

# Safety Behaviour Survey

2002

Safety Behaviour Working Party Report and Recommendations

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13 MAY 2010

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Resources Safety Division

December 2002

**2002 SAFETY BEHAVIOUR SURVEY OF THE  
WESTERN AUSTRALIAN MINING INDUSTRY**

**SAFETY BEHAVIOUR WORKING PARTY  
REPORT AND RECOMMENDATIONS**

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Note that due to size limitations, not all Appendices are contained in this Report. To view all Appendices, please refer to the additional "Appendices To The 2002 Safety Behaviour Working Party Report" document.

All documents, including the Report, Appendices and Powerpoint presentation, can be found on the MOSHAB Web site at [www.mpr.wa.gov.au/moshab/reports](http://www.mpr.wa.gov.au/moshab/reports).

## 1.0 EXECUTIVE SUMMARY

A Safety Behaviour Survey was undertaken by MOSHAB in 2002 to collect information from employees regarding their views on key safety issues, including perceptions of things that might lead to risk-taking behaviour on mine sites.

The Survey was also conducted as a follow-up from the initial 1998 "Risk-Taking Behaviour" (RTB) Survey of underground mines but was expanded to include all major industry sectors and surface operations. This information gained will be used by MOSHAB to develop strategies for implementation by its members to improve safety performance across the industry.

The Survey was conducted in December 2001 and between February and May in 2002 by a tripartite Safety Behaviour Working Party (SBWP). All major industry sectors were involved, including alumina, coal, gold, iron ore, mineral sands and nickel. Approximately 4 700 employees were surveyed, representing about 14% of Western Australian Mining Industry employees and 22% of the total employees at the visited sites. The SBWP visited 60 mines across the State, which included 21 underground mines, 24 surface mines, 13 processing operations and 2 port/rail operations.

The Survey took the form of a confidential questionnaire and included 40 questions for employees (i.e. everyone who took part). Any supervisors and managers present were then asked to complete additional questionnaires (20 questions and 18 questions, respectively). Data entry of the completed surveys and questionnaires was undertaken by Savant Surveys and Strategies, Perth. Questionnaire development and data analysis was undertaken by the Mineral Industry Safety and Health Centre (MISHC) at the University of Queensland, Brisbane. The data analysis was undertaken:

- ❖ By the four main employment groups, i.e. Operator/Tradesperson; Support/Technical; Manager/Superintendent; and Supervisor;
- ❖ By the nine regions surveyed, i.e. Central, South West, Kalgoorlie, Kambalda/Norseman, Laverton/Leonora, Leinster/Wiluna, Murchison, Yilgarn and Pilbara; and
- ❖ By the seven industry sectors, i.e. Gold, Nickel, Alumina, Mineral Sands, Iron Ore, Coal and 'Other Minerals' (salt, talc, tantalum and zinc).

A comparison of results between comparable questions from the 1998 RTB Survey and the 2002 Survey for the underground mining sector was also undertaken.

Major findings of the 2002 Survey are as follows:

- There appears to be a high level of hazard/accident/incident reporting but timely follow-up action to address hazards and feed-back on the results of accident/incident investigations could be improved;
- *Some risk-taking behaviour still exists within the industry and appears to be driven by production pressures and management/supervisor acceptability of such behaviour;*

- ❑ Managers and supervisors can have a significant impact on employee behaviour by communicating the expected standards for 'safe production', setting the example, and actively encouraging and promoting safe behaviour;
- ❑ Significant differences in perceptions across job groups are evident. These could be addressed through more effective communication at all levels (i.e. manager-supervisor, supervisor-employee and manager-employee) and managers/supervisors allocating more time to discuss safety with employees;
- ❑ Better training of managers and supervisors in effective communication and people management skills is essential to improving mine site communications and in providing those managers and supervisors with the skills to encourage and promote safe behaviour;
- ❑ Safe work procedures are generally being developed by involving employees, but must be more readily accessible to all employees and be an integral part of employee training programs. Systems should be in place that, readily capture any changes that improve work practices so procedures can be updated, documented and communicated to employees.

With regard to the comparison of results from the 1998 RTB Survey and the 2002 Survey, improvements in perceptions occurred in 60% (i.e. 20 out of 34) of the questions that were available for comparison. Key findings were:

- ❑ Significant improvements occurred in perceptions regarding supervisors' skills and their ability to have an impact upon safe behaviours, communications with management, and the "amount" of risk-taking behaviour observed by respondents;
- ❑ Significant declines in perceptions occurred in relation to the availability of safe work procedures, training of employees in safe work procedures, compliance with procedures and the penalising of employees for performing tasks they considered to be unsafe.

The Working Party made eight recommendations that cover a range of issues and with responsibility for action directed to mine management, MOSHAB and its member organisations. *Recommendation 1* requires action by mine management to address 10 specific issues at the mine site in consultation with employees. The remaining recommendations call for action at a higher, industry-wide level by MOSHAB or its member organisations. Examples are of these are:

- ❑ The development of industry-wide standards and training strategies (e.g. FMI for managers and supervisors);
- ❑ Programs to improve the involvement and commitment of Executive Management;
- ❑ Industry-wide approach to injury reporting;
- ❑ Promoting development of fatigue management plans based on the MOSHAB Guideline;
- ❑ Programs to improve the effectiveness of safety and health representatives.

Finally, mine management should ensure that copies of this Report are made readily available to all employees. They should also review the findings and recommendations in this Report in consultation

with employees to determine what action is necessary to ensure that relevant recommendations are implemented on site.

MOSHAB should consider what action is recommended to the Minister to ensure that the recommendations made in this Report are effectively implemented. This may include requesting the Department of Mineral and Petroleum Resources to monitor the implementation of recommendations requiring action by mine management and reporting progress to MOSHAB.

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## 2.0 SUMMARY OF RECOMMENDATIONS

The recommendations have been referenced to the relevant sections in the Report. The recommendations are not in order of priority as each one is considered important to address specific issues. The Recommendations are as follows:

### *Mine Management Actions to Address Issues Raised in Report*

**Recommendation 1** – Mine Management should review this Report and implement the various actions contained in Appendix L – “Action Plan for Mine Management” to address the following issues on mine sites:

- 1.0 *Review and Communication of Report Findings*
- 2.0 *Hazard/Incident Investigation and Follow-up*
- 3.0 *Provision of Safety Information*
- 4.0 *Promoting Safe Behaviour*
- 5.0 *Management-Employee Communications*
- 6.0 *Management-Supervisor Communications*
- 7.0 *Site Procedures and Training*
- 8.0 *Manager and Supervisor Training*
- 9.0 *Fatigue Management*
- 10.0 *Injury Reporting, Recording and Management*
- 11.0 *Drug and Alcohol Management*

Refer to Appendix L – “Action Plan for Mine Management” for details.

### *Industry Approach to Training of Managers and Supervisors*

**Recommendation 2** – The Chamber of Minerals and Energy reviews the content and implementation of the Frontline Management Initiative (FMI) against issues raised in this Report. Training for managers and supervisors should include:

- strategies that improve the ability of supervisors and managers to positively influence employee behaviour (refer Sections 4.5, 5.4, 6.2 and 6.5);
- effective communication skills, including how to give positive feed-back to employees for working safely and how to discipline for unsafe behaviours (refer Sections 4.5, 5.2, 5.4 and 6.2);
- understanding hazard identification, risk assessment and risk control (refer Section 5.2);
- understanding the statutory responsibilities of managers and supervisors (refer Sections 5.2 and 8.6).

Consideration should also be given to extending the implementation of FMI to all mining industry supervisors and managers, commencing with those who have statutory responsibilities (refer Section 8.6).



*Improving Effectiveness of Employee Representation*

**Recommendation 3** – MOSHAB develops a strategy to promote the role of safety and health representatives across the industry and programs for implementation by the industry to improve the effectiveness of safety and health representatives on mines (refer Sections 4.8 and 6.6).

*Increasing the Involvement of Executive Management*

**Recommendation 4** – The Chamber of Minerals and Energy should communicate the findings and recommendations of this Report to industry Executive Management, including issues associated with:

- demonstrating their commitment to safety and encouraging greater involvement of executive management in ensuring safety at their mine site (refer Section 6.1);
- the adequacy of resources to ensure safe production (refer Sections 6.1 and 8.8); and
- committing the necessary resources to review and implement applicable recommendations from this Report and holding site management accountable for their implementation (refer Appendix L).

*Industry Strategy to Improve Employee Training*

**Recommendation 5** – The Chamber of Minerals and Energy should review the current status of employee skill-training and identify ways of improving the level and effectiveness of training across the industry (refer Sections 4.6 and 8.1). A report on the status of employee skill-training and proposed improvement actions should be provided to MOSHAB for consideration and comment.

*Promotion of Fatigue Management Guideline*

**Recommendation 6** – MOSHAB promotes the development and implementation of fatigue management plans at all mines based on the MOSHAB Fatigue Management Guideline (refer Section 8.2).

*Injury Reporting and Recording*

**Recommendation 7** – MOSHAB should develop a common industry approach to the reporting and recording of injuries and promote the adoption of positive safety performance measures rather than reactive measures that can lead to mis-reporting of injuries and performance (refer Section 8.10).

*Follow-up Action on Report Recommendations*

**Recommendation 8** – MOSHAB should consider what action is recommended to the Minister to ensure that the recommendations made in this Report are effectively implemented. This may include requesting the Department of Mineral and Petroleum Resources to monitor the implementation of recommendations requiring action by mine management and reporting progress to MOSHAB.

### 3.0 INTRODUCTION

On 1 August 2001, the first Mines Occupational Safety and Health Advisory Board (MOSHAB) Priority Areas Program (released in August 2000) was reviewed and the revised "MOSHAB 2001-2004 Priority Program" developed for implementation by members.

In this revised strategy, MOSHAB has adopted a goal of achieving a step change reduction in mining-related fatalities and serious injuries within three years (i.e. by the end of 2004). This goal is to be achieved through the implementation of a program of activities within three priority areas. These are:

1. Risk Management;
2. Communicating Risk Information; and
3. Specific 'Targeted Initiatives'.

The MOSHAB 2001-2004 Priority Program identified "Behavioural Safety" as a key issue for the industry. The first step in addressing this important issue was to collect information from employees regarding their views on key safety issues, including perceptions of things that might lead to risk-taking behaviour on mine sites. The Survey is also being conducted as a follow-up from the initial 1998 "Risk-Taking Behaviour Survey" of underground mines but has been expanded to include all major industry sectors and surface operations. This information would then be used by MOSHAB to develop strategies for implementation by its members to improve safety performance across the industry.

The tripartite MOSHAB Safety Behaviour Working Party was subsequently established in 2001 and requested to undertake a survey of the WA Mining Industry to identify factors that affect safety behaviour and other issues important to safety performance. The members of the Working Party were:

- Irene Ioannakis, Lee Jackson and Mark Stirling (Chamber of Minerals and Energy)
- Henry Rozmianiec and Gary Wood (Unions WA)
- Bob Leggerini and Simon Thompson (Department of Mineral and Petroleum Resources)

Administrative support was provided by Cassie Lines (MPR). Assistance with the site surveys was also received from Charles Crouch, Eamon Moore, Sue Reid and Donna Williams from the Chamber of Minerals and Energy.

The Survey was conducted in December 2001 and between February and May in 2002. All major industry sectors (alumina, coal, gold, iron ore, mineral sands and nickel) were involved and 4 700 employees were surveyed at 60 mines across the State. This represented about 14% of WA Mining Industry employees and some 22% of the total employees at the visited sites.

The sites visited included underground mines, surface (open-pit) mines and processing operations such as a smelter, refineries and complex mineral processing plants.

The types of operations surveyed in the various regions is shown in the following table:

Principal type of operation	Central	South West	Kalgoorlie	Kambalda-Norseman	Laverton-Leonora	Leinster - Wiluna	Murchison	Yigam	Pilbara	Total
Underground	0	1	6	3	1	6	4	3	0	24
Surface	2	4	1	1*	2	1	1	1	8	21
Processing	6	4	2	0	1	0	0	0	0	13
Port/Rail	0	0	0	0	0	0	0	0	2	2
<b>Total</b>	<b>8</b>	<b>9</b>	<b>9</b>	<b>4</b>	<b>4</b>	<b>7</b>	<b>5</b>	<b>4</b>	<b>10</b>	<b>60</b>

\* includes one underground mine part of major gold operation

The employees involved in the Survey came from a broad cross-section of occupations, including underground miners, surface mobile equipment and operators, maintenance personnel, technical personnel, administration personnel, supervisors and managers. A summary of the responses by employment category and type of employer is as follows:

Employment Category/ Employer Type	Operator/ Tradesperson	Technical/ Support	Manager/ Superintendent	Supervisor	Total
No. of Company	1 426	769	293	396	2 884
No. of Contractor	1 246	135	75	167	1 623
No. of Labour Hire	100	35	6	7	148
No. of Other	5	1	2	0	8
<b>Total</b>	<b>2 777</b>	<b>940</b>	<b>376</b>	<b>570</b>	<b>4 663*</b>

\* although 4,700 employees took part in the Survey, some did not complete all of the Form

### Survey Details

The Survey itself was a confidential written questionnaire (form) that took about 20 minutes to complete.

All participants were given a white Survey form that consisted of four sections:

- Part A containing 13 questions ("A to M") collecting general demographical information (age, gender, occupation, type of employment, etc.);
- Part B containing 40 questions ("1 to 40") for all 'Employees' (i.e. everyone who was surveyed);
- A section asking participants to select three items they would most like to change at their mine site (including Better Training, Better Equipment, Better PPE, Better Communication, etc.); and
- A section asking participants to provide MOSHAB with any ideas or comments on how safety could be improved.

Further to the white form for everyone who attended, all supervisors were given a green form (Part C) with 20 additional questions ("41 to 60") and all managers/superintendents were given a yellow form (Part D) with 18 questions ("61 to 78").

Copies of the Survey Forms are provided in Appendix A.

The Survey forms were scanned or manually entered in Perth by Savant Survey and Strategies. Data analysis and interpretation were then undertaken by the Mining Industry Safety and Health Centre (MISHC) at the University of Queensland, Brisbane. MISHC also assisted in developing the survey questionnaire.

### ***Data Analysis***

Data analysis was initially undertaken using three categories:

- ❖ By the four employment groups defined by Question G, i.e. Operator/Tradesperson, Support/Technical, Manager/Superintendent and Supervisor;
- ❖ By the nine regions surveyed, i.e. Central, Southwest, Kalgoorlie, Kambalda-Norseman, Laverton-Leonora, Leinster-Wiluna, Murchison, Yilgarn and Pilbara; and
- ❖ By the seven industry sectors, i.e. Gold, Nickel, Alumina, Mineral Sands, Iron Ore, Coal and 'Other Minerals' (salt, talc, tantalum and zinc).

### ***Survey Results, Findings and Recommendations***

The results of the Survey for the three main categories (i.e. employees, supervisors and managers) are contained in Appendix B to Appendix H. Appendix J contains the results for the Underground Sector only for comparison with the 1998 Risk-Taking Behaviour (RTB) Survey results. Appendix K contains a summary of the significant issues raised by comments written by employees.

Due to size limitations, not all the Appendices are contained in this Report. To view all Appendices, please refer to the separate additional "Appendices To The 2002 Safety Behaviour Working Party Report" document. Accordingly, only Appendices A, B, I, J, K and L are included in this Report.

Findings and Recommendations of the Working Party based on their interpretation of the Survey results are contained in Section 4.0 (Employees), Section 5.0 (Supervisors) and Section 6.0 (Managers) of this Report. Section 7.0 contains a comparison with the 1998 RTB Survey results and key findings relating only to the Underground Sector. Section 8.0 contains summaries and findings relating to comments written by employees. Section 9.0 contains the recommendations made by the Working Party.

All written comments made by employees are contained on the MOSHAB Web site at [www.mpr.wa.gov.au/moshab/reports](http://www.mpr.wa.gov.au/moshab/reports).

## 4.0 EMPLOYEE SURVEY FINDINGS

All 4 700 employees who took part in the Survey were asked 40 questions (Part B) that included various statements relating to key issues associated with safety on the mine site.

The results from these questions were then analysed based on the four employment categories defined by Question G. These were as follows:

- Operator/Tradesperson (i.e. traditional workforce)
- Support/Technical (including engineers, geologists and administrative personnel)
- Manager/Superintendent (i.e. management)
- Supervisor.

The full analysis of the results is contained in Appendix B.

To facilitate analysis and the determination of key findings, the Safety Behaviour Working Party ('the Working Party') has grouped the 40 Employee questions into eight areas that are considered key indicators of effective safety management. These are as follows:

1. Hazard/Incident Reporting and Investigation
2. Communications
3. Employee Behaviour
4. Management
5. Supervision
6. Training
7. Procedures
8. Employee Representation.

The results for each of the eight areas and main findings are detailed below. To simplify analysis, the four possible ratings have been combined to either "Agree" or "Disagree".

Where common issues (e.g. training) are also covered in the questions given to Supervisors and Managers, relevant supporting responses from these two groups are also given. Full details of Supervisor responses are given in Appendix E (by Region) and Appendix F (by Industry Sector). Manager responses are given in Appendix G (by Region) and Appendix H (by Industry Sector).

Recommendations that relate to the findings are contained in Section 9.0.

#### 4.1 HAZARD/INCIDENT REPORTING AND INVESTIGATION

Four questions related to the reporting and investigation of hazards and incidents/accidents. Accidents were generally acknowledged as incidents involving personal injury. The responses to the questions are summarised as follows:

No.	Question	Agree%	Disagree%
1	Hazards/Incidents at this mine are reported promptly	90.8	9.2
4	Accidents at this mine are reported promptly	94.6	5.4
31	Employees are routinely involved in incident/accident investigations	66.1	33.9
32	Employees get feedback from management on incident/accident investigations	76.4	23.6

The responses generally show a high level of hazard, incident and accident (usually including personal injury) reporting within the mining industry. Responses however indicated that employee involvement in incident/accident investigations is not occurring on a routine basis and needs to be improved.

##### *Supporting Supervisor Response*

In response to Question 57, around 83% of supervisors indicated that safety and health representatives are routinely involved in incident/accident investigations.

Feed-back from incident/accident investigations is also an area of concern, with only around 76% of respondents indicating that this occurs at their mine site.

*Recommendation 1 (Action 2.0) in Section 9.0 has been made to address issues relating to hazard/incident investigation and follow-up.*

#### 4.2 COMMUNICATIONS

Five questions related to the provision of safety information and formal communications using tool-box/safety meetings. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
15	Tool-box/safety meetings are held at this mine	96.7	3.3
20	Safety bulletins and safety incident reports are readily available for you to read	90.6	9.4
21	Safety bulletins and safety incidents are discussed at tool-box/safety meetings/pre-shift meetings	92.1	7.9
34	Employees are not provided with safety information relevant to their work	22.1	77.9
40	How often do you attend tool-box or safety meetings at your mine site.	93.9 at least monthly	4.1 never attend

Responses were generally positive and indicated that formal communication systems exist at most mine sites. Tool-box or safety meetings are being conducted on a regular basis and most employees

(around 94%) attend them on a monthly basis. Relevant information on incidents and hazards (e.g. Safety Bulletins) is also available to most employees (91%) and discussed at formal safety meetings.

#### *Supporting Supervisor Response*

In response to Question 60 "As a supervisor, I get actively involved in shift safety meetings", around 91% of supervisors indicated that they do.

A high proportion of employees (around 22%) indicated that they do not receive enough safety information that is relevant to their work. This is of some concern and should be addressed as a matter of priority. Also, around 4% of employees do not attend any formal safety meetings. While shift work can create some problems in regular attendance, the Working Party believes that all employees should be attending formal tool-box or safety meetings at least monthly.

*Recommendation 1 (Action 3.0) in Section 9.0 has been made to address issues associated with formal communications on mine sites.*

### **4.3 EMPLOYEE BEHAVIOUR**

Nine questions related to the factors that could affect safety behaviour by employees and their ability to work safely. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
2	The thought of being killed or injured at work affects how I behave at work	86.7	13.3
7	Employees take short-cuts to meet production demands	43.6	56.4
16	I understand what my 'Duty of Care' means under the <i>Mines Safety and Inspection Act 1994</i>	97.0	3.0
18	Employees at this mine behave unsafely and take risks at work	20.0	80.0
19	Contractor employees operate at the same standard of safety as company (principal) employees	70.1	29.9
22	Recognition from managers/supervisors for working safely encourages employees not to take risks	80.2	19.8
30	Risks, short-cuts or unsafe behaviour are acceptable to management	14.8	85.2
36	Incentive-based remuneration systems encourage risk-taking behaviour	34.5	65.5
38	I am able to effectively apply risk management principles (i.e. identifying hazards, assessing the level of risk) while on the job	95.5	4.5

Responses to these questions indicate that there is a general perception that risk-taking behaviour is prevalent within the mining industry, despite most employees (97%) understanding their 'Duty of Care' obligations to work safely.

Around 88% indicated that the consequences of not working safely (being killed or injured) did have an impact on their behaviour at work, yet there is a high level of agreement (around 44%) that employees

take short-cuts to meet production demands. This perceived pressure on employees to take short-cuts (whether safe or unsafe) to get the job done is of concern. The existence of unsafe behaviour is also further reinforced by the 20% of respondents who indicated that employees at their particular mine site behaved unsafely and took risks.

*Supporting Supervisor Response*

Supervisors also reflected the views of employees. Around 16% of supervisors indicated that they are pressured to deliver production targets ahead of safety (Question 45) and 55% indicated that some employees get away with unsafe behaviour and take risks (Question 53).

The above perceptions will need to be addressed in the future by the industry in order to move towards a 'safe production' culture. This should include taking steps to clearly communicate to all employees in a consistent manner the unacceptability of risk-taking behaviour and the need to ensure safe production.

The response to the question relating to the standards followed by contractor employees is also of concern, where only 70% of employees indicated that the standards were the same. This could be due to a number of reasons, including increased pressure being placed on employees to produce due to contractual obligations. This reinforces the need for management of principal companies to ensure safety standards are consistently applied and audited across all areas of their operations, including areas where contractors, sub-contractors or labour hire companies are used.

In regard to promoting safe behaviours, around 80% of respondents indicated that recognition from managers and supervisors does encourage employees not to take risks. Increased recognition in the form of reinforcement and encouragement of safe employee behaviour by supervisors and management (rather than safety awards based on accident prevention) should therefore be promoted across the industry. This is also reinforced through 'More Recognition' being ranked No.5 on the things respondents would like to see changed at their particular mine site.

Management acceptability of risk-taking behaviour is also an important motivator for employees. Around 15% of employees responded that they believed such behaviour was acceptable to management. Furthermore, around 9% of the management group themselves (refer Question 30, Appendix B) indicated that managers accepted risk-taking behaviour. This is a major concern and will require concerted action on behalf of management to improve by setting an example and ensuring a clear message is communicated to employees that risk-taking behaviour is not acceptable.

Incentive-based remuneration systems (e.g. piece work, contract payment systems) were identified by around 35% of respondents as encouraging employees to take short-cuts and risks. This reinforces the need for the industry to move away from such systems and implement ones that positively reinforce safe behaviour by employees.



