |
| % musculoskeletal of all cases   | 3.6       | 4.68      | 1.88      | 1.8       | 2.93  |
| <b>Non-Coal sector</b>           |           |           |           |           |       |
| Falls from the same level        | 3         | 5         | 1         | 3         | 12    |
| Exposure to mechanical vibration | 0         | 0         | 0         | 0         | 0     |
| Other muscular stress            |           | 1         |           | 1         | 2     |
| Total musculoskeletal            | 3         | 6         | 1         | 4         | 14    |
| Total cases in COMET             | 232       | 210       | 230       | 225       | 897   |
| % musculoskeletal of all cases   | 1.29      | 2.86      | 0.43      | 1.78      | 1.56  |

#### **4. Hospital admissions in NSW related to mining**

The analysis for this section was conducted by Rebecca Mitchell and was based on analysis described in Mitchell R, Williamson A. Examining the burden of work-related hospitalized injuries: definitional issues. Injury Prevention, in press.

This section looked at the possibility of identifying mining-related musculoskeletal injury data and conducting an analysis of the characteristics of work-related hospitalizations. Identification of mine-related injury involved hospitalised injury cases where the activity at the time of the incident was recorded as mining and/or the place of occurrence of the incident that resulted in admission to hospital was recorded as mine and quarry.

#### **Method**

New South Wales (NSW) hospitalisation data that includes information on hospital admission to NSW public and private hospitals, private day procedures, and public psychiatric hospitals were obtained from 1 July 2002 to 30 June 2005. Information collected includes patient demographics, diagnoses and clinical procedures. NSW hospitalisation data include information on episodes of care in hospital, which end with the discharge, transfer or death of the patient, or when the service category for the admitted patient changes. Hospitalisations were extracted for residents of NSW which also included hospitalisations of NSW residents that occurred in another Australian state or territory. The hospitalisation data were coded using the International Classification of Disease, 10<sup>th</sup> revision, Australian modification (ICD-10-AM). [1-3]

Hospitalisations relating to transfers or statistical discharges were excluded in order to attempt to partly eliminate 'multiple counts'. These exclusions refer to transfers between hospitals or changes in the service category (eg. a change from acute to rehabilitation) for a patient during one episode of care in a single facility.[4]

Work-related hospital admissions were identified from the data if:

- the activity code in ICD-10-AM versions 2 to 4 indicated the injured person was working at the time of the injury (ie. Y93.2 or U73.0 to U73.09); or
- payment status was equal to 40 'compensable – NSW workers' compensation'; or
- supplementary factors related to causes of morbidity and mortality was equal to Y96 – 'work-related condition'.

Hospitalisations that met any of the above criteria were considered to be work-related hospitalisations.

Mining-related hospital admissions were identified if:

- the activity performed at the time of an incident that resulted in hospitalisation was reported as 'mining' (ie. U73.01); and/or
- the place of occurrence of the incident that resulted in admission to hospital was recorded as 'mine and quarry' (ie. Y92.63).

Hospitalisations that were identified as work-related and that were also identified as mining-related were considered to be work-related mining hospitalisations. Analysis was performed using SAS. [5]

## Results: Hospitalisations

During 2002-03 to 2004-05, there were 69,931 work-related hospitalisations identified of NSW residents using the activity, payment status or work-related condition variables to identify working status. The payment status variable identified 58,231 work-related hospital admissions, the activity code identified 26,990 work-related admissions, and the work-related condition variable identified 16 admissions as work-related.

Missing data is likely to have had an impact on the identification of work-related hospitalisations. For example, for the payment status variable, there were 707 (1.0%) cases with missing data and for the activity variable, just over half (52.4%, n=36,650) of the cases had missing data, with a further 7.0% (n=4,878) of cases having an 'unspecified activity' recorded.

Of the 69,931 work-related hospitalisations that were able to be identified, the activity of 499 cases was reported as mining and the place of occurrence of the incident for 525 cases was described as mine and quarry. Again, the missing and unspecified data for the activity variable are likely to lead to an under-enumeration of the number of mining-related hospital admissions. In addition, just under half (46.9%, n=32,809) of the place of occurrence data was missing and a further 21.4% (n=14,958) of cases had an 'unspecified place of occurrence' recorded.

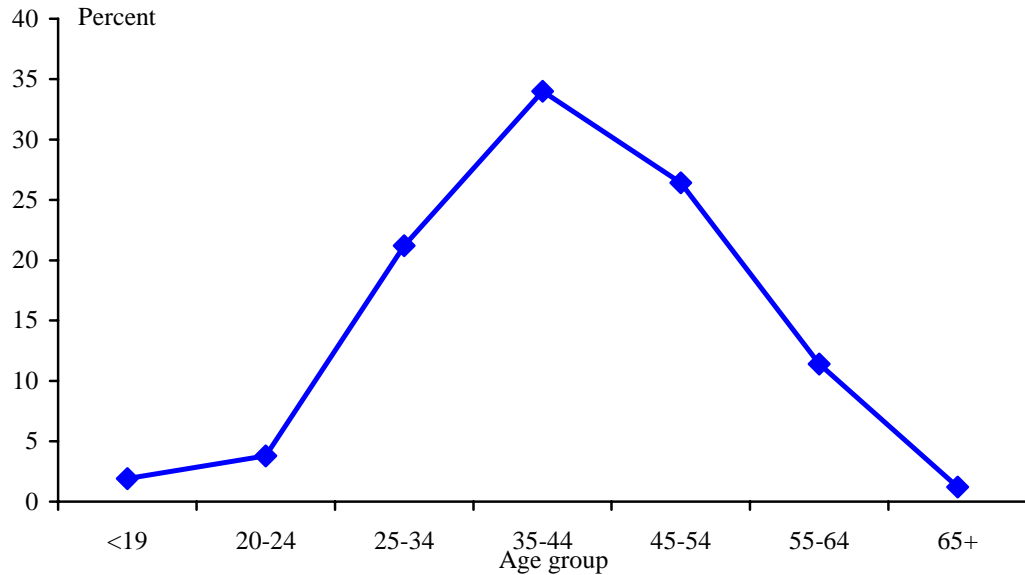
Of the work-related hospital admissions that were identified, there were 579 (0.8%) hospital admissions that had either an activity of mining recorded and/or the place of occurrence was recorded as mine or quarry (Table 65).

**Table 65: Work-related mining hospitalisations in NSW by year of admission, 2002-03 to 2004-05**

| Year    | Number | Percent |
|---------|--------|---------|
| 2002-03 | 206    | 35.6    |
| 2003-04 | 211    | 36.4    |
| 2004-05 | 162    | 28.0    |
| Total   | 579    | 100.0   |

Males accounted for almost all mining-related hospital admissions (97.9%, n=567), with only 12 (2.1%) females hospitalised. The majority (81.7%) of admissions were of individuals aged between 25 and 54 years (Figure 1).

**Figure 1: Work-related mining hospitalisations in NSW by age group, 2002-03 to 2004-05**



Mining was the most common activity performed at the time of the incident (86.2%). However, as the place of occurrence was also used to identify mining-related hospitalisations, other activities were also identified (Table 66).

**Table 66 Work-related mining hospitalisations in NSW by activity, 2002-03 to 2004-05**

| Activity                              | Number | Percent |
|---------------------------------------|--------|---------|
| Mining                                | 499    | 86.2    |
| Manufacturing                         | 5      | 0.9     |
| Construction/ Transport and storage   | 7      | 1.2     |
| Other specified work for income       | 7      | 1.2     |
| While working for income, unspecified | 40     | 6.9     |
| Other and unspecified                 | 7      | 1.3     |
| Missing                               | 14     | 2.4     |
| Total                                 | 579    | 100.0   |

The most common place of occurrence of the incident was mine or quarry (90.7%). However, as the activity performed at the time of the incident was also used to identify mining-related hospitalisations, other locations were also identified (Table 67).

**Table 67: Work-related mining hospitalisations in NSW by place of occurrence, 2002-03 to 2004-05**

| Place of occurrence  | Number | Percent |
|--|--------|---------|
| Street and highway, roadway  | 10     | 1.7     |
| Industrial and construction area, mine and quarry  | 525    | 90.7    |
| Industrial and construction areas, including construction, factory & plant, oil & gas extraction, power station, other and unspecified | 13     | 2.2     |
| Other specified place of occurrence  | 15     | 2.5     |
| Unspecified place of occurrence  | 14     | 2.4     |
| Missing  | 2      | 0.4     |
| Total  | 579    | 100.0   |

Just less than two-thirds (61.7%) of the hospital admissions were for a principal diagnosis of injury. A further 20% of admissions were as a result of a musculoskeletal condition (Table 68).

**Table 68: Principal diagnosis codes of work-related mining hospitalisations, NSW, 2002-03 to 2004-05**

| ICD-10-AM Chapter   | Number | Percent |
|---|--------|---------|
| Injury, poisoning and certain other consequences of external causes (Chapter XIX) | 357    | 61.7    |
| Diseases of the musculoskeletal system and connective tissue (Chapter XIII)       | 131    | 22.6    |
| Factors influencing health status and contact with health services (Chapter XXI)  | 63     | 10.9    |
| Diseases of the digestive system (Chapter XI)                                     | 13     | 2.2     |
| Other <sup>3</sup>  | 15     | 2.6     |
| Total   | 579    | 100.0   |

<sup>3</sup> Other includes: diseases of the nervous system, mental and behavioural disorders, diseases of the eye and adnexa, diseases of the circulatory system, diseases of the respiratory system, and diseases of the skin and subcutaneous tissue.

Struck by or struck against objects or equipment (17.6%), machinery-related incidents (15.2%), motor vehicle crashes (15.0%), and falls (10.5%) were the most common mechanisms of injury that resulted in hospitalisation (Table 69).

**Table 69 External causes codes of work-related mining hospitalisations, NSW, 2002-03 to 2004-05**

| <b>ICD-10-AM External Cause</b>   | <b>Number</b> | <b>Percent</b> |
|-----------------------------------|---------------|----------------|
| Struck by/ struck against         | 102           | 17.6           |
| Machinery                         | 88            | 15.2           |
| Motor vehicle crash               | 87            | 15.0           |
| Falls                             | 61            | 10.5           |
| Overexertion                      | 57            | 9.8            |
| Electric currents                 | 21            | 3.6            |
| Poisoning                         | 18            | 3.1            |
| Cut/pierce                        | 12            | 2.1            |
| Natural and environmental factors | 9             | 1.6            |
| Other <sup>1</sup>                | 19            | 3.3            |
| Other specified, classifiable     | 9             | 1.6            |
| Unspecified (X59)                 | 92            | 15.9           |
| Not known                         | 4             | 0.7            |
| <b>Total</b>                      | <b>579</b>    | <b>100.0</b>   |

<sup>1</sup> Other includes: explosive materials, explosion of pressure vessels, fire and burns, interpersonal violence, water transport, undetermined intent, exposure to other specified factors, attempted self-harm, and complications of care.

## ***Discussion: Musculoskeletal injuries***

This analysis reviewed four different sources of information on musculoskeletal injury in the NSW Mining industry. Certainly the NSW Workers Compensation dataset provides the most comprehensive data for in-depth analysis of the characteristics of musculoskeletal injury for both the coal and Non-coal sectors. The problems with using Workers Compensation data are well-known. This data underestimates musculoskeletal injury as it only reflects eligible claims; employees (not self-employees, although this may not be a significant problem for the mining industry), injuries that result in a minimum of five days off work and those for which an employee decides to make a claim. The main disadvantage of this is that reporting of injury and therefore inclusion of claims may be influenced by external pressures so making monitoring of trends more difficult.

The Coal Services Compensation dataset contains basically the same information as the NSW Workers Compensation dataset albeit only for the coal sector. This dataset has the same type of problems of underestimating injury as the WorkCover dataset. Comparison of the two compensation datasets shows that the Coal Services dataset contains more cases across the years of this analysis. There were around 67 percent more Falls on same level claims in the Coal Services dataset than the WorkCover dataset and around 47 percent more for Other muscular stressing claims. Nevertheless, the WorkCover data had an expanded array of musculoskeletal codes, specifically it included around 10 percent of cases coded to Exposure to mechanical vibration whereas there were no cases with this Mechanism code in the Coal Services data. For the two main types of musculoskeletal injury, however, the patterns of occurrence were very similar between WorkCover and Coal Services data. While the absolute numbers of cases differed between the two datasets, the conclusions that could be drawn about the main characteristics of musculoskeletal injury were the same.

Analysis of musculoskeletal injury from the COMET dataset showed that the dataset is not very suitable for the purpose of tracking changes in this type of injury. There were very few musculoskeletal injuries identified, almost certainly because only notifiable serious injuries are contained in COMET. The list of Notifiable Incidents required to be reported to the NSW DPI and to be included in COMET does not specifically include musculoskeletal injuries (see Appendix 1 for extract from Coal Mine Occupational Health and Safety Regulation 2006). A number of the Notifiable Incident types, however, are circumstances that could result in musculoskeletal injury such as a collision or loss of control of a vehicle (clauses (h) or (i)) or could be the result of serious musculoskeletal injury such as the requirement to notify incidents resulting in a person going to hospital. Clearly Notifiable Incidents do result in musculoskeletal injury, however, the definition of Notifiable would need to be expanded for the COMET database to be very useful for following trends in musculoskeletal injury.

The advantage of the COMET dataset, on the other hand, is that inclusion criteria to the dataset are very clearly defined, which is not the case for Workers Compensation-related datasets like WorkCover and Coals Services data collections. In addition, the information collected about each Notifiable Incident is comprehensive so if the inclusion criteria for COMET were expanded to include musculoskeletal injury, further in-depth analysis would be possible.

The evaluation of the usefulness of hospitalisation data for monitoring trends in mining injury and specifically in musculoskeletal injury in this industry demonstrated that while this source of injury data is promising, it is not yet suitable for even identifying mining injury. Currently the NSW hospitalisation dataset has too much missing data on the main variable that allows identification of work-relatedness. With around fifty percent of the data missing, the data is simply too unreliable. The coding of Activity and Place of occurrence for injury is a comparatively recent addition to the

NSW hospitalisation dataset. It is likely that with increasing usage of the Activity and Place variables, their completeness and reliability will improve so potentially making it a most useful source of information about musculoskeletal injury in mining. The main advantage of pursuing this data source for strategic planning in mining in the future is that the inclusion criterion is well-defined, that is, an injury serious enough to result in at least one day in hospital. The disadvantage of using hospital inpatient data for tracking musculoskeletal injury, however, is that musculoskeletal injury may be chronic in onset and may not require a period of hospitalisation.

Overall, the NSW Workers Compensation dataset currently provides the best and most comprehensive data source for monitoring musculoskeletal injury in NSW mining. Despite some negative aspects that might influence the likelihood of reporting musculoskeletal injury and some difficulties in accessing the data in a timely fashion, this data source is currently the most appropriate for review and analysis as part of a priority setting process.

### **Current trends in musculoskeletal injury (2002 to 2006)**

Using the NSW Workers Compensation dataset, this analysis has highlighted some of the major characteristics of musculoskeletal injury in mining. First, the most common type of musculoskeletal injury is Other muscular stress which includes Muscular stress while lifting or handling, carrying, or putting down objects, while handling objects other than in those circumstances and while not handling objects. Falls on the same level make up the balance of musculoskeletal injuries.

The characteristics of each of these types of musculoskeletal injury differ between coal and Non-coal sectors. In the coal sector, the causes of the different types of injury differ, but the types of claimant and the effects do not. Other muscular stressing claims were mainly due to mobile plant and transport, non-powered handtools or equipment or materials and substances and they mainly involved the trunk and upper limbs. In contrast, Falls on the same level in the coal sector mostly occurred due to environmental agencies and affected lower limbs. Both types of injury, however, involved employees in the 40 to 59 age group and employees working in Intermediate production and transport occupations. For both types of injury again, they mostly resulted in only temporary disability of less than six months and involved no time off. Furthermore, they involved comparatively low levels of payment with most less than \$5,000. It is also notable that for both types of injury the level of payment for the injury is increasing.

Injuries from the Non-coal sector also showed similarities between Other muscular stressing injuries and Falls on same level, but the characteristics of these injuries were different from those seen in the coals sector. Both types of injuries occurred due to the same agencies as seen in the coal sector and affected the same body locations. These musculoskeletal injuries in the Non-coal sector showed a different age distribution, affecting mainly employees in the 20 to 49 years age group. It is difficult to interpret this difference without information about the age distribution in the two industry sectors since it is possible that employees also tend to be younger in the Non-coal sector. The effects of musculoskeletal injuries in the Non-coal sector differed considerably from the coal sector. While the amount paid per injury claim was similar to that seen in the coal sector, the amount paid has remained similar over the analysis period. A much higher percentage of musculoskeletal injuries in the Non-coal sector were classified as Permanently disabling. Furthermore, a much smaller percentage of Non-coal claims involved no lost time compared to the coal sector. It is notable too that in the Non-coal sector Lost time for claims for Falls on same level have been increasing, whereas claims for Other muscular stressing have remained fairly static.