Employees were also asked if they believed they were able to effectively apply risk management principles (i.e. identifying hazards, assessing the level of risk) while on the job. Most employees (95%) indicated that they were able to do this. While an encouraging result in itself, there is concern that most employees believe they have the skills to identify hazards and assess risks and yet there still appears to be a prevalence of risk-taking behaviour in the industry as indicated by responses to Questions 7 and 18 (refer page 15).

*Recommendation 1 (Action 4.0) in Section 9.0 has been made to help address issues associated with improving employee behaviour.*

#### 4.4 MANAGEMENT

Eight questions related to management and their commitment to safety, including reaction to safety issues being raised, management action in eliminating/addressing hazards, discrimination against employees and time spent with employees discussing safety. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
6	Mining industry employers are serious about safety and health.	89.7	10.3
10	Employees are discouraged from reporting or bringing safety issues to the attention of management.	10.9	89.1
11	Management reacts constructively to safety issues that are raised.	84.4	15.6
12	Hazards at this site are eliminated or dealt with promptly	76.3	23.7
14	Employees are disciplined or disadvantaged for refusing to do tasks they consider unsafe.	19.6	80.4
23	Managers are skilled and competent to ensure the safety of their employees.	84.0	16.0
33	Managers do not spend enough time talking with employees about safety.	35.3	64.7
39	At your mine site, how often does your manager speak to you about safety issues?	91.8 has manager speak at least monthly	8.2 never has manager speak to them

It is widely acknowledged that the actions and example set by management has a significant influence on employee behaviour. Around 90% of respondents indicated that mining industry employers are serious about safety and health. A similar percentage of respondents (89%) indicated that they were not discouraged from reporting or raising safety issues with management.

Once issues were raised, however, only 84% of respondents indicated that there was a positive reaction from management. A response by management that is not constructive ('negative') has the potential to act as a disincentive to issues being raised and can hinder effective communication. A positive reaction can be viewed as an indicator of management commitment to safety.

Another potential indicator of management commitment is the way in which reported hazards are addressed. Around 76% of respondents indicated that hazards at their mine site are eliminated or dealt with promptly. While the level of reporting appeared high (around 95% as indicated in Question 1, page 14), there was a lower response in relation to the timely follow-up to eliminate or otherwise address reported hazards.

The issue of disciplining or discriminating against employees for refusing to undertake tasks they considered unsafe is also a measure of management's attitude to safety. Around 20% of respondents indicated that they believed employees were disadvantaged. Of significance here also, is the large variation between responses from the "Operator/Tradesperson" group (around 26%) to the "Manager/Superintendent" (around 6%). As employees have a 'Duty of Care' to work safely, any discriminatory action taken by employers, managers or supervisors against employees who refuse to undertake tasks they consider unsafe, is a serious concern.

Responses to Question 23 show that 84% of those surveyed believe management is skilled and competent to ensure the safety of employees. This question is a measure of employees' confidence in the ability of management and shows there is some room for improvement. The general move across the industry to adopt the Front-line Management Initiative (FMI) should help to improve these skills.

#### *Supporting Manager Response*

Around 35% of respondents indicated that managers do not spend enough time talking with employees about safety. In the 'management' questions, managers were also asked if they had sufficient time to address safety issues with employees (Question 63). Around 26% of managers indicated that they did not have enough time. Increasing the contact time and level of communication between management and employees is likely to have a significant impact on employee behaviour and allow management to demonstrate real commitment to 'safe production'.

Also, while responses to Question 39 indicate that over 30% of managers are leading the way through daily contacts, the Working Party is extremely concerned that around 8% of respondents indicated that their manager never speaks to them about safety.

*Recommendation 1 (Action 5.0) in Section 9.0 has been made to help improve employee-management communications on the mine site.*

*Recommendation 1 (Action 8.0) and Recommendation 2 in Section 9.0 have been made to improve the effectiveness of training of managers in communicating to employees and being able to positively influence employee behaviour.*

#### 4.5 SUPERVISION

Five questions related to supervision, particularly their ability to effectively deal with safety issues and their role in promoting and reinforcing safe behaviours by employees. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
3	Supervisors ignore risk-taking behaviour	17.6	83.4
5	Safety issues raised with supervisors are adequately dealt with	81.0	19.0
8	Supervisors provide positive feedback for following safe work practices	78.0	22.0
9	Supervisors actively discourage unsafe behaviour	83.9	16.1
17	Supervisors are skilled and competent to ensure the safety of their people	84.2	15.7

Due to their close and ongoing contact with employees, the actions and example set by supervisors have a major influence on employee behaviour. In regard to risk-taking behaviour, around 82% of respondents indicated a perception that supervisors did not ignore risk-taking behaviour (Question 3). The level of response to this question was confirmed in Question 9 where 84% indicated that supervisors actively discouraged unsafe behaviour.

When asked whether safety issues raised with supervisors were adequately dealt with (Question 5), 81% responded that they were. This was similar to the response provided to Question 8, where 78% of respondents indicated that supervisors provided positive feedback for following safe work practices.

Responses to Question 17 show that around 84% of those surveyed believe supervisors are skilled and competent to ensure the safety of employees. This was exactly the same as the response to Question 23 in regard to management (refer Section 4 above).

##### *Supporting Supervisor Response*

In general, the responses to employee questions relating to the ability of supervision to influence employee behaviour show that there is some room for improvement. This view is also reinforced by supervisors themselves, with around 28% indicating they were not provided with adequate training in hazard identification/risk assessment/risk control (Question 42) and 50% indicating they were not provided with adequate training in people management and effective communication (Question 46).

The general move across the industry to adopt the Front-line Management Initiative (FMI) should help to improve these skills. The Working Group however believes that management must take a leading role in setting an example to supervisors and in improving the effectiveness of the industry's supervisors in their ability to promote and encourage safe behaviour. The FMI package and implementation could also be reviewed in light of responses made by the supervisors who took part in this Survey. Consideration should also be given by the industry to extend the FMI in time to all supervisors and not just those who hold statutory positions (e.g. underground shift supervisors).

Also, "Better Supervision" ranked 7<sup>th</sup> (13.1%) and "More Time With Supervisor" (5.2%) ranked 11<sup>th</sup> out of the 12 choices employees were given for things they would most want changed at their particular mine site. This indicates that supervision in the mining industry is not being viewed as a major issue by employees when compared to other priorities (e.g. better communication, better equipment, etc.), although more work can be done to improve general perceptions on the effectiveness of supervisors to impact upon employee behaviour.

*Recommendation 1 (Action 6.0) in Section 9.0 has been made to improve communications between management and supervisors on the mine site.*

*Recommendation 1 (Action 8.0) and Recommendation 2 in Section 9.0 have been made to improve the effectiveness of training of managers in communicating to employees and being able to positively influence employee behaviour.*

#### 4.6 TRAINING

Two questions directly related to induction training and training in safe work procedures. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
13	Employees have been properly trained to perform assigned tasks	76.8	23.2
27	Employees are properly trained in the use of written safe work procedures	70.2	29.8
29	Induction training for my work area covered all relevant safety issues	80.2	19.8

Around 77% of respondents indicated that they believed employees have been properly trained to perform their assigned tasks. As proper training is essential to maintaining a safe work place and this has been a high priority for the industry for several years, the Working Party is concerned that there was a high proportion (23%) of respondents that had a contrary view. This was further reinforced with "Better Training" being the No. 1 item (44.0%) that respondents most wanted to change at their particular mine site. This should highlight the need to investigate this important issue further and to implement an industry-wide strategy to improve the effectiveness of the training.

In regard to training in safe work procedures, around 70% of respondents indicated that employees are properly trained. This is also of concern and indicates some opportunities for improvement by site management.

Induction training had a similar response with around 80% of respondents indicating that induction training for their particular work area covered all relevant safety issues. This could be improved by ensuring that site or work-area-specific inductions are reviewed to ensure they contain information about hazards and controls that are relevant to the particular workplace and not relying on "generic" inductions that do not generally cover work-area-specific hazards.

Recommendation 6 in Section 9.0 has been made to address issues associated with the training of employees in safe work procedures on mine sites.

*Recommendation 1 (Action 7.0) and Recommendation 5 in Section 9.0 have been made to help identify current training issues and improve the effectiveness of training at both a site and industry-wide level.*

#### 4.7 PROCEDURES

Four questions related to safe work procedures, including employee involvement in developing procedures, access to procedures and implementation of safe work procedures in the workplace. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
24	Employees are routinely involved in the development of (safe) work procedures	81.6	18.4
25	Up-to-date (safe) work procedures are available at this mine	84.6	15.4
26	I have easy access to (safe) work procedures	83.9	16.1
28	The work practices in my workplace are not the same as the written (safe) work procedures	33.8	64.1

The responses relating to the development, availability and accessibility of safe work procedures were similar and ranged from 81.6% to 84.6%. As the availability of proper, relevant and up-to-date safe work procedures for (particularly 'high risk') tasks is essential to employee safety, improvements in this important area should be addressed as a matter of urgency. The provision of such procedures can also be considered as a 'duty of care' obligation.

Of most concern to the Working Party is the relatively high proportion (34%) of respondents who indicated that actual work practices are not the same as the written safe work procedures (Question 28). While there are probably several reasons for this, increased employee involvement to ensure procedures are relevant and practical is likely to lead to some improvement.

Safe work procedures therefore need to be developed using employee involvement, be readily accessible and be an integral part of training programs for employees. A system should also be in place to capture any changes in work practices that are initiated by employees to improve efficiency or safety. These changes should be systematically identified and documented, and the applicable procedures updated and communicated to other employees.

Task observation programs that identify problems with following procedures and then provide direct feedback to employees and management on the level of compliance with safe work procedures, should also be encouraged.

*Recommendation 1 (Action 7.0) in Section 9.0 has been made to address issues associated with the development and availability of safe work procedures and compliance with such procedures on mine sites.*

#### **4.8 EMPLOYEE REPRESENTATION**

Two questions related to employee representation through safety and health representatives and safety committees.

The responses are summarised as follows:

<b>No.</b>	<b>Question</b>	<b>Agree %</b>	<b>Disagree %</b>
35	Safety and health representatives and safety committees are encouraged at your site	91.2	8.8
37	Safety and health representatives are effective in representing employees on safety and health issues	79.2	20.8

The high level of perceived support (91.2%) for safety and health representatives and safety committees is considered positive.

Around 79% of respondents indicated that safety and health representatives were effective in representing employees on safety and health matters. The response to this question shows a need to improve the effectiveness of safety and health representatives and to raise their profile across the industry.

The Working Party is of the view that effective safety and health representatives and safety committees are essential to improving the safety performance of the industry. To improve in this area, the industry should be taking steps to promote the role of safety and health representatives and to improve the effectiveness of safety and health representatives on mines.

*Recommendation 3 in Section 9.0 has been made to help improve the profile and effectiveness of safety and health representatives in the Western Australian mining industry.*

#### **4.9 VARIABILITY ACROSS JOB GROUPS**

Table 1 in Appendix I contains a variability analysis of responses given to the 40 Employee Questions in Section B of the Survey (Q1 to Q40) based on the four job groups (i.e. Operator/Tradespersons; Support/Technical; Manager/Superintendent and Supervisor).

This analysis was undertaken to determine the degree of variability in responses across the four job groups. It compares the responses of the four job groups for each question against the total group average (or mean) to see if each individual group was "average", or more "positive" or "negative" than the rest. This involved determining the range of responses, determining the "mean" result for the group then calculating the standard deviation for each group.

The three categories used were as follows:

- the number of responses less than one standard deviation from the industry mean (i.e. number of "average" or "0" responses);
- the number of responses greater than one standard deviation away from the industry mean for the most desired or "positive" response (i.e. 1, 2 etc.); and
- the number of responses greater than one standard deviation away from the industry mean for the least desired or "negative" result (i.e. -1, -2 etc.).

The results from Table 1 in Appendix I have been summarised as follows:

Type of Response	Operator/ Tradesperson	Support/ Technical	Manager/ Superintendent	Supervisor	Total
No. of "Average" (0) Responses	2	29	1	25	57
No. of "Positive" (+) Responses	0	0	39	14	53
No. of "Negative" (-) Responses	38	11	0	1	50
<b>Overall Result (net sum)</b>	<b>- 38</b>	<b>- 11</b>	<b>+ 39</b>	<b>+ 13</b>	<b>160</b>

The above table indicates that responses from Operator/Tradesperson group were significantly more "negative" than the other three groups. In particular, the difference in views or perceptions from the traditional workforce (as represented by the Operator/Tradesperson group) and the Manager/Superintendent group is marked.

This difference in perception also appears consistent across all areas covered in the survey (refer Appendix B) and shows that managers generally feel far more "positive" than the traditional workforce. Supervisors were somewhere in between the responses of managers and the workforce.

In the 38 "agree/disagree" questions (i.e. Q1 to Q38), the following variations occurred between the Operator/Tradesperson and Manager/Superintendent groups:

- 10% or more in 20 questions;
- 15% or more in 14 questions; and
- 20% or more in 6 questions.

The Working Party believes that any variation of 15% or more is significant. These significant variations, together with the Supervisor responses for comparison, are as follows:

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No.	Question	Workforce %	Managers %	Workforce-Manager Variance %	Supervisors %
5	Safety issues raised with supervisors are adequately dealt with	74.9 agree	94.7 agree	20.2	89.9 agree
7	Employees take short-cuts to meet production demands	51.0 disagree	71.6 disagree	20.6	64.5 disagree
11	Management reacts constructively to safety issues that are raised.	78.3 agree	96.3 agree	18.0	92.3 agree
12	Hazards at this site are eliminated or dealt with promptly	70.2 agree	89.4 agree	19.2	82.3 agree
13	Employees have been properly trained to perform assigned tasks	71.5 agree	89.7 agree	18.2	82.7 agree
14	Employees are disciplined or disadvantaged for refusing to do tasks they consider unsafe	73.4 disagree	93.9 disagree	20.5	89.0 disagree
23	Managers are skilled and competent to ensure the safety of their employees	79.2 agree	95.8 agree	16.6	89.5 agree
24	Employees are routinely involved in the development of (safe) work procedures	76.4 agree	93.4 agree	17.0	89.0 agree
27	Employees are properly trained in the use of written safe work procedures	66.8 agree	82.0 agree	15.2	70.2 agree
28	The work practices in my workplace are not the same as the written (safe) work procedures	58.4 disagree	82.8 disagree	24.4	75.2 disagree
29	Induction training for my work area covered all relevant safety issues	77.3 agree	92.3 agree	15.0	82.3 agree
31	Employees are routinely involved in incident/accident investigations	56.7 agree	86.5 agree	29.8	76.7 agree
34	Employees are not provided with safety information relevant to their work	72.5 disagree	91.5 disagree	19.0	83.6 disagree

While some difference in perceptions between managers and the workforce is to be expected, the extremely wide differences (i.e. 15% or greater) indicates that communications need to be improved in several areas. Mine management should take the initiative in working to improve this situation and take steps to identify and rectify possible communication problems on their site.

*Recommendation 1 (Action 5.0) in Section 9.0 has been made to help improve communications between management and employees on mine sites.*



#### 4.10 VARIABILITY ACROSS REGIONS

The variability of employee survey results for each of the nine regions is shown in Table 2 of Appendix I. This analysis is similar to that undertaken for the four job groups (refer Section 4.9) and shows the variability of responses against the average (or mean) to see if each region was "average", or more "positive" or "negative" than the rest.

The results of the analysis shown in Table 2 of Appendix I have been summarised as follows:

Type of Response	Central	South West	Kalgoorlie	Kambalda-Norseman	Laverton-Leonora	Leinster – Wiluna	Murchison	Yilgarn	Pilbara	Total
No. of "Average" (0) Responses	18	22	26	13	11	24	14	13	14	155
No. of "Positive" (+) Responses	15	9	14	25	5	9	5	26	3	122
No. of "Negative" (-) Responses	7	9	0	2	24	7	21	1	23	83
Overall Result (net sum)	+8	0	+14	+23	-19	+2	-16	+25	-20	360

The above table indicates that responses from the Yilgarn and Kambalda-Norseman regions were generally more "positive" than the rest of the industry. In contrast, the responses from the Murchison, Laverton-Leonora and Pilbara regions were generally more "negative" than the industry mean.

The reasons for the variations across regions are likely to be many and varied. Further investigation would be required to determine these reasons. There may be some value in the industry investigating the reasons why the Kambalda-Norseman and Yilgarn responses were so positive and communicating any lessons learned to the rest of industry.

#### 4.11 VARIABILITY ACROSS INDUSTRY SECTORS

Similar to job groups (Section 4.9) and regions (Section 4.10), the variability of employee survey results for each of the seven industry sectors is shown in Table 3 of Appendix I. The results of the analysis shown in Table 3 of Appendix I have been summarised as follows:

Type of Response	Gold	Nickel	Alumina	Mineral Sands	Iron Ore	Coal	Other Minerals	Total
No. of "Average" (0) Responses	27	27	19	16	19	8	20	136
No. of "Positive" (+) Responses	5	7	8	23	1	5	20	69
No. of "Negative" (-) Responses	8	6	13	1	20	27	0	75
Overall Result (net sum)	-3	+1	-5	+22	-19	-22	+20	280

The above table indicates that responses from the Mineral Sands and Other Minerals (Talc, Tantalum, Salt and Zinc) sectors were generally more "positive" than the industry mean. In contrast, the responses from the Iron Ore and Coal sectors were generally more "negative" than the others.

As with the Regional responses, the reasons for the variations across the industry sectors are likely to be many and varied. Further investigation is required to determine these reasons. The individual industry sectors involved may wish to undertake further work to determine the reasons why these variations exist.

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## 5.0 SUPERVISOR SURVEY FINDINGS

The 770 supervisors who took part in the Survey comprised 550 workforce supervisors and 200 personnel who had supervisory roles in technical or support areas. Supervisors were asked an additional 20 questions (Part C, Questions 41 to 60) on a green form that included various statements relating to key issues associated with the role of supervisors and their ability to have an impact on safety on the mine site.

The results from these questions were then analysed based on both Regions (refer Appendix E) and Industry Sectors (refer Appendix F).

To facilitate analysis and the determination of key findings, the Safety Behaviour Working Party ('the Working Party') has grouped the 20 Supervisor questions into six areas as follows:

1. Management
2. Training
3. Production Pressure
4. Employee Behaviour
5. Decision-making
6. Other Issues (Communications, Employee Representation).

The results for each of the six areas and main findings are detailed below. To simplify analysis, the four possible ratings have been combined to either "Agree" or "Disagree".

Recommendations that relate to the findings are contained in Section 9.0.

### 5.1 MANAGEMENT

Six questions related to management and their interaction with supervisors in important areas of safety. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
41	Management encourages employee involvement in safety	96.5	3.2
43	Foremen or managers overrule supervisors' decisions on safety matters	26.8	70.6
44	Supervisors are encouraged by management to report all incidents, accidents, hazards and safety issues	97.4	2.1
47	Management have a genuine commitment to safety	94.0	5.6
51	Supervisors' safety and health concerns are properly addressed by management	82.1	17.4
52	Employees are discouraged by management from reporting safety issues or incidents	5.8	93.5

The responses from supervisors generally indicated a high level of support for management. Around 96% indicated that management encouraged employee involvement in safety, 97% indicated they were encouraged to report all hazards/incidents and safety issues, 94% indicated that management has a genuine commitment to safety and 93% indicated that employees were not being discouraged from reporting issues to management.

Perceptions were somewhat different however when asked whether or not the decisions of supervisors were overruled by foremen or managers. Around 27% of supervisors indicated that they were. While encouraged to raise issues about safety (97%), only 82% of supervisors indicated that their concerns are being properly addressed by management. This may indicate the need for better communication between management and supervisors, particularly regarding follow-up action in addressing supervisor concerns for safety and reasons why their decisions are over-turned.

*Recommendation 1 (Action 6.0) in Section 9.0 has been made to help improve the effectiveness of communications between management and supervisors on mine sites.*

## 5.2 TRAINING

Three questions related to the training of supervisors in fundamental areas such as hazard identification/risk control and communication. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
42	Supervisors are provided with adequate training in hazard identification, risk assessment and risk control	71.9	27.8
46	Supervisors are provided with adequate training in people management and effective communication	49.1	50.4
55	I fully understand my responsibilities as a supervisor under the <i>Mines Safety and Inspection Act 1994</i>	81.8	17.5

In the area of hazard identification and risk control, around 72% of supervisors indicated that they were provided with adequate training. With regard to people management and effective communication, 49% of supervisors indicated that they were provided with adequate training.

Supervisors were also asked if they fully understood their responsibilities under the *Mines Safety and Inspection Act 1994*. Around 82% indicated that they did understand their responsibilities.

As all of these areas are critical to the ability of supervisors to effectively manage safety, the Working Party is concerned that a high proportion of supervisors believes that their training has not been adequate. This should again highlight the need to investigate this important issue further and to implement an industry-wide strategy to improve the effectiveness of supervisor training, as well as training for all employees (refer Section 4.6). As previously stated in Section 4.5, the FMI package and implementation could also be reviewed in light of responses made by the supervisors who took part in this Survey. Consideration could also be given to eventually extending the FMI to all supervisors in the

WA Mining Industry. This would ensure that there is a consistent approach across all areas and is likely to have substantial benefits in improving the quality of supervision in the industry.

*Recommendation 1 (Action 8.0) and Recommendation 2 in Section 9.0 have been made to help improve the effectiveness of training being provided to managers and supervisors.*

### 5.3 PRODUCTION DEMANDS

Two questions related to issues associated with production demand. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
45	Supervisors are pressured to deliver production targets ahead of safety	16.2	82.5
54	Supervisors do not have enough time to properly discuss safety issues with employees	27.8	71.4

Around 83% of supervisors indicated that they were not pressured to deliver production targets ahead of safety and 71% indicated that they had enough time to properly discuss safety issues with employees.

Due to the crucial role that supervisors play in influencing employees' behaviour, the Working Group is concerned that there is still a significant percentage of supervisors who are being pressured to deliver production at the expense of safety. Based on the responses received, there is also considerable room for improving the amount of time that supervisors have to discuss safety with employees. Both of these issues should be addressed by mine management with a degree of urgency.

*Recommendation 1 (Action 6.0) in Section 9.0 has been made to help address issues associated with production demands.*

### 5.4 EMPLOYEE BEHAVIOUR

Four questions related either to the ability of supervisors to have an impact upon the behaviour of employees or to their perceptions of employee behaviour. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
49	Supervisors are not able to effectively discipline workers for unsafe work practices	31.4	67.4
50	Supervisors are able to effectively promote and encourage safe work practices	92.2	7.1
53	Some employees get away with unsafe behaviour and taking risks	55.5	43.8
59	I am confident the employees I supervise have sufficient skills to carry out their job safely	90.3	9.5

Around 67% of supervisors indicated that they were able to effectively discipline employees for unsafe work practices. Just over 92% of supervisors also responded that they are able to effectively promote and encourage safe work practices by employees.

When asked if employees 'get away' with unsafe behaviour and taking risks, around 55% of supervisors were of the view that employees did. Despite this, there was a high percentage (90.3%) of supervisors who indicated confidence in the skills of their employees to work safely.

The responses by supervisors indicate that some work is required in improving the ability of supervisors to effectively discipline employees and to address issues that might be contributing to risk-taking behaviour by employees. Implementation of recommendations relating to employee behaviour (*Section 9.0, Recommendation 1 Action 4.0*) and supervisor training (*Section 9.0, Recommendation 1 Action 8.0 and Recommendation 2*) should help to address these issues.

## 5.5 DECISION-MAKING

Two questions related to ability of supervisors to make decisions and the level of confidence in their decisions. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
48	Supervisors have adequate control over decisions made during the shift that impact on safety	91.6	8.3
58	I feel confident when making decisions that affect safety	96.4	3.4

Around 92% of supervisors indicated that they had adequate control over the decisions made that impacted upon safety. Over 95% indicated that they felt confident when making decisions that could affect safety.

## 5.6 OTHER ISSUES (COMMUNICATIONS, EMPLOYEE REPRESENTATION)

Three questions related to other issues associated with communications, changes to legislation and employee representation through safety and health representatives. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
56	Changes to the <i>Mines Safety and Inspection Act 1994</i> and <i>Regulations</i> have made mining safer	86.6	9.7
57	Safety representatives are routinely involved in accident investigations	82.9	16.5
60	As a supervisor I get actively involved in shift safety meetings	91.0	8.6

Around 87% of supervisors indicated that changes to the *Mines Safety and Inspection Act 1994* and *Regulations* have made mining safer. Around 83% of supervisors indicated that safety representatives are routinely involved in accident investigations. As the involvement of safety and health representatives in accident investigations is a statutory function (refer s53 (1) (b) of the *Mine Safety Inspection Act 1994*), the level of involvement should be higher (*Section 9.0, Recommendation 3*).

Around 91% of supervisors indicated active involvement in safety meetings.

## 6.0 MANAGER SURVEY FINDINGS

The 376 managers and superintendents who took part in the Survey were asked an additional 18 questions (Part D, Questions 61 to 78) on a yellow form that included various statements relating to key issues associated with the role of management, both site-based and executive management.

The results from these questions were then analysed based for both Regions (refer Appendix G) and Industry Sectors (refer Appendix H).

To facilitate analysis and the determination of key findings, the Safety Behaviour Working Party ('the Working Party') has grouped the 18 Management questions into six areas as follows:

1. Executive Management
2. Skills and Competency
3. Decision-making
4. Safety Role and Responsibility
5. Employee Behaviour
6. Other Issues (Supervisors, Employee Representation)

The results for each of the six areas and main findings are detailed below. To simplify analysis, the four possible ratings have been combined to either "Agree" or "Disagree".

Recommendations that relate to the findings are contained in Section 9.0.

### 6.1 EXECUTIVE MANAGEMENT

Four questions related to site management's views of the level of commitment and support from executive management (e.g. CEOs, managing directors, group executive managers, etc.). The responses are summarised as follows:

No.	Question	Agree %	Disagree %
61	Executive management provides adequate resources for site management to effectively manage safety	83.0	16.3
62	Executive management is committed to improving safety	96.9	2.0
64	Executive management show commitment through involvement in site safety activities	63.1	35.6
70	Executive management is more concerned with maximising profit than adequately resourcing safety	15.8	82.4

Executive management play an important role in promoting safety through the provision of adequate resources and through their own involvement in site safety activities. With regard to resources, 83% of managers indicated that they were provided with enough resources to effectively manage safety at the

mine site. This response was similar to the question relating to executive management's commitment to resourcing safety, where 82% of managers responded that they placed safety before profit.

The issue of adequate resources was also raised by employees when asked the three things they would most like improved at their mine site. "More Resources" was ranked No. 3 overall and "Better Equipment" ranked No. 4, signalling to both site-based and executive management that resourcing is an issue that needs to be addressed.

With regard to executive management being committed to improving safety (Question 62), almost 97% of site managers indicated a favourable response. Managers however were less positive when asked if executive management showed commitment through involvement in site-based activities; only 63% indicated agreement.

While the commitment of executive management to improving safety seems clear, there is a significant proportion of site-based managers (around 20%) who believe that executive management needs to provide more resources and to place safety before production. More active involvement by executive management in site-based safety activities (e.g. reviewing resources, conducting review of accidents or incidents, participating in audits, etc.) is a good way of demonstrating commitment and is likely to provide opportunities for identifying key resourcing issues. The increased involvement of executive management should therefore be encouraged by the industry.

*Recommendation 4 in Section 9.0 has been made to help encourage commitment and greater involvement of executive management in mine site safety.*

## 6.2 SKILLS AND COMPETENCY

Three questions related to skills and competence of management to effectively manage safety and to influence employee behaviour. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
65	Management is trained and competent to effectively manage safety	81.4	17.6
72	Managers are unskilled in discussing risk-taking behaviour with employees	18.1	80.7
75	Managers do not have the necessary skills to influence employee behaviour	9.7	89.1

Around 81% of managers indicated that management are trained and competent to effectively manage safety. Similarly, almost 81% indicated that management are skilled at discussing risk-taking behaviour with employees. The response was however slightly more positive when asked if managers have the skills to influence employee behaviour, with around 89% indicating that they had.

As all of these areas are critical to effective safety management, the Working Party is concerned that a high proportion of managers believe that their training has not been adequate. This should again highlight the need to investigate this important issue further and to implement an industry-wide strategy



to improve the effectiveness of management training, as well as training for all employees (refer Section 4.6) and supervisors (refer Section 5.2). As previously stated, the FMI package and implementation could also be reviewed in light of responses made by the managers who took part in this Survey to identify ways of improving training in this key area.

*Recommendation 2 in Section 9.0 has been made to help improve training of both managers and supervisors in key skill areas that impact on safety.*

### 6.3 DECISION-MAKING

Three questions related to management's ability to make effective risk-based decisions. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
66	Management properly considers potential safety and health-risk implications when making decisions	93.9	5.6
73	Potential risks are properly considered as part of the mine site planning process	91.1	8.4
78	I understand risk management concepts enough to feel confident when making decisions that could affect safety	95.9	3.3

All responses to these questions were over 90%, indicating a general high level of confidence in the ability of management to make effective 'risk-based' decisions. Around 94% of managers indicated proper consideration of risk in decision-making, 91% indicated consideration of risk in their planning processes and 96% indicated their own personal confidence in making decisions that could affect safety.

### 6.4 SAFETY ROLE AND RESPONSIBILITY

Three questions related to management's role and responsibility for safety. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
67	Management is not responsible for managing safety and health on the mine site	2.8	95.4
71	Managers have a leading role in 'setting an example' for employees and supervisors	99.0	0.5
76	Systems are in place at this mine site that ensures risks are effectively managed	89.6	9.7

The majority of managers (95%) indicated that they were responsible for managing safety and health on the mine site. Importantly, almost all managers (99.0%) indicated that they have a leading role in setting the example to employees and supervisors. These responses demonstrate a high level of understanding by industry management of these fundamentals of management commitment.

Managers were also asked if they had systems in place to effectively manage risks. Around 90% indicated that such systems were in place. As the development and implementation of safety systems is primarily a management responsibility and can be considered a fundamental 'duty of care' obligation, the industry should be aiming to improve in this area. The development of common standards and guidance material on safety management systems being currently undertaken by the Chamber of Minerals and Energy is likely to assist in achieving a consistent approach across the industry.

## 6.5 EMPLOYEE BEHAVIOUR

Two questions related to management and their ability to influence employee behaviour through personal interaction and encouragement. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
63	Managers have insufficient time to address safety issues with employees	25.7	73.0
69	Managers provide enough recognition and encouragement to employees for working safely	63.9	34.6

The responses to these two questions indicate significant room for improvement. Around 26% of managers indicated that they did not have enough time to address safety issues with employees. Increasing the contact time and level of communication between management and employees is likely to have a significant impact on employee behaviour and allow management to demonstrate real commitment to 'safe production'.

Similarly, only 64% of respondents indicated management provides enough recognition and encouragement to employees for working safely. It is widely acknowledged that the personal example set by management and encouragement for working safely has a significant influence on employee behaviour. These areas should be a focus for increased effort by mine management.

*Recommendation 1 (Action 4.0) and Recommendation 1 (Action 5.0) in Section 9.0 have been made to help promote safe behaviours and improve communications between management and employees on mine sites.*

## 6.6 OTHER ISSUES (COMMUNICATIONS, EMPLOYEE REPRESENTATION)

Three questions were also included that related to supervisors, safety representatives and principal/contractor arrangements. The responses are summarised as follows:

No.	Question	Agree %	Disagree %
68	Supervisors spend enough time discussing on-the-job safety with employees	64.9	34.1
74	Safety Representatives perform a valuable role in improving safety	90.3	8.4
77	Principal employer/contractor arrangements in the mining industry have made mining safer	73.5	22.6

Almost 65% of managers indicated that supervisors do not spend enough time discussing safety on the job with employees. This response is similar to the number of supervisors (71%) who answered the same question. This reinforces the need to review the amount of time supervisors have in this important area and to take steps to provide more contact time between supervisors and employees.

Managers' views on safety and health representatives were positive, with around 90% indicating that safety representatives perform a valuable role in improving safety. Addressing other issues associated with the role of safety representatives (e.g. more involvement in accident investigations) should help to increase their value.

General moves across the industry to increase the involvement of contractors were viewed positively, with around 74% of managers indicating that the changes have made mining safer. Addressing concerns over different standards being adopted by contractors (refer Question 19, Section 4.3) should help to improve this view.

*Recommendation 1 (Action 6.0) in Section 9.0 has been made to help promote safe behaviours and improve communications between supervisors and employees on mine sites.*

*Recommendation 3 in Section 9.0 has been made to help improve the profile and effectiveness of safety and health representatives in the WA mining industry.*

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## **7.0 COMPARISON WITH 1998 RISK-TAKING BEHAVIOUR SURVEY FOR UNDERGROUND MINES**

Appendix J contains a comparison of the results of the 1998 Risk-Taking Behaviour (RTB) Survey of the Underground Sector and the results of the 2002 Survey for the Underground Sector.

In 1998, around 1000 employees (underground operators, etc.) and 150 supervisors were surveyed at 25 underground mines.

In the 2002 Survey, 970 persons took part at 21 underground mines. Due to several mine closures, only twelve (12) of the mines surveyed in the 1998 RTB Survey were re-surveyed in 2002. The participants included 699 employees in the "Operator/Tradesperson" group, 92 "Supervisors" and 179 employees in the "Support/Technical" and "Manager/Superintendent" groups.

To ensure consistency in the sample population groups, only the responses from the "Operator/Tradesperson" and "Supervisor" groups in the 2002 Survey have been used for comparison.

Of the 970 who took part in the latest survey, 280 employees (including 42 supervisors) took part in the 1998 RTB Survey. There were also 330 employees who took part in both the 1998 RTB Survey and 2002 Survey that now work in other (non-underground) areas. Their responses have not been included as part of this comparison.

It is important to also note that the style of survey questions is not exactly the same: 'Direct' questions were used in 1998 and 'statements' were used in 2002. Although similar issues are covered (refer Section B in Appendix J), the comparisons of "employees" and "supervisors" responses for the two surveys should be considered as indicative only.

### **7.1 EMPLOYEE RESPONSES**

Details of the change in employee perceptions from the 1998 RTB Survey to the 2002 Survey are contained in Section C of Appendix J.

To facilitate analysis and the determination and comparison of key findings, the Safety Behaviour Working Party ('the Working Party') has used a similar grouping of issues to that used in the 1998 RTB Survey. These are as follows:

1. Workforce Experience
2. Reporting of Hazards and Incidents
3. Management Attitude To Risk-Taking Behaviour
4. Supervisor Attitude To Risk-Taking Behaviour
5. Employee Attitude To Risk-Taking Behaviour
6. Obstacles To Safe Work By Employees

## 7. Employee-Supervisor-Management Interface

## 8. Employee Knowledge Of Safety

## 9. Training.

A comparison of the results for each of the nine areas and main findings are detailed below. Associated recommendations are contained in Section 9.0.

**7.1.1 Workforce Experience**

The comparison between the two surveys in Section A of Appendix J shows that the general level of experience of the underground workforce has increased. In 1998, 66% of employees had worked five years or less underground and 34% had worked greater than five years. In 2002, 29% of employees have worked five years or less and 69% have worked more than five years. This has coincided with an increase in the percentage of employees who have worked at more than two mines; 49% in 1998 compared to 60% in 2002.

**7.1.2 Reporting of Hazards and Incidents**

One question is available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q19	Are hazards eliminated promptly at your site	70 (Yes)	74 (Agree)	4 improvement

The different style and content of questions relating to hazard/incident reporting that were asked in the two surveys does not enable direct comparison. In 1998, 99% of employees indicated that they report all or some hazards. In 2002, 91% of employees agreed that hazards/incidents at the mine were reported promptly.

In 1998, 98% of employees indicated that they reported all or some incidents. In 2002, 94% of employees indicated that accidents (generally meaning incidents that involve personal injury) are reported promptly.

With regard to follow-up action, a direct comparison can be made. In 1998, 70% of employees indicated that (once reported) hazards were promptly eliminated at their site. This has increased to 74% in 2002. As stated previously in Section 4.4, while the level of reporting appeared high (in both cases +90%), there is a lower response when it comes to the timely follow-up to eliminate or otherwise address reported hazards.

While some changes in percentages has occurred, the Working Party believes that the changes are not significant enough to show any major change. The implementation of the recommendation relating to improving follow-up action by management (*Section 9.0, Recommendation 1*) should help lead to improvements in the future.

### 7.1.3 Management's Attitude To Risk-Taking Behaviour

Two questions related to management's attitude to risk-taking behaviour and can be used for comparison purposes.

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q8	Is taking risk, short-cuts or unsafe behaviour acceptable to management	82 (No)	80 (Disagree)	2 decline
Q18	Are you discouraged from reporting or bringing safety issues to management	84 (No)	82 (Disagree)	2 decline

Both questions show a slight decline in the responses to the questions relating to management's attitude. While the positive response (+80%) is encouraging, there still remains a significant percentage of employees who believe that management is not committed to safety and is prepared to accept unsafe behaviour and to discourage reporting of safety issues. This is of concern and needs to be addressed by the underground sector as a matter of urgency.

The recommendation relating to promoting safe behaviour (*Section 9.0, Recommendation 3*) and improving employee-management communications (*Section 9.0, Recommendation 4*) should be given some priority in the underground mining sector.

### 7.1.4 Supervisor's Attitude To Risk-Taking Behaviour

Four questions related to supervisors' attitude to risk-taking behaviour and can be used for comparison purposes.

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q9	Do supervisors ignore risk-taking behaviour	76 % (No)	77 % (Disagree)	1 % improvement
Q10	Do supervisors actively discourage unsafe behaviour	59 % (Yes)	82 % (Agree)	23 % improvement
Q15	Do you receive positive feedback from supervisors for following safe work practices	64 % (Yes)	77 % (Agree)	13 % improvement
Q16	Are safety issues raised with your supervisor or foreman adequately dealt with	73 % (Yes)	77 % (Agree)	4 % improvement
Q21	Have you been penalised for not performing a task that you considered unsafe	90 % (No)	70 % (Disagree)	20 % decline

Most comparison questions show some improvement in perceptions. While there have been significant improvements in perceptions relating to supervisors discouraging unsafe behaviour and employees receiving positive feedback for working safely (23% and 13%, respectively), there is still considerable room for improvement in all the areas covered. In general, there is still around 20% of underground employees who believe that supervisors are not carrying out fundamental aspects of their role in promoting and encouraging safe behaviour by employees. Recommendations that relate to improving supervisor skills and competency in these important areas (*refer Section 9.0, Recommendation 7*)

should be implemented with priority in the underground sector due to the (generally) more hazardous work environment.

A significant decline in perceptions is however apparent in the area of penalising or discriminating against employees for not undertaking work that they consider unsafe. In the 1998 RTB Survey, 90% of employees indicated that they had not been penalised. This has reduced to 70% of employees in the 2002 Survey responses. As employees have a 'duty of care' to work safely, any discriminatory action taken by supervisors, managers or employers against employees who refuse to undertake tasks they consider unsafe, is a serious concern and should be addressed as a matter of priority by the underground sector.

*Recommendation 1 (Action 5.0) in Section 9.0 has been made to help improve communications on mine sites and provide a working environment in which employees are not penalised for not undertaking work that they genuinely consider to be unsafe.*

#### 7.1.5 Employee's Attitude To Risk-Taking Behaviour

Two questions related to employees' attitude to risk-taking behaviour and can be used for comparison purposes.

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q13	Have you observed risk-taking behaviour by other employees at your mine	27 (No)	75 (Disagree)	48 improvement
Q17	Does the thought of being killed or injured at work affect how you behave at work	73 (Yes)	82 (Agree)	9 improvement

The two comparison questions show some improvement in perceptions. Employees' views on the level of risk-taking behaviour by other employees has improved considerably. In 1998, 27% of employees indicated that they had not observed risk-taking behaviour by others. In 2002, around 75% of employees disagreed with the statement "employees at this mine behave unsafely and take risks at work".

Question 17 shows that the thought of the consequences of accidents at work has changed with 82% of employees now indicating that it impacts upon their behaviour at work. This is up by 9% from the 1998 result.

#### 7.1.6 Obstacles To Safe Work By Employees

The different style and content of the main question relating to factors that influence risk-taking behaviour by employees (i.e. Q11 in 1998 vs. Q7 in 2002) does not enable direct comparison. In 1998, 69% of employees indicated that they did not take risks or behave unsafely while at work. In 2002, 47% of employees disagreed with the statement that "employees take short-cuts to meet production demands". As previously indicated in Section 4.3, there still exists in the underground sector a

perceived pressure on employees to take short-cuts (whether safe or unsafe) to get the job done. This reinforces the view expressed in the 1998 RTB Survey Report that:

“until a safety-before-production mentality is generated throughout the sector, there will continue to be conflicting messages for employees and, as a consequence, risk-taking will be perceived to be necessary to ‘get the job done’.”

Due to the hazardous nature of the underground working environment, priority should be given by the underground sector to recommendations that relate to developing a ‘safe production’ culture where taking risks and short-cuts that compromise safety are not acceptable (refer Section 9.0, Recommendation 1, Actions 4.0 and 5.0).

### 7.1.7 Employee-Supervisor-Management Interface

Three questions related to the employee-supervisor-management interface can be used for comparison purposes.

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q29	Is your employer serious about safety and health?	88 (yes)	86 (Agree)	2 decline
Q30	Are you happy with the skills and competency of your supervisor?	85 (Yes)	89 (Agree)	4 improvement
Q31	How often does your manager speak to you on the job (weekly/fortnightly/never)?	66 (At least weekly/fortnightly)	88 (At least weekly/fortnightly)	12 improvement
Q31	How often does your manager speak to you on the job underground (weekly/fortnightly/never)?	20 (Never)	1 (Never)	19 improvement

A slight decline in perception has occurred when employees were asked if their (mining industry) employer was serious about safety and health. This shows that there is still a significant percentage (around 14%) of employees who are skeptical of their, or the industry, employers’ commitment to safety and health.

In contrast, there have been improvements in perceptions in the areas of supervisor competency and contact with site management. Around 89% of employees now believe that supervisors have sufficient skills and are competent in doing their jobs. In the 2002 Survey, at least 88% of employees now have contact with their manager on a weekly or fortnightly basis. There has also been a significant reduction (from 20% to 1%) of employees who have never spoken to their manager on the job. While there has been considerable improvement, the Working Party is concerned that a very small percentage of employees still do not get the opportunity to speak with their manager about safety.

*Recommendation 1 (Action 5.0) in Section 9.0 has been made to help improve communications on mine sites and provide all employees with an opportunity to discuss safety issues with their manager.*



### 7.1.8 Employee Knowledge of Safety

Three questions related to aspects of employee knowledge and the means for improving knowledge at the mine and can be used for comparison purposes.

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q26	Are Tool-box or Safety Meetings involving yourself held regularly?	92 (Yes)	96 (Agree)	4 improvement
Q28	Do you understand what 'duty of care' means in terms of the <i>Mines Safety and Inspection Act 1994</i> ?	95 (Yes)	98 (Agree)	3 improvement
Q32	Are Safety Bulletins and Safety Incident Reports made available for you to read?	96 (Yes)	87 (Agree)	9 decline

Improvements have been observed in the percentage of employees attending toolbox or safety meetings (i.e. from 92% in 1998 to 96% in 2002) and in those who indicated understanding of 'duty of care' under the *Mines Safety and Inspection Act 1994* (i.e. from 95% in 1998 to 98% in 2002). Both results are commendable.

There has however been a decrease in the percentage of employees who have access to safety Bulletins and Incident Reports. While there was a slight change in the question (i.e. the 2002 asked if they were 'readily' available), it is of concern that there is around 13% of employees that do not have (ready) access to important safety information. As it is a 'duty of care' obligation for employers to provide such information, this issue should be addressed by underground sector management by giving priority to the recommendation relating to improving the provision of relevant safety information (refer Recommendation 1, (Action 3.0) in Section 9.0).

### 7.1.9 Training

Four questions related to issues associated with training and procedures and can be used for comparison purposes.

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q20	Have you been adequately trained to perform your tasks underground?	87 (Yes)	68 (Agree)	19 decline
Q33	Does your mine have written procedures?	95 (Yes)	86 (Agree)	9 decline
Q33A	Were you trained in those procedures?	83 (Yes)	73 (Agree)	10 decline
Q34	Are the procedures used underground the same as the ones written in the manuals?	87 (Yes)	57 (Agree)	23 decline

All of these key areas show a decline in survey results from 1998 to 2002. While there is now likely to be an increased awareness by employees of what constitutes "proper" training (including competency assessment), the Working Party is concerned that there is around 30% of underground employees

who believe that they have not been properly trained and have not been trained in the mine's (safe work) procedures.

With regard to written work procedures being available, there has been a 9% decline in the percentage of underground employees who believe they are (readily) available. While the use of the qualifying word 'readily' (available) may account for some of the change, it is still of concern that 14% of the underground employees surveyed were of this view.

Of main concern is the significant decline (23%) in the response to the procedures/practices used underground being the same as the written procedures. The 57% of underground employees who now believe that they are the same is also significantly lower than the 64% of the general industry group (refer Section 4.7).

The Working Party believes that these issues associated with training and procedures require urgent action by the underground sector. Due to the hazardous nature of the underground mining environment, the recommendation relating to training and procedures (*Section 9.0, Recommendation 1, Action 7.0*) should be given priority by the underground sector.

## **7.2 SUPERVISOR RESPONSES**

Details of the change in supervisor perceptions from the 1998 RTB Survey to the 2002 Survey are contained in Section D of Appendix J.