This analysis of trends in musculoskeletal injury has provided some benchmarks for evaluating further trends. It has also provided some clear directions for understanding of the circumstances of

these types of injuries. Other muscular stressing and falls on same level are clearly the important targets. Non-powered handtools and equipment and environmental agencies are also important areas of focus to attempt to prevent musculoskeletal injuries in both sectors. There is also some evidence to justify actions to reduce the severity of outcomes of musculoskeletal injury in the Non-coal sector in particular.

There is potential, however, to conduct follow-up analysis in further depth. For example, it would be possible to combine the data across years to examine Agency and Occupation at a lower level of coding. Further analysis is also possible to explore the relationships between the main characteristics of each type of musculoskeletal injury. For example, it would be possible to compare the characteristics of the longest or most serious claims with those of the least serious claims. It would also be possible to look at the relationships between the Agency of occurrence and the other variables to attempt to understand more about any differences in outcomes.

## B: Unplanned Movement of Plant

The purpose of this analysis was to provide information for the coal and non-coal sector over four years (financial years 2002/2003 to 2005/2006 inclusive).

For this analysis Unplanned movements of plant were defined as an injury mechanism of at least the top three:

- Activities
- Occupations
- Body locations
- Mechanisms (Hit by moving object, Vehicle accident)
- Age Groups
- Estimated Severity of the injuries including Cost / severity (permanent / temporary) and Time lost for temporary claims

For this analysis the definition of Unplanned movement of plant depended on the data used. The primary analysis for this priority area used the NSW WorkCover Workers compensation data (new claims for relevant injury mechanisms as described above). For this data Unplanned movement of plant were defined as claims with Mechanism codes of Being hit by moving objects (TOOCS code = 28) and Vehicle accidents (TOOCS code=92).

Analysis was also performed on the COMET database of Notifiable incidents. The definition of Unplanned movement of plant used in COMET coding was:

‘A movement or response of a whole machine or part of a machine where the movement or response was different from that intended by the operator’.

The COMET coding included Unplanned movements as a specific set of five Incident subtypes based on Mine Safety Regulation (Unplanned movement 16(1)(f), Unplanned movement 34(2)(e), Unplanned movement 34A (1)(b) and Unplanned movement 83(1)(c) from the coal sector and Unplanned movement due to electricity cl 68 (5) in the Non-coal sector).

It should be noted that this approach to identifying incidents due to Unplanned movement of plant will not pick up all incidents involving this type of incident. First, mainly Coal mines legislation includes this type of incident as notifiable. Second, if an unplanned movement occurred which results in a serious injury, it will be notified because of the injury and therefore classified as an injury rather than as an unplanned movement. Analysis of the COMET dataset for an earlier report for the NSW Mine Safety Advisory Council (Development of Performance Measures to support the NSW Mining Health and Safety Action Plan to 2008) demonstrated that only a few incidents notified because of an unplanned movement of plant were also coded as having an injury occur.

The differences between these two datasets in identifying Unplanned movement of plant mean that the Workers Compensation analysis will provide information on reported injuries due to unplanned movement incidents in both coal and Non-coal sectors, whereas the analysis of the COMET dataset will provide information on incidents that mostly did not result in an incident, but were required to be reported to the NSW DPI by regulation. As the coal sector has most regulation requiring notification of unplanned movement incidents most of the COMET analysis will be from the coal sector.

## ***In-depth analysis of New Workers compensation claims for unplanned movements of plant in the coal sector***

Claims for unplanned movements of plant accounted for 14.62 percent of all workers compensation claims in the NSW WorkCover data collection. These types of claims involved Hit by moving objects (10.62%) and Vehicle accidents (4.02%). Analysis of these types of claims across the years, 2002/2003 and 2005/2006, showed little change in the percentage of claims in any of the years (see Table B1).

In-depth analysis of the two types of claims contributing to the Unplanned movements of plant category showed that most Hit by moving objects claims involved Materials and substances or Mobile plant and transport (see Tables B2 and B3), with a notable minority of claims involving Non-powered handtools and equipment. For Vehicle accident claims, the most common agency was Mobile plant and transport. Intermediate production and transport workers were the most common occupations to be involved in both types of claims (Tables B4 and B5). Tradespersons and related workers also tended to be involved in both types of unplanned movement claims with nearly one-third of claims for Hit by moving objects involving this occupational grouping. Across all years, the head was the most common body location for Hit by moving object claims, followed by upper limb injury (see Table B6) whereas Vehicle accident claims involved injury to all main body locations and multiple locations (see Table B7). The age group of claimants was also very similar between the two types of unplanned movement claim categories (see Tables B8 and B9). Well over half of all claimants were between 40 and 59 years of age and a further one-quarter were between 30 and 39 years. There were also no clear age trends over the analysis period.

The severity of claims were also similar for both claim types, although there is a tendency for Vehicle accident claims to be more severe than those for Hit by moving objects (see Tables B10 and B11). This was also borne out in the cost of claim and lost time data for each type of claim, with Vehicle accident claims costing significantly more (Table B12 and B13) and taking much longer to resolve than Hit by moving object claims (Table B14 and B15).

***Table B1: Trends in Hit by moving object and Vehicle accident claims for each year showing counts and percentage for each year***

|                                 |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---------------------------------|--------|-----------|-----------|-----------|-----------|-------|
| Hit by moving object            | Count  | 116       | 204       | 144       | 210       | 674   |
|                                 | % Year | 73.89     | 73.65     | 66.67     | 75.27     | 72.55 |
| Vehicle accident                | Count  | 41        | 73        | 72        | 69        | 255   |
|                                 | % Year | 26.11     | 26.35     | 33.33     | 24.73     | 27.45 |
| Total unplanned movement claims | Count  | 157       | 277       | 216       | 279       | 929   |
|                                 | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B2: Agency of claim for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 7         | 13        | 12        | 18        | 50    |
|  | % Year | 6.03      | 6.37      | 8.33      | 8.57      | 7.42  |
| 2: Mobile Plant And Transport                      | Count  | 35        | 78        | 46        | 73        | 232   |
|  | % Year | 30.17     | 38.24     | 31.94     | 34.76     | 34.42 |
| 3: Powered Equipment, Tools And Appliances         | Count  | 4         | 11        | 11        | 13        | 39    |
|  | % Year | 3.45      | 5.39      | 7.64      | 6.19      | 5.79  |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 17        | 22        | 17        | 37        | 93    |
|  | % Year | 14.66     | 10.78     | 11.81     | 17.62     | 13.80 |
| 5: Chemicals And Chemical Products                 | Count  | 5         | 5         | 8         | 8         | 26    |
|  | % Year | 4.31      | 2.45      | 5.56      | 3.81      | 3.86  |
| 6: Materials And Substances                        | Count  | 47        | 73        | 48        | 60        | 228   |
|  | % Year | 40.52     | 35.78     | 33.33     | 28.57     | 33.83 |
| 7: Environmental Agencies                          | Count  | 0         | 2         | 1         | 1         | 4     |
|  | % Year | 0.00      | 0.98      | 0.69      | 0.48      | 0.59  |
| 8: Animal, Human And Biological Agencies           | Count  | 1         | 0         | 1         | 0         | 2     |
|  | % Year | 0.86      | 0.00      | 0.69      | 0.00      | 0.30  |
| Total unplanned movement claims                    | Count  | 116       | 204       | 144       | 210       | 674   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B3: Agency of claim for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant    | Count  | 4         | 3         | 1         | 3         | 11    |
|  | % Year | 9.76      | 4.11      | 1.39      | 4.35      | 4.31  |
| 2: Mobile Plant And Transport            | Count  | 30        | 49        | 57        | 46        | 182   |
|  | % Year | 73.17     | 67.12     | 79.17     | 66.67     | 71.37 |
| 7: Environmental Agencies                | Count  | 5         | 14        | 12        | 10        | 41    |
|  | % Year | 12.20     | 19.18     | 16.67     | 14.49     | 16.08 |
| 8: Animal, Human And Biological Agencies | Count  | 2         | 7         | 2         | 10        | 21    |
|  | % Year | 4.88      | 9.59      | 2.78      | 14.49     | 8.24  |
| Total unplanned movement claims          | Count  | 41        | 73        | 72        | 69        | 255   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B4: Occupation of claimant for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 1         | 1         | 2         | 2         | 6     |
|   | % Year | 0.86      | 0.49      | 1.39      | 0.95      | 0.89  |
| 2: Professionals                                    | Count  | 0         | 3         | 0         | 2         | 5     |
|   | % Year | 0.00      | 1.47      | 0.00      | 0.95      | 0.74  |
| 3: Associate Professionals                          | Count  | 7         | 13        | 14        | 23        | 57    |
|   | % Year | 6.03      | 6.37      | 9.72      | 10.95     | 8.46  |
| 4: Tradespersons And Related Workers                | Count  | 37        | 57        | 45        | 65        | 204   |
|   | % Year | 31.90     | 27.94     | 31.25     | 30.95     | 30.27 |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 1         | 0         | 0         | 0         | 1     |
|   | % Year | 0.86      | 0.00      | 0.00      | 0.00      | 0.15  |
| 7: Intermediate Production And Transport Workers    | Count  | 69        | 125       | 80        | 114       | 388   |
|   | % Year | 59.48     | 61.27     | 55.56     | 54.29     | 57.57 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 0         | 1         | 0         | 0         | 1     |
|   | % Year | 0         | 0.49      | 0.00      | 0.00      | 0.15  |
| 9: Labourers And Related Workers                    | Count  | 1         | 4         | 3         | 4         | 12    |
|   | % Year | 0.86      | 1.96      | 2.08      | 1.90      | 1.78  |
| Total   | Count  | 116       | 204       | 144       | 210       | 674   |
|   | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B5: Occupation of claimant for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 0         | 0         | 2         | 1         | 3     |
|   | % Year | 0.00      | 0.00      | 2.78      | 1.45      | 1.18  |
| 2: Professionals                                    | Count  | 1         | 2         | 3         | 2         | 8     |
|   | % Year | 2.44      | 2.74      | 4.17      | 2.90      | 3.14  |
| 3: Associate Professionals                          | Count  | 0         | 4         | 1         | 1         | 6     |
|   | % Year | 0.00      | 5.48      | 1.39      | 1.45      | 2.35  |
| 4: Tradespersons And Related Workers                | Count  | 5         | 17        | 11        | 10        | 43    |
|   | % Year | 12.20     | 23.29     | 15.28     | 14.49     | 16.86 |
| 5: Advanced Clerical And Service Workers            | Count  | 0         | 1         | 0         | 0         | 1     |
|   | % Year | 0.00      | 1.37      | 0.00      | 0.00      | 0.39  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 1         | 0         | 2         | 0         | 3     |
|   | % Year | 2.44      | 0.00      | 2.78      | 0.00      | 1.18  |
| 7: Intermediate Production And Transport Workers    | Count  | 34        | 45        | 53        | 53        | 185   |
|   | % Year | 82.93     | 61.64     | 73.61     | 76.81     | 72.55 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 0         | 1         | 0         | 0         | 1     |
|   | % Year | 0.00      | 1.37      | 0.00      | 0.00      | 0.39  |
| 9: Labourers And Related Workers                    | Count  | 0         | 3         | 0         | 2         | 5     |
|   | % Year | 0.00      | 4.11      | 0.00      | 2.90      | 1.96  |
| Total   | Count  | 41        | 73        | 72        | 69        | 255   |
|   | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B6: Body location of injury of claimant for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|                       |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total  |
|-----------------------|--------|-----------|-----------|-----------|-----------|--------|
| Head                  | Count  | 53        | 82        | 63        | 86        | 284    |
|                       | % year | 45.70     | 40.20     | 43.80     | 41.00     | 42.10  |
| Neck                  | Count  | 6         | 5         | 4         | 5         | 20     |
|                       | % year | 5.20      | 2.50      | 2.80      | 2.40      | 3.00   |
| Trunk                 | Count  | 6         | 7         | 13        | 9         | 35     |
|                       | % year | 5.20      | 3.40      | 9.00      | 4.30      | 5.20   |
| Upper limb            | Count  | 26        | 68        | 35        | 65        | 194    |
|                       | % year | 22.40     | 33.30     | 24.30     | 31.00     | 28.80  |
| Lower limb            | Count  | 20        | 31        | 19        | 27        | 97     |
|                       | % year | 17.20     | 15.20     | 13.20     | 12.90     | 14.40  |
| Multiple locations    | Count  | 5         | 10        | 10        | 18        | 43     |
|                       | % year | 4.30      | 4.90      | 6.90      | 8.60      | 6.40   |
| Unspecified locations | Count  | 0         | 1         | 0         | 0         | 1      |
|                       | % year | 0.00      | 0.50      | 0.00      | 0.00      | 0.10   |
| Total                 | Count  | 116       | 204       | 144       | 210       | 674    |
|                       | % year | 100.00    | 100.00    | 100.00    | 100.00    | 100.00 |

**Table B7: Body location of injury of claimant for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|                          |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total  |
|--------------------------|--------|-----------|-----------|-----------|-----------|--------|
| Head                     | Count  | 3         | 12        | 4         | 7         | 26     |
|                          | % year | 7.30      | 16.40     | 5.60      | 10.10     | 10.20  |
| Neck                     | Count  | 5         | 11        | 14        | 13        | 43     |
|                          | % year | 12.20     | 15.10     | 19.40     | 18.80     | 16.90  |
| Trunk                    | Count  | 9         | 11        | 14        | 16        | 50     |
|                          | % year | 22.00     | 15.10     | 19.40     | 23.20     | 19.60  |
| Upper limb               | Count  | 6         | 14        | 14        | 10        | 44     |
|                          | % year | 14.60     | 19.20     | 19.40     | 14.50     | 17.30  |
| Lower limb               | Count  | 3         | 9         | 9         | 5         | 26     |
|                          | % year | 7.30      | 12.30     | 12.50     | 7.20      | 10.20  |
| Multiple locations       | Count  | 15        | 15        | 16        | 18        | 64     |
|                          | % year | 36.60     | 20.50     | 22.20     | 26.10     | 25.10  |
| Respiratory in general   | Count  | 0         | 1         | 0         | 0         | 1      |
|                          | % year | 0.00      | 1.40      | 0.00      | 0.00      | 0.40   |
| Psychological in general | Count  | 0         | 0         | 1         | 0         | 1      |
|                          | % year | 0.00      | 0.00      | 1.40      | 0.00      | 0.40   |
| Total                    | Count  | 41        | 73        | 72        | 69        | 255    |
|                          | % year | 100.00    | 100.00    | 100.00    | 100.00    | 100.00 |