To facilitate analysis and the determination and comparison of key findings, the Safety Behaviour Working Party ('the Working Party') has used a similar grouping of issues to that used in the 1998 RTB Survey. These are as follows:

1. Supervisor Experience
2. Reporting by Employees of Hazards and Incidents
3. Supervisor Hazard Identification and Risk Management Skills-Decisions Regarding Safety
4. Employee Attitude to Risk-Taking Behaviour
5. Obstacles to Safe Work by Employees
6. Supervisor-Foreman-Management Interface
7. Employee Knowledge of Safety and Health Consultative Issues
8. Supervisor Knowledge of the *Mines Safety and Inspection Act 1994*
9. Training

A comparison of the results for each of the nine areas and main findings are detailed below. Associated recommendations are contained in Section 9.0.

### 7.2.1 Supervisor Experience

The comparison between the two surveys in Section D of Appendix J shows that the general level of experience of the underground supervisors has increased slightly. In 1998, 21% of supervisors had worked five years or less underground and 79% had worked greater than five years. In 2002, 17% of supervisors have worked five years or less and 83% have worked more than five years. In 1998, 93% of supervisors had worked at two or more mines, compared to 89% in 2002.

### 7.2.2 Reporting by Employees of Hazards and Incidents

Two questions on employee hazard and incident reporting are available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q8	Are your employees encouraged to report all incidents, accidents hazards and safety issues?	98 (Yes)	91 (Agree)	7 decline
Q17	Are employees at your mine discouraged from reporting safety issues?	96 (No)	91 (Disagree)	5 decline

In 1998, 98% of supervisors indicated that their employees are encouraged to report all incidents, accidents, hazards and safety issues. In 2002, the response had reduced slightly to 91% of supervisors.

In 1998, 96% of supervisors responded that employees were not discouraged from reporting safety issues. In 2002, 91% of supervisors responded to a similar question.

While slight declines in responses have occurred, there is still a large percentage (over 90%) of supervisors who believe employees are encouraged to report hazards, accidents, incidents and safety issues.

*Recommendation 1 (Action 2.0) in Section 9.0 has been made to address issues relating to hazard/incident reporting and investigation.*

### 7.2.3 Supervisor Hazard Identification and Risk Management Skills-Decisions Regarding Safety

One question is available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q21	Have you acquired enough hazard identification and risk management skills to feel confident when making decisions regarding safety?	86 (Yes)	95 (Agree)	9 improvement

In 1998, 86% of underground supervisors indicated they had acquired enough risk management skills to feel confident when making decisions regarding safety. In 2002, this response had increased to 95%. This indicates that underground supervisors are now more comfortable in applying risk management skills (refer Section 7.2.9 below) on the job.

#### 7.2.4 Employees' Attitude to Risk-Taking Behaviour

Two questions relating to employees' attitude toward risk-taking behaviour are available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q15	Does the contract-based remuneration system lead to risk-taking behaviour by some employees?	31 (No)	67 (Disagree)	36 improvement
Q18	Do some employees get away with risk-taking behaviour at your mine?	53 (No)	49 (Disagree)	4 decline

In 1998, 31% of supervisors indicated that the contract-based remuneration system did not lead to risk-taking behaviour by employees. In 2002, around 67% of supervisors held a similar view. This shows a significant improvement of 36%. Supervisors were also asked if some employees get away with risk-taking behaviour. In 1998, 53% of supervisors indicated that employees do not. This had dropped by 4% to 49% in 2002.

*Recommendation 1 (Action 4.0) in Section 9.0 has been made to help address issues associated with employee risk-taking behaviour.*

#### 7.2.5 Obstacles to Safe Work by Employees

One question is available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q19	Are you happy with the skill level of employees under your control?	64 (Yes)	88 (Agree)	24 improvement

In the 1998 RTB Survey, 64% of supervisors responded that they were happy with the skill level of employees under their control.

In 2002, supervisors were given a similar statement ("I am confident the employees I supervise have sufficient skills to carry out their job safely") and 88% indicated that they agreed. This showed a significant improvement of 24% in perceptions.

### 7.2.6 Supervisor-Foreman-Management Interface

Five questions regarding the supervisor-foreman-management interface are available for direct comparison.

The questions are as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q10	Are your decisions on safety matters overruled by foremen/managers?	61 (No)	68 (Disagree)	7 improvement
Q11	Have you ever been pressured to deliver production targets to the detriment of safety?	63 (No)	82 (Disagree)	19 improvement
Q12	Do you believe senior mine management has a genuine commitment to safety?	84 (Yes)	94 (Agree)	10 improvement
Q14	On your shift, are you able to properly penalise workers for unsafe work practices?	86 (Yes)	73 (Agree)	13 decline
Q16	Are your concerns for safety and health fully acknowledged by your foreman/manager?	98 (Yes + Sometimes)	83 (Agree)	15 decline

The responses to the five questions in the supervisor-foreman-management interface area showed mixed results.

There were significant improvements in perceptions regarding overruling of decisions (up 7%), production pressure adversely impacting upon safety (up 19%) and management commitment to safety (up 10%).

There were however also some declines in responses to the ability of supervisors to penalise or discipline employees for unsafe work practices (down 13%) and supervisor safety concerns being acknowledged and addressed by management (down 15%). These changes are significant and indicate a need to improve communications between supervisors and management.

The recommendations relating to improving supervisor-manager communications (*refer Section 9.0, Recommendation 1, Action 6.0*) should therefore be treated as a priority for the underground sector.

### 7.2.7 Employee Knowledge of Safety and Health Consultative Issues

One question is available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q6	Are safety and health representatives, committees and meetings encouraged at your mine?	84 (Yes)	94 (Agree)	10 improvement

In 1998, 84% of supervisors responded that safety and health representatives and safety committees were encouraged at their site. This has improved by 10% to 94% of supervisors in 2002.

### 7.2.8 Supervisors' Knowledge of the *Mines Safety and Inspection Act 1994*

Two questions regarding supervisors' knowledge of aspects of the *Mines Safety and Inspection Act 1994* are available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q20	Do you fully understand your responsibilities under the MSI Act?	95 (Yes)	84 (Agree)	11 decline
Q22	Did recent changes to the MSI Act and Regulations make mining safer?	58 (Yes)	87 (Agree)	29 improvement

An 11% decline has occurred since 1998 in regard to supervisors' understanding of their responsibilities under the *Mines Safety and Inspection Act 1994*. There has however been a significant improvement (29%) in the proportion of supervisors who indicated that changes in legislation (e.g. introduction of the Code of Practice on Underground Ground Support) have made mining safer.

The Working Party is concerned that around 15% of the underground supervisors surveyed do not believe they fully understand their statutory responsibilities. This should be addressed by the industry by including relevant training in legislative responsibilities as part of the Frontline Management Initiative.

*Recommendation 1 (Action 8.0) and Recommendation 2 in Section 9.0 contain provisions to help improve supervisors' knowledge and understanding of their statutory responsibilities.*

### 7.2.9 Training

One question relating to supervisor training is available for direct comparison, as follows:

1998 RTB	Question	1998 RTB %	2002 %	Change %
Q9	Are underground supervisors provided with enough training in hazard identification, risk assessment/control and people management?	39 (Yes)	61 (Agree)*	22 improvement

\* 2002 figure is the average of Q42 and Q46

In the 1998 Survey, 39% of supervisors responded that they were provided with enough training in hazard identification, risk assessment/control and people management.

In 2002, supervisors were asked two separate questions; one relating to hazard identification and risk assessment/control training (73% "Agree") and one relating to training in people management and effective communication (49% "Agree"). The average response to these two questions in 2002 was 61%, which represents an improvement of 22% from 1998.

The improvement in perception from 1998 is probably due to the increased focus on supervisor training, particularly through the introduction of the Frontline Management Initiative (FMI). As discussed previously in Section 5.2, there is still a significant percentage of underground supervisors who believe that their training has not been adequate, particularly in people management skills (51%). This reinforces the need for the underground sector to give immediate priority to the implementation of FMI.

*Recommendation 1 (Action 8.0) and Recommendation 2 in Section 9.0 are designed to help improve supervisors' skills in effective communication and people management.*

### 7.3 CORRELATION WITH SAFETY PERFORMANCE

The comparison of responses between the 1998 Risk-Taking Behaviour Survey and the 2002 Survey of the underground sector has shown general improvements in 12 out of the 19 employee questions and 9 out of 15 of the supervisor questions. This equates to an improvement for 60% (or 20 out of the 34) of the comparison questions.

It is significant however that training and procedures is the area that has shown the most significant decline in employee perceptions. For supervisors, there have been improvements in most areas except in relation to the reporting of hazards, incidents/accidents and safety issues by employees.

With regard to safety performance, the underground sector has shown some improvement since the 1998 RTB Survey as shown in the following table:

Performance Indicator	1997-1998	1998-1999	1999-2000	2000-2001
Lost-time Injury Frequency Rate	9.5	6.8	8.9	6.7
Injury Index	189	161	153	129
Duration Rate	20.0	23.5	17.2	19.3

While it is difficult to make direct comparisons, it is likely that improvements in safety climate (as measured by perception surveys) are linked to improvements in safety behaviour and resultant safety performance.

#### **7.4 FUTURE SURVEYS**

The 2002 Employee Survey contained 40 employee questions and 24 of these addressed similar issues covered in the 1998 RTB Survey. The 2002 Supervisor Survey contained 20 of these questions and 16 of these covered similar issues covered in the 1998 RTB Survey.

The 2002 Survey therefore collected additional information on important safety issues in the underground sector. This additional information has not been included in this comparison as there were no equivalent questions in the 1998 RTB Survey. To make use of this additional information and to help build a better picture of changes in safety 'climate', consideration should be given to using the 2002 format for any future surveys.

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## 8.0 EMPLOYEE WRITTEN COMMENTS

As part of the 2002 Survey, all employees were invited to provide written comments on any ideas or suggestions they would like to provide to MOSHAB on ways of improving safety. Employees (i.e. supervisors, managers, workforce, technical personnel, etc.) were also invited to include any concerns or safety issues that they felt strongly about, either at a site or industry-wide level.

All written comments were manually entered into a database by Savant Surveys and Strategies, and then individually reviewed. Where there were 10 or more comments on the same issue, these were grouped by topic into "significant issues".

All of the written comments (approximately 130 pages) are available for viewing on the MOSHAB Web site.

A summary of the number of comments relating to the significant issues is contained in Appendix K. Approximately 1900 comments were included in the 15 significant issue areas; 298 of these comments were from managers, 255 were from supervisors and 1348 were from other employees. The top 13 significant issues that represent most (99%) of comments were as follows:

Number	ISSUE	Number of comments	% of total comments*
1	Training (induction and ongoing)	321	17
2	Fatigue (shift hours, rosters, etc.)	283	15
3	Procedures	193	10
4	Working Conditions/Equipment	178	9
5	Employee-Management Communications	159	8
6	Management and Supervisor	145	8
7	Responsibility for and importance of safety	143	7
8	Production Pressures	101	5
9	Reporting of Hazards/ Incidents/Accidents	88	4
10	Reporting and Measurement of Injuries	84	4
11	Standards, Audits and Inspections	76	4
12	Drugs and Alcohol	53	3
13	MOSHAB/Information Exchange	49	3
		<b>1873</b>	<b>99</b>

\* total comments = 1901

A summary of the main points from the analysis of the employee comments are contained in the following sections. This includes both issues or concerns raised and suggestions for improvement. Relevant recommendations from the Working Party that relate to issues raised are contained in Section 9.0.

## 8.1 TRAINING

Approximately 17% of comments related to training issues.

### *Concerns/Issues*

Some of the concerns expressed were as follows:

- New workers to a site were not given adequate training on the procedures that applied to that site;
- New employees were often given little or no training on particular items of machinery so that production levels would not be affected;
- The induction or job orientation process was often inadequate or non-existent; the main concern being that co-workers were expected to ensure that the new employees knew what to do, which is difficult under normal working conditions and often resulted in the bad habits of the "old hands" being passed on;
- Re-training of older or long-term mine workers was believed to be essential as many were reluctant to adopt new procedures or work methods;
- Almost all incidents/accidents involve a communication break-down somewhere, yet there is almost no training for employees on how to communicate clearly and effectively.

### *Suggestions for Improvement*

Some suggestions for improvement provided by employees were as follows:

- There should be a national accreditation system for safety training, which all employees (company or contractor) should be required to be part of in order to work in the mining industry;
- Upon returning to the site after being rostered-off, employees should be given a training session to bring them up to date with any incidents or changes in procedures that may have occurred;
- Ensure that all companies develop and implement effective training and assessment programs based on industry-wide standards and regularly audit compliance;
- Develop standardised training packages for induction, hazard identification/risk management, JSAs, etc. and make them freely available;
- A mentor system for new persons working on mines;
- A four-year apprenticeship for underground mining to train people the right way the first time;
- Ensure all employees are trained in first-aid as it helps you appreciate what can go wrong.

Training has been identified as the most significant issue for employees in both written comments and as the item they most wanted to improve at their mine site (refer Section 4.6). This again reinforces the

need for the current status of employee skill training to be reviewed and an industry-wide strategy developed and implemented to improve the effectiveness of training.

*Recommendation 1 (Action 7.0) in Section 9.0 has been made to address issues associated with training in safe work procedures on mine sites.*

*Recommendation 5 in Section 9.0 has been made to help identify current training issues and improve the effectiveness of training at an industry-wide level.*

## **8.2 FATIGUE**

Approximately 15% of comments related to issues associated with fatigue, including working hours and rosters.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- Some employees considered the 12-hour working shift was too long and could contribute to fatigue, particularly for underground workers;
- The lack of suitable break times, or the short amount of time allowed for breaks, was thought to contribute to fatigue during long shifts;
- Some employees commented that when travelling, the time to and from the work site was taken into consideration, the hours workers were required to be alert were increased considerably; as a result of these long hours, workers were in danger of accidents not only at work, but also travelling home at the end of a shift;
- The way some FIFO rosters were constructed, workers were rostered to work a 12-hour shift immediately after arriving at the mine site from flying in to site; tiredness from travelling became a compounding problem and was further aggravated if the first shift was a night shift;
- The effect on family life/children with an absent father was a concern with rosters that involved long periods of work before returning home (e.g. six weeks on, one week off);
- Worrying about problems which resulted from being away from home often affected the level of concentration required to work safely.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- Have a maximum of 10-hour shifts for underground;
- More training of shift workers in Fatigue Management;
- More study/research into the causes and effects of fatigue on safety;

- Have enforceable crib breaks for underground workers;
- Reduce the hours of work or increase break times of the first few night shifts on long-shift rosters as this is the worst time and hard to stay alert;
- More recognition that if workers are tired, they place themselves and other workers at risk; rather than forcing themselves to get through the day for the sake of production, they should be given adequate rest breaks;
- Develop and implement industry standards for shift lengths and rosters (e.g. compulsory 10-hour break between shifts for maintenance personnel).

Issues associated with fatigue, including shift lengths and travelling arrangements, are issues that should generally be addressed by site management. These should include consulting with employees regarding specific concerns that could impact upon safety on the site. At an industry-wide level, the Working Party believes MOSHAB should support a broad review and research of issues that could contribute to fatigue and promote the implementation of fatigue management plans at all mines based on the MOSHAB Fatigue Management Guideline.

*Recommendation 1 (Action 9.0) and Recommendation 6 in Section 9.0 have been made to help identify issues associated with fatigue and improve fatigue management on mine sites.*

### **8.3 PROCEDURES**

Approximately 10% of comments related to procedures.

#### *Concerns/Issues*

Some of the concerns raised were as follows:

- Some contractors believed the safety standards and procedures they were required to follow were often higher and more stringent than those expected of principal or company employees;
- Safe work procedures should be practical and developed by employees who have knowledge of the task;
- Written procedures should be readily available, including to contractor and sub-contractor employees;
- Different formats and different approaches to procedures from site to site are confusing; there is no common industry approach.

#### *Suggestions for Improvement*

Some suggestions provided by employees were as follows:

- Use JSAs as the basis for developing all safe work procedures;

- Safe act (task) observation programs should be implemented at all mines;
- Develop industry standards and guidelines for JSAs and Task/Safe Act Observations;
- Develop standard industry procedures for common (high-risk) tasks and make them freely available (e.g. via Internet).

Employee comments on procedures reinforce the survey results contained in Section 4.7. The concerns expressed should be addressed through implementing the recommendation relating to improving procedures and training at mine sites.

*Recommendation 1 (Action 7.0) in Section 9.0 has been made to address issues associated with the development and availability of safe work procedures and compliance with such procedures on mine sites.*

#### **8.4 WORKING CONDITIONS/EQUIPMENT**

Approximately 9% of comments related to working conditions and equipment.

##### *Concerns/Issues*

Some of the concerns raised were as follows:

- A lack of ventilation and excessive dust were mentioned frequently by employees at several underground mines;
- Employees working in office situations expressed concern that safety in these areas (e.g. ergonomic seating and desks or adequate lighting) was not given sufficient attention;
- PPE, although deemed adequate in most cases, was often not designed well enough to meet individual requirements;
- Equipment standards varied significantly from site to site, e.g. some sites have boggers (underground load-haul-dump units) with enclosed cabs and other sites have the same equipment without cabs.

##### *Suggestions for Improvement*

- Independent testing of ventilation and air quality underground;
- Have more specific standards or regulations about ventilation underground (maximum temperatures, minimum air flows, etc.);
- Develop common industry standards for equipment specifications;
- Create a universal Tag board that can be put into all underground sites.

Most of the issues raised by employees were site-specific and should be addressed through consultation between employees and management. Improved communication systems on mine sites

(refer Section 9.0, Recommendation 1, Action 5.0) should assist in identifying issues and having them properly resolved.

## **8.5 EMPLOYEE-MANAGEMENT COMMUNICATIONS**

Approximately 8% of comments related to communications between management and employees.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- Due to high workloads, managers were not able to spend enough time on the job discussing issues with employees or finding out what really happens;
- Employees being intimidated for raising safety issues with management;
- Poor communication between company/principal and contractors and sub-contractors;
- Lack of formal training for employees, supervisors and managers in effective communications (must all have some basic skills);
- Information passed on to employees is often on a "need to know" basis only and employees are not given the whole picture.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- Better planning and formal shift plan meetings so everyone knows what is happening for the day;
- Contractors and subcontractors should be included in company safety meetings/briefings;
- Use clear communication with easily understandable words e.g. less jargon;
- Managers to allocate set time each day/week to spend on the job speaking to employees.

Employee comments on communications again reinforce the survey results contained in Section 4.3, Section 4.4 and Section 4.9. The concerns expressed should be addressed through the implementation of the recommendation relating to improving management-employee communications.

*Recommendation 1 (Action 5.0) in Section 9.0 has been made to help improve communications between management and employees on mine sites.*

## **8.6 MANAGER AND SUPERVISOR**

Approximately 8% of comments related to managers and supervisors.

### *Concerns/ Issues*

Some of the concerns raised were as follows:

- ❑ The lack of communication and people management skills of some managers;
- ❑ Inexperienced managers being placed in senior positions with appointments seemingly based on "holding a degree" rather than "shop floor" knowledge and experience;
- ❑ Some managers and supervisors turning a "blind eye" to safety breaches due to production pressures;
- ❑ Not enough managers ventured into the work areas to gain either experience or knowledge about relevant aspects of their areas of responsibility;
- ❑ Some supervisors often don't understand their responsibilities i.e. what they are supposed to do;
- ❑ Some managers see safety issues raised by employees as a personal attack on them and will often bury issues rather than addressing them;
- ❑ Managers often just don't have enough time to get out into the workplace;
- ❑ Due to increased workloads and cut-backs, managers and supervisors often don't have time to properly plan things; as a result, things never quite get finished off properly.

*Suggestions for Improvement*

Some suggestions provided were as follows:

- ❑ Managers to provide supervisors with more time to spend on the job with employees (e.g. less paperwork);
- ❑ Training in communication, people skills and management techniques should be compulsory for all managers and supervisors;
- ❑ Supervisors and managers to spend more time encouraging employees for working safely rather than disciplining them for unsafe work practices;
- ❑ Make managers and supervisors attend the same training as safety and health representatives;
- ❑ Regular supervisor-manager meetings to discuss issues and set common standards;
- ❑ Managers and supervisors conducting more checks on how people are doing their job without employees getting into trouble;
- ❑ "supervisors ability to ensure safety is put ahead of production, recognise good safety performance, take action with regard to poor performance, and motivate employees to behave safely/identify hazards, can be a key driver in improving safety performance";
- ❑ Managers, supervisors and team leaders to be thoroughly trained in legislative responsibilities (MSI Act and Regulations) and company safety standards/procedures before they start work at the mine so they do not have to interpret them; they will then know what is expected of them right from the start.

Comments regarding managers and supervisors reinforce responses by employees, supervisors and managers in the Survey contained in Section 4.4, Section 4.5, Section 5.1, Section 5.2, Section 5.4 and Section 6.2. These issues and concerns should be addressed through the implementation of recommendations relating to improving the skills and competence of managers and supervisors.

*Recommendation 1 (Action 8.0) in Section 9.0 has been made to help improve the effectiveness of communications between management and supervisors on mine sites.*

*Recommendation 2 in Section 9.0 has been made to help improve the effectiveness of training being provided to managers and supervisors.*

## **8.7 RESPONSIBILITY FOR SAFETY**

Approximately 7% of comments related to responsibility for safety.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- The emphasis needs to be placed back on the individual to take responsibility for their own safety and that of their work mates;
- Some managers and supervisors don't 'walk the talk'; management sometimes turns a blind eye, if it means getting the job done;
- Safety reps are often "safety cops", approaching and disciplining the work force rather than the workforce approaching them and asking for help with issues;
- Management often dictates safety policies and procedures, but they are not familiar with the actual conditions under which the mine/mining industry operates.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- More employee-based safety programs run by the employees themselves, not management;
- Everyone should spend at least 5% of their time on safety issues and on a daily basis;
- Safety reps should get more recognition and support from management to help them be more effective;
- Make individuals more accountable for their own safety through behaviour-based safety observation programs;
- Get employees to develop those workplace behaviours they value; the resultant "behaviour standards" set the template for the way all employees should approach safety, teamwork, dedication and personal integrity;



- All work groups/crews should develop and implement safety improvement plans and audit them regularly.

*Recommendation 1 (Action 4.0) in Section 9.0 has been made to help address issues associated with employee behaviour, including setting standards of behaviour and management setting the example.*

## **8.8 PRODUCTION PRESSURES**

Approximately 5% of comments related to the impact of production on safety.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- Management often say "Safety before production", but in the minds of some, production does, and always will, come first;
- Managers and supervisors are often subconsciously pressured to ignore safety when production levels are threatened by having unrealistic targets being set;
- Supervisors are often put under pressure when plans change and they do not have enough people to do the job safely;
- Senior managers tell employees about safety while middle managers push for production;
- Cost-cutting on mines (less people, less maintenance, older equipment) and higher production targets to increase profit adversely affects morale and safety, particularly for contractors;
- Tighter budgets mean less people doing more and rushing, taking short-cuts;
- Supervisors and managers often push for production to make them look good;
- Management often do not "walk the talk" when it comes to production versus safety; they should be honestly committed to safety, not just when it suits them.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- More involvement of employees and management working together to determine the best way of safely achieving production targets;
- We have to lose "more metres and tonnes" attitude;
- Incentives should only be for safety, not production;
- Encourage corporate managers not to over-demand production without consulting site management as this will often lead to unrealistic demands being placed on supervisors and employees taking short-cuts;

- Senior managers not to have performance incentives based solely on production.