**Table B8: Age of claimant for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 1         | 3         | 1         | 3         | 8     |
|           | % Year | 0.86      | 1.47      | 0.69      | 1.43      | 1.19  |
| 20-29 yrs | Count  | 12        | 26        | 10        | 46        | 94    |
|           | % Year | 10.34     | 12.75     | 6.94      | 21.90     | 13.95 |
| 30-39 yrs | Count  | 37        | 45        | 40        | 51        | 173   |
|           | % Year | 31.90     | 22.06     | 27.78     | 24.29     | 25.67 |
| 40-49 yrs | Count  | 39        | 68        | 47        | 58        | 212   |
|           | % Year | 33.62     | 33.33     | 32.64     | 27.62     | 31.45 |
| 50-59 yrs | Count  | 27        | 60        | 46        | 51        | 184   |
|           | % Year | 23.28     | 29.41     | 31.94     | 24.29     | 27.30 |
| 60-65 yrs | Count  | 0         | 2         | 0         | 1         | 3     |
|           | % Year | 0.00      | 0.98      | 0.00      | 0.48      | 0.45  |
| Total     | Count  | 116       | 204       | 144       | 210       | 674   |
|           | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B9: Age of claimant for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 0         | 2         | 0         | 1         | 3     |
|           | % Year | 0.00      | 2.74      | 0.00      | 1.45      | 1.18  |
| 20-29 yrs | Count  | 5         | 4         | 9         | 10        | 28    |
|           | % Year | 12.20     | 5.48      | 12.50     | 14.49     | 10.98 |
| 30-39 yrs | Count  | 14        | 19        | 18        | 18        | 69    |
|           | % Year | 34.15     | 26.03     | 25.00     | 26.09     | 27.06 |
| 40-49 yrs | Count  | 13        | 29        | 18        | 24        | 84    |
|           | % Year | 31.71     | 39.73     | 25.00     | 34.78     | 32.94 |
| 50-59 yrs | Count  | 9         | 19        | 24        | 16        | 68    |
|           | % Year | 21.95     | 26.03     | 33.33     | 23.19     | 26.67 |
| 60-65 yrs | Count  | 0         | 0         | 2         | 0         | 2     |
|           | % Year | 0.00      | 0.00      | 2.78      | 0.00      | 0.78  |
| Total     | Count  | 41        | 73        | 71        | 69        | 254   |
|           | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B10: Severity of claim for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 0         | 2         | 2         | 5         | 9     |
|  | % Year | 0.00      | 0.98      | 1.39      | 2.38      | 1.34  |
| 3: Temporary disability - 6 months and over  | Count  | 0         | 2         | 2         | 1         | 5     |
|  | % Year | 0.00      | 0.98      | 1.39      | 0.48      | 0.74  |
| 4: Temporary disability - Less than 6 months | Count  | 116       | 200       | 140       | 204       | 660   |
|  | % Year | 100.00    | 98.04     | 97.22     | 97.14     | 97.92 |
| Total  | Count  | 116       | 204       | 144       | 210       | 674   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B11: Severity of claim for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Fatal                                     | Count  | 1         | 0         | 0         | 0         | 1     |
|  | % Year | 2.44      | 0.00      | 0.00      | 0.00      | 0.39  |
| 2: Permanent disability                      | Count  | 0         | 0         | 1         | 5         | 6     |
|  | % Year | 0.00      | 0.00      | 1.39      | 7.25      | 2.35  |
| 3: Temporary disability - 6 months and over  | Count  | 2         | 6         | 5         | 2         | 15    |
|  | % Year | 4.88      | 8.22      | 6.94      | 2.90      | 5.88  |
| 4: Temporary disability - Less than 6 months | Count  | 38        | 67        | 66        | 62        | 233   |
|  | % Year | 92.68     | 91.78     | 91.67     | 89.86     | 91.37 |
| Total  | Count  | 41        | 73        | 72        | 69        | 255   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B12: Cost of claim for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|                 |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|-----------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment      | Count  | 33        | 20        | 18        | 1         | 72       |
|                 | % Year | 28.45     | 9.80      | 12.50     | 0.48      | 10.68    |
| \$1-\$100       | Count  | 18        | 33        | 29        | 29        | 109      |
|                 | % Year | 15.52     | 16.18     | 20.14     | 13.81     | 16.17    |
| \$101-\$500     | Count  | 46        | 89        | 52        | 76        | 263      |
|                 | % Year | 39.66     | 43.63     | 36.11     | 36.19     | 39.02    |
| \$501-\$1000    | Count  | 9         | 14        | 16        | 25        | 64       |
|                 | % Year | 7.76      | 6.86      | 11.11     | 11.90     | 9.50     |
| \$1001-\$5000   | Count  | 7         | 30        | 15        | 53        | 105      |
|                 | % Year | 6.03      | 14.71     | 10.42     | 25.24     | 15.58    |
| \$5001-\$10000  | Count  | 1         | 7         | 6         | 11        | 25       |
|                 | % Year | 0.86      | 3.43      | 4.17      | 5.24      | 3.71     |
| \$10001-\$20000 | Count  | 2         | 6         | 3         | 4         | 15       |
|                 | % Year | 1.72      | 2.94      | 2.08      | 1.90      | 2.23     |
| >\$20000        | Count  | 0         | 5         | 5         | 11        | 21       |
|                 | % Year | 0.00      | 2.45      | 3.47      | 5.24      | 3.12     |
| Total           | Count  | 116       | 204       | 144       | 210       | 674      |
|                 | % Year | 100       | 100       | 100       | 100       | 100      |
| Mean costs (\$) | Mean   | 578.40    | 2327.36   | 2072.90   | 6534.32   | 3282.76  |
|                 | n      | 116       | 204       | 144       | 210       | 674      |
|                 | s.d.   | 1785.06   | 8688.74   | 5996.19   | 46777.65  | 26751.34 |

**Table B13: Cost of claim for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|                 |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|-----------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment      | Count  | 6         | 6         | 7         | 0         | 19       |
|                 | % Year | 14.63     | 8.22      | 9.72      | 0.00      | 7.45     |
| \$1-\$100       | Count  | 7         | 5         | 5         | 2         | 19       |
|                 | % Year | 17.07     | 6.85      | 6.94      | 2.90      | 7.45     |
| \$101-\$500     | Count  | 10        | 22        | 13        | 12        | 57       |
|                 | % Year | 24.39     | 30.14     | 18.06     | 17.39     | 22.35    |
| \$501-\$1000    | Count  | 3         | 12        | 8         | 10        | 33       |
|                 | % Year | 7.32      | 16.44     | 11.11     | 14.49     | 12.94    |
| \$1001-\$5000   | Count  | 7         | 15        | 18        | 19        | 59       |
|                 | % Year | 17.07     | 20.55     | 25.00     | 27.54     | 23.14    |
| \$5001-\$10000  | Count  | 3         | 6         | 10        | 7         | 26       |
|                 | % Year | 7.32      | 8.22      | 13.89     | 10.14     | 10.20    |
| \$10001-\$20000 | Count  | 3         | 0         | 6         | 5         | 14       |
|                 | % Year | 7.32      | 0.00      | 8.33      | 7.25      | 5.49     |
| >\$20000        | Count  | 2         | 6         | 5         | 14        | 27       |
|                 | % Year | 4.88      | 8.22      | 6.94      | 20.29     | 10.59    |
| Total           | Count  | 41        | 73        | 72        | 69        | 255      |
|                 | % Year | 100       | 100       | 100       | 100       | 100      |
| Mean costs (\$) | Mean   | 10083.20  | 3984.01   | 8207.56   | 20315.97  | 10576.43 |
|                 | n      | 41        | 73        | 72        | 69        | 255      |
|                 | s.d.   | 43458.79  | 9898.95   | 26606.74  | 40449.07  | 31638.50 |

**Table B14: Lost time of claim for Hit by moving object claims in the coal sector showing counts and percentage claims for each year**

|                        |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|------------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                   | Count  | 96        | 160       | 117       | 177       | 550   |
|                        | % Year | 82.76     | 78.43     | 81.25     | 84.29     | 81.60 |
| One day or less        | Count  | 3         | 4         | 2         | 2         | 11    |
|                        | % Year | 2.59      | 1.96      | 1.39      | 0.95      | 1.63  |
| 2 to 3 days            | Count  | 2         | 2         | 1         | 6         | 11    |
|                        | % Year | 1.72      | 0.98      | 0.69      | 2.86      | 1.63  |
| 4 to 5 days            | Count  | 1         | 3         | 1         | 6         | 11    |
|                        | % Year | 0.86      | 1.47      | 0.69      | 2.86      | 1.63  |
| 6 to 7 days            | Count  | 0         | 0         | 0         | 0         | 0     |
|                        | % Year | 0         | 0         | 0         | 0         | 0     |
| >1 - 2 weeks           | Count  | 0         | 7         | 1         | 1         | 9     |
|                        | % Year | 0.00      | 3.43      | 0.69      | 0.48      | 1.34  |
| >2 - 3 weeks           | Count  | 1         | 1         | 2         | 1         | 5     |
|                        | % Year | 0.86      | 0.49      | 1.39      | 0.48      | 0.74  |
| >3 - 4 weeks           | Count  | 1         | 2         | 1         | 0         | 4     |
|                        | % Year | 0.86      | 0.98      | 0.69      | 0.00      | 0.59  |
| >4 to 8 weeks          | Count  | 7         | 11        | 7         | 6         | 31    |
|                        | % Year | 6.03      | 5.39      | 4.86      | 2.86      | 4.60  |
| >8 to 12 weeks         | Count  | 4         | 4         | 4         | 2         | 14    |
|                        | % Year | 3.45      | 1.96      | 2.78      | 0.95      | 2.08  |
| >12 to 16 weeks        | Count  | 0         | 2         | 1         | 1         | 4     |
|                        | % Year | 0.00      | 0.98      | 0.69      | 0.48      | 0.59  |
| >16 to 26 weeks        | Count  | 1         | 4         | 3         | 2         | 10    |
|                        | % Year | 0.86      | 1.96      | 2.08      | 0.95      | 1.48  |
| >6 mths to 1 yr        | Count  | 0         | 2         | 2         | 1         | 5     |
|                        | % Year | 0.00      | 0.98      | 1.39      | 0.48      | 0.74  |
| Total                  | Count  | 116       | 202       | 142       | 205       | 665   |
|                        | % Year | 100       | 100       | 100       | 100       | 100   |
| Mean lost time (weeks) | Mean   | 0.90      | 1.53      | 1.62      | 0.73      | 1.19  |
|                        | n      | 116       | 202       | 142       | 205       | 665   |
|                        | s.d.   | 2.68      | 4.84      | 5.19      | 3.29      | 4.19  |

**Table B15: Lost time of claim for Vehicle accident claims in the coal sector showing counts and percentage claims for each year**

|                        |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|------------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                   | Count  | 25        | 43        | 44        | 40        | 152   |
|                        | % Year | 60.98     | 58.90     | 61.11     | 57.97     | 59.61 |
| One day or less        | Count  | 2         | 0         | 0         | 2         | 4     |
|                        | % Year | 4.88      | 0.00      | 0.00      | 2.90      | 1.57  |
| 2 to 3 days            | Count  | 1         | 1         | 0         | 1         | 3     |
|                        | % Year | 2.44      | 1.37      | 0.00      | 1.45      | 1.18  |
| 4 to 5 days            | Count  | 1         | 1         | 1         | 2         | 5     |
|                        | % Year | 2.44      | 1.37      | 1.39      | 2.90      | 1.96  |
| 6 to 7 days            | Count  | 0         | 0         | 0         | 0         | 0     |
|                        | % Year | 0         | 0         | 0         | 0         | 0     |
| >1 - 2 weeks           | Count  | 1         | 1         | 0         | 3         | 5     |
|                        | % Year | 2.44      | 1.37      | 0.00      | 4.35      | 1.96  |
| >2 - 3 weeks           | Count  | 1         | 3         | 1         | 1         | 6     |
|                        | % Year | 2.44      | 4.11      | 1.39      | 1.45      | 2.35  |
| >3 - 4 weeks           | Count  | 1         | 3         | 2         | 2         | 8     |
|                        | % Year | 2.44      | 4.11      | 2.78      | 2.90      | 3.14  |
| >4 to 8 weeks          | Count  | 2         | 7         | 4         | 5         | 18    |
|                        | % Year | 4.88      | 9.59      | 5.56      | 7.25      | 7.06  |
| >8 to 12 weeks         | Count  | 3         | 6         | 5         | 3         | 17    |
|                        | % Year | 7.32      | 8.22      | 6.94      | 4.35      | 6.67  |
| >12 to 16 weeks        | Count  | 0         | 1         | 2         | 1         | 4     |
|                        | % Year | 0.00      | 1.37      | 2.78      | 1.45      | 1.57  |
| >16 to 26 weeks        | Count  | 1         | 1         | 7         | 2         | 11    |
|                        | % Year | 2.44      | 1.37      | 9.72      | 2.90      | 4.31  |
| >6 mths to 1 yr        | Count  | 2         | 5         | 5         | 2         | 14    |
|                        | % Year | 4.88      | 6.85      | 6.94      | 2.90      | 5.49  |
| >1 year                | Count  | 0         | 1         | 0         | 0         | 1     |
|                        | % Year | 0.00      | 1.37      | 0.00      | 0.00      | 0.39  |
| Total                  | Count  | 40        | 73        | 71        | 64        | 248   |
|                        | % Year | 100       | 100       | 100       | 100       | 100   |
| Mean lost time (weeks) | Mean   | 3.09      | 5.00      | 6.41      | 3.21      | 4.64  |
|                        | n      | 40        | 73        | 71        | 64        | 248   |
|                        | s.d.   | 6.77      | 10.05     | 11.39     | 7.63      | 9.50  |

## ***In-depth analysis of New workers compensation claims for unplanned movement of plant in the Non-coal sector***

In the Non-coal sector, claims for unplanned movement of plant were broken into mainly Being hit by moving objects (8.70% of all claims) and Vehicle accidents (3.40% of all claims). Analysis of trends in the number and percentage of these types of claims between 2002/2003 and 2005/2006 showed that Vehicle accident claims have increased steadily over the period, whereas Hit by moving object claims have remained around the same (see Table B16).

Tables B17 and B18, B15 and B16 show the agency involved for each of the two types of unplanned movement of plant claims in the Non-coal sector. For Hit by moving object, Materials and substances and Non-powered handtools and equipment accounted for more than half of the claims, with Mobile plant and transport only accounting for a relatively small percentage of claims. Almost all Vehicle accident claims, however, involved Mobile plant and transport.

Analysis of the characteristics of the claimants involved in unplanned movement incident shows that Hit by moving object claims mainly involved Intermediate production and transport workers, Labourers and related workers and Tradespersons and related workers. Vehicle accident claims also involved mainly Intermediate production and transport workers and Labourers and related workers although involvement of the latter group reduced over the period of analysis and Tradespersons and related workers were more likely to be involved (see Tables B19 and B20). The body location of the injury was most commonly the head followed by upper limbs for Hit by moving objects. In contrast, the majority of Vehicle accident claims were either injuries to multiple locations or to the trunk (see Tables B21 and B22). The age group of claimants was very similar for both types of claim. Most claimants were aged between 20 and 49 years, with claimants fairly evenly distributed across these decades (see Tables B23 and B24).

Vehicle accident claims were considerably more severe than Hit by moving objects claims. More vehicle accident claims involved a longer and more severe level of disability than the Hit by moving object claims (see Tables B25 and B26/B22). Time off was also considerably longer for Vehicle accident claims compared to Hit by moving object claims (see Table B27 and B28) and the cost of claims was also markedly higher for Vehicle accident claims (Tables B29 and B30).

***Table B16: Trends in Hit by moving object and Vehicle accident claims in the Non-coal sector showing counts and percentage for each year***

|                      |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|----------------------|--------|-----------|-----------|-----------|-----------|-------|
| Hit by moving object | Count  | 58        | 78        | 67        | 84        | 287   |
|                      | % Year | 76.32     | 78.79     | 67.68     | 67.20     | 71.93 |
| Vehicle accident     | Count  | 18        | 21        | 32        | 41        | 112   |
|                      | % Year | 23.68     | 21.21     | 32.32     | 32.80     | 28.07 |
| Total                | Count  | 76        | 99        | 99        | 125       | 399   |
|                      | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B17: Agency of claim for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant              | Count  | 5         | 7         | 4         | 14        | 30    |
|  | % Year | 8.62      | 8.97      | 5.97      | 16.67     | 10.45 |
| 2: Mobile Plant And Transport                      | Count  | 5         | 12        | 9         | 5         | 31    |
|  | % Year | 8.62      | 15.38     | 13.43     | 5.95      | 10.80 |
| 3: Powered Equipment, Tools And Appliances         | Count  | 5         | 2         | 4         | 6         | 17    |
|  | % Year | 8.62      | 2.56      | 5.97      | 7.14      | 5.92  |
| 4: Non-Powered Handtools, Appliances And Equipment | Count  | 17        | 9         | 14        | 19        | 59    |
|  | % Year | 29.31     | 11.54     | 20.90     | 22.62     | 20.56 |
| 5: Chemicals And Chemical Products                 | Count  | 0         | 0         | 0         | 2         | 2     |
|  | % Year | 0.00      | 0.00      | 0.00      | 2.38      | 0.70  |
| 6: Materials And Substances                        | Count  | 19        | 33        | 29        | 31        | 112   |
|  | % Year | 32.76     | 42.31     | 43.28     | 36.90     | 39.02 |
| 7: Environmental Agencies                          | Count  | 2         | 1         | 1         | 3         | 7     |
|  | % Year | 3.45      | 1.28      | 1.49      | 3.57      | 2.44  |
| 8: Animal, Human And Biological Agencies           | Count  | 0         | 1         | 0         | 2         | 3     |
|  | % Year | 0.00      | 1.28      | 0.00      | 2.38      | 1.05  |
| Total  | Count  | 5         | 13        | 6         | 2         | 26    |
|  | % Year | 8.62      | 16.67     | 8.96      | 2.38      | 9.06  |

**Table B18: Agency of claim for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Machinery And (Mainly) Fixed Plant    | Count  | 0         | 0         | 1         | 2         | 3     |
|  | % Year | 0.00      | 0.00      | 3.13      | 4.88      | 2.68  |
| 2: Mobile Plant And Transport            | Count  | 16        | 18        | 30        | 37        | 101   |
|  | % Year | 88.89     | 85.71     | 93.75     | 90.24     | 90.18 |
| 7: Environmental Agencies                | Count  | 1         | 1         | 1         | 1         | 4     |
|  | % Year | 5.56      | 4.76      | 3.13      | 2.44      | 3.57  |
| 8: Animal, Human And Biological Agencies | Count  | 1         | 2         | 0         | 1         | 4     |
|  | % Year | 5.56      | 9.52      | 0.00      | 2.44      | 3.57  |
| Total                                    | Count  | 18        | 21        | 32        | 41        | 112   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B19: Occupation of claimant for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 4         | 1         | 3         | 1         | 9     |
|   | % Year | 6.90      | 1.28      | 4.48      | 1.19      | 3.14  |
| 2: Professionals                                    | Count  | 4         | 4         | 4         | 7         | 19    |
|   | % Year | 6.90      | 5.13      | 5.97      | 8.33      | 6.62  |
| 3: Associate Professionals                          | Count  | 0         | 0         | 2         | 2         | 4     |
|   | % Year | 0.00      | 0.00      | 2.99      | 2.38      | 1.39  |
| 4: Tradespersons And Related Workers                | Count  | 12        | 23        | 15        | 20        | 70    |
|   | % Year | 20.69     | 29.49     | 22.39     | 23.81     | 24.39 |
| 5: Advanced Clerical and Service Workers            | Count  | 0         | 0         | 2         | 0         | 2     |
|   | % Year | 0.00      | 0.00      | 2.99      | 0.00      | 0.70  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 2         | 2         | 0         | 0         | 4     |
|   | % Year | 3.45      | 2.56      | 0.00      | 0.00      | 1.39  |
| 7: Intermediate Production And Transport Workers    | Count  | 16        | 33        | 17        | 23        | 89    |
|   | % Year | 27.59     | 42.31     | 25.37     | 27.38     | 31.01 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 0         | 0         | 2         | 1         | 3     |
|   | % Year | 0.00      | 0.00      | 2.99      | 1.19      | 1.05  |
| 9: Labourers And Related Workers                    | Count  | 19        | 15        | 22        | 30        | 86    |
|   | % Year | 32.76     | 19.23     | 32.84     | 35.71     | 29.97 |
| Total   | Count  | 57        | 78        | 67        | 84        | 287   |
|   | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B20: Occupation of claimant for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|   |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|---|--------|-----------|-----------|-----------|-----------|-------|
| 1: Managers And Administrators                      | Count  | 1         | 0         | 1         | 3         | 5     |
|   | % Year | 5.56      | 0.00      | 3.13      | 7.32      | 4.46  |
| 2: Professionals                                    | Count  | 2         | 3         | 1         | 5         | 11    |
|   | % Year | 11.11     | 14.29     | 3.13      | 12.20     | 9.82  |
| 3: Associate Professionals                          | Count  | 0         | 0         | 1         | 2         | 3     |
|   | % Year | 0.00      | 0.00      | 3.13      | 4.88      | 2.68  |
| 4: Tradespersons And Related Workers                | Count  | 0         | 1         | 3         | 6         | 10    |
|   | % Year | 0.00      | 4.76      | 9.38      | 14.63     | 8.93  |
| 5: Advanced Clerical And Service Workers            | Count  | 0         | 0         | 0         | 1         | 1     |
|   | % Year | 0.00      | 0.00      | 0.00      | 2.44      | 0.89  |
| 6: Intermediate Clerical, Sales And Service Workers | Count  | 0         | 0         | 2         | 2         | 4     |
|   | % Year | 0.00      | 0.00      | 6.25      | 4.88      | 3.57  |
| 7: Intermediate Production And Transport Workers    | Count  | 10        | 10        | 14        | 18        | 52    |
|   | % Year | 55.56     | 47.62     | 43.75     | 43.90     | 46.43 |
| 8: Elementary Clerical, Sales And Service Workers   | Count  | 0         | 0         | 1         | 1         | 2     |
|   | % Year | 0.00      | 0.00      | 3.13      | 2.44      | 1.79  |
| 9: Labourers And Related Workers                    | Count  | 5         | 7         | 9         | 3         | 24    |
|   | % Year | 27.78     | 33.33     | 28.13     | 7.32      | 21.43 |
| Total   | Count  | 18        | 21        | 32        | 41        | 112   |
|   | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B21: Body location of injury of claimant for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|                          |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total  |
|--------------------------|--------|-----------|-----------|-----------|-----------|--------|
| Head                     | Count  | 30        | 30        | 30        | 41        | 131    |
|                          | % year | 51.70     | 38.50     | 44.80     | 48.80     | 45.60  |
| Neck                     | Count  | 6         | 1         | 0         | 1         | 8      |
|                          | % year | 10.30     | 1.30      | 0.00      | 1.20      | 2.80   |
| Trunk                    | Count  | 3         | 3         | 2         | 1         | 9      |
|                          | % year | 5.20      | 3.80      | 3.00      | 1.20      | 3.10   |
| Upper limbs              | Count  | 12        | 27        | 24        | 28        | 91     |
|                          | % year | 20.70     | 34.60     | 35.80     | 33.30     | 31.70  |
| Lower limbs              | Count  | 5         | 13        | 9         | 9         | 36     |
|                          | % year | 8.60      | 16.70     | 13.40     | 10.70     | 12.50  |
| Multiple locations       | Count  | 2         | 3         | 2         | 4         | 11     |
|                          | % year | 3.40      | 3.80      | 3.00      | 4.80      | 3.80   |
| Psychological in general | Count  | 0         | 1         | 0         | 0         | 1      |
|                          | % year | 0.00      | 1.30      | 0.00      | 0.00      | 0.30   |
| Total                    | Count  | 58        | 78        | 67        | 84        | 287    |
|                          | % year | 100.00    | 100.00    | 100.00    | 100.00    | 100.00 |

**Table B22: Body location of injury of claimant for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|                          |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total  |
|--------------------------|--------|-----------|-----------|-----------|-----------|--------|
| Head                     | Count  | 0         | 0         | 2         | 1         | 3      |
|                          | % year | 0.00      | 0.00      | 6.90      | 2.60      | 2.90   |
| Neck                     | Count  | 2         | 2         | 3         | 3         | 10     |
|                          | % year | 11.80     | 10.00     | 10.30     | 7.70      | 9.50   |
| Trunk                    | Count  | 4         | 6         | 7         | 13        | 30     |
|                          | % year | 23.50     | 30.00     | 24.10     | 33.30     | 28.60  |
| Upper limbs              | Count  | 2         | 4         | 4         | 6         | 16     |
|                          | % year | 11.80     | 20.00     | 13.80     | 15.40     | 15.20  |
| Lower limbs              | Count  | 0         | 1         | 3         | 4         | 8      |
|                          | % year | 0.00      | 5.00      | 10.30     | 10.30     | 7.60   |
| Multiple locations       | Count  | 9         | 5         | 9         | 12        | 35     |
|                          | % year | 52.90     | 25.00     | 31.00     | 30.80     | 33.30  |
| Multiple locations       | Count  | 0         | 1         | 0         | 0         | 1      |
|                          | % year | 0.00      | 5.00      | 0.00      | 0.00      | 1.00   |
| Psychological in general | Count  | 0         | 1         | 1         | 0         | 2      |
|                          | % year | 0.00      | 5.00      | 3.40      | 0.00      | 1.90   |
| Total                    | Count  | 17        | 20        | 29        | 39        | 105    |
|                          | % year | 100.00    | 100.00    | 100.00    | 100.00    | 100.00 |

**Table B23: Age of claimant for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 2         | 3         | 2         | 8         | 15    |
|           | % Year | 3.45      | 3.85      | 2.99      | 9.52      | 5.23  |
| 20-29 yrs | Count  | 15        | 22        | 21        | 23        | 81    |
|           | % Year | 25.86     | 28.21     | 31.34     | 27.38     | 28.22 |
| 30-39 yrs | Count  | 14        | 26        | 20        | 25        | 85    |
|           | % Year | 24.14     | 33.33     | 29.85     | 29.76     | 29.62 |
| 40-49 yrs | Count  | 18        | 19        | 9         | 18        | 64    |
|           | % Year | 31.03     | 24.36     | 13.43     | 21.43     | 22.30 |
| 50-59 yrs | Count  | 8         | 7         | 11        | 9         | 35    |
|           | % Year | 13.79     | 8.97      | 16.42     | 10.71     | 12.20 |
| 60-65 yrs | Count  | 1         | 1         | 3         | 1         | 6     |
|           | % Year | 1.72      | 1.28      | 4.48      | 1.19      | 2.09  |
| Total     | Count  | 58        | 78        | 66        | 84        | 286   |
|           | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B24: Age of claimant for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|           |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|-----------|--------|-----------|-----------|-----------|-----------|-------|
| 15-19 yrs | Count  | 0         | 1         | 3         | 1         | 5     |
|           | % Year | 0         | 4.76      | 9.38      | 2.44      | 4.46  |
| 20-29 yrs | Count  | 4         | 9         | 7         | 15        | 35    |
|           | % Year | 22.22     | 42.86     | 21.88     | 36.59     | 31.25 |
| 30-39 yrs | Count  | 6         | 6         | 7         | 9         | 28    |
|           | % Year | 33.33     | 28.57     | 21.88     | 21.95     | 25.00 |
| 40-49 yrs | Count  | 6         | 3         | 8         | 10        | 27    |
|           | % Year | 33.33     | 14.29     | 25.00     | 24.39     | 24.11 |
| 50-59 yrs | Count  | 2         | 1         | 5         | 5         | 13    |
|           | % Year | 11.11     | 4.76      | 15.63     | 12.20     | 11.61 |
| 60-65 yrs | Count  | 0         | 1         | 1         | 1         | 3     |
|           | % Year | 0         | 4.76      | 3.13      | 2.44      | 2.68  |
| Total     | Count  | 18        | 21        | 31        | 41        | 111   |
|           | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B25: Severity of claim for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 2: Permanent disability                      | Count  | 0         | 7         | 5         | 4         | 16    |
|  | % Year | 0.00      | 8.97      | 7.46      | 4.76      | 5.57  |
| 3: Temporary disability - 6 months and over  | Count  | 2         | 0         | 1         | 0         | 3     |
|  | % Year | 3.45      | 0.00      | 1.49      | 0.00      | 1.05  |
| 4: Temporary disability - Less than 6 months | Count  | 56        | 71        | 61        | 80        | 268   |
|  | % Year | 96.55     | 91.03     | 91.04     | 95.24     | 93.38 |
| Total  | Count  | 58        | 78        | 67        | 84        | 287   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B26: Severity of claim for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 1: Fatal                                     | Count  | 0         | 0         | 1         | 0         | 1     |
|  | % Year | 0.00      | 0.00      | 3.13      | 0.00      | 0.89  |
| 2: Permanent disability                      | Count  | 1         | 1         | 2         | 4         | 8     |
|  | % Year | 5.56      | 4.76      | 6.25      | 9.76      | 7.14  |
| 3: Temporary disability - 6 months and over  | Count  | 1         | 0         | 2         | 5         | 8     |
|  | % Year | 5.56      | 0.00      | 6.25      | 12.20     | 7.14  |
| 4: Temporary disability - Less than 6 months | Count  | 16        | 20        | 27        | 32        | 95    |
|  | % Year | 88.89     | 95.24     | 84.38     | 78.05     | 84.82 |
| Total  | Count  | 18        | 21        | 32        | 41        | 112   |
|  | % Year | 100       | 100       | 100       | 100       | 100   |

**Table B27: Cost of claim for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|                 |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|-----------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment      | Count  | 1         | 2         | 2         | 0         | 5        |
|                 | % Year | 1.72      | 2.56      | 2.99      | 0.00      | 1.74     |
| \$1-\$100       | Count  | 6         | 7         | 10        | 6         | 29       |
|                 | % Year | 10.34     | 8.97      | 14.93     | 7.14      | 10.10    |
| \$101-\$500     | Count  | 24        | 31        | 19        | 27        | 101      |
|                 | % Year | 41.38     | 39.74     | 28.36     | 32.14     | 35.19    |
| \$501-\$1000    | Count  | 7         | 16        | 9         | 19        | 51       |
|                 | % Year | 12.07     | 20.51     | 13.43     | 22.62     | 17.77    |
| \$1001-\$5000   | Count  | 15        | 10        | 15        | 23        | 63       |
|                 | % Year | 25.86     | 12.82     | 22.39     | 27.38     | 21.95    |
| \$5001-\$10000  | Count  | 3         | 2         | 4         | 2         | 11       |
|                 | % Year | 5.17      | 2.56      | 5.97      | 2.38      | 3.83     |
| \$10001-\$20000 | Count  | 0         | 5         | 3         | 1         | 9        |
|                 | % Year | 0         | 6.41      | 4.48      | 1.19      | 3.14     |
| >\$20000        | Count  | 2         | 5         | 5         | 6         | 18       |
|                 | % Year | 3.45      | 6.41      | 7.46      | 7.14      | 6.27     |
| Total           | Count  | 58        | 78        | 67        | 84        | 287      |
|                 | % Year | 100       | 100       | 100       | 100       | 100      |
| Mean Costs (\$) | Mean   | 3047.74   | 5337.15   | 5245.37   | 3525.94   | 4322.94  |
|                 | n      | 58        | 78        | 67        | 84        | 287      |
|                 | s.d.   | 9399.79   | 15802.38  | 14422.70  | 9468.72   | 12643.54 |

**Table B28: Cost of claim for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|                 |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total    |
|-----------------|--------|-----------|-----------|-----------|-----------|----------|
| No payment      | Count  | 0         | 1         | 0         | 2         | 3        |
|                 | % Year | 0.00      | 4.76      | 0.00      | 4.88      | 2.68     |
| \$1-\$100       | Count  | 3         | 1         | 3         | 2         | 9        |
|                 | % Year | 16.67     | 4.76      | 9.38      | 4.88      | 8.04     |
| \$101-\$500     | Count  | 4         | 4         | 6         | 12        | 26       |
|                 | % Year | 22.22     | 19.05     | 18.75     | 29.27     | 23.21    |
| \$501-\$1000    | Count  | 0         | 5         | 4         | 6         | 15       |
|                 | % Year | 0.00      | 23.81     | 12.50     | 14.63     | 13.39    |
| \$1001-\$5000   | Count  | 5         | 5         | 11        | 9         | 30       |
|                 | % Year | 27.78     | 23.81     | 34.38     | 21.95     | 26.79    |
| \$5001-\$10000  | Count  | 0         | 0         | 3         | 1         | 4        |
|                 | % Year | 0.00      | 0.00      | 9.38      | 2.44      | 3.57     |
| \$10001-\$20000 | Count  | 2         | 2         | 0         | 5         | 9        |
|                 | % Year | 11.11     | 9.52      | 0.00      | 12.20     | 8.04     |
| >\$20000        | Count  | 4         | 3         | 5         | 4         | 16       |
|                 | % Year | 22.22     | 14.29     | 15.63     | 9.76      | 14.29    |
| Total           | Count  | 18        | 21        | 32        | 41        | 112      |
|                 | % Year | 100       | 100       | 100       | 100       | 100      |
| Mean Costs (\$) | Mean   | 16130.76  | 12684.34  | 27414.67  | 19577.78  | 19970.39 |
|                 | n      | 18        | 21        | 32        | 41        | 112      |
|                 | s.d.   | 43475.65  | 33914.64  | 78660.64  | 57418.04  | 58662.40 |

**Table B29: Lost time of claim for Hit by moving object claims in the Non-coal sector showing counts and percentage claims for each year**

|                        |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|------------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                   | Count  | 28        | 37        | 38        | 39        | 142   |
|                        | % Year | 48.28     | 47.44     | 56.72     | 46.43     | 49.48 |
| One day or less        | Count  | 7         | 8         | 4         | 11        | 30    |
|                        | % Year | 12.07     | 10.26     | 5.97      | 13.10     | 10.45 |
| 2 to 3 days            | Count  | 8         | 5         | 4         | 13        | 30    |
|                        | % Year | 13.79     | 6.41      | 5.97      | 15.48     | 10.45 |
| 4 to 5 days            | Count  | 4         | 3         | 5         | 6         | 18    |
|                        | % Year | 6.90      | 3.85      | 7.46      | 7.14      | 6.27  |
| 6 to 7 days            | Count  | 0         | 7         | 5         | 4         | 16    |
|                        | % Year | 0.00      | 8.97      | 7.46      | 4.76      | 5.57  |
| >1 - 2 weeks           | Count  | 4         | 5         | 4         | 4         | 17    |
|                        | % Year | 6.90      | 6.41      | 5.97      | 4.76      | 5.92  |
| >2 - 3 weeks           | Count  | 1         | 2         | 1         | 1         | 5     |
|                        | % Year | 1.72      | 2.56      | 1.49      | 1.19      | 1.74  |
| >3 - 4 weeks           | Count  | 2         | 0         | 0         | 0         | 2     |
|                        | % Year | 3.45      | 0.00      | 0.00      | 0.00      | 0.70  |
| >4 to 8 weeks          | Count  | 1         | 4         | 1         | 4         | 10    |
|                        | % Year | 1.72      | 5.13      | 1.49      | 4.76      | 3.48  |
| >8 to 12 weeks         | Count  | 1         | 4         | 3         | 1         | 9     |
|                        | % Year | 1.72      | 5.13      | 4.48      | 1.19      | 3.14  |
| >12 to 16 weeks        | Count  | 0         | 2         | 0         | 1         | 3     |
|                        | % Year | 0.00      | 2.56      | 0.00      | 1.19      | 1.05  |
| >16 to 26 weeks        | Count  | 0         | 1         | 1         | 0         | 2     |
|                        | % Year | 0.00      | 1.28      | 1.49      | 0.00      | 0.70  |
| >6 mths to 1 yr        | Count  | 1         | 0         | 1         | 0         | 2     |
|                        | % Year | 1.72      | 0.00      | 1.49      | 0.00      | 0.70  |
| > 1 year               | Count  | 1         | 0         | 0         | 0         | 1     |
|                        | % Year | 1.72      | 0.00      | 0.00      | 0.00      | 0.35  |
| Missing                | Count  | 0         | 7         | 5         | 4         | 16    |
|                        | % Year | 0         | 8.97      | 7.46      | 4.76      | 5.57  |
| Total                  | Count  | 58        | 78        | 67        | 84        | 287   |
|                        | % Year | 100       | 100       | 100       | 100       | 100   |
| Mean time lost (weeks) | Mean   | 2.09      | 1.77      | 1.58      | 0.85      | 1.52  |
|                        | n      | 58        | 71        | 62        | 80        | 271   |
|                        | s.d.   | 8.14      | 3.80      | 4.76      | 2.32      | 4.97  |