Comments regarding production pressure reinforce responses by employees and supervisors in the Survey (refer Section 4.3 and Section 5.3). The issues should be addressed through the implementation of the recommendation relating to promoting safe behaviours on mine sites (*Refer Section 9.0, Recommendation 1, Action 5.0*), allowing supervisors to freely express concerns relating to unrealistic production schedules (*Refer Section 9.0, Recommendation 1, Action 6.0*) and ensuring executive managers are aware of the impact that tight resourcing and production targets can have on safety (*Refer Section 9.0, Recommendation 4*).

## 8.9 REPORTING OF HAZARDS/INCIDENTS/ACCIDENTS

Approximately 4% of comments related to the reporting of incidents and accidents.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- Employees are often reluctant to report near-misses/incidents/accidents because blame is immediately placed on to the person/people involved;
- In some cases, the employee's pay structure or roster was affected as a result of reporting an incident;
- Some management and supervisory staff have key performance incentives (KPIs) which can be affected by the number of incidents/accidents reported and this hindered honest reporting;
- Employees are often turned-off reporting because they have to complete complex forms;
- Employees often hear about accidents, but do not get any information about what has been done to prevent them;
- There is often no feedback about the outcomes of accidents or incidents, no resulting changes to existing standards nor introduction of new procedures to prevent a re-occurrence.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- Ensuring group or individual performance measures/incentives are not based on accidents/injury statistics, but positive things (e.g. number of inspections, safety meetings held, etc.);
- Encourage employees to report all incidents/accidents by rewarding them (e.g. by praise/recognition) and get rid of the "blame" mentality;
- Ensure that all hazards are treated seriously; if they are not, it discourages employees from reporting and identifying the hazards;

- Pay people rewards or incentives for identifying hazards;
- More feed-back to employees on incidents/accidents and what action is being taken; this will encourage them to report events if they see things are being addressed;
- Reduce the “red-tape” in completing forms so there is more incentive to report.

Comments regarding incident/accident reporting reflect the responses by employees in the Survey (refer Section 4.1). The issues and concerns expressed should be addressed through the implementation of the recommendation relating to improving hazard/incident/accident reporting, investigation and follow-up on mine sites (*Refer Section 9.0, Recommendation 1, Action 2.0*).

## **8.10 REPORTING AND MEASUREMENT OF INJURIES**

Approximately 4% of comments related to the reporting and measurement of workplace injuries.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- Some contractors had Lost-Time Injury (LTI) targets set as part of their contract and either lost money or did not receive a bonus if they had any injuries, prompting creative injury management (e.g. sending injured employees out on break early);
- Some bonus and reward systems in place are based on the amount of “injury free” working time which provided incentive not to record injuries;
- The system of placing injured workers on “light duties” after an injury was sometimes done to make the LTI figures look better; e.g. injured workers were told to report to work for light duties, then told to go home after an hour as this would not register as an LTI;
- Some injury report forms were too difficult to complete, making workers avoid reporting;
- There is a lack of a clear industry-wide definition as to what constitutes an LTI or MTI and how they should be recorded;
- The practice of using the measurement of “LTI-free days” was considered by many employees not to be a true reflection of the actual safety performance of the site.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- Ensuring group or individual performance measures/incentives are not based on injury statistics (i.e. use positive performance indicators only);

- ❑ Introduce different levels of injury measurement so that LTI is not the only measurement used (e.g. use All injuries, not just LTIs and MTIs); the different levels would reflect the severity of the injury and provide a category relating to the ability of the worker to carry out certain duties;
- ❑ Ensure proper injury management programs are in place that are run by people “independent” of those with personnel interest in maintaining safety records;
- ❑ Not having contracts that contain penalties for having LTIs or MTIs; have incentives for undertaking safety activities instead.

The reporting and measurement of injuries requires some attention to ensure that any incentives for not reporting or properly recording injuries are minimised. To address this issue, the industry should develop a common approach to reporting and recording injuries and adopt a broader set of safety performance measures, not just LTIs. MOSHAB should take a leading role in developing these indicators and move the industry toward a system that provides greater integrity.

*Recommendation 1 (Action 10.0) and Recommendation 7 in Section 9.0 have been made to help improve the integrity of injury reporting across the mining industry and to address employee concerns regarding mis-reporting of injuries.*

## **8.11 STANDARDS, AUDITS AND INSPECTIONS**

Approximately 4% of comments related to standards, audits and inspection.

### *Concerns/Issues*

Some of the concerns raised were as follows:

- ❑ Inspections by Department of Mineral and Petroleum Resources (MPR); inspectors were often notified in advance, giving managers and supervisors an opportunity to move employees out of unsafe areas or to cover things up;
- ❑ Inspectors often do not visit to the smaller sites;
- ❑ Inspectors often visit the workplace with the manager and supervisor and do not spend time with safety representatives and workers;
- ❑ Safety standards and systems often vary from site to site and from contractor to company; with no consistent industry approach, except following regulations which only address a fraction of the issues;
- ❑ No common auditing system across the industry; difficult to benchmark or compare sites.

### *Suggestions for Improvement*

Some suggestions provided by employees were as follows:

- Develop a common set of standards which apply to all aspects of Health and Safety in the mining industry; regular audits should be carried out to ensure these standards are being met;
- More checks on night-shift to ensure people take the same care when management is not present;
- MPR inspections should be done without prior warning and involve employees, not just management;
- Have Mines Inspectors attend OH and S committee meetings and ask employees privately when visiting mine sites, not with management in attendance; some employees are too scared to say what they want to say with managers around;
- MPR to actively participate in mine activities e.g. safety summits or other activities that encourages safety and health improvement;
- Regular auditing of contractors by mining companies to ensure common standards of safety.

Some of these issues are currently being addressed by the Chamber of Minerals and Energy (e.g. development of a safety management system guideline). Issues relating to inspections by the inspectorate will be referred to the Department of Mineral and Petroleum Resources.

## **8.12 DRUGS AND ALCOHOL**

Approximately 3% of comments from employees related to drugs and alcohol. A number of employees expressed the need to address the amount and frequency of drugs and alcohol being used on mine sites, particularly in FIFO situations.

### *Suggestions for Improvement*

Some suggestions provided were as follows:

- Implement regulations with severe penalties if safety of the individual and others could be affected;
- Develop industry-wide standards for fitness for work, including drugs and alcohol.

Many companies have developed fitness for work policies and procedures that include addressing the adverse impacts of alcohol and drug use on mine sites. The Working Party believes these programs should be developed in consultation with employees and should reinforce appropriate employee behaviour to minimise the adverse impacts of drugs and alcohol in the workplace.

*Recommendation 1 (Action 11.0) in Section 9.0 has been made to help address drug and alcohol issues.*

## **8.13 MOSHAB AND INFORMATION EXCHANGE**

Approximately 3% of comments from employees related to MOSHAB and issues associated with exchanging information on safety and health.

*Concerns/Issues*

Some of the concerns raised were as follows:

- There seems to be little sharing of important safety information across the industry, except within the larger companies;
- General employee awareness of MOSHAB and its role was very low.

*Suggestions for Improvement*

Some suggestions provided were as follows:

- Exchanges of information and procedures should be done on a regular basis between mine sites/ mining companies/mining sectors to promote 'best practice' standards;
- Visits by key site personnel to other mine sites to discuss safety procedures, systems and methods would be beneficial in developing a consistent approach;
- Better dissemination of industry accident/incident information to mine sites.
- MOSHAB should take a more active role in safety promotion and in providing information to employees and improve its profile with site-based people through more mine site visits;
- Regular employee surveys to be held as a follow-up to this survey;
- Feedback to be provided on the findings of this and other future surveys to all employees, not just management.

The Working Party believes MOSHAB should consider ways of improving its profile with employees in the Western Australian Mining Industry and ensure the findings and recommendations of this Report are communicated to all employees (*refer Section 9.0, Recommendation 1, Action 1.0*) and that all recommendations are properly implemented (*refer Section 9.0, Recommendation 8*).

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## 9.0 RECOMMENDATIONS

The Recommendations made by the Working Party are detailed in this section. The Recommendations are generally:

- Those that should be addressed on the mine or site by local management; and
- Those that should be addressed at a higher industry level by MOSHAB or its member organisations, either individually or jointly (i.e. Department of Mineral and Petroleum Resources, Unions WA or Chamber of Minerals and Energy).

The recommendations have also been referenced to the relevant sections in the Report.

The recommendations are not in order of priority as each one is considered important to address specific issues. The Recommendations are as follows:

### *Mine Management Actions to Address Issues Raised in Report*

**Recommendation 1** – Mine Management should review this Report and implement the various actions contained in Appendix L – “Action Plan for Mine Management” to address the following issues on mine sites:

1. *Review and Communication of Report Findings*
2. *Hazard/Incident Investigation and Follow-up*
3. *Provision of Safety Information*
4. *Promoting Safe Behaviour*
5. *Management-Employee Communications*
6. *Management-Supervisor Communications*
7. *Site Procedures and Training*
8. *Manager and Supervisor Training*
9. *Fatigue Management*
10. *Injury Reporting, Recording and Management*
11. *Drug and Alcohol Management*

Refer to Appendix L – “Action Plan for Mine Management” for details.

### *Industry Approach to Training of Managers and Supervisors*

**Recommendation 2** – The Chamber of Minerals and Energy reviews the content and implementation of the Frontline Management Initiative (FMI) against issues raised in this Report. Training for managers and supervisors should include:

- strategies that improve the ability of supervisors and managers to positively influence employee behaviour (refer Section 4.5, Section 5.4, Section 6.2 and Section 6.5);

- ❑ effective communication skills, including how to give positive feed-back to employees for working safely and how to discipline for unsafe behaviours (refer Section 4.5, Section 5.2, Section 5.4 and Section 6.2);
- ❑ understanding hazard identification, risk assessment and risk control (refer Section 5.2);
- ❑ understanding the statutory responsibilities of managers and supervisors (refer Section 5.2 and Section 8.6).

Consideration should also be given to extending the implementation of FMI to all mining industry supervisors and managers, commencing with those who have statutory responsibilities (refer Section 8.6).

*Improving Effectiveness of Employee Representation*

**Recommendation 3** – MOSHAB develops a strategy to promote the role of safety and health representatives across the industry and programs for implementation by the industry to improve the effectiveness of safety and health representatives on mines (refer Section 4.8 and Section 6.6).

*Increasing the Involvement of Executive Management*

**Recommendation 4** – The Chamber of Minerals and Energy should communicate the findings and recommendations of this Report to industry Executive Management, including issues associated with:

- ❑ demonstrating their commitment to safety and encouraging greater involvement of executive management in ensuring safety at their mine site (refer Section 6.1);
- ❑ the adequacy of resources to ensure safe production (refer Section 6.1 and Section 8.8); and
- ❑ committing the necessary resources to review and implement applicable recommendations from this Report and holding site management accountable for their implementation (refer Appendix L).

*Industry Strategy to Improve Employee Training*

**Recommendation 5** – The Chamber of Minerals and Energy should review the current status of employee skill training and identify ways of improving the level and effectiveness of training across the industry (refer Section 4.6 and Section 8.1). A report on the status and proposed improvement actions should be provided to MOSHAB for consideration and comment.

*Promotion of Fatigue Management Guideline*

**Recommendation 6** – MOSHAB should promote the development and implementation of fatigue management plans at all mines based on the MOSHAB Fatigue Management Guideline (refer Section 8.2).



*Injury Reporting and Recording*

**Recommendation 7** – MOSHAB should develop a common industry approach to the reporting and recording of injuries and promote the adoption of positive safety performance measures rather than reactive measures that can lead to mis-reporting of injuries and performance (refer Section 8.10).

*Follow-up Action on Report Recommendations*

**Recommendation 8** – MOSHAB should consider what action is recommended to the Minister to ensure that the recommendations made in this Report are effectively implemented. This may include requesting the Department of Mineral and Petroleum Resources to monitor the implementation of recommendations requiring action by mine management and reporting progress back to MOSHAB.

Finally, the Working Party would like to thank all sites who agreed to participate in the Survey and to all those who made time to attend survey sessions.

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## **10.0 LIST OF APPENDICES**

Copies of the Appendices contained in this Report are as follows:

**APPENDIX A – SURVEY FORMS (ALL EMPLOYEES, SUPERVISORS AND MANAGERS)**

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

**APPENDIX I – VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS**

**APPENDIX J – COMPARISON BETWEEN 1998 RISK TAKING BEHAVIOUR SURVEY AND  
2002 UNDERGROUND SECTOR SURVEY RESULTS**

**APPENDIX K – STATISTICAL ANALYSIS OF EMPLOYEE COMMENTS**

**APPENDIX L – ACTION PLAN FOR MINE MANAGEMENT (*Recommendation 1*)**

The following Appendices referred to in this Report are contained in a separate document (“Appendices To The 2002 Safety Behaviour Working Party Report) due to their volume:

**APPENDIX C – EMPLOYEE RESULTS BY REGION**

**APPENDIX D – EMPLOYEE RESULTS BY INDUSTRY SECTOR**

**APPENDIX E – SUPERVISOR RESULTS BY REGION**

**APPENDIX F – SUPERVISOR SURVEY RESULTS BY INDUSTRY SECTOR**

**APPENDIX G – MANAGER SURVEY RESULTS BY REGION**

**APPENDIX H – MANAGER SURVEY RESULTS BY INDUSTRY SECTOR**

APPENDIX A – SURVEY FORMS (EMPLOYEES SUPERVISORS AND MANAGERS)

**APPENDIX A – SURVEY FORMS (EMPLOYEES, SUPERVISORS AND MANAGERS)**



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**MINES OCCUPATIONAL SAFETY AND HEALTH ADVISORY BOARD (MOSHAB)  
SAFETY BEHAVIOUR SURVEY 2001/02**

**DIRECTIONS**

Thank you for making your time available for this Survey. The answers you give are confidential and there will be no way of identifying individual responses. Please read each question carefully and complete using a **black** pen following the directions below.

Write clearly within the boxes in CAPITAL letters.

Make heavy marks that fill the circle completely.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Shade Circles Like This-> ●
Not Like This-> ⊗ ⊕

Everyone should complete 'Section A: General Information' and 'Section B: Employee Questions'.

If you are a 'Supervisor', you will be given an extra "green" survey form (marked "Section C") to complete.

If you are a 'Manager', you will be given an extra "yellow" survey form (marked "Section D") to complete.

**IMPORTANT DEFINITIONS**

**Executive Management** means senior company managers who are not normally based on the site and may include CEOs, Managing Directors, Operations Managers, Corporate Managers etc.

**Management** means site-based personnel with line-management responsibilities and may include resident managers, general managers, department managers, underground or quarry managers, superintendents, contractor project managers etc.

**Supervisor** means site-based personnel with supervisory responsibilities who are responsible for individual work groups and may include forepersons, shift bosses, shift supervisors, shift coordinators, team leaders, contractor supervisors etc.

**SECTION A: GENERAL INFORMATION**

This section is to be completed by **EVERYONE**

- A. Did you take part in the last MOSHAB Risk-Taking Behaviour Survey in 1998?  No  Yes
- B. Your Age: 

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 years
- C. Gender:  Male  Female
- D. Are you a Safety and Health Representative?  No  Yes
- E. Are you a member of a Safety and Health Committee?  No  Yes

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APPENDIX A – SURVEY FORMS (EMPLOYEES SUPERVISORS AND MANAGERS)



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**F. What is your main work area?** (ie the area where you have been assigned to work)

Underground     Smelter/Refinery  
 Surface Mining     Surface Drilling  
 Workshop     Office  
 Process Plant     Other (please specify)

**G. Which of the following categories best describes your job or position?**

Operator / Tradesperson     Support / Technical     Manager / Superintendent     Supervisor

**H. What is your job or position title?**

**I. What resource sector do you work in?**

Gold     Coal  
 Nickel     Salt  
 Alumina     Other Metals  
 Mineral Sands     Other (please specify)   
 Iron Ore

**J. How many years have you worked in the mining industry?**

3 years or less     More than 3 but less than 5     5 or more but less than 10     More than 10

**K. How long have you worked at this mine / site?**

years      months

**L. How many other mines have you worked at?**

**M. Who do you work for on this site?**

Company / Principal     Contractor / Sub-contractor     Labour Hire Company     Other

**SECTION B – EMPLOYEE QUESTIONS**

**This section is to be completed by EVERYONE**

Please read the following statements and indicate your view by shading the appropriate circle on the right. Answer the questions based on your current perceptions of the mine/site where you currently work (ie we are interested in your most recent industry experiences).

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Hazards / incidents at this mine are reported promptly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. The thought of being killed or injured at work affects how I behave at work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Supervisors ignore risk-taking behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Accidents at this mine are reported promptly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Safety issues raised with supervisors are adequately dealt with.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Mining industry employers are serious about safety and health.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Employees take short-cuts to meet production demands.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Supervisors provide positive feedback for following safe work practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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	Strongly Agree	Agree	Disagree	Strongly Disagree
9. Supervisors actively discourage unsafe behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Employees are discouraged from reporting or bringing safety issues to the attention of management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Management reacts constructively to safety issues that are raised.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Hazards at this site are eliminated or dealt with promptly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Employees have been properly trained to perform their assigned tasks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Employees are disciplined or disadvantaged for refusing to do tasks that they consider to be unsafe.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Tool-box / Safety meetings are held at this mine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I understand what my "Duty of Care" means under the <i>Mines Safety and Inspection Act 1994</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Supervisors are skilled and competent to ensure the safety of their people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Employees at this mine behave unsafely and take risks at work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Contractor employees operate at the same standard of safety as company (principal) employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Safety bulletins and safety incident reports are readily available for me to read.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Safety bulletins and safety incidents are discussed at Tool-box / Safety meetings / Pre-shift meetings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Recognition from managers / supervisors for working safely encourages employees not to take risks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Managers are skilled and competent to ensure the safety of their operations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Employees are routinely involved in the development of (safe) work procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Up to date (safe) work procedures are available at this mine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I have easy access to (safe) work procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Employees are properly trained in the use of written (safe) work procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. The work practices in my workplace are not the same as the written (safe) work procedures.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. Induction training for my work area covered all relevant safety issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. Risks, short-cuts or unsafe behaviour are acceptable to management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Employees are routinely involved in incident / accident investigations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Employees get feedback from management on incident/accident investigations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Managers do not spend enough time talking with employees about safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Employees are not provided with enough safety information relevant to their work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. Safety and health representatives and safety committees are encouraged at this mine/site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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	Strongly Agree	Agree	Disagree	Strongly Disagree												
36. Incentive-based remuneration systems encourage risk-taking behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>												
37. Safety and health representatives are effective in representing employees on safety and health issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>												
38. I am able to effectively apply risk management principles (ie identifying hazards, assessing the level of risk) while on the job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>												
	Weekly/															
	Daily	Fortnightly	Monthly	Never												
39. At your mine/site, how often does your manager speak to you about safety issues?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>												
40. How often do you attend Tool-box or Safety meetings at your mine?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>												
<p><b>If you could choose <u>three</u> things to change at your mine/site, what would they be?</b></p> <p><i>(Make your three choices from the examples given or write additional ones in the "Other" Section)</i></p> <table border="0"> <tr> <td><input type="radio"/> Better training</td> <td><input type="radio"/> Better safety information</td> </tr> <tr> <td><input type="radio"/> Better equipment</td> <td><input type="radio"/> Better supervision</td> </tr> <tr> <td><input type="radio"/> Better Personal Protective Equipment (PPE)</td> <td><input type="radio"/> More resources (staff, capital funds etc)</td> </tr> <tr> <td><input type="radio"/> Better communication</td> <td><input type="radio"/> More recognition</td> </tr> <tr> <td><input type="radio"/> Better Safety Representatives</td> <td><input type="radio"/> More time with supervisor</td> </tr> <tr> <td><input type="radio"/> Better incident / accident reporting</td> <td><input type="radio"/> More management involvement</td> </tr> </table> <p><b>Other (please specify):</b></p> <hr/> <hr/> <hr/>					<input type="radio"/> Better training	<input type="radio"/> Better safety information	<input type="radio"/> Better equipment	<input type="radio"/> Better supervision	<input type="radio"/> Better Personal Protective Equipment (PPE)	<input type="radio"/> More resources (staff, capital funds etc)	<input type="radio"/> Better communication	<input type="radio"/> More recognition	<input type="radio"/> Better Safety Representatives	<input type="radio"/> More time with supervisor	<input type="radio"/> Better incident / accident reporting	<input type="radio"/> More management involvement
<input type="radio"/> Better training	<input type="radio"/> Better safety information															
<input type="radio"/> Better equipment	<input type="radio"/> Better supervision															
<input type="radio"/> Better Personal Protective Equipment (PPE)	<input type="radio"/> More resources (staff, capital funds etc)															
<input type="radio"/> Better communication	<input type="radio"/> More recognition															
<input type="radio"/> Better Safety Representatives	<input type="radio"/> More time with supervisor															
<input type="radio"/> Better incident / accident reporting	<input type="radio"/> More management involvement															
<p><b>Based on your experience, do you have any other ideas or comments for MOSHAB on how safety can be improved?</b></p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>																
<p>IF YOU ARE A <u>SUPERVISOR</u>, PLEASE COMPLETE SECTION C (the "green" form)</p> <p>IF YOU ARE A <u>MANAGER</u>, PLEASE COMPLETE SECTION D (the "yellow" form)</p>																

IF YOU ARE NOT A SUPERVISOR OR A MANAGER, YOUR QUESTIONNAIRE IS NOW COMPLETE.  
 THANK YOU FOR PARTICIPATING IN THIS SURVEY.  
 PLEASE PASS YOUR COMPLETED QUESTIONNAIRE BACK TO THE SURVEY TEAM.

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APPENDIX A – SURVEY FORMS (EMPLOYEES SUPERVISORS AND MANAGERS)



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**SECTION C – SUPERVISORS**

**This section is to be completed by SUPERVISORY personnel ONLY**

Answer the questions based on your perceptions of the mine/site and organisation where you currently work.

	Strongly Agree	Agree	Disagree	Strongly Disagree
41. Management encourages employee involvement in safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. Supervisors are provided with adequate training in hazard identification, risk assessment and risk control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. Foreman or managers overrule supervisors' decisions on safety matters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. Supervisors are encouraged by management to report all incidents, accidents, hazards and safety issues.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. Supervisors are pressured to deliver production targets ahead of safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. Supervisors are provided with adequate training in people management and effective communication.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Management has a genuine commitment to safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Supervisors have adequate control over decisions made during the shift that impact safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Supervisors are not able to effectively discipline workers for unsafe work practices.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
50. Supervisors are able to effectively promote and encourage safe work practices and behaviours.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
51. Supervisor safety and health concerns are properly addressed by management.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
52. Employees are discouraged by management from reporting safety issues or incidents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
53. Some employees get away with unsafe behaviour and taking risks.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. Supervisors do not have enough time to properly discuss safety issues with employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. I fully understand my responsibilities as a supervisor under the <i>Mines Safety and Inspection Act 1994</i> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. Changes to the <i>Mines Safety and Inspection Act</i> and <i>Regulations</i> have made mining safer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. Safety Representatives are routinely involved in accident investigations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. I feel confident when making decisions that affect safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. I am confident that the employees I supervise have sufficient skills to carry out their job safely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. As a supervisor, I get actively involved in shift safety meetings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

YOUR QUESTIONNAIRE IS NOW COMPLETE.

THANK YOU FOR PARTICIPATING IN THIS SURVEY  
PLEASE PASS YOUR COMPLETED QUESTIONNAIRE BACK TO THE SURVEY TEAM.

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APPENDIX A – SURVEY FORMS (EMPLOYEES SUPERVISORS AND MANAGERS)



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**SECTION D - MANAGERS**

This section is to be completed by **MANAGEMENT** personnel ONLY

Answer the questions based on your perceptions of the mine/site and organisation where you currently work.

	Strongly Agree	Agree	Disagree	Strongly Disagree
61. Executive Management provide adequate resources for site management to effectively manage safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
62. Executive Management are committed to improving safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
63. Managers have insufficient time to address safety issues with employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
64. Executive Management shows commitment through involvement in site safety activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
65. Management are trained and competent to effectively manage safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
66. Management properly consider potential safety and health risk implications when making decisions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
67. Management is not responsible for managing safety and health on the minesite.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
68. Supervisors spend enough time discussing on-the-job safety with employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
69. Managers provide enough recognition and encouragement to employees for working safely.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
70. Executive Management are more concerned with maximising profit than adequately resourcing safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
71. Managers have a leading role in 'setting the example' for employees and supervisors.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
72. Managers are unskilled at discussing risk-taking behaviours with employees.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
73. Potential risks are properly considered as part of the mine/site planning process.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
74. Safety Representatives perform a valuable role in improving safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
75. Managers do not have the necessary skills to influence employee safety behaviour.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
76. Systems are in place at this mine/site that ensures risks are effectively managed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
77. Principal Employer / Contract arrangements in the mining industry have made mining safer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
78. I understand risk management concepts enough to feel confident when making decisions that could affect safety.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

YOUR QUESTIONNAIRE IS NOW COMPLETE.

THANK YOU FOR PARTICIPATING IN THIS SURVEY.  
PLEASE PASS YOUR COMPLETED QUESTIONNAIRE BACK TO THE SURVEY TEAM.

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**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

**APPENDIX B - EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

## EMPLOYEE SURVEY RESULTS BY JOB CATEGORY

This Appendix (Appendix B) contains the analysis of the responses given to *Section B* ("EMPLOYEE QUESTIONS" or Questions 1 to 40). Under each of the four Job Classifications Categories, respondents were asked to complete under *Question G* in *Section A*. The four job categories are as follows:

1. Operator/Tradesperson (i.e. traditional workforce)
2. Technical/Support (including engineers, geologists and administration personnel)
3. Manager/ Superintendent (i.e. management)
4. Supervisor

The number of complete responses given within each of the job categories and a summary of the employment status (i.e. whether employed by company/principal, contractor, etc.) is given below:

<b>Responses</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total</b>
No. of Company	1 426	769	293	396	2 884
No. of Contractor	1 246	135	75	167	1 623
No. of Labour Hire	100	35	6	7	148
No. of Other	5	1	2	0	8
<b>Total</b>	<b>2 777</b>	<b>940</b>	<b>376</b>	<b>570</b>	<b>4 663*</b>

\* although 4 700 employees took part in the Survey, some did not complete all the form

*The rest of this page is blank*

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q1 – Hazards/Incidents at this mine are reported promptly</b>					
<b>% Response to Q1</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	22.8	29.7	48.0	33.6	27.6
Agree	65.1	63.2	48.3	61.9	63.2
<b>Total Agree</b>	<b>87.9</b>	<b>92.9</b>	<b>96.3</b>	<b>95.5</b>	<b>90.8</b>
Disagree	10.8	6.4	3.4	4.4	8.6
Strongly Disagree	0.9	0.2	0.3	0.2	0.6
<b>Total Disagree</b>	<b>11.8</b>	<b>6.6</b>	<b>3.7</b>	<b>4.5</b>	<b>9.2</b>

<b>Q2 – The thought of being killed or injured at work affects how I behave at work</b>					
<b>% Response to Q2</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	45.7	46.5	56.0	49.5	47.4
Agree	39.9	38.7	34.2	38.8	39.3
<b>Total Agree</b>	<b>85.6</b>	<b>85.2</b>	<b>90.2</b>	<b>88.3</b>	<b>86.7</b>
Disagree	10.3	10.5	6.6	8.7	9.9
Strongly Disagree	3.4	3.9	3.2	3.0	3.4
<b>Total Disagree</b>	<b>13.6</b>	<b>14.4</b>	<b>9.8</b>	<b>11.7</b>	<b>13.3</b>

<b>Q3 – Supervisors ignore risk-taking behaviour</b>					
<b>% Response to Q3</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	3.5	2.0	1.9	0.9	2.8
Agree	18.5	12.4	6.6	5.2	14.8
<b>Total Agree</b>	<b>22.0</b>	<b>14.4</b>	<b>8.5</b>	<b>6.1</b>	<b>17.6</b>
Disagree	57.4	59.2	54.1	56.1	58.0
Strongly Disagree	19.2	25.7	36.9	37.2	24.3
<b>Total Disagree</b>	<b>76.6</b>	<b>84.9</b>	<b>91.0</b>	<b>93.4</b>	<b>83.4</b>

<b>Q4 – Accidents at this mine are reported promptly</b>					
<b>% Response to Q4</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	26.7	38.7	58.6	40.6	33.9
Agree	64.6	56.9	39.5	55.2	60.7
<b>Total Agree</b>	<b>91.3</b>	<b>95.6</b>	<b>98.1</b>	<b>95.8</b>	<b>94.6</b>
Disagree	6.1	3.3	1.9	2.6	4.8
Strongly Disagree	0.9	0.2	0.0	0.3	0.6
<b>Total Disagree</b>	<b>6.9</b>	<b>3.5</b>	<b>1.9</b>	<b>3.0</b>	<b>5.4</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q5 – Safety issues raised with supervisors are adequately dealt with</b>					
<b>% Response to Q5</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	11.6	13.7	19.4	17.7	13.5
Agree	63.3	70.8	75.3	72.2	67.5
<b>Total Agree</b>	<b>74.9</b>	<b>84.5</b>	<b>94.7</b>	<b>89.9</b>	<b>81.0</b>
Disagree	20.8	13.1	4.8	9.3	16.8
Strongly Disagree	3.1	1.1	0.3	0.3	2.2
<b>Total Disagree</b>	<b>23.9</b>	<b>14.1</b>	<b>5.0</b>	<b>9.6</b>	<b>19.0</b>

<b>Q6 – Mining industry employers are serious about safety and health</b>					
<b>% Response to Q6</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	18.6	25.7	40.6	27.8	23.2
Agree	67.2	65.5	57.3	64.7	66.5
<b>Total Agree</b>	<b>85.9</b>	<b>91.2</b>	<b>97.9</b>	<b>92.5</b>	<b>89.7</b>
Disagree	11.5	7.3	1.9	6.8	9.4
Strongly Disagree	1.3	0.5	0.0	0.3	0.9
<b>Total Disagree</b>	<b>12.7</b>	<b>7.9</b>	<b>1.9</b>	<b>7.2</b>	<b>10.3</b>

<b>Q7 – Employees take short-cuts to meet production demands</b>					
<b>% Response to Q7</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	8.3	4.1	2.4	2.3	6.3
Agree	39.4	36.8	25.2	32.3	37.3
<b>Total Agree</b>	<b>47.7</b>	<b>41.0</b>	<b>27.6</b>	<b>34.6</b>	<b>43.6</b>
Disagree	43.8	50.7	56.0	54.2	48.0
Strongly Disagree	7.2	7.3	15.6	10.3	8.4
<b>Total Disagree</b>	<b>51.0</b>	<b>58.1</b>	<b>71.6</b>	<b>64.5</b>	<b>56.4</b>

<b>Q8 – Supervisors provide positive feedback for following safe work practices</b>					
<b>% Response to Q8</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	10.0	10.5	15.1	14.9	11.2
Agree	64.7	64.3	67.9	76.7	66.7
<b>Total Agree</b>	<b>74.7</b>	<b>74.8</b>	<b>83.0</b>	<b>91.6</b>	<b>78.0</b>
Disagree	22.5	22.8	16.2	7.9	20.3
Strongly Disagree	2.2	1.6	0.5	0.3	1.7
<b>Total Disagree</b>	<b>24.7</b>	<b>24.4</b>	<b>16.7</b>	<b>8.2</b>	<b>22.0</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q9 – Supervisors actively discourage unsafe behaviour</b>					
<b>% Response to Q9</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	19.9	22.0	34.0	36.2	23.6
Agree	60.8	63.7	58.1	51.6	60.3
<b>Total Agree</b>	<b>80.7</b>	<b>85.7</b>	<b>92.0</b>	<b>87.8</b>	<b>83.9</b>
Disagree	15.7	11.9	4.8	7.5	13.1
Strongly Disagree	3.0	2.0	3.2	4.4	3.0
<b>Total Disagree</b>	<b>18.7</b>	<b>13.9</b>	<b>8.0</b>	<b>11.9</b>	<b>16.1</b>

<b>Q10 – Employees are discouraged from reporting or bringing safety issues to the attention of management</b>					
<b>% Response to Q10</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	2.6	2.0	2.1	2.6	2.5
Agree	11.6	5.0	1.9	2.3	8.4
<b>Total Agree</b>	<b>14.2</b>	<b>7.0</b>	<b>4.0</b>	<b>4.9</b>	<b>10.9</b>
Disagree	62.3	55.0	28.1	47.0	56.5
Strongly Disagree	22.9	37.7	67.9	47.6	32.6
<b>Total Disagree</b>	<b>85.2</b>	<b>92.7</b>	<b>96.0</b>	<b>94.6</b>	<b>89.1</b>

<b>Q11 – Management reacts constructively to safety issues that are raised</b>					
<b>% Response to Q11</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	10.2	17.9	32.9	18.5	14.7
Agree	68.1	71.7	63.4	73.8	69.6
<b>Total Agree</b>	<b>78.3</b>	<b>89.6</b>	<b>96.3</b>	<b>92.3</b>	<b>84.4</b>
Disagree	19.6	8.8	3.2	7.0	14.6
Strongly Disagree	1.1	1.0	0.5	0.5	1.0
<b>Total Disagree</b>	<b>20.7</b>	<b>9.8</b>	<b>3.7</b>	<b>7.5</b>	<b>15.6</b>

<b>Q12 – Hazards at this site are eliminated or dealt with promptly</b>					
<b>% Response to Q12</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	9.8	12.7	20.7	15.7	12.2
Agree	60.4	66.9	68.7	66.6	64.1
<b>Total Agree</b>	<b>70.2</b>	<b>79.6</b>	<b>89.4</b>	<b>82.3</b>	<b>76.3</b>
Disagree	25.6	17.5	10.3	15.6	21.9
Strongly Disagree	2.4	1.3	0.3	0.5	1.8
<b>Total Disagree</b>	<b>28.0</b>	<b>18.8</b>	<b>10.6</b>	<b>16.1</b>	<b>23.7</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q13 – Employees have been properly trained to perform their assigned tasks</b>					
<b>% Response to Q13</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	9.9	11.3	19.9	12.8	11.4
Agree	61.6	70.2	69.8	69.9	65.5
<b>Total Agree</b>	<b>71.5</b>	<b>81.4</b>	<b>89.7</b>	<b>82.7</b>	<b>76.8</b>
Disagree	24.8	16.7	10.3	16.1	21.1
Strongly Disagree	2.9	0.7	0.0	1.2	2.1
<b>Total Disagree</b>	<b>27.8</b>	<b>17.4</b>	<b>10.3</b>	<b>17.3</b>	<b>23.2</b>

<b>Q14 – Employees are disciplined or disadvantaged for refusing to do tasks they consider unsafe</b>					
<b>% Response to Q14</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	4.8	1.9	3.2	2.4	3.9
Agree	20.8	9.8	2.7	8.2	15.8
<b>Total Agree</b>	<b>25.6</b>	<b>11.7</b>	<b>5.8</b>	<b>10.7</b>	<b>19.6</b>
Disagree	58.9	59.2	32.4	47.2	56.0
Strongly Disagree	14.5	26.9	61.5	41.8	24.4
<b>Total Disagree</b>	<b>73.4</b>	<b>86.1</b>	<b>93.9</b>	<b>89.0</b>	<b>80.4</b>

<b>Q15 – Tool-box/safety meetings are held at this mine</b>					
<b>% Response to Q15</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	34.6	51.4	73.5	54.2	43.7
Agree	60.0	46.4	26.3	44.2	52.9
<b>Total Agree</b>	<b>94.6</b>	<b>97.8</b>	<b>99.7</b>	<b>98.4</b>	<b>96.7</b>
Disagree	3.6	1.2	0.3	1.6	2.6
Strongly Disagree	1.2	0.1	0.0	0.0	0.7
<b>Total Disagree</b>	<b>4.8</b>	<b>1.3</b>	<b>0.3</b>	<b>1.6</b>	<b>3.3</b>

<b>Q16 – I understand what my 'Duty of Care' means under the <i>Mines Safety and Inspection Act 1994</i></b>					
<b>% Response to Q16</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	37.1	48.9	74.3	50.9	44.3
Agree	58.9	47.9	25.2	47.7	52.7
<b>Total Agree</b>	<b>96.0</b>	<b>96.8</b>	<b>99.5</b>	<b>98.6</b>	<b>97.0</b>
Disagree	3.2	2.7	0.5	1.0	2.6
Strongly Disagree	0.5	0.2	0.0	0.3	0.4
<b>Total Disagree</b>	<b>3.7</b>	<b>2.9</b>	<b>0.5</b>	<b>1.4</b>	<b>3.0</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q17 – Supervisors are skilled and competent to ensure the safety of their people</b>					
<b>% Response to Q17</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	16.5	17.0	27.3	24.0	18.6
Agree	63.9	66.2	67.1	68.0	65.6
<b>Total Agree</b>	<b>80.5</b>	<b>83.2</b>	<b>94.4</b>	<b>92.0</b>	<b>84.2</b>
Disagree	16.7	14.4	5.3	6.8	14.2
Strongly Disagree	2.1	1.2	0.0	0.5	1.5
<b>Total Disagree</b>	<b>18.8</b>	<b>15.6</b>	<b>5.3</b>	<b>7.3</b>	<b>15.7</b>

<b>Q18 – Employees at this mine behave unsafely and take risks at work</b>					
<b>% Response to Q18</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	2.3	1.2	1.6	1.4	1.9
Agree	21.2	16.1	8.0	11.9	18.1
<b>Total Agree</b>	<b>23.4</b>	<b>17.3</b>	<b>9.5</b>	<b>13.3</b>	<b>20.0</b>
Disagree	57.1	59.1	53.1	59.6	58.0
Strongly Disagree	18.6	22.4	36.9	26.9	22.0
<b>Total Disagree</b>	<b>75.8</b>	<b>81.5</b>	<b>89.9</b>	<b>86.5</b>	<b>80.0</b>

<b>Q19 – Contractors' employees operate at the same standard of safety as company (principal) employees</b>					
<b>% Response to Q19</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	13.5	13.9	27.1	19.1	15.6
Agree	54.3	53.2	55.2	51.2	54.5
<b>Total Agree</b>	<b>67.8</b>	<b>67.1</b>	<b>82.2</b>	<b>70.3</b>	<b>70.1</b>
Disagree	25.8	26.8	15.4	26.7	25.6
Strongly Disagree	4.9	4.2	2.1	2.3	4.3
<b>Total Disagree</b>	<b>30.6</b>	<b>31.0</b>	<b>17.5</b>	<b>29.0</b>	<b>29.9</b>

<b>Q20 – Safety bulletins and safety incidents reports are readily available for you to read</b>					
<b>% Response to Q20</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	22.8	36.9	53.3	39.5	30.2
Agree	65.5	54.5	41.4	55.9	60.4
<b>Total Agree</b>	<b>88.3</b>	<b>91.4</b>	<b>94.7</b>	<b>95.5</b>	<b>90.6</b>
Disagree	9.9	7.6	5.0	4.0	8.4
Strongly Disagree	1.4	0.5	0.3	0.2	1.0
<b>Total Disagree</b>	<b>11.3</b>	<b>8.2</b>	<b>5.3</b>	<b>4.2</b>	<b>9.4</b>



**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q21 – Safety bulletins and safety incidents are discussed at Tool-box/Safety meetings/ pre-shift meetings</b>					
<b>% Response to Q21</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	24.4	34.9	50.9	42.5	31.1
Agree	65.3	57.0	44.6	53.5	61.0
<b>Total Agree</b>	<b>89.8</b>	<b>91.9</b>	<b>95.5</b>	<b>96.0</b>	<b>92.1</b>
Disagree	8.3	6.1	4.2	3.3	7.0
Strongly Disagree	1.3	0.4	0.3	0.3	0.9
<b>Total Disagree</b>	<b>9.6</b>	<b>6.5</b>	<b>4.5</b>	<b>3.7</b>	<b>7.9</b>

<b>Q22 – Recognition from managers/ supervisors for working safely encourages employees not to take risks</b>					
<b>% Response to Q22</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	18.6	21.5	27.1	23.3	20.6
Agree	57.1	61.6	63.1	63.5	59.6
<b>Total Agree</b>	<b>75.7</b>	<b>83.1</b>	<b>90.2</b>	<b>86.7</b>	<b>80.2</b>
Disagree	21.2	14.9	9.5	12.6	18.1
Strongly Disagree	2.2	1.3	0.3	0.7	1.7
<b>Total Disagree</b>	<b>23.4</b>	<b>16.1</b>	<b>9.8</b>	<b>13.3</b>	<b>19.8</b>

<b>Q23 – Managers are skilled and competent to ensure the safety of their employees</b>					
<b>% Response to Q23</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	12.4	16.9	32.4	19.2	15.9
Agree	66.8	69.3	63.4	70.3	68.1
<b>Total Agree</b>	<b>79.2</b>	<b>86.2</b>	<b>95.8</b>	<b>89.5</b>	<b>84.0</b>
Disagree	17.4	11.7	4.2	8.7	14.3
Strongly Disagree	2.3	0.7	0.0	1.2	1.7
<b>Total Disagree</b>	<b>19.6</b>	<b>12.4</b>	<b>4.2</b>	<b>10.0</b>	<b>16.0</b>

<b>Q24 – Employees are routinely involved in the development of (safe) work procedures</b>					
<b>% Response to Q24</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	12.3	19.7	39.0	25.9	17.7
Agree	64.1	65.3	54.4	63.1	63.9
<b>Total Agree</b>	<b>76.4</b>	<b>85.0</b>	<b>93.4</b>	<b>89.0</b>	<b>81.6</b>
Disagree	20.9	13.4	6.4	10.3	17.1
Strongly Disagree	1.8	0.6	0.0	0.5	1.3
<b>Total Disagree</b>	<b>22.7</b>	<b>14.0</b>	<b>6.4</b>	<b>10.8</b>	<b>18.4</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q25 – Up-to-date (safe) work procedures are available at this mine</b>					
<b>% Response to Q25</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	14.3	21.3	34.2	23.6	18.6
Agree	68.8	62.1	54.1	62.8	66.0
<b>Total Agree</b>	<b>83.0</b>	<b>83.4</b>	<b>88.3</b>	<b>86.4</b>	<b>84.6</b>
Disagree	13.7	14.2	10.6	12.6	13.5
Strongly Disagree	2.5	1.1	0.5	0.9	1.8
<b>Total Disagree</b>	<b>16.2</b>	<b>15.3</b>	<b>11.1</b>	<b>13.5</b>	<b>15.4</b>

<b>Q26 – I have easy access to (safe) work procedures</b>					
<b>% Response to Q26</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	15.6	24.6	39.8	29.0	21.3
Agree	64.7	59.1	49.6	58.4	62.5
<b>Total Agree</b>	<b>80.2</b>	<b>83.8</b>	<b>89.4</b>	<b>87.4</b>	<b>83.9</b>
Disagree	16.5	12.7	9.3	11.0	14.7
Strongly Disagree	1.7	1.3	0.5	0.9	1.4
<b>Total Disagree</b>	<b>18.2</b>	<b>14.0</b>	<b>9.8</b>	<b>11.9</b>	<b>16.1</b>

<b>Q27 – Employees are properly trained in the use of written (safe) work procedures</b>					
<b>% Response to Q27</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	8.9	10.5	18.8	12.8	10.6
Agree	57.9	60.5	63.1	58.6	59.6
<b>Total Agree</b>	<b>66.8</b>	<b>71.0</b>	<b>82.0</b>	<b>71.3</b>	<b>70.2</b>
Disagree	29.7	25.3	17.2	27.3	27.9
Strongly Disagree	2.4	1.4	0.3	1.2	1.9
<b>Total Disagree</b>	<b>32.1</b>	<b>26.6</b>	<b>17.5</b>	<b>28.5</b>	<b>29.8</b>

<b>Q28 – The work practices in my workplace are not the same as the written (safe) work practices</b>					
<b>% Response to Q28</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	3.8	1.8	1.3	1.4	3.0
Agree	35.4	24.7	15.1	22.9	30.8
<b>Total Agree</b>	<b>39.2</b>	<b>26.5</b>	<b>16.4</b>	<b>24.3</b>	<b>33.8</b>
Disagree	53.0	60.5	63.1	65.7	58.1
Strongly Disagree	5.4	9.6	19.6	9.4	8.0
<b>Total Disagree</b>	<b>58.4</b>	<b>70.1</b>	<b>82.8</b>	<b>75.2</b>	<b>64.1</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q29 – Induction training for my work area covered all relevant safety issues</b>					
<b>% Response to Q29</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	12.9	20.0	31.3	19.9	16.8
Agree	64.4	59.2	61.0	62.4	63.4
<b>Total Agree</b>	<b>77.3</b>	<b>79.2</b>	<b>92.3</b>	<b>82.3</b>	<b>80.2</b>
Disagree	18.6	17.5	6.9	16.6	17.3
Strongly Disagree	3.0	2.5	0.8	1.0	2.5
<b>Total Disagree</b>	<b>21.7</b>	<b>20.1</b>	<b>7.7</b>	<b>17.7</b>	<b>19.8</b>

<b>Q30 – Risks, short-cuts or unsafe behaviour are acceptable to management</b>					
<b>% Response to Q30</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	3.2	3.8	6.4	3.0	3.6
Agree	14.9	7.0	2.4	4.7	11.2
<b>Total Agree</b>	<b>18.1</b>	<b>10.8</b>	<b>8.8</b>	<b>7.7</b>	<b>14.8</b>
Disagree	56.3	50.1	24.7	45.6	51.6
Strongly Disagree	24.7	38.2	66.3	46.7	33.7
<b>Total Disagree</b>	<b>81.0</b>	<b>88.3</b>	<b>91.0</b>	<b>92.3</b>	<b>85.2</b>