**Table B30: Lost time of claim for Vehicle accident claims in the Non-coal sector showing counts and percentage claims for each year**

|                        |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|------------------------|--------|-----------|-----------|-----------|-----------|-------|
| None                   | Count  | 8         | 2         | 11        | 20        | 41    |
|                        | % Year | 44.44     | 9.52      | 34.38     | 48.78     | 36.61 |
| One day or less        | Count  | 0         | 4         | 0         | 2         | 6     |
|                        | % Year | 0.00      | 19.05     | 0.00      | 4.88      | 5.36  |
| 2 to 3 days            | Count  | 0         | 4         | 5         | 1         | 10    |
|                        | % Year | 0.00      | 19.05     | 15.63     | 2.44      | 8.93  |
| 4 to 5 days            | Count  | 2         | 2         | 3         | 1         | 8     |
|                        | % Year | 11.11     | 9.52      | 9.38      | 2.44      | 7.14  |
| 6 to 7 days            | Count  | 1         | 1         | 3         | 4         | 9     |
|                        | % Year | 5.56      | 4.76      | 9.38      | 9.76      | 8.04  |
| >1 - 2 weeks           | Count  | 2         | 1         | 0         | 0         | 3     |
|                        | % Year | 11.11     | 4.76      | 0.00      | 0.00      | 2.68  |
| >2 - 3 weeks           | Count  | 0         | 0         | 2         | 0         | 2     |
|                        | % Year | 0.00      | 0.00      | 6.25      | 0.00      | 1.79  |
| >3 - 4 weeks           | Count  | 0         | 1         | 0         | 0         | 1     |
|                        | % Year | 0.00      | 4.76      | 0.00      | 0.00      | 0.89  |
| >4 to 8 weeks          | Count  | 2         | 2         | 3         | 3         | 10    |
|                        | % Year | 11.11     | 9.52      | 9.38      | 7.32      | 8.93  |
| >8 to 12 weeks         | Count  | 0         | 0         | 0         | 2         | 2     |
|                        | % Year | 0.00      | 0.00      | 0.00      | 4.88      | 1.79  |
| >12 to 16 weeks        | Count  | 1         | 3         | 2         | 1         | 7     |
|                        | % Year | 5.56      | 14.29     | 6.25      | 2.44      | 6.25  |
| >16 to 26 weeks        | Count  | 1         | 1         | 1         | 2         | 5     |
|                        | % Year | 5.56      | 4.76      | 3.13      | 4.88      | 4.46  |
| >6 mths to 1 yr        | Count  | 0         | 0         | 2         | 5         | 7     |
|                        | % Year | 0.00      | 0.00      | 6.25      | 12.20     | 6.25  |
| >1 year                | Count  | 1         | 0         | 0         | 0         | 1     |
|                        | % Year | 5.56      | 0.00      | 0.00      | 0.00      | 0.89  |
| Missing                | Count  | 1         | 1         | 3         | 4         | 9     |
|                        | % Year | 5.56      | 4.76      | 9.38      | 9.76      | 8.04  |
| Total                  | Count  | 18        | 21        | 32        | 41        | 112   |
|                        | % Year | 100       | 100       | 100       | 100       | 100   |
| Mean time lost (weeks) | Mean   | 6.60      | 4.03      | 5.19      | 8.02      | 6.21  |
|                        | n      | 17        | 20        | 29        | 37        | 103   |
|                        | s.d.   | 13.63     | 6.19      | 10.45     | 14.40     | 11.91 |

## ***Discussion: NSW WorkCover Workers Compensation claims for unplanned movement of plant***

Analysis of unplanned movement of plant claims in the NSW WorkCover Workers Compensation data collection show some clear similarities between those occurring in the coal and Non-coal sectors. In both sectors, vehicle accidents account for a smaller percentage of these claims, but are clearly more serious than claims for Hit by moving objects. Vehicle accidents resulted in around three to four times more lost time and cost, at least twice the amount compared to Hit by moving object claims. A higher proportion of vehicle claims also ended in permanent disability than the moving object claims although only a relatively small proportion of the total unplanned claims were in this severity category. It is also notable that the costs of claims for both types of unplanned movement injury increased considerably over the last two years of the analysis period. For both types of claims costs increased by around three times between 2004/2005 and 2005/2006. Examination of the patterns of claim costs suggests that these differences were due to markedly fewer claims with no payment and a greater number with payments over \$20,000 rather than an overall increase in payments at all levels. This pattern should be reviewed in the coming years.

Vehicle accidents in both sectors mainly involved mobile plant, whereas while a significant number of hit by moving objects claims in both coal and non-coal sectors involved Material and substances, in the coal sector they were also likely to involve Mobile plant, but in the Non-coal sector Non-powered handtools and equipment were more likely to be the agency of the injury. In the coal sector unplanned movement injuries mainly involved Intermediate production and transport occupations and trades and related workers, but in Non-coal unplanned movement injuries were also likely to involve Labourers and related worker occupations. This difference is likely to reflect different roles and employment of occupations in the two sectors rather than necessarily different patterns of risk of unplanned movement injuries. Similarly, the age distributions of these types of claims differed between the two sectors. While in coal most claimants for this type of injury were in the 30 to 59 years age group, in Non-coal they were in the 20 to 49 years age group. This is likely to reflect different age distributions of employees in the two sectors rather than differences in risk of unplanned movement injury.

## ***Analysis of Notifiable incidents due to Unplanned movements reported in COMET database***

As shown in Table B31, almost all unplanned movement of plant incidents notified to COMET were from the Coal sector. There was little evidence of a trend across the years of the analysis. Almost all cases were included in the dataset because of the requirement to notify an unplanned movement. Only nine cases were also coded as involving an injury, however due to the structure of the COMET database, this may be an underestimate of the number of unplanned movement incidents that involved an injury.

In order to attempt to determine the extent that notifiable unplanned movement of plant incidents involved injury, incidents in COMET that involved injury were reviewed in-depth and those with evidence that they involved an unplanned movement of plant were located. This process involved two researchers independently reading and coding the text description of each incident notified due to fatality or serious bodily injury and included in COMET. The coding of each of the two researchers concurred for all cases.

The analysis of the injury cases assessed to result from an unplanned movement of plant showed that three unplanned movement cases in COMET resulted in a fatality: two in the coal sector in 2003 and 2004 and one in Non-coal in 2005. The results of this analysis for serious injury are shown in Table B32. A total of 52 notifiable injuries were judged to involve an unplanned movement of plant. These results show that most of the notifiable injuries associated with unplanned movements came from the coal sector. It should be noted, however, that most of the notifiable unplanned movement incidents also came from this sector. Certainly a much higher proportion of the injuries involving unplanned movement came from the Non-coal sector although the results indicate that the percentage of injuries due to unplanned movements have decreased in the Non-coal sector in the most recent full year compared to the coal sector.

***Table B31: Unplanned movement of plant notifiable incidents reported in COMET showing counts and percentages for each year***

|          |        | <b>2002</b> | <b>2003</b> | <b>2004</b> | <b>2005</b> | <b>Jun 2006</b> | <b>Total</b> |
|----------|--------|-------------|-------------|-------------|-------------|-----------------|--------------|
| Coal     | Count  | 94          | 66          | 65          | 85          | 55              | 365          |
|          | % year | 96.91       | 98.51       | 95.59       | 98.84       | 98.21           | 97.59        |
| Non-Coal | Count  | 3           | 1           | 3           | 1           | 1               | 9            |
|          | % year | 3.09        | 1.49        | 4.41        | 1.16        | 1.79            | 2.41         |
| Total    | Count  | 97          | 67          | 68          | 86          | 56              | 374          |
|          | % year | 100         | 100         | 100         | 100         | 100             | 100          |

**Table B32: Serious bodily injury/serious injury involved in Unplanned movement of plant notifiable incidents reported in COMET showing counts and percentages for each year**

|          |        | 2002  | 2003  | 2004  | 2005  | Jun 2006 | Total |
|----------|--------|-------|-------|-------|-------|----------|-------|
| Coal     | Count  | 6     | 6     | 15    | 6     | 3        | 36    |
|          | % year | 66.67 | 75.00 | 71.43 | 85.71 | 42.86    | 69.23 |
| Non-Coal | Count  | 3     | 2     | 6     | 1     | 4        | 16    |
|          | % year | 33.33 | 25.00 | 28.57 | 14.29 | 57.14    | 30.77 |
| Total    | Count  | 9     | 8     | 21    | 7     | 7        | 52    |
|          | % year | 100   | 100   | 100   | 100   | 100      | 100   |

### **Discussion: Unplanned movements of plant**

The two data collections used to evaluate the role of Unplanned movements of plant in NSW mining provide different pictures of the situation. The workers compensation dataset provides a fairly comprehensive basis for tracking trends in this type of incident but has two major weaknesses. First the previously discussed issues that influence the likelihood of a claim being made and lack of representation of all workers in the mining industry will have an effect on Unplanned movement of plant analysis using this type of data. Second, the definition of Unplanned movements of plant used in this analysis is likely to have underestimated the extent of incidents of this type. There are other mechanism codes that might also result from unplanned movements of equipment or plant such as Trapped by moving machinery or equipment (Mechanism code=25) or Being trapped between stationary and moving objects (Mechanism code=26) which were not included in the current analysis. These problems are likely to have underestimated the number of claims for injuries due to unplanned movement of plant. Further investigation is needed of the most inclusive definition of unplanned movement of plant for Workers compensation datasets.

The analysis of notifiable incidents involving unplanned movements of plant were dominated by reports from the coal sector almost certainly because there are more regulations in the coal sector requiring reporting of Unplanned movement-related incidents. The advantages of using notifiable incidents as indicators of safety-related outcomes are that they are clearly defined and change infrequently as regulation usually changes infrequently. The disadvantage of using this type of measure as an indicator is that it provides no information about injuries resulting from unplanned movement of plant. This analysis demonstrated that if Unplanned movements of plant is to be used as a performance indicator for the mining industry, it would be worthwhile to expand the coding of Unplanned movements in COMET to allow coding of both incident subtype and injury outcome.

## C: Vulnerable Workers

The objective of this section was to locate and report information on the involvement of vulnerable workers in the mining industry in order to provide some benchmarks and analysis relevant to priority setting in the industry.

For the purpose of this project, the definition of Vulnerable Workers endorsed by the NSW Mine Safety Advisory Council is as follows:

*Vulnerable workers may not receive equity, access, participation or rights to work. Some of these people may be affected by past and/or present discrimination in employment. These people often come from the following categories:*

- *New employees or “cleanskins”*
- *Age (young and old)*
- *Tenuous employment contract including; Contractors, Labour Hire, Casual*
- *Remote area (>100Km from centre of population of 50,000)*
- *Lack of access to information*
- *Aboriginal and Torres Strait Islander*
- *Women*
- *Non English-speaking background*
- *Low literacy in English*
- *Disabled*

### Method

Data on the involvement of vulnerable workers in the mining industry was difficult to locate and multiple sources were needed. The following table summarises the sources of information located for each category of vulnerable worker. Where possible the mining data is presented with data on all industry in order to provide some context for judgments about the current situation for mining. This data will also provide a benchmark for analysis of future trends.

| <b>Category of vulnerability</b>  | <b>Source of information</b>  |
|---|---|
| • New employees or “cleanskins”   | COMET   |
| • Age (young and old)   | ABS Census, (also NSW WorkCover, Coal Services, COMET, Hospitalisation) |
| • Tenuous employment contract including; Contractors, Labour Hire, Casual | Full or part time work, ABS Census                                      |
| • Remote area (>100Km from centre of population of 50,000)                | ABS Census  |
| • Lack of access to information   | None located  |
| • Aboriginal and Torres Strait Islander                                   | ABS Census  |
| • Women   | ABS Census  |
| • Non English-speaking background   | ABS Census  |
| • Low literacy in English   | ABS Census  |
| • Disabled  | ABS Census  |

\* Australian Bureau of Statistics, 2001 Census of Population and Housing, Persons Employed in Mining (Industry of Employment ANZSIC 1993) (Based on employment in the week before the census) New South Wales (Place of Usual Residence)

\*\* Australian Bureau of Statistics, 2006 Census of Population and Housing, Persons employed in Mining (Industry of employment ANZSIC 1993) (based on employment in the week before the Census) New South Wales Place of usual residence

## Results

### Industry Experience

Very little information is available in the mining industry on the level of experience of employees. The COMET database is one of the few sources of information. As shown in Table C1, involvement of low experienced employees has been increasing in the mining industry such that in the period 2004/2005 to 2005/2006 almost half of notifiable injury cases have involved an employee with no experience. It should be acknowledged, however, that the distribution of industry experience of injury cases may not reflect the distribution of industry experience in the mining industry. It is not possible without this information to determine whether no or low experience employees in the mining industry are really vulnerable to injury or whether there are simply more low experience employees in the industry. Information is needed on the distribution of experience in the mining industry to resolve this question.

**Table C1: Industry experience of notifiable injury cases reported in the COMET database for each year.**

|               | 99/00 | 00/01 | 01/02 | 02/03 | 03/04 | 04/05 | 05/06 |
|---------------|-------|-------|-------|-------|-------|-------|-------|
| No experience | 14.5  | 27.1  | 7.4   | 30.0  | 27.4  | 45.5  | 49.1  |
| up to 1 year  | 30.4  | 25.4  | 14.8  | 28.0  | 9.6   | 4.5   | 16.4  |
| 1-10 years    | 23.2  | 27.1  | 42.6  | 24.0  | 35.6  | 31.8  | 18.2  |
| >10 years     | 29.0  | 20.3  | 31.5  | 18.0  | 26.0  | 15.9  | 16.4  |
| unknown       | 2.9   | 0.0   | 3.7   | 0.0   | 1.4   | 2.3   | 0.0   |

## Extremes in Age (young and old)

Information on the age distribution of persons employed in the mining industry in NSW is available from the 2001 and 2006 Census. As shown in Table C2 the majority of employees in the mining industry are between 35 and 54 years of age and this distribution is much more truncated than seen for all industry. Compared to all industry, there are considerably fewer young employees (15 -19 years) in mining and slightly fewer older employees in mining. In mining males tend to be older than females, a pattern not seen for all industry where there is little difference between the genders.