<b>Q31 – Employees are routinely involved in incident/accident investigations</b>					
<b>% Response to Q31</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	6.4	14.5	38.2	15.7	12.0
Agree	50.3	59.7	48.3	61.0	54.1
<b>Total Agree</b>	<b>56.7</b>	<b>74.2</b>	<b>86.5</b>	<b>76.7</b>	<b>66.1</b>
Disagree	36.2	21.5	11.9	20.8	29.9
Strongly Disagree	5.3	2.5	0.8	2.1	4.0
<b>Total Disagree</b>	<b>41.5</b>	<b>24.1</b>	<b>12.7</b>	<b>22.9</b>	<b>33.9</b>

<b>Q32 – Employees get feedback from management on incident/accident investigations</b>					
<b>% Response to Q32</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	10.3	14.8	28.1	18.7	13.8
Agree	62.2	62.0	58.9	62.8	62.6
<b>Total Agree</b>	<b>72.5</b>	<b>76.8</b>	<b>87.0</b>	<b>81.5</b>	<b>76.4</b>
Disagree	23.0	19.3	11.9	16.1	20.8
Strongly Disagree	3.4	2.2	0.8	2.1	2.8
<b>Total Disagree</b>	<b>26.4</b>	<b>21.5</b>	<b>12.7</b>	<b>18.2</b>	<b>23.6</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q33 – Managers do not spend enough time speaking with employees about safety</b>					
<b>% Response to Q33</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	7.0	4.0	2.7	3.1	5.6
Agree	32.8	24.0	25.5	24.5	29.6
<b>Total Agree</b>	<b>39.8</b>	<b>28.0</b>	<b>28.1</b>	<b>27.6</b>	<b>35.3</b>
Disagree	51.4	57.2	50.7	56.6	53.5
Strongly Disagree	8.0	13.8	21.2	15.4	11.2
<b>Total Disagree</b>	<b>59.4</b>	<b>71.0</b>	<b>71.9</b>	<b>72.0</b>	<b>64.7</b>

<b>Q34 – Employees are not provided with safety information relevant to their work</b>					
<b>% Response to Q34</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	3.1	1.6	1.1	2.3	2.6
Agree	23.6	15.1	7.4	13.8	19.5
<b>Total Agree</b>	<b>26.7</b>	<b>16.7</b>	<b>8.5</b>	<b>16.1</b>	<b>22.1</b>
Disagree	64.6	65.6	62.9	65.0	65.2
Strongly Disagree	7.9	16.5	28.6	18.5	12.7
<b>Total Disagree</b>	<b>72.5</b>	<b>82.1</b>	<b>91.5</b>	<b>83.6</b>	<b>77.9</b>

<b>Q35 – Safety and health representatives and safety committees are encouraged at your mine</b>					
<b>% Response to Q35</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	20.5	35.2	57.0	40.0	29.0
Agree	68.1	57.3	38.5	53.8	62.2
<b>Total Agree</b>	<b>88.5</b>	<b>92.6</b>	<b>95.5</b>	<b>93.9</b>	<b>91.2</b>
Disagree	9.2	5.8	4.0	4.9	7.6
Strongly Disagree	1.5	1.0	0.5	0.7	1.2
<b>Total Disagree</b>	<b>10.7</b>	<b>6.8</b>	<b>4.5</b>	<b>5.6</b>	<b>8.8</b>

<b>Q36 – Incentive-based remuneration systems encourage risk-taking behaviour</b>					
<b>% Response to Q36</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	7.9	9.0	8.0	7.0	8.2
Agree	25.6	27.7	23.9	24.8	26.3
<b>Total Agree</b>	<b>33.5</b>	<b>36.7</b>	<b>31.8</b>	<b>31.8</b>	<b>34.5</b>
Disagree	52.1	45.6	43.5	47.0	50.4
Strongly Disagree	12.2	15.6	23.6	19.9	15.1
<b>Total Disagree</b>	<b>64.4</b>	<b>61.3</b>	<b>67.1</b>	<b>67.0</b>	<b>65.5</b>

**APPENDIX B – EMPLOYEE SURVEY RESULTS BY JOB CATEGORY**

<b>Q37 – Safety and health representatives are effective in representing employees on safety and health issues</b>					
<b>% Response to Q37</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	10.0	9.9	13.8	11.2	10.6
Agree	67.3	68.8	70.3	66.6	68.6
<b>Total Agree</b>	<b>77.3</b>	<b>78.7</b>	<b>84.1</b>	<b>77.8</b>	<b>79.2</b>
Disagree	18.8	17.4	14.9	19.9	18.5
Strongly Disagree	2.7	2.2	0.5	1.0	2.3
<b>Total Disagree</b>	<b>21.5</b>	<b>19.6</b>	<b>15.4</b>	<b>21.0</b>	<b>20.8</b>

<b>Q38 – I am able to effectively apply risk management principles (i.e. identifying hazards, assessing the level of risk) while on the job</b>					
<b>% Response to Q38</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Strongly Agree	24.4	28.7	48.3	33.4	28.5
Agree	69.5	65.8	49.9	63.8	67.0
<b>Total Agree</b>	<b>93.9</b>	<b>94.5</b>	<b>98.1</b>	<b>97.2</b>	<b>95.5</b>
Disagree	4.7	4.1	0.8	2.1	4.0
Strongly Disagree	0.5	0.4	0.5	0.2	0.5
<b>Total Disagree</b>	<b>5.3</b>	<b>4.6</b>	<b>1.3</b>	<b>2.3</b>	<b>4.5</b>

<b>Q39 – At your mine site, how often does your manager speak to you about safety issues?</b>					
<b>% Response to Q39</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Daily	25.8	29.7	49.1	37.8	30.5
Weekly/ fortnightly	33.6	40.0	38.7	37.1	36.3
Monthly	26.4	22.3	10.9	20.5	24.0
Never	12.2	6.3	0.8	3.7	9.2

<b>Q40 – How often do you attend Tool-box or Safety meetings at your mine?</b>					
<b>% Response to Q40</b>	<b>Operator/ Tradesperson</b>	<b>Technical/ Support</b>	<b>Manager/ Superintendent</b>	<b>Supervisor</b>	<b>Total Employees</b>
Daily	25.5	19.4	17.2	25.2	23.9
Weekly/fortnightly	40.3	40.7	55.7	48.4	43.2
Monthly	29.4	30.9	23.9	23.3	28.9
Never	3.3	7.6	2.7	2.4	4.1



APPENDIX I – VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS

APPENDIX I – VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS

## VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS

This Appendix (Appendix I) contains a statistical analysis that shows the variability of the responses given to *Section B* (“EMPLOYEE QUESTIONS” or Questions 1 to 40) under each of the main analysis categories as follows:

1. By the four employment or job groups defined by Question G, i.e. Operator/Tradesperson, Technical/Support, Manager/Supervisor and Supervisor;
2. By the nine regions surveyed, i.e. Central, South West, Kalgoorlie, Kambalda/Norseman, Laverton/Leonora, Leinster/Wiluna, Murchison, Yilgarn and Pilbara; and
3. By the seven industry sectors, (i.e. Gold, Nickel, Alumina, Mineral Sands, Iron Ore, Coal and ‘Other’ (salt, tantalum, talc and zinc).

The analysis involved determining the industry “average” or “mean” response for each question and then determining the standard deviation of each of the job groups, regions or industry sectors from the job group or industry mean or average. This gives an indication of the variability of responses.

### Analysis Results

The three tables for Job Group (Table 1), Region (Table 2) and Industry Sector (Table 3) are given on page no.’s 2, 3 and 4, respectively.

The far left-hand column contains the question number (i.e. 1 to 40). The “max”, “min” and “mean” columns correspond to the results for the “Total Agree” response to each of the questions. As the sum of the “Total Agree” and “Total Disagree” generally is 100% (except where some employees have not given a response), the degree of variability is the same for either response.

The figure given in the right-hand side of the tables (i.e. under the main categories) is the number of standard deviations (i.e. 0, -1, 1, -2, 2, etc.) the individual response is away from the mean. The value of the deviation (i.e. + or -) takes into account the nature of the question and shows if the response is either more “positive” or more “negative” than the industry average. That is:

- If the result is “positive” (i.e. 1, 2, etc.), the response is more desirable or more “positive” than the mean; or
- If the result is “negative” (i.e. -1, -2, etc.), the response is less desirable or more “negative” than the mean.

If the result is a zero (i.e. 0), the response is less than one standard deviation away from the mean and is considered an “average” response.

This analysis has been undertaken only to provide an indication of the degree of variability of responses. In terms of all responses from the 40 questions, it also shows if any one particular job group, region or industry sector is more or less “positive” than the average.

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APPENDIX I – VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS

**TABLE 1 – VARIABILITY BY JOB GROUP**

Questn	Max	Min	Mean	Operator/ Tradesperson	Technical/ Support	Manager/ Superintendent	Supervisor
1	96.3	87.9	90.8	-1	0	1	1
2	90.2	85.2	86.7	-1	-1	1	0
3	22.0	6.1	17.6	-1	0	1	1
4	98.1	91.3	94.6	-1	0	1	0
5	94.7	74.9	81.0	-1	0	1	0
6	97.9	85.9	89.7	-1	0	1	0
7	47.7	27.6	43.6	-1	0	1	0
8	91.6	74.7	77.9	-1	-1	0	1
9	92.0	80.7	83.9	-1	0	1	0
10	14.2	4.0	10.9	-1	0	1	1
11	96.3	78.3	84.3	-1	0	1	0
12	89.4	70.2	76.3	-1	0	1	0
13	89.7	71.5	76.9	-1	0	1	0
14	25.6	5.8	19.7	-1	0	1	0
15	99.7	94.6	96.6	-1	0	1	0
16	99.5	96.0	97.0	-1	-1	1	1
17	94.4	80.5	84.2	-1	-1	1	1
18	23.4	9.5	20.0	-1	0	1	0
19	82.2	67.1	70.1	-1	-1	1	0
20	95.5	88.3	90.6	-1	0	1	1
21	96.0	89.8	92.1	-1	0	1	1
22	90.2	75.7	80.2	-1	0	1	0
23	95.8	79.2	84.0	-1	0	1	0
24	93.4	76.4	81.6	-1	0	1	0
25	88.3	83.0	84.6	-1	-1	1	0
26	89.4	80.2	83.8	-1	0	1	1
27	82.0	66.8	70.2	-1	0	1	0
28	39.2	16.4	33.8	-1	0	1	0
29	92.3	77.3	80.2	-1	-1	1	0
30	18.1	7.7	14.8	-1	0	1	1
31	86.5	56.7	66.1	-1	0	1	0
32	87.0	72.5	76.0	-1	0	1	0
33	39.8	27.6	35.2	-1	-1	1	1
34	26.7	8.5	22.1	-1	0	1	0
35	95.5	88.5	91.2	-1	0	1	0
36	36.7	31.8	34.5	0	-1	1	1
37	84.1	77.3	79.2	-1	0	1	-1
38	98.1	93.9	95.5	-1	-1	1	1
39	87.8	59.4	66.8	-1	0	1	0
40	73.6	60.1	67.1	0	-1	1	1
<b>OVERALL RESPONSE</b>				<b>- 38</b>	<b>- 11</b>	<b>+39</b>	<b>+13</b>

APPENDIX I – VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS

**TABLE 2 – VARIABILITY BY REGION**

	Max	Min	Mean	Central	West	Kalgoorlie	Kambalda-Norseman	Laverton-Leonora	Leinster – Wiluna		Yilgarn	Pibara
1	94.1	85.6	90.8	0	1	1	1	-1	1	0	1	-1
2	92.4	79.4	86.7	0	1	0	-1	0	-1	-1	0	1
3	20.0	11.3	17.6	1	-1	0	0	0	0	-1	1	-1
4	95.5	89.5	94.6	0	0	1	0	0	0	1	1	-1
5	86.3	71.7	81.0	0	0	1	1	-1	0	0	1	-1
6	93.6	85.3	89.7	0	0	1	1	-1	0	-1	1	-1
7	51.5	32.6	43.6	1	1	1	1	-1	0	-1	1	-1
8	82.0	71.0	77.9	0	0	0	0	-1	0	0	1	0
9	86.6	79.8	83.9	1	0	1	1	1	1	-1	1	-1
10	17.1	6.4	10.9	1	0	1	0	1	-1	-1	0	0
11	89.5	78.7	84.3	0	1	1	1	-1	-1	0	1	-1
12	83.4	66.7	76.3	-1	-1	0	1	-1	0	0	0	-1
13	83.4	71.1	76.9	-1	-1	0	1	-1	0	0	0	-1
14	28.4	13.2	19.7	1	1	1	0	0	0	-1	0	0
15	98.0	92.0	96.6	1	1	1	1	0	1	-1	-1	0
16	99.2	94.0	97.0	0	0	0	1	0	1	0	1	-1
17	90.9	76.7	84.2	-1	0	1	1	-1	0	0	0	-1
18	24.8	10.6	20.0	-1	0	1	1	-1	1	-1	1	-1
19	79.6	59.7	70.1	0	-1	0	1	-1	1	1	1	-1
20	95.4	87.7	90.6	1	0	0	-1	-1	-1	1	0	0
21	95.4	87.8	92.1	1	0	0	0	0	0	-1	1	-1
22	87.0	76.0	80.2	-1	-1	0	1	-1	0	-1	1	-1
23	90.4	77.3	84.0	0	0	0	1	-1	0	0	1	-1
24	86.1	70.0	81.6	0	0	0	1	-1	-1	-1	1	1
25	89.9	78.9	84.6	0	0	0	1	0	0	0	1	-1
26	87.5	79.5	83.8	0	0	0	1	-1	0	-1	0	-1
27	80.8	60.9	70.2	0	-1	0	1	-1	0	0	1	0
28	36.3	28.4	33.8	-1	0	1	1	-1	-1	-1	1	-1
29	85.7	74.5	80.2	-1	-1	0	1	-1	0	0	1	0
30	16.3	13.0	14.8	1	0	1	0	0	0	-1	1	0
31	73.7	55.0	66.1	1	1	0	0	0	0	-1	0	0
32	84.1	67.1	76.0	1	0	0	1	-1	0	0	1	0
33	44.1	26.2	35.2	0	0	0	1	-1	1	0	1	-1
34	27.1	15.6	22.1	1	0	0	0	-1	0	-1	0	0
35	93.9	85.4	91.2	0	0	0	1	1	0	-1	0	1
36	41	27.4	34.5	1	1	0	0	0	-1	-1	0	0
37	82.8	70.1	79.2	1	1	0	0	-1	0	-1	0	0
38	96.2	92.5	95.5	1	0	0	0	-1	0	-1	1	0
39	83.3	45.6	66.8	0	-1	0	1	1	1	1	1	-1
40	83.5	44.5	67.1	0	-1	0	0	1	1	1	1	-1
<b>OVERALL RESPONSE</b>				<b>+8</b>	<b>0</b>	<b>+14</b>	<b>+23</b>	<b>- 19</b>	<b>+2</b>	<b>- 16</b>	<b>+25</b>	<b>- 20</b>

APPENDIX I – VARIABILITY TABLES FOR EMPLOYEE SURVEY RESULTS

**TABLE 3 – VARIABILITY BY INDUSTRY SECTOR**

Qstn	Max	Min	Mean	Gold	Nickel	Alumina	Mineral Sands	Iron Ore	Coal	Other Minerals
1	95.1	83.4	90.8	0	0	0	1	-1	-1	0
2	93.9	82.1	86.7	0	0	1	0	0	1	0
3	28.2	12.1	17.6	0	1	0	1	0	-1	0
4	96.7	81.6	94.6	0	0	0	1	0	-1	1
5	87.6	72.4	81	0	0	-1	1	-1	-1	1
6	92.5	82.8	89.7	0	0	0	1	-1	-1	0
7	50.9	30.1	43.6	0	0	-1	1	-1	-1	1
8	82.4	67.5	77.9	0	0	0	0	0	-1	1
9	88.5	71.2	83.9	0	1	0	0	0	-1	0
10	12.0	4.3	10.9	-1	0	0	1	-1	-1	0
11	89.2	80.7	84.3	0	-1	0	1	-1	0	1
12	80.2	68.3	76.3	1	-1	-1	1	-1	-1	1
13	84.4	74.3	76.9	-1	-1	0	1	-1	1	1
14	22.2	11.3	19.7	-1	0	0	1	-1	0	0
15	100	92.7	96.6	0	1	1	1	-1	1	0
16	98.3	92	97	1	0	-1	0	-1	-1	0
17	88.7	76.9	84.2	0	0	-1	0	-1	0	1
18	29.1	14.2	20	-1	0	-1	1	-1	0	0
19	78	57.7	70.1	0	0	-1	0	-1	-1	1
20	96.8	80.4	90.6	0	0	0	0	0	-1	1
21	94.9	84.7	92.1	0	0	1	1	0	-1	0
22	82.4	68.1	80.2	1	0	-1	1	0	-1	1
23	88.4	77.2	84	0	-1	-1	1	-1	0	0
24	90.2	71.8	81.6	0	0	-1	1	0	-1	0
25	88.4	78.5	84.6	0	0	0	0	-1	-1	1
26	88.1	76.1	83.8	0	1	0	0	0	-1	1
27	73.8	55.2	70.2	0	1	0	0	0	-1	1
28	38.3	28	33.8	0	0	-1	1	0	0	0
29	85.1	75.3	80.2	0	0	-1	-1	0	-1	1
30	19.6	10.7	14.8	0	0	0	1	0	-1	1
31	77.4	60.3	66.1	-1	0	1	0	-1	0	0
32	82.6	65.6	76	0	0	1	0	0	-1	0
33	42.2	29.8	35.2	0	-1	-1	1	-1	0	1
34	25.8	14.7	22.1	0	0	1	1	0	-1	0
35	93.9	87.6	91.2	-1	0	1	1	1	1	1
36	36.3	24.5	34.5	-1	0	0	1	-1	-1	0
37	85.3	75.9	79.2	-1	-1	0	0	0	1	0
38	96.6	90.8	95.5	0	1	0	0	0	-1	0
39	76.3	30.1	66.8	1	1	0	0	-1	-1	1
40	77.2	18.4	67.1	1	0	1	0	0	-1	1
<b>OVERALL RESPONSE</b>				<b>- 3</b>	<b>+1</b>		<b>+22</b>	<b>- 19</b>	<b>- 22</b>	<b>+20</b>

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR  
SURVEY AND 2002 UNDERGROUND SECTOR SURVEY RESULTS**

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

**COMPARISON BETWEEN 1998 RISK-TAKING BEHAVIOUR SURVEY  
AND UNDERGROUND SECTOR 2001- 2002 SURVEY RESULTS**

This Appendix (Appendix J) contains a comparison of the results of the 1998 Risk-Taking Behaviour (RTB) Survey of the Underground Sector and the results of the 2002 Survey for the Underground Sector only.

Although the type of survey questions are not exactly the same (i.e. 'direct' questions in 1998 and 'statements' in 2002), the issues covered are similar. The comparisons given should therefore be considered as indicative only.

This Appendix contains the following:

- (A) Comparison of General Information (i.e. experience, number of mines worked at);
- (B) Comparison between questions asked in the 1998 RTB and 2002 Surveys;
- (C) Comparison of Employee Responses; and
- (D) Comparison of Supervisor Responses.

Note that the number and location of mines surveyed and the classification of the various regions in the two surveys is different and results can only be interpreted on an 'underground-sector wide' basis.

A comparison between the number of underground mines in each Region and the Regions surveyed is given below. Note that in the 2002 Survey there were no underground mines surveyed in the Central or Pilbara regions.

<b>2001 – 2002 Survey</b>	<b>South West</b>	<b>Kalgoorlie</b>	<b>Kambalda-Norseman</b>	<b>Laverton-Leonora</b>	<b>Leinster-Wiluna</b>	<b>Murchison</b>	<b>Yilgarn</b>	<b>Overall</b>
No. of Underground Mines	1	3	3*	1	6	4	3	21

\* includes an underground mine that was part of a large gold operation but was classified as part of surface operations

<b>1998 Survey</b>	<b>Kalgoorlie-Kambalda</b>	<b>North-Eastern</b>	<b>Pilbara-Kimberley</b>	<b>Murchison</b>	<b>Yilgarn</b>	<b>Overall</b>
No. of Underground Mines	7	8	4	3	3	25

**(A) GENERAL INFORMATION**

**2002 Survey**

In the 2002 Survey, 970 employees took part at the 21 underground mines. This included 699 employees in the "Operator/Tradesperson" group, 92 "Supervisors" and 179 employees in the "Support/Technical" and "Manager/Superintendent" groups.

Only the responses from the "Operator/Tradesperson" and "Supervisor" groups have been used for comparison (refer Sections C and D) to ensure consistency in the sample population groups.

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002 UNDERGROUND SECTOR SURVEY RESULTS**

Of the 970 who took part in the latest survey, 280 employees (including 42 supervisors) took part in the 1998 RTB Survey. There were also 330 employees who took part in both the 1998 RTB Survey and 2002 Survey that now work in other (non-underground) areas. Their responses are not included.

The average age of the workforce surveyed in 2002 was 35.3 years.

**1998 RTB Survey**

In 1998, around 1000 employees and 150 supervisors were surveyed at 25 mines. Only twelve (12) of the mines surveyed in the 1998 RTB Survey were re-surveyed in the 2002 Survey.

**Comparison of Data**

<b>1998 RTB Survey</b>						
<b>No. of years in Industry (%)</b>	<b>Kalgoorlie-Kambalda</b>	<b>North-Eastern</b>	<b>Pilbara-Kimberley</b>	<b>Murchison</b>	<b>Yilgarn</b>	<b>Overall</b>
3 years or less (%)	32	53	31	42	31	39
3-5 years (%)	17	36	33	28	31	27
More than 5 years (%)	51	11	34	30	38	34

<b>Question J – How many years have you worked in the mining industry? (2002 for comparison)</b>								
<b>No. of years in Industry (%)</b>	<b>South West</b>	<b>Kalgoorlie</b>	<b>Kambalda-Norseman</b>	<b>Laverton-Leonora</b>	<b>Leinster-Wiluna</b>	<b>Murchison</b>	<b>Yilgarn</b>	<b>Overall</b>
3 years or less (%)	10.3	19.6	15.3	16.1	21.2	19.3	18.5	18.9
3-5 years (%)	6.9	11.2	8.7	16.1	12.3	14.1	7.4	11.9
5-10 years (%)	34.5	28.0	23.3	38.7	30.8	32.2	29.6	30.2
More than 10 years (%)	48.3	41.1	51.3	29.0	35.0	33.8	44.4	39.0

<b>1998 RTB Survey Results</b>						
<b>Worked at more than 2 mines</b>	<b>Kalgoorlie-Kambalda</b>	<b>North-Eastern</b>	<b>Pilbara-Kimberley</b>	<b>Murchison</b>	<b>Yilgarn</b>	<b>Overall</b>
Per cent of employees (%)	55	54	54	29	52	39

<b>Question L – How many other mines have you worked at? (2002 for comparison)</b>								
<b>Number of mines worked at</b>	<b>South West</b>	<b>Kalgoorlie</b>	<b>Kambalda-Norseman</b>	<b>Laverton-Leonora</b>	<b>Leinster-Wiluna</b>	<b>Murchison</b>	<b>Yilgarn</b>	<b>Overall</b>
% at 1 mine	6.9	22.4	11.3	19.4	17.3	19.0	18.5	10.6
% at 2 mines	6.9	9.3	8.0	16.1	8.1	13.2	9.9	29.4
% at 3-5 mines	27.6	28.0	32.0	16.1	31.9	25.1	28.4	52.7
% at > 5 mines	58.6	37.4	46.7	41.9	40.0	37.3	43.2	7.4

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

**(B) COMPARISON OF SURVEY QUESTIONS**

This section contains a listing of the 1998 RTB Survey Questions and the corresponding 2002 Survey Question, where one exists. Note that as the format of the questions was changed in the 2002 Survey (i.e. 'statements' rather than direct questions), it is difficult to make a direct comparison. The results should be taken as "indicative" only.