**Table C2: Age distribution of males and females employed in the mining industry in NSW compared to All industry from the 2001 Census and 2006 Census.**

|                        | 15-19<br>years | 20-24<br>years | 25-34<br>years | 35-44<br>years | 45-54<br>years | 55-64<br>years | 65<br>years<br>and<br>over | Total     |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------------|-----------|
| <b>2001 Census</b>     |                |                |                |                |                |                |                            |           |
| Mining-Males n         | 124            | 537            | 2,527          | 4,544          | 4,577          | 1,282          | 96                         | 13,687    |
| Mining-Females n       | 32             | 106            | 362            | 327            | 226            | 72             | 11                         | 1,136     |
| Mining-All n           | 156            | 643            | 2,889          | 4,871          | 4,803          | 1,354          | 107                        | 14,823    |
| Mining-Males %         | 0.91           | 3.92           | 18.46          | 33.20          | 33.44          | 9.37           | 0.70                       | 100.00    |
| Mining-Females %       | 2.82           | 9.33           | 31.87          | 28.79          | 19.89          | 6.34           | 0.97                       | 100.00    |
| Mining-All %           | 1.05           | 4.34           | 19.49          | 32.86          | 32.40          | 9.13           | 0.72                       | 100.00    |
| <b>2006 Census</b>     |                |                |                |                |                |                |                            |           |
| Mining-Males n         | 311            | 1,088          | 3,999          | 5,100          | 5,300          | 2,335          | 189                        | 18,322    |
| Mining-Females n       | 45             | 216            | 615            | 551            | 385            | 152            | 29                         | 1,993     |
| Mining-All n           | 356            | 1,304          | 4,614          | 5,651          | 5,685          | 2,487          | 218                        | 20,315    |
| Mining-Males %         | 1.70           | 5.94           | 21.83          | 27.84          | 28.93          | 12.74          | 1.03                       | 100.00    |
| Mining-Females %       | 2.26           | 10.84          | 30.86          | 27.65          | 19.32          | 7.63           | 1.46                       | 100.00    |
| Mining-All %           | 1.75           | 6.42           | 22.71          | 27.82          | 27.98          | 12.24          | 1.07                       | 100.00    |
| <b>2006 Census</b>     |                |                |                |                |                |                |                            |           |
| All industry-Males n   | 84,829         | 148,895        | 344,746        | 378,315        | 349,665        | 214,182        | 49,816                     | 1,570,448 |
| All industry-Females n | 87,590         | 139,615        | 294,073        | 322,418        | 315,325        | 154,453        | 25,519                     | 1,338,993 |
| All industry-All n     | 172,419        | 288,510        | 638,819        | 700,733        | 664,990        | 368,635        | 75,335                     | 2,909,441 |
| All industry-Males %   | 5.40           | 9.48           | 21.95          | 24.09          | 22.27          | 13.64          | 3.17                       | 100.00    |
| All industry-Females % | 6.54           | 10.43          | 21.96          | 24.08          | 23.55          | 11.54          | 1.91                       | 100.00    |
| All industry-All %     | 5.93           | 9.92           | 21.96          | 24.08          | 22.86          | 12.67          | 2.59                       | 100.00    |

## **Tenuous employment contract**

Very little information is available on the involvement of workers with tenuous or contingent employment contracts in the mining industry. The only information obtained was on full or part time status work which was obtained from the 2001 and the 2006 Census. These results are shown in Table C3. Part time work is relatively uncommon in the mining industry, particularly for the coal mining sector. Furthermore, comparison of the 2001 and 2006 Census results suggests that part time work is decreasing in all sectors of the mining industry.

## **Remote areas**

Information is available on the remoteness of the usual place of residence from the 2006 Census. This allows comparison of the remoteness of residence for employees in the mining industry compared to all employed persons in Australia. The results are shown in Table C4. It is clear that mining employees are much less likely to reside in major cities than most employed persons in Australia. They are much more likely to live in Inner, Regional and Remote regions than employees in other industries.

**Table C3: Full and part time employees in different mining industry sectors from the 2001 and 2006 Census**

|                              |   | 2001*                                     |   |   |              | 2006**                                    |   |   |              |
|------------------------------|---|---|---|---|--------------|---|---|---|--------------|
|                              |   | <i>Employed,<br/>worked<br/>full-time</i> | <i>Employed,<br/>worked<br/>part-time</i> | <i>Employed,<br/>away from<br/>work and<br/>not stated<br/>hours<br/>worked</i> | <i>Total</i> | <i>Employed,<br/>worked<br/>full-time</i> | <i>Employed,<br/>worked<br/>part-time</i> | <i>Employed,<br/>away from<br/>work and<br/>not stated<br/>hours<br/>worked</i> | <i>Total</i> |
| 11 Coal Mining               | n | 8104                                      | 871                                       | 186   | 9161         | 9910                                      | 705.00                                    | 720   | 11335        |
|                              | % | 88.46                                     | 9.51                                      | 2.03  | 100.00       | 87.43                                     | 6.22                                      | 6.35  | 100          |
| 12 Oil and Gas<br>Extraction | n | 168                                       | 52  | 3   | 223          | 303                                       | 28.00                                     | 53  | 384          |
|                              | % | 75.34                                     | 23.32                                     | 1.35  | 100.00       | 78.91                                     | 7.29                                      | 13.80   | 100          |
| 13 Metal Ore Mining          | n | 2091                                      | 249                                       | 35  | 2375         | 2736                                      | 166                                       | 170   | 3072         |
|                              | % | 88.04                                     | 10.48                                     | 1.47  | 100.00       | 89.06                                     | 5.40                                      | 5.53  | 100          |
| 14 Other Mining              | n | 1255                                      | 234                                       | 30  | 1519         | 1411                                      | 189                                       | 89  | 1689         |
|                              | % | 82.62                                     | 15.40                                     | 1.97  | 100.00       | 83.54                                     | 11.19                                     | 5.27  | 100          |
| 15 Services to Mining        | n | 804                                       | 194                                       | 21  | 1019         | 1839                                      | 203                                       | 123   | 2165         |
|                              | % | 78.90                                     | 19.04                                     | 2.06  | 100.00       | 84.94                                     | 9.38                                      | 5.68  | 100          |
| B0 Mining, undefined         | n | 521                                       | 90  | 21  | 632          | 1332                                      | 162                                       | 97  | 1591         |
|                              | % | 82.44                                     | 14.24                                     | 3.32  | 100.00       | 83.72                                     | 10.18                                     | 6.10  | 100          |
| Total                        | n | 12943                                     | 1690                                      | 296   | 14929        | 17531                                     | 1453                                      | 1252  | 20236        |
|                              | % | 86.70                                     | 11.32                                     | 1.98  | 100.00       | 86.63                                     | 7.18                                      | 6.19  | 100          |

\* Australian Bureau of Statistics, 2001 Census of Population and Housing, Persons Employed in Mining (Industry of Employment ANZSIC 1993) by Hours Worked (Full-time/Part-time) (Based on employment in the week before the census), New South Wales, (Place of Usual Residence)

\*\* Australian Bureau of Statistics, 2006 Census of Population and Housing, Persons employed in Mining (Industry of employment ANZSIC 1993), by Labour Force Status (full-time/part-time) (based on employment in the week before the Census), New South Wales, (Place of usual residence)

**Table C4: Remoteness of usual place of residence for employed persons in the NSW mining industry compared to all employed persons in NSW from 2006 Census\***

|        |             | Males     | Total     | Persons   | Males  | Total   | Persons |
|--------|-------------|-----------|-----------|-----------|--------|---------|---------|
|        |             | n         | Females   | n         | %      | Females | %       |
|        |             |           | n         | n         |        | %       | %       |
| Mining | Major City  | 7,244     | 920       | 8,164     | 39.64  | 46.05   | 40.27   |
|        | Inner       | 8,179     | 731       | 8,910     | 44.75  | 36.59   | 43.95   |
|        | Regional    |           |           |           |        |         |         |
|        | Outer       | 2,059     | 216       | 2,275     | 11.27  | 10.81   | 11.22   |
|        | Regional    |           |           |           |        |         |         |
|        | Remote      | 767       | 123       | 890       | 4.20   | 6.16    | 4.39    |
|        | Very remote | 27        | 8         | 35        | 0.15   | 0.40    | 0.17    |
|        |             | 18,276    | 1,998     | 20,274    | 100.00 | 100.00  | 100.00  |
| Total  | Major City  | 1,166,439 | 997,641   | 2,164,080 | 74.38  | 74.58   | 74.47   |
|        | Inner       | 295,951   | 255,686   | 551,637   | 18.87  | 19.11   | 18.98   |
|        | Regional    |           |           |           |        |         |         |
|        | Outer       | 96,669    | 77,726    | 174,395   | 6.16   | 5.81    | 6.00    |
|        | Regional    |           |           |           |        |         |         |
|        | Remote      | 8,014     | 5,812     | 13,826    | 0.51   | 0.43    | 0.48    |
|        | Very remote | 1,129     | 837       | 1,966     | 0.07   | 0.06    | 0.07    |
|        |             | 1,568,202 | 1,337,702 | 2,905,904 | 100.00 | 100.00  | 100.00  |

## Indigenous status of employees in the NSW Mining industry

Information about the indigenous status of employees in the NSW mining industry is obtainable from the 2001 and 2006 Census. As shown in Table C5, around one percent of employees in NSW mining were reported to be Indigenous. In 2001 this was a very similar percentage to all NSW industry. In the 2006 Census the percentage of indigenous employees in NSW mining had increased slightly and to a greater extent than all NSW industry.

Information is also available on indigenous status and remoteness of residence for mining industry employees in NSW (see Table C6). As would be expected, there is a higher percentage of indigenous employees with increasing remoteness of residence. Indigenous employees account for around five percent of employed persons in mining in NSW when location of residence is in Remote areas. Compared to all NSW industry, however, this is a considerably lower percentage of indigenous employees in areas of remote residence. For very remote areas of residence there are no indigenous employees in mining whereas for all industry, indigenous employees represent around 15 percent of employees in very remote areas. It seems that NSW mining is lagging behind NSW industry in general in employment of indigenous workers.

**Table C5: Indigenous status for employed persons in the NSW Mining industry compared to all employed persons in NSW industry from 2001 Census and 2006 Census.**

|                      | Indigenous |         |         | Non-Indigenous |           |           | Indigenous status<br>Not stated |         |         | Total     |           |           |
|----------------------|------------|---------|---------|----------------|-----------|-----------|---------------------------------|---------|---------|-----------|-----------|-----------|
|                      | Males      | Females | Persons | Males          | Females   | Persons   | Males                           | Females | Persons | Males     | Females   | Persons   |
| <b>2001 Census*</b>  |            |         |         |                |           |           |                                 |         |         |           |           |           |
| <b>Mining (n)</b>    | 145        | 14      | 159     | 13,505         | 1,116     | 14,621    | 37                              | 6       | 43      | 13,687    | 1,136     | 14,823    |
| <b>Mining %</b>      | 1.06       | 1.23    | 1.07    | 98.67          | 98.24     | 98.64     | 0.27                            | 0.53    | 0.29    | 100.00    | 100.00    | 100.00    |
| <b>Total NSW (n)</b> | 15,435     | 12,907  | 28,342  | 1,484,400      | 1,217,833 | 2,702,233 | 10,191                          | 7,630   | 17,821  | 1,510,026 | 1,238,370 | 2,748,396 |
| <b>Total NSW%</b>    | 1.02       | 1.04    | 1.03    | 98.30          | 98.34     | 98.32     | 0.67                            | 0.62    | 0.65    | 100.00    | 100.00    | 100.00    |
| <b>2006 Census**</b> |            |         |         |                |           |           |                                 |         |         |           |           |           |
| <b>Mining (n)</b>    | 308        | 35      | 343     | 17,917         | 1,947     | 19,864    | 101                             | 11      | 112     | 18,326    | 1,993     | 20,319    |
| <b>Mining %</b>      | 1.68       | 1.76    | 1.69    | 97.77          | 97.69     | 97.76     | 0.55                            | 0.55    | 0.55    | 100.00    | 100.00    | 100.00    |
| <b>Total NSW (n)</b> | 18,536     | 16,737  | 35,273  | 1,538,350      | 1,311,807 | 2,850,157 | 13,561                          | 10,449  | 24,010  | 1,570,447 | 1,338,993 | 2,909,440 |
| <b>Total NSW %</b>   | 1.18       | 1.25    | 1.21    | 97.96          | 97.97     | 97.96     | 0.86                            | 0.78    | 0.83    | 100.00    | 100.00    | 100.00    |

\* AUSTRALIAN BUREAU OF STATISTICS 2001 Census of Population and Housing, New South Wales (STATE 1), INDUSTRY BY INDIGENOUS STATUS BY SEX , Employed persons

\*\* Cat. No. 2068.0 - 2006 Census Tables, 2006 Census of Population and Housing, New South Wales (State), INDUSTRY OF EMPLOYMENT BY INDIGENOUS STATUS BY SEX, Count of employed persons aged 15 years and over, based on place of usual residence

**Table C6: Indigenous status and remoteness of residence for Mining industry employees**

|                   | Indigenous |         |         | Non-Indigenous |         |         | Indigenous status not stated |         |         | Total  |         |         |
|-------------------|------------|---------|---------|----------------|---------|---------|------------------------------|---------|---------|--------|---------|---------|
|                   | Males      | Females | Persons | Males          | Females | Persons | Males                        | Females | Persons | Males  | Females | Persons |
|                   | n          | n       | n       | n              | n       | n       | n                            | n       | n       | n      | n       | n       |
| <b>NSW Mining</b> |            |         |         |                |         |         |                              |         |         |        |         |         |
| Major City        | 70         | 5       | 75      | 7,122          | 915     | 8,037   | 52                           | 0       | 52      | 7,244  | 920     | 8,164   |
| Inner Regional    | 132        | 18      | 150     | 8,008          | 705     | 8,713   | 39                           | 8       | 47      | 8,179  | 731     | 8,910   |
| Outer Regional    | 48         | 11      | 59      | 2,003          | 202     | 2,205   | 8                            | 3       | 11      | 2,059  | 216     | 2,275   |
| Remote            | 47         | 6       | 53      | 715            | 117     | 832     | 5                            | 0       | 5       | 767    | 123     | 890     |
| Very remote       | 0          | 0       | 0       | 27             | 8       | 35      | 0                            | 0       | 0       | 27     | 8       | 35      |
|                   | %          | %       | %       | %              | %       | %       | %                            | %       | %       | %      | %       | %       |
| Major City        | 0.97       | 0.54    | 0.92    | 98.32          | 99.46   | 98.44   | 0.72                         | 0.00    | 0.64    | 100.00 | 100.00  | 100.00  |
| Inner Regional    | 1.61       | 2.46    | 1.68    | 97.91          | 96.44   | 97.79   | 0.48                         | 1.09    | 0.53    | 100.00 | 100.00  | 100.00  |
| Outer Regional    | 2.33       | 5.09    | 2.59    | 97.28          | 93.52   | 96.92   | 0.39                         | 1.39    | 0.48    | 100.00 | 100.00  | 100.00  |
| Remote            | 6.13       | 4.88    | 5.96    | 93.22          | 95.12   | 93.48   | 0.65                         | 0.00    | 0.56    | 100.00 | 100.00  | 100.00  |
| Very remote       | 0.00       | 0.00    | 0.00    | 100.00         | 100.00  | 100.00  | 0.00                         | 0.00    | 0.00    | 100.00 | 100.00  | 100.00  |

**Table C6: Indigenous status and remoteness of residence for Mining industry employees (continued)**

|                           | Indigenous |         |         | Non-Indigenous |         |           | Indigenous status not stated |         |         | Total     |         |           |
|---------------------------|------------|---------|---------|----------------|---------|-----------|------------------------------|---------|---------|-----------|---------|-----------|
|                           | Males      | Females | Persons | Males          | Females | Persons   | Males                        | Females | Persons | Males     | Females | Persons   |
| <b>Total NSW industry</b> | n          | n       | n       | n              | n       | n         | n                            | n       | n       | n         | n       | n         |
| City                      | 8,832      | 8,300   | 17,132  | 1,147,280      | 981,423 | 2,128,703 | 10,327                       | 7,918   | 18,245  | 1,166,439 | 997,641 | 2,164,080 |
| Inner Regional            | 5,787      | 5,176   | 10,963  | 287,875        | 248,676 | 536,551   | 2,289                        | 1,834   | 4,123   | 295,951   | 255,686 | 551,637   |
| Outer Regional            | 2,930      | 2,502   | 5,432   | 92,902         | 74,598  | 167,500   | 837                          | 626     | 1,463   | 96,669    | 77,726  | 174,395   |
| Remote                    | 737        | 613     | 1,350   | 7,199          | 5,157   | 12,356    | 78                           | 42      | 120     | 8,014     | 5,812   | 13,826    |
| Very remote               | 169        | 126     | 295     | 947            | 702     | 1,649     | 13                           | 9       | 22      | 1,129     | 837     | 1,966     |
|                           | %          | %       | %       | %              | %       | %         | %                            | %       | %       | %         | %       | %         |
| Major City                | 0.76       | 0.83    | 0.79    | 98.36          | 98.37   | 98.37     | 0.89                         | 0.79    | 0.84    | 100       | 100     | 100       |
| Inner Regional            | 1.96       | 2.02    | 1.99    | 97.27          | 97.26   | 97.27     | 0.77                         | 0.72    | 0.75    | 100       | 100     | 100       |
| Outer Regional            | 3.03       | 3.22    | 3.11    | 96.10          | 95.98   | 96.05     | 0.87                         | 0.81    | 0.84    | 100       | 100     | 100       |
| Remote                    | 9.20       | 10.55   | 9.76    | 89.83          | 88.73   | 89.37     | 0.97                         | 0.72    | 0.87    | 100       | 100     | 100       |
| Very remote               | 14.97      | 15.05   | 15.01   | 83.88          | 83.87   | 83.88     | 1.15                         | 1.08    | 1.12    | 100       | 100     | 100       |

Cat. No. 2068.0 - 2006 Census Tables, 2006 Census of Population and Housing, (Remoteness Area) – NSW, INDUSTRY OF EMPLOYMENT(a)  
BY INDIGENOUS STATUS BY SEX Count of employed persons aged 15 years and over, Based on place of usual residence

## Women in the NSW Mining industry

Information on the employment of women in NSW mining is available from both the 2001 and 2006 Census and these results are shown in Tables C7 and C8. While the largest number of women is employed in the coal mining sector, this sector has the smallest percentage of women in the workforce. Women make up the largest percentages in the Services to mining sector, especially in Exploration. Where there has been an increase of around 37 percent in employment numbers for the NSW mining industry between the two Censuses, the number of women employed in the industry increased by 73.8%.

Table C9 shows a comparison of female employment in NSW mining with all NSW industry for the last three Census periods. This shows that women in mining represent a markedly smaller percentage of the female employees in NSW than for male mining employees. The percentage of women employees who are working in the mining industry has increased slightly in the decade since the 1996 Census. Furthermore, the percentage of female employees in NSW who work in mining has also slightly increased over the last decade which is in contrast to the percentage of male employees in NSW working in mining which has decreased over the same period.

Despite these suggestions of increasing female participation, these data suggests that there is considerable scope to increase the number and proportion of women in NSW mining.

**Table C7: Employed persons for Mining subgroups in NSW from 2001 Census**

|                        | Male          | Female       | Total         |
|------------------------|---------------|--------------|---------------|
|                        | n             | n            | n             |
| Coal Mining            | 8,439         | 381          | 8,820         |
| Metal Ore Mining       | 2,055         | 252          | 2,307         |
| Oil and Gas Extraction | 133           | 21           | 154           |
| Other Mining           | 1,273         | 200          | 1,473         |
| Mining, undefined      | 509           | 88           | 597           |
| Services to Mining     | 771           | 166          | 937           |
| <b>Total</b>           | <b>13,180</b> | <b>1,108</b> | <b>14,288</b> |
|                        | %             | %            | %             |
| Coal Mining            | 95.68         | 4.32         | 100.00        |
| Metal Ore Mining       | 89.08         | 10.92        | 100.00        |
| Oil and Gas Extraction | 86.36         | 13.64        | 100.00        |
| Other Mining           | 86.42         | 13.58        | 100.00        |
| Mining, undefined      | 85.26         | 14.74        | 100.00        |
| Services to Mining     | 82.28         | 17.72        | 100.00        |
| <b>Total</b>           | <b>92.25</b>  | <b>7.75</b>  | <b>100.00</b> |

**Table C8: Employed persons for mining subgroups in NSW Mining from 2006 Census**

|  | <b>Male<br/>n</b> | <b>Female<br/>n</b> | <b>Total<br/>n</b> |
|--|-------------------|---------------------|--------------------|
| Coal Mining  | 10,668            | 667                 | 11,335             |
| Metal Ore Mining                                   | 2,737             | 336                 | 3,073              |
| Non-Metallic Mineral Mining and Quarrying, nfd     | 113               | 18                  | 131                |
| Mining, nfd  | 1,365             | 226                 | 1,591              |
| Other Mining Support Services                      | 1,045             | 161                 | 1,206              |
| Other Non-Metallic Mineral Mining and Quarrying    | 179               | 57                  | 236                |
| Construction Material Mining                       | 1,145             | 219                 | 1,364              |
| Exploration  | 759               | 241                 | 1,000              |
| Exploration and Other Mining Support Services, nfd | 3                 | 0                   | 3                  |
| <b>Total</b>                                       | <b>18,014</b>     | <b>1,925</b>        | <b>19,939</b>      |
|  | <b>%</b>          | <b>%</b>            | <b>%</b>           |
| Coal Mining  | 94.12             | 5.88                | 100.00             |
| Metal Ore Mining                                   | 89.07             | 10.93               | 100.00             |
| Non-Metallic Mineral Mining and Quarrying, nfd     | 86.26             | 13.74               | 100.00             |
| Mining, nfd  | 85.80             | 14.20               | 100.00             |
| Other Mining Support Services                      | 86.65             | 13.35               | 100.00             |
| #Other Non-Metallic Mineral Mining and Quarrying   | 75.85             | 24.15               | 100.00             |
| Construction Material Mining                       | 83.94             | 16.06               | 100.00             |
| Exploration  | 75.90             | 24.10               | 100.00             |
| Exploration and Other Mining Support Services, nfd | 100.00            | 0.00                | 100.00             |
| <b>Total</b>                                       | <b>90.35</b>      | <b>9.65</b>         | <b>100.00</b>      |

**Table C9: Employed persons in mining for 1996, 2001 and 2006 Census years by gender compared to total NSW employed persons**

|   |   | 1996 Census |           |           | 2001 Census |           |           | 2006 Census |           |           |
|---|---|-------------|-----------|-----------|-------------|-----------|-----------|-------------|-----------|-----------|
|   |   | Males       | Females   | Persons   | Males       | Females   | Persons   | Males       | Females   | Persons   |
| Employed persons in NSW                     | n | 20,178      | 1,455     | 21,633    | 13,598      | 1,139     | 14,737    | 18,323      | 1,992     | 20,315    |
| Mining                                      | % | 93.27       | 6.73      | 100.00    | 92.27       | 7.73      | 100.00    | 90.19       | 9.81      | 100.00    |
| Total NSW employed persons                  | n | 1,433,602   | 1,129,713 | 2,563,315 | 1,500,101   | 1,234,452 | 2,734,553 | 1,570,448   | 1,338,996 | 2,909,444 |
| Mining employees as percentage of NSW total | % | 1.41        | 0.13      | 0.84      | 0.91        | 0.09      | 0.54      | 1.17        | 0.15      | 0.70      |

(a) Industry of Employment was coded to the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC) edition. This replaced the 1993 ANZSIC edition. Data for 1996 and 2001 have been concorded.

## **Non-English-speaking background**

Data on the language spoken at home is available from the last two Censuses (see Table C10). For most mining sectors English is the language spoken at home by almost all employees. Furthermore, the percentage of English-speakers did not change between the two Censuses. The exception is the Oil and Gas Extraction sector where a notable minority of employees speak a language other than English at home and this percentage almost doubled between 2001 and 2006.

The 2001 Census also allowed analysis of the self-rated proficiency of spoken English for non-English speaking background (NESB) employees in Mining compared to all NSW Industry. This analysis shows that a smaller percentage of male mining employees from Non-English speaking backgrounds rate themselves as speaking English very well or well, while the opposite is true for female mining employees. These results suggest that non-English speaking background employees in mining may benefit from activities designed to enhance their English language proficiency.

**Table C10: Language spoken at home for each sector of the NSW mining industry from 2001 and 2006 Censuses**

|                           | 2001  |        | 2006  |        |
|---------------------------|-------|--------|-------|--------|
|                           | n     | %      | n     | %      |
| 11 Coal Mining            |       |        |       |        |
| English                   | 8929  | 97.47  | 11044 | 97.43  |
| Other languages           | 165   | 1.80   | 255   | 2.25   |
| Not stated                | 67    | 0.73   | 36    | 0.32   |
| Total                     | 9161  | 100.00 | 11335 | 100.00 |
| 12 Oil and Gas Extraction |       |        |       |        |
| English                   | 198   | 88.79  | 315   | 82.03  |
| Other languages           | 22    | 9.87   | 66    | 17.19  |
| Not stated                | 3     | 1.35   | 3     | 0.78   |
| Total                     | 223   | 100.00 | 384   | 100.00 |
| 13 Metal Ore Mining       |       |        |       |        |
| English                   | 2270  | 95.58  | 2948  | 95.96  |
| Other languages           | 79    | 3.33   | 116   | 3.78   |
| Not stated                | 26    | 1.09   | 8     | 0.26   |
| Total                     | 2375  | 100.00 | 3072  | 100.00 |
| 14 Other Mining           |       |        |       |        |
| English                   | 1435  | 94.47  | 1564  | 92.60  |
| Other languages           | 70    | 4.61   | 122   | 7.22   |
| Not stated                | 14    | 0.92   | 3     | 0.18   |
| Total                     | 1519  | 100.00 | 1689  | 100.00 |
| 15 Services to Mining     |       |        |       |        |
| English                   | 946   | 92.84  | 1993  | 92.06  |
| Other languages           | 68    | 6.67   | 162   | 7.48   |
| Not stated                | 5     | 0.49   | 10    | 0.46   |
| Total                     | 1019  | 100.00 | 2165  | 100.00 |
| B0 Mining, undefined      |       |        |       |        |
| English                   | 584   | 92.41  | 1482  | 93.15  |
| Other languages           | 39    | 6.17   | 97    | 6.10   |
| Not stated                | 9     | 1.42   | 12    | 0.75   |
| Total                     | 632   | 100.00 | 1591  | 100.00 |
| Total                     |       |        |       |        |
| English                   | 14362 | 96.20  | 19346 | 95.60  |
| Other languages           | 443   | 2.97   | 818   | 4.04   |
| Not stated                | 124   | 0.83   | 72    | 0.36   |
| Total                     | 14929 | 100.00 | 20236 | 100.00 |

\* Australian Bureau of Statistics, 2001 Census of Population and Housing, Persons Employed in Mining (Industry of Employment ANZSIC 1993), (Based on employment in the week before the census) New South Wales (Place of Usual Residence)

\*\* Australian Bureau of Statistics, 2006 Census of Population and Housing, Persons Employed in Mining (Industry of Employment ANZSIC 1993), (Based on employment in the week before the census) New South Wales (Place of Usual Residence)

**Table C11: Proficiency in spoken English for employed persons who speak a language other than English at home for the NSW mining industry compared to all NSW industry from 2001 Census**

|              |   | Speaks English    |         |          |         |            |         |               |         |         |         | Total persons |
|--------------|---|-------------------|---------|----------|---------|------------|---------|---------------|---------|---------|---------|---------------|
|              |   | Very well or well |         | Not well |         | Not at all |         | Not stated(a) |         | Total   |         |               |
|              |   | Males             | Females | Males    | Females | Males      | Females | Males         | Females | Males   | Females |               |
| Mining       | n | 322               | 81      | 25       | 0       | 0          | 0       | 86            | 4       | 433     | 85      | 518           |
|              | % | 74.36             | 95.29   | 5.77     | 0.00    | 0.00       | 0.00    | 19.86         | 4.71    | 100.00  | 100.00  |               |
| All industry | n | 240,296           | 189,286 | 23,023   | 15,399  | 1,689      | 1,238   | 10,517        | 8,646   | 275,525 | 214,569 | 490,094       |
|              | % | 87.21             | 88.22   | 8.36     | 7.18    | 0.61       | 0.58    | 3.82          | 4.03    | 100.00  | 100.00  |               |

(a) Includes persons who did not state their language spoken at home and persons who stated their language spoken at home but did not state their proficiency in English.

## **Literacy level in NSW mining**

Attempts to identify sources of information on the level of literacy of employees in NSW mining were not successful. The Australian Bureau of Statistics produces Literacy Skill level by Industry tables from the Adult Literacy and Life Skills survey, but this data is not recent and was only for Australia as a whole. No information is available on the involvement of employees with low literacy level in NSW mining at this stage.

## Disability in the mining industry

Very little information was located that provided data on the level of disability amongst mining industry employees in NSW. The only information found was from the Australian Bureau of Statistics which reported on employed persons defined as needing assistance. This information was available for the NSW industry including mining. As can be seen in Table C12, the mining industry has the smallest percentage of all persons needing assistance employed in NSW industry. While the nature of the work in the mining industry may preclude employment of people with disabilities, it is notable that other industries with high physical demand such as Agriculture, forestry and fishing, employ a higher number of people with need for assistance. This data suggests there is potential for increasing the involvement of people with disabilities in NSW mining.

**Table C12: Employed persons defined as needing assistance(a) in NSW mining compared to all NSW industry**

|   | Persons with a<br>need for assistance |               |
|---|---------------------------------------|---------------|
|   | n                                     | %             |
| Agriculture, forestry & fishing               | 853                                   | 5.08          |
| Mining  | 42                                    | 0.25          |
| Manufacturing                                 | 1,471                                 | 8.76          |
| Electricity, gas, water & waste services      | 119                                   | 0.71          |
| Construction                                  | 602                                   | 3.59          |
| Wholesale trade                               | 565                                   | 3.37          |
| Retail trade                                  | 1,500                                 | 8.93          |
| Accommodation & food services                 | 1,045                                 | 6.22          |
| Transport, postal & warehousing               | 691                                   | 4.12          |
| Information media & telecommunications        | 235                                   | 1.40          |
| Financial & insurance services                | 433                                   | 2.58          |
| Rental, hiring & real estate services         | 239                                   | 1.42          |
| Professional, scientific & technical services | 849                                   | 5.06          |
| Administrative & support services             | 1,149                                 | 6.84          |
| Public administration & safety                | 900                                   | 5.36          |
| Education & training                          | 995                                   | 5.93          |
| Health care & social assistance               | 3,016                                 | 17.97         |
| Arts & recreation services                    | 241                                   | 1.44          |
| Other services                                | 669                                   | 3.98          |
| Inadequately described/Not stated             | 1,174                                 | 6.99          |
| <b>Total</b>                                  | <b>16,788</b>                         | <b>100.00</b> |

(a) The 'Core Activity Need for Assistance' variable has been developed to measure the number of people with a profound or severe disability. People with a profound or severe disability are defined as needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, long term health condition (lasting six months or more), or old age.

(b) Industry of employment was coded to the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC). This has replaced the 1993 ANZSIC first edition.

Source: Cat. No. 2068.0 - 2006 Census Tables, ABS.

## ***Discussion: Vulnerable Workers***

This analysis looked at a range of categories of workers in the mining industry that could be judged as vulnerable on the basis that they are potentially at greater safety risk or vulnerable due to inequity in employment practices or both. Most of the information located about the involvement of vulnerable workers in mining came from ABS Census documents. No information was available on the level of access to information in the NSW Mining industry or the level of literacy and only limited information was available on the level of industry experience and the involvement of contractors and contract labour in NSW Mining. The last two areas are important as new employees and contractors may be particularly vulnerable due to insufficient training and experience in mine safety. Certainly the data available from the COMET database suggests that mine workers with no experience had particularly high representation among the notifiable injury cases in the last four years. As noted earlier, there are a number of potential reasons for this however this finding indicates that further efforts need to be made to collect reliable information on industry experience in the mining industry in NSW.

A similar argument exists for contractors in the mining industry. The only information located on the involvement of temporary or contract workers was on part time work. While this information suggests that part time work is decreasing in NSW mining, anecdotal evidence suggests that full and part time contract work is increasing. This type of employment is of concern as it is argued that contract workers may not have full access to organisational, operational and safety information and resources and so may be at considerably higher safety risk. It is not possible to evaluate the impact of contract work if there is no system for identifying contract workers. There is clearly a need to collect information on contract workers in NSW mining.

For some categories of vulnerable workers, reasonably good information is available. Census data provides some useful information on the demographic characteristics of people employed in mining in NSW, especially age, gender and indigenous status. This data shows that the age distribution in mining in NSW is truncated compared to all NSW industry, with the main difference in much lower employment of under 25 years olds and to a lesser extent over 54 year olds. The impact of this age distribution on safety risk is not immediately clear. There may be benefits of fewer older workers in areas of mining requiring heavy physical work and concerns about potential risky behaviour in young workers may be a factor in the lower employment of under 25 year olds in NSW mining. On the other hand, concerns about safety need to be balanced against concerns about discriminatory employment practices. It should be noted, however, that the most recent Census year showed an increase in the representation of these youngest and oldest age groups in NSW mining.

Representation of women in mining is low, although there is some indication that it is also increasing, but fairly slowly. On the basis of ensuring equal opportunities for employment, this data suggests that further action needs to be taken to recruit more women into the industry, especially the coal sector.

Similarly, involvement of indigenous people in mining in NSW has increased relative to their involvement in NSW industry as a whole although not for remote and very remote areas where there is considerably lower representation of indigenous people compared to all NSW industry in these areas. Again, this data indicates that in these areas, further

efforts could be made to increase the involvement of indigenous people in the mining industry on the basis of equity in employment opportunity.

Vulnerability of employees in mining may also occur due to the remoteness of location of many mines in NSW. Workers in remote areas may not have access to the level of information and resources available to workers in city and regional areas and this may have an impact on safety risk. In addition, remoteness of worksite location may also increase safety risk where employees are required to commute for long distances between home and work. The Census provides information on remoteness of residence but not on remoteness of work site. Larger percentages of NSW mine employees live in inner or outer regional and remote areas compared to all NSW industry, but further information is needed on the relative location of the worksite for mine employees.

The ability to communicate in oral and written form may also influence safety risk. Difficulties with language and low literacy may therefore increase safety risk. Census information on the language spoken at home showed that English is the language spoken by the greater majority of employees in NSW mining, except for the Oil and Gas sector which had around 20 percent non-English speaking background employees. Furthermore, the data indicates that most of the mine workers who did not speak English at home rated themselves as speaking it well or very well. This indicates that language difficulties are not a major problem for NSW mining. Unfortunately, there is very little information available on literacy in the mining industry. It cannot be assumed that high levels of spoken English imply good levels of literacy. There is need for further information on literacy levels in the NSW mining industry.

Finally, some information is available on the involvement of people with disabilities in mining employment through the ABS data collection on employed persons needing assistance. In NSW the mining industry employed the smallest percentage of persons needing assistance. The same issues apply for this group as for older workers in the need to balance physical work demands with fairness in employment practices. This data again suggests that the employment of people with disabilities in mining needs to be considered further.

In summary, this analysis has highlighted a number of areas where better data is required, including the involvement of contractors, the level of literacy in the mining industry and the role of remoteness of mines in access to information and in creating safety risks due to long commuting times. The analysis indicated that action is needed to address the lower involvement in mining employment of younger and older workers, women, indigenous people, especially in remote and very remote areas and people with disabilities.

## D: Atmospheric Contaminants

The aim of this analysis was to identify and analyse data on atmospheric contaminant exposure in the mining industry. Two main sources of information were used: the NSW WorkCover Workers compensation database and the Coal Services Pty Ltd workers compensation database. This analysis attempted to will include following specific contaminants:

- Silica (respirable)
- Diesel emissions
- Substances including; Welding fume, Resins, Gases (e.g. CO, CO<sup>2</sup>)
- Coal dust
- Non-respirable dust
- Lead
- Cyanide
- Radiation
- Asbestiform respirable dust
- Isocyanides
- Lack of oxygen

For this analysis of the NSW WorkCover Workers Compensation dataset the Nature of Injury variable was used to locate all respiratory-related claims. This included, 610: Asthma, 630: Asbestosis, 640: Pneumoconiosis due to other silica or silicates, 660: Other respiratory conditions due to substances, 670: Chronic bronchitis, emphysema and allied conditions, and 680: Other diseases of the respiratory system. Analysis was conducted for new and total claims for coal and Non-coal sectors.

For the Coal Services workers compensation data analysis, the details of all claims for respiratory conditions over the past 10 years were provided in a separate file. This was analysed separately for coal and Non-coal sectors.

## **Results: Airborne Contaminants**

### **Analysis of Respiratory claims in NSW WorkCover Workers Compensation**

Analysis of the new claims in the coal sector over the period 2002/2003 to 2005/2006 in the NSW Workers Compensation dataset showed 27 new claims, almost all Other respiratory conditions due to substances (see Table D1). There were no apparent trends over the period of analysis. For the Non-coal sector a total of 24 new claims were made in the analysis period, with the largest number of claims for Asbestosis followed by Other respiratory conditions due to substances (Table D2). Again, there were no clear trends across the analysis period.

There were 68 claims for respiratory conditions in total in the coal sector (see Table D3). As for new claims, the majority were for Other respiratory conditions due to substances although just over 10 percent of respiratory claims were due to Chronic conditions, emphysema and allied conditions and a similar percentage were for Other diseases of the respiratory system. As would be expected, the total number of claims was highest for the most recent years. For the Non-coal sector, a total of 45 claims were on the record for the analysis period. Again, the most common type of respiratory claim was Asbestosis which accounted for almost half of all respiratory claims (46.7%), followed by Other respiratory conditions due to substances (28.9%) and then Pneumoconiosis due to other silica or silicates (17.8%). Similar to the coal sector, there was again a trend for higher total claims in the most recent years of the analysis.

**Table D1: New claims for respiratory conditions in the coal sector for NSW WorkCover workers compensation data showing counts and percentages for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 610: Asthma  | Count  | 0         | 0         | 1         | 0         | 1     |
|  | % year | 0.00      | 0.00      | 0.07      | 0.00      | 0.02  |
| 660: Other respiratory conditions due to substances      | Count  | 2         | 12        | 5         | 3         | 22    |
|  | % year | 0.16      | 0.65      | 0.34      | 0.16      | 0.35  |
| 670: Chronic bronchitis, emphysema and allied conditions | Count  | 1         | 0         | 1         | 0         | 2     |
|  | % year | 0.08      | 0.00      | 0.07      | 0.00      | 0.03  |
| 680: Other diseases of the respiratory system            | Count  | 0         | 2         | 0         | 0         | 2     |
|  | % year | 0.00      | 0.11      | 0.00      | 0.00      | 0.03  |
| Total respiratory  | Count  | 3         | 14        | 7         | 3         | 27    |
|  | % year | 0.25      | 0.74      | 0.48      | 0.16      | 0.43  |
| Non-respiratory  | Count  | 1216      | 1826      | 1444      | 1832      | 6318  |
|  | % year | 99.75     | 99.24     | 99.52     | 99.84     | 99.57 |
| Total  | Count  | 1219      | 1840      | 1451      | 1835      | 6345  |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table D2: New claims for respiratory conditions in the Non-coal sector for NSW WorkCover workers compensation data showing counts and percentages for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 610: Asthma  | Count  | 0         | 0         | 0         | 1         | 1     |
|  | % year | 0.00      | 0.00      | 0.00      | 0.13      | 0.03  |
| 630: Asbestosis  | Count  | 3         | 3         | 3         | 2         | 11    |
|  | % year | 0.38      | 0.37      | 0.33      | 0.25      | 0.33  |
| 640: Pneumoconiosis due to other silica or silicates     | Count  | 1         | 0         | 3         | 0         | 4     |
|  | % year | 0.13      | 0.00      | 0.33      | 0.00      | 0.12  |
| 660: Other respiratory conditions due to substances      | Count  | 3         | 2         | 2         | 0         | 7     |
|  | % year | 0.38      | 0.25      | 0.22      | 0.00      | 0.21  |
| 670: Chronic bronchitis, emphysema and allied conditions | Count  | 0         | 1         | 0         | 0         | 1     |
|  | % year | 0.00      | 0.12      | 0.00      | 0.00      | 0.03  |
| Total respiratory  | Count  | 7         | 6         | 8         | 3         | 24    |
|  | % year | 0.78      | 0.74      | 0.89      | 0.38      | 0.73  |
| Non-respiratory  | Count  | 791       | 807       | 890       | 786       | 3274  |
|  | % year | 99.12     | 99.26     | 99.11     | 99.62     | 99.27 |
| Total  | Count  | 798       | 813       | 898       | 789       | 3298  |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table D3: Total claims for respiratory conditions in the coal sector for NSW WorkCover workers compensation data showing counts and percentages for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 610: Asthma  | Count  | 0         | 0         | 1         | 1         | 2     |
|  | % year | 0.00      | 0.00      | 0.02      | 0.02      | 0.01  |
| 660: Other respiratory conditions due to substances      | Count  | 2         | 16        | 17        | 18        | 53    |
|  | % year | 0.16      | 0.45      | 0.38      | 0.30      | 0.35  |
| 670: Chronic bronchitis, emphysema and allied conditions | Count  | 1         | 1         | 2         | 3         | 7     |
|  | % year | 0.08      | 0.03      | 0.04      | 0.05      | 0.05  |
| 680: Other diseases of the respiratory system            | Count  | 0         | 2         | 2         | 2         | 6     |
|  | % year | 0.00      | 0.06      | 0.04      | 0.03      | 0.04  |
| Total respiratory  | Count  | 3         | 19        | 22        | 24        | 68    |
|  | % year | 0.25      | 0.54      | 0.49      | 0.39      | 0.44  |
| Non-respiratory  | Count  | 1216      | 3522      | 4491      | 6060      | 15289 |
|  | % year | 99.75     | 99.46     | 99.51     | 99.61     | 99.56 |
| Total  | Count  | 1219      | 3541      | 4513      | 6084      | 15357 |
|  | % year | 100       | 100       | 100       | 100       | 100   |

**Table D4: Total claims for respiratory conditions in the Non-coal sector for NSW WorkCover workers compensation data showing counts and percentages for each year**

|  |        | 2002/2003 | 2003/2004 | 2004/2005 | 2005/2006 | Total |
|--|--------|-----------|-----------|-----------|-----------|-------|
| 610: Asthma  | Count  | 0         | 0         | 0         | 1         | 1     |
|  | % year | 0.00      | 0.00      | 0.00      | 0.07      | 0.02  |
| 630: Asbestosis  | Count  | 3         | 6         | 7         | 5         | 21    |
|  | % year | 0.37      | 0.48      | 0.48      | 0.36      | 0.43  |
| 640: Pneumoconiosis due to other silica or silicates     | Count  | 1         | 0         | 4         | 3         | 8     |
|  | % year | 0.12      | 0.00      | 0.28      | 0.22      | 0.16  |
| 660: Other respiratory conditions due to substances      | Count  | 3         | 5         | 3         | 2         | 13    |
|  | % year | 0.37      | 0.40      | 0.21      | 0.15      | 0.27  |
| 670: Chronic bronchitis, emphysema and allied conditions | Count  | 0         | 1         | 1         | 0         | 2     |
|  | % year | 0.00      | 0.08      | 0.07      | 0.00      | 0.04  |
| Total respiratory  | Count  | 7         | 12        | 15        | 11        | 45    |
|  | % year | 0.67      | 0.96      | 1.03      | 0.8       | 0.8   |
| Non-respiratory  | Count  | 794       | 1236      | 1436      | 1359      | 4825  |
|  | % year | 99.13     | 99.04     | 98.97     | 99.20     | 99.08 |
| Total  | Count  | 801       | 1248      | 1451      | 1370      | 4870  |
|  | % year | 100       | 100       | 100       | 100       | 100   |

### **Analysis of Respiratory claims from Coal Services Pty Ltd Workers compensation dataset**

A total of 71 cases were captured in the set of respiratory claims registered in the Coal Services Workers compensation dataset over the last 10 years (see Table D5). Nearly three-quarters of these claims were related to exposure to Dust and a notable minority of nearly 16 percent of claims was Asbestos-related. The analysis of other characteristics of these claims were consistent with this. More than two-thirds of claims had a nature code of Other respiratory conditions due to substances and a further 14 percent were coded as Chronic bronchitis, emphysema and allied conditions (see Table D6). Almost all claims had a mechanism code of Long term contact with chemical or substances (see Table D7) and almost all had an agency code of Non-metallic minerals and substances - Dust not elsewhere classified (see Table D8).

**Table D5: Total claims for respiratory conditions in the Coal Services workers compensation dataset a showing counts and percentages**

| <b>Type of Claim</b> | <b>Count</b> | <b>Percent</b> |
|----------------------|--------------|----------------|
| Asbestos             | 11           | 15.49          |
| Asbestosis           | 1            | 1.41           |
| Diesel               | 1            | 1.41           |
| Dust                 | 52           | 73.24          |
| Dust/Asbestos        | 1            | 1.41           |
| Fume                 |              |                |
| Inhalation           | 2            | 2.82           |
| Missing              | 3            | 4.23           |
| <b>Total</b>         | <b>71</b>    | <b>100</b>     |

**Table D6: Nature of claims for all claims for respiratory conditions in the Coal Services workers compensation dataset a showing counts and percentages**

| <b>Nature</b>  | <b>Frequency</b> | <b>Percent</b> |
|--|------------------|----------------|
| 140: Poisoning and toxic effects of substances           | 1                | 1.41           |
| 630: Asbestosis  | 1                | 1.41           |
| 640: Pneumoconiosis due to other silica or silicates     | 1                | 1.41           |
| 650: Pneumoconiosis excluding asbestosis and silicosis   | 2                | 2.82           |
| 660: Other respiratory conditions due to substances      | 50               | 70.42          |
| 670: Chronic bronchitis, emphysema and allied conditions | 10               | 14.08          |
| 680: Other diseases of the respiratory system            | 2                | 2.82           |
| 810: Mesothelioma  | 2                | 2.82           |
| Total respiratory  | 69               | 97.18          |
| Missing  | 2                | 2.82           |
| <b>Total</b>   | <b>71</b>        | <b>100</b>     |

**Table D7: Mechanism of claims for all claims for respiratory conditions in the Coal Services workers compensation dataset a showing counts and percentages**

| <b>Mechanism</b>                                 | <b>Frequency</b> | <b>Percent</b> |
|--|------------------|----------------|
| 61: Single contact with chemical or substance    | 1                | 1.41           |
| 62: Long term contact with chemical or substance | 68               | 95.77          |
| Total respiratory                                | 69               | 97.18          |
| Missing  | 2                | 2.82           |
| <b>Total</b>                                     | <b>71</b>        | <b>100</b>     |

**Table D8: Agency of claims for all claims for respiratory conditions in the Coal Services workers compensation dataset a showing counts and percentages**

| Agency  | Frequency | Percent |
|---|-----------|---------|
| 521: Other basic chemicals- Industrial gases and fumes                    | 1         | 1.41    |
| 616: Non-metallic minerals and substances - Dust not elsewhere classified | 66        | 92.96   |
| 618: Non-metallic minerals and substances - Asbestos                      | 1         | 1.41    |
| 619: Other Non-metallic minerals and substances                           | 1         | 1.41    |
| Total respiratory   | 69        | 97.18   |
| System  | 2         | 2.82    |
| Total   | 71        | 100     |

### ***Discussion: Airborne Contaminants***

Both the NSW WorkCover and Coal Services databases showed that there are a relatively small number of respiratory claims in mining in NSW. Both datasets contained a similar number of total claims for the coal sector and showed a very similar pattern of nature of injury codes. Other respiratory conditions due to substances was clearly the main nature of injury in the coal sector followed by chronic bronchitis, emphysema and allied conditions. From the Coal Services analysis it was also possible to determine that most claims were for dust exposure, approaching 20 percent of the claims for respiratory conditions involved asbestos whereas there were only isolated claims for exposure to diesel or other inhalation.

The only source of information about respiratory claims in the Non-coal sector was the NSW WorkCover workers compensation dataset. While there were fewer respiratory claims in this sector compared to the coal sector, the nature of the claims was broader in the Non-coal sector, with Asbestosis accounting for nearly half, and other respiratory conditions due to substances and Pneumoconiosis accounting for nearly all of the remainder of respiratory claims.

Clearly this analysis demonstrates that exposure to airborne contaminants is the most common reason for respiratory claims in coal and Non-coal mining. Despite the disadvantages of workers compensation datasets as discussed earlier, this type of data was the only accessible source of information on respiratory injury and consequently exposure to airborne contaminants in NSW mining. The NSW WorkCover workers compensation dataset is the best source of information as it contains data on claims from both coal and Non-coal sectors although the Coal Services workers compensation dataset provides the same and slightly extended information for the coal sector.

## **APPENDIX 1 Extract from Coal Mine Health and Safety Regulation 2006**

### **55 Notification of certain incidents at or in relation to coal operations: section 110 (1) (b) of the Act**

The following incidents are prescribed for the purposes of section 110 (1) (b) of the Act:

- (a) an injury to a person that results (at any time after the injury) in any of the following:
  - (i) the amputation of one or more fingers or toes or any other part of a hand or foot,
  - (ii) any fracture other than a fracture of a finger, toe, hand or foot,
  - (iii) loss of sight of an eye,
  - (iv) an internal haemorrhage receiving hospital treatment,
  - (v) the injection of fluid (including hydraulic fluid, oil, air or water) under pressure,
  - (vi) asphyxia,
  - (vii) the loss of consciousness of the person caused by impact of physical force, exposure to hazardous substances, electric shock or lack of oxygen,
- (b) an event that results (at any time after the event) in the admission of a person to hospital as an in-patient,
- (c) any of the following events or circumstances that present an immediate threat to life or of permanent incapacitating injury:
  - (i) damage to any plant, building or structure,
  - (ii) imminent risk of explosion or fire,
  - (iii) entrapment of a person,
  - (iv) failure of strata, or of slope stability control measures,
  - (v) serious burns to a person,
  - (vi) the unintended activation or movement of vehicles or machinery,
- (d) any incident involving electricity:
  - (i) as a consequence of which a person suffers injury, receives treatment from a health care professional or is unable (on medical advice) to attend work for any period of time, or
  - (ii) where a vehicle, machinery or other plant makes contact with an energised high voltage source involving a risk to any person,
- (e) an uncontrolled explosion or fire or a misfire of explosives in the underground parts of a coal operation,
- (f) an uncontrolled outburst of gas,
- (g) an abnormal inrush of fluid,
- (h) a collision on the surface part of the coal operation involving a vehicle or mobile plant with a gross weight of more than 2 tonnes,
- (i) the loss of control of a heavy vehicle or other large plant on the surface part of the coal operation,
- (j) the overturning of a heavy vehicle or other large plant on the surface part of the coal operation,
- (k) ejection of fly rock so that it falls outside a blast exclusion zone (that is an area from which people are excluded during blasting) or near people,
- (l) failure of any part of a powered winding system or damage to a shaft or shaft equipment.