**(C) Employee Survey**

1998 RTB SURVEY QUESTION		2002 SURVEY QUESTION	
No.	Question Summary	No.	Question Summary
1	How long have you worked underground?	K	How long have you worked in the industry?
2	At how many mines?	L	At how many mines?
3	Why do you work underground?	-	<i>No equivalent question</i>
4	Is underground mining hazardous?	-	<i>No equivalent question</i>
5	Is remote-bogging dangerous?	-	<i>No equivalent question</i>
6	Do you report hazards (all/some/none)?	-	<i>No equivalent question but partly covered by:</i> Q1 – Hazards/incidents at this mine are reported promptly
7	Do you report incidents (all/some/none)?	-	<i>No equivalent question but partly covered by:</i> Q4 – Accidents at this mine are reported promptly
8	Is taking risk, short-cuts or unsafe behaviour acceptable to management?	30	<b>Risks, short-cuts or unsafe behaviour are acceptable to management</b>
9	Do supervisors ignore risk-taking behaviour?	3	Supervisors ignore risk-taking behaviour
10	Do supervisors actively discourage unsafe behaviour?	9	Supervisors actively discourage unsafe behaviour
11	Do you take risks or behave unsafely? Yes/No If yes, why (5 choices)	-	<i>No equivalent question but partly covered by:</i> Q7 – Employees take short-cuts to meet production demands
12	Would you take risks to increase earnings?	-	<i>No equivalent question</i>
13	Have you observed risk-taking behaviour by other employees at you mine?	18	Employees at this mine behave unsafely and take risks at work
14	What things (if any) prevent you from doing your job safely?	-	<i>No equivalent question</i>
15	Do you receive positive feedback from supervisors for following safe work practices?	8	Supervisors provide positive feedback for following safe work practices
16	Are safety issues raised with your supervisor or foreman adequately dealt with?	5	Safety issues raised with supervisors are adequately dealt with
17	Does the thought of being killed or injured at work affect how you behave at work?	2	The thought of being killed or injured at work affects how I behave at work
18	Are you discouraged from reporting or bringing safety issues to management? Yes/No If yes, what type (3 choices)	10	Employees are discouraged from reporting or bringing safety issues to the attention of management
19	Are hazards eliminated promptly at your site?	12	Hazards at this site are eliminated or dealt with promptly
20	Have you been adequately trained to perform your tasks underground?	13	Employees have been properly trained to perform their assigned tasks

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

*Employee Survey continued*

1998 RTB SURVEY QUESTION		2002 SURVEY QUESTION	
No.	Summary	No.	Summary
21	Have you been penalised for not performing a task that you considered unsafe?	14	Employees are disciplined or disadvantaged for refusing to do tasks they consider unsafe
22	Are you confident of assessing good and bad ground underground?	-	<i>No equivalent question (specific to ground control)</i>
23	Have you been trained in manual scaling?	-	<i>No equivalent question (specific to ground control)</i>
24	Is there a scaling bar available: on each piece of equipment at each heading?	-	<i>No equivalent question (specific to ground control)</i>
25	Do you report rockfalls (all/some/none)?	-	<i>No equivalent question (specific to ground control)</i>
26	Are Tool-box or Safety Meetings involving yourself held regularly?	15 & 40	Tool-box/safety meetings are held at this mine How often do you attend Tool-box or Safety meetings at your mine
27	Do you understand the process regarding safety and health representatives/ committees?	-	<i>No equivalent question</i>
28	Do you understand what 'duty of care' means in terms of the MSI Act 1994?	16	I understand what my 'Duty of Care' means under the MSI Act 1994
29	Is your employer serious about safety and health?	6	Mining Industry employers are serious about safety and health
30	Are you happy with the skills and competency of your supervisor?	17	Supervisors are skilled and competent to ensure the safety of their people
31	How often does your underground manager speak to you on the job underground?	39	At your mine site, how often does your manager speak to you about safety issues?
32	Are Safety Bulletins and Safety Incident Reports made available for you to read?	20	Safety bulletins and safety incidents reports are readily available for you to read
33	Does your mine have written procedures?	25	Up-to-date (safe) work procedures are available at this mine
33A	Were you trained in those procedures?	27	Employees are properly trained in the use of written (safe) work procedures
34	Are the procedures used underground the same as the ones written in the manuals?	28	The work practices in my workplace are not the same as the written (safe) work procedures
35	Rate the usefulness of your current mine induction: useless/of some use/useful/extremely useful?	-	<i>No equivalent question</i>

**Supervisor Survey**

1998 RTB SURVEY QUESTION		2002 SURVEY QUESTION	
No.	Question Summary	No.	Question Summary
1	How long have you worked underground?	K	How long have you worked in the industry?
2	At how many mines?	L	At how many mines?
3	Is underground mining hazardous?	-	<i>No equivalent question</i>
4	Why do you work underground?	-	<i>No equivalent question</i>
5	Why do you work as an underground supervisor?	-	<i>No equivalent question</i>



**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

*Supervisor Survey continued*

1998 RTB SURVEY QUESTION		2002 SURVEY QUESTION	
No.	Summary	No.	Summary
6	Are safety and health representatives, committees and meetings encouraged at your mine?	35	Safety and health representatives and safety committees are encouraged at your mine
7	Do you think all employees understand the requirements of the MSI Act and Regulations?	-	<i>No equivalent question</i>
8	Are your employees encouraged to report all incidents, accidents, hazards and safety issues?	52	Employees are discouraged by management from reporting safety issues or incidents
9	Are u/g supervisors provided with enough training in hazard identification, risk assessment/ control and people management?	42	Supervisors are provided with adequate training in hazard identification, risk assessment and control
		46	Supervisors are provided with adequate training in people management and effective communication
10	Are your decisions on safety matters overruled by foremen/managers?	43	Foremen or managers overrule supervisors' decisions on safety matters
11	Have you ever been pressured to deliver production targets to the detriment of safety?	45	Supervisors are pressured to deliver production targets ahead of safety
12	Do you believe senior mine management has a genuine commitment to safety?	47	Management has a genuine commitment to safety
13	Are you happy with the amount of control you have over the shift (day/night/afternoon)?	48	Supervisors have adequate control over decisions made during the shift that impact upon safety
14	On your shift are you able to properly penalise workers for unsafe work practices?	49	Supervisors are not able to effectively discipline workers for unsafe work practices
15	Does the contract-based remuneration system lead to risk-taking behaviour by some employees?	36	Incentive-based remuneration systems encourage risk-taking behaviour
16	Are your concerns for safety and health fully acknowledged by your foreman/manager?	51	Supervisor safety and health concerns are properly addressed by management
17	Are employees at your mine discouraged from reporting safety issues?	52	Employees are discouraged by management from reporting safety issues or incidents
18	Do some employees get away with risk-taking behaviour at your mine?	53	Some employees get away with unsafe behaviour and taking risks
19	Are you happy with the skill level of employees under your control?	59	I am confident that the employees I supervise have sufficient skills to carry out their job safely
20	Do you fully understand your responsibilities under the MSI Act?	55	I fully understand my responsibilities as a supervisor under the MSI Act
21	Have you acquired enough hazard identification and risk management skills to feel confident when making decisions regarding safety?	58	I feel confident when making decisions that affect safety
22	Did recent changes to the MSI Act and Regulations make mining safer?	56	Changes to the MSI Act and Regulations have made mining safer

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**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

**(C) COMPARISON OF EMPLOYEE RESPONSES**

This section contains a comparison of the responses given by the 1 000 underground workers in the 1998 RTB Survey Questions and the 699 employees (i.e. operators/tradespersons) who took part in the 2002 Survey. As the style of the questions has changed (i.e. from direct questions to statements), no direct comparison can be made and results should be considered as 'indicative' only.

The 'Change' is the change in the response from the 1998 RTB Survey to the 2002 Underground Sector Survey result. For most questions, an increase in the 'Yes' responses indicates a more positive perception and can be considered an improvement. In some cases however (e.g. Q8, Q9, Q13, Q18, Q21), a decrease in the 'Yes' response is more desirable.

Note that no comparison is given where there is no equivalent question in the 2002 Survey. The question referenced (eg Q1 – How long have you worked underground) is the one given in the 1998 RTB Survey. The equivalent statement in the 2002 Survey, if any, is detailed in Section B above.

<b>Q1 – How long have you worked underground?</b>			
Time period (years)	1998 RTB	2002 U/G	Change
3 years or less	39%	19%	-20%
3-5 years	27%	12%	-15%
More than 5 years	34%	69%	+35%

<b>Q2 – How many mines have you worked at?</b>			
No. of mines	1998 RTB	2002 U/G	Change
More than 2 mines	49%	60%	+11%

<b>Q6 – Do you report hazards?</b>			
	1998 RTB	2002 U/G	Change
ALL	57%	<i>No equivalent question</i>	-
SOME	42%	<i>No equivalent question</i>	-
NONE	0.8%	<i>No equivalent question</i>	-

For comparison, the closest question in the 2002 Survey was:

<b>Q1 – Hazards/incidents at this mine are reported promptly</b>	
Total Agree	Total Disagree
91%	9%

<b>Q7 – Do you report incidents?</b>			
	1998 RTB	2002 U/G	Change
ALL	42%	<i>No equivalent question</i>	-
SOME	56%	<i>No equivalent question</i>	-
NONE	2%	<i>No equivalent question</i>	-

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

For comparison, the closest question in the 2002 Survey was:

<b>Q4 - Accidents at this mine are reported promptly</b>	
Total Agree	Total Disagree
94%	6%

<b>Q8 - Is taking risk, short-cuts or unsafe behaviour acceptable to management?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	18%	20%	+2%
NO (Total Disagree)	82%	80%	-2 %

<b>Q9 - Do supervisors ignore risk-taking behaviour?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	24%	23%	- 1%
NO (Total Disagree)	76%	77%	+ 1%

<b>Q10 - Do supervisors actively discourage unsafe behaviour?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	59%	82%	+ 23%
NO (Total Disagree)	41%	18%	-23%

<b>Q11 - Do you (employees) take risks or behave unsafely?</b>			
	1998 RTB	2002 U/G	Change
YES	31%	<i>No equivalent question</i>	-
NO	69%	<i>No equivalent question</i>	-

For comparison, the closest question in the 2002 Survey was:

<b>Q7 - Employees take short-cuts to meet production demands</b>	
Total Agree	Total Disagree
53%	47%

<b>Q13 - Have you observed risk-taking behaviour by other employees at your mine?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	73%	25%	- 48%
NO (Total Disagree)	27%	75%	+ 48%

<b>Q15 - Do you receive positive feedback from supervisors for following safe work practices</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	64%	77%	+ 13%
NO (Total Disagree)	36%	23%	- 13%

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

<b>Q16 - Are safety issues raised with your supervisor or foreman adequately dealt with?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	73%	77%	+4%
NO (Total Disagree)	27%	23%	-4%

<b>Q17 - Does the thought of being killed or injured at work affect how you behave at work?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	73%	82%	+9%
NO (Total Disagree)	27%	18%	-9%

<b>Q18 - Are you discouraged from reporting or bringing safety issues to management?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	16%	18%	+2%
NO (Total Disagree)	84%	82%	-2%

<b>Q19 - Are hazards eliminated promptly at your site?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	70%	74%	+4%
NO (Total Disagree)	30%	26%	-4%

<b>Q20 - Have you been adequately trained to perform your tasks underground?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	87%	68%	-19%
NO (Total Disagree)	13%	32%	+19%

<b>Q21 - Have you been penalised for not performing a task that you considered unsafe?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	10%	30%	+20%
NO (Total Disagree)	90%	70%	-20%

<b>Q25 - Are Tool-box or Safety Meetings involving yourself held regularly?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	92%	96%	+4%
NO (Total Disagree)	8%	4%	-4%

<b>Q28 - Do you understand what 'duty of care' means in terms of the MSI Act 1994?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	95%	98%	+3%
NO (Total Disagree)	5%	2%	-3%

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

<b>Q29 - Is your employer serious about safety and health?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	88%	86%	-2%
NO (Total Disagree)	12%	14%	+2%

<b>Q30 - Are you happy with the skills and competency of your supervisor?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	85%	89%	+4%
NO (Total Disagree)	15%	11%	-4%

<b>Q31 - How often does your underground manager speak to you on the job underground?</b>			
	1998 RTB	2002 U/G	Change
DAILY	27%	38%	+11%
WEEKLY/ FORTNIGHTLY	39%	50%	+ 11%
MONTHLY	14%	11%	-3%
NEVER	20%	1%	-19%

<b>Q32 - Are Safety Bulletins and Safety Incident Reports made available* for you to read?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	96%	87%	- 9%
NO (Total Disagree)	4%	13%	+ 9%

\* 2002 question asked 'readily available'

<b>Q33 - Does your mine have written procedures**?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	95%	86%	-9%
NO (Total Disagree)	5%	14%	+9%

\*\* 2002 question asked 'up-to-date' procedures are available

<b>Q33A - Were you trained in those procedures?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	83%	73%	-10%
NO (Total Disagree)	17%	27%	+10%

\* 2002 question asked if you were 'properly' trained in procedures

<b>Q34 - Are the procedures used underground the same as the ones written in the manuals?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Disagree)*	80%	57%	-23%
NO (Total Agree)*	20%	43%	+23%

\* Responses reversed due to 'negative' statement in 2002 Survey

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002 UNDERGROUND SECTOR SURVEY RESULTS**

**(D) COMPARISON OF SUPERVISOR RESPONSES**

This section contains a comparison of the responses given by 150 supervisors in the 1998 RTB Survey Questions and the 92 supervisors who participated in the 2002 Survey. As the style of the questions has changed (i.e. from direct questions to statements), no direct comparison can be made. Results are indicative only.

The 'Change' is the change in the response from the 1998 RTB Survey to the 2002 Underground Sector Survey results. For most questions, an increase in the 'Yes' responses indicates a more positive perception and can be considered an improvement. In some cases however (e.g. Q10, Q11, Q15, Q17, Q18), a decrease in the 'Yes' response is more desirable.

Note that no comparison is given where there is no equivalent question in the 2002 Survey. The question referenced (e.g. Q1 – How long have you worked underground?) is the one given in the 1998 RTB Survey. The equivalent statement in the 2002 Survey, if any, is detailed in Section B above.

<b>Q1 – How long have you worked underground?</b>			
Time period (years)	1998 RTB	2002 U/G	Change
5–10 years	21%	17%	-4%
More than 10 years	79%	83%	+4%

<b>Q2 – How many mines have you worked at?</b>			
No. of mines	1998 RTB	2002 U/G	Change
More than 2 mines	93%	89%	-4%
Other	9%	<i>No equivalent question</i>	-

<b>Q6 - Are safety and health representatives, committees and meetings encouraged at your mine?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	95%	95%	0
NO (Total Disagree)	5%	5%	0

<b>Q8 - Are your employees encouraged to report all incidents, accidents, hazards and safety issues?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Disagree)	98%	91%	-7%
NO (Total Agree)	2%	9%	+7%

\* Responses reversed due to 'negative' statement in 2002 Survey

<b>Q9 - Are underground supervisors provided with enough training in hazard identification, risk assessment/control and people management?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	39%	61%*	+22%
NO (Total Disagree)	61%	39%*	-22%

\* 2002 figure is the average of Q42 and Q46 (Q42 "Yes" = 73%, Q46 "Yes" = 49%; Q42 "No" = 27%, Q46 "No" = 51%)

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

<b>Q10 - Are your decisions on safety matters overruled by foremen/ managers?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (11%) + SOMETIMES (28%)</b> = Total Agree	39%	32%	-7%
<b>NO (Total Disagree)</b>	61%	68%	+7%

<b>Q11 - Have you ever been pressured to deliver production targets to the detriment of safety?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (Total Agree)</b>	37%	18%	-19%
<b>NO (Total Disagree)</b>	63%	82%	+19%

<b>Q12 - Do you believe senior mine management has a genuine commitment to safety?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (Total Agree)</b>	84%	94%	+10%
<b>NO (Total Disagree)</b>	16%	6%	-10%

<b>Q13 - Are you happy with the amount of control you have over the shift (day/night/afternoon)?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (Total Agree)</b>	No result in Report	92%	N/a
<b>NO (Total Disagree)</b>	No result in Report	8%	N/a

<b>Q14 - On your shift, are you able to properly penalise workers for unsafe work practices?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (Total Disagree)</b>	86%	73%	-13%
<b>NO (Total Agree)</b>	14%	27%	+13%

\* Responses reversed due to 'negative' statement in 2002 Survey

<b>Q15 - Does the contract-based remuneration system lead to risk-taking behaviour by some employees?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (Total Agree)</b>	69%	33%	-36%
<b>NO (Total Disagree)</b>	31%	67%	+36%

<b>Q16 - Are your concerns for safety and health fully acknowledged by your foreman/manager?</b>			
	1998 RTB	2002 U/G	Change
<b>YES (76%) + SOMETIMES (22%)</b> = Total Agree	98%	83%	-15%
<b>NO (Total Disagree)</b>	2%	17%	+15%

**APPENDIX J – COMPARISON OF 1998 RISK-TAKING BEHAVIOUR SURVEY AND 2002  
UNDERGROUND SECTOR SURVEY RESULTS**

<b>Q17 - Are employees at your mine discouraged from reporting safety issues?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	4%	9%	+5%
NO (Total Disagree)	96%	91%	-5%

<b>Q18 - Do some employees get away with risk-taking behaviour at your mine?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	47%	51%	+4%
NO (Total Disagree)	53%	49%	-4%

<b>Q19 - Are you happy with the skill level of employees under your control?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	64%	88%	+24%
NO (Total Disagree)	36%	12%	-24%

<b>Q20 - Do you fully understand your responsibilities under the MSI Act?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	95%	84%	-11%
NO (Total Disagree)	5%	16%	+11%

<b>Q21 - Have you acquired enough hazard identification and risk management skills to feel confident when making decisions regarding safety?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	86%	95%	+9%
NO (Total Disagree)	14%	5%	+9%

<b>Q22 - Did recent changes to the Mines Safety and Inspection Act and Regulations make mining safer?</b>			
	1998 RTB	2002 U/G	Change
YES (Total Agree)	58%	87%	+29%
NO (Total Disagree)	42%	13%	-29%



**APPENDIX K – STATISTICAL ANALYSIS OF EMPLOYEE COMMENTS**

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COMMENTS**

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<b>No.</b>	<b>ISSUE</b>	<b>MANAGER</b>	<b>SUPERVISOR</b>	<b>EMPLOYEE</b>	<b>TOTAL</b>	<b>% of TOTAL RESPONSES ( n = 1901 )</b>
1	TRAINING (Induction and on-going skill training)	51	58	212	321	16.9
2	FATIGUE (Shift hours, Rosters, Fly In-Fly Out)	16	39	228	283	14.9
3	PROCEDURES	46	38	109	193	10.2
4	WORKING CONDITIONS AND EQUIPMENT	1	14	163	178	8.4
5	EMPLOYEE-MANAGEMENT COMMUNICATIONS	26	7	126	159	8.4
6	MANAGER AND SUPERVISOR SKILLS/COMPETENCY	31	17	97	145	7.6
7	RESPONSIBILITY FOR/IMPORTANCE OF SAFETY	45	24	74	143	7.5
8	PRODUCTION PRESSURE	3	5	93	101	5.3
9	REPORTING OF HAZARDS/ INCIDENTS/ ACCIDENTS	23	14	51	88	4.6
10	REPORTING AND RECORDING OF INJURIES	15	10	59	84	4.4
11	STANDARDS, AUDITS AND INSPECTIONS	10	12	54	76	4.0
12	DRUGS AND ALCOHOL	3	11	39	53	2.8
13	MOSHAB ROLE AND EXCHANGE OF INFORMATION	24	5	20	49	2.6
14	UNIONS	1	1	12	14	0.7
15	MOSHAB SURVEYS	3	0	11	14	0.7
<b>TOTALS</b>		<b>298</b>	<b>255</b>	<b>1,348</b>	<b>1,901</b>	<b>100.0</b>

Analysis provided by Savant Survey and Strategies

**APPENDIX L – ACTION PLAN FOR MINE MANAGEMENT**

**APPENDIX L – “ACTION PLAN FOR MINE MANAGEMENT”  
*(Recommendation 1)***

**ACTION PLAN FOR MINE MANAGEMENT (Recommendation 1)**

Issue	ACTION No.	SECTION Ref.	Issues and Recommended Actions	Action Required	ACTION TO BE TAKEN	RESPONSIBILITY	COMPLETION DATE
<b>1.0 Review and Communication of Report and Site Actions</b>			<b>1.0 Provide employees access to the 2002 MOSHAB Safety Survey Report, its findings and status of actions to address relevant issues/ recommendations.</b>				
	<b>Actions</b>		<b>Recommended Action Mine Management needs to:</b>				
	1.1	8.13	Ensure copies of this Report are made readily available to all employees	Yes/No			
	1.2	-	Review the findings and recommendations in the Report in consultation with employees to determine appropriate action	Yes/No			
	1.3	-	Assign responsibility for actions to appropriate personnel and ensure actions are implemented in a timely manner	Yes/No			
	1.4	-	Regularly report implementation progress to employees (e.g. via safety meetings, safety committee, etc.).	Yes/No			
<b>2.0 Hazard/Incident Reporting, Investigation and Follow-up</b>			<b>2.0 Improve employee involvement in incident investigation, improve follow-up action on eliminating/controlling hazards and providing timely feed-back on actions arising from incident investigations</b>				
	<b>Actions</b>		<b>Recommended Action Mine Management needs to:</b>				
	2.1	4.1 & 8.9	Review level of employee involvement in incident/accident investigation to ensure adequate level of involvement	Yes/No			
	2.2	4.4 & 8.9	Review timeliness and effectiveness of follow-up action to eliminate or address reported hazards; if required, take steps to improve	Yes/No			
	2.3	4.1 & 8.9	Ensure formal and timely feed-back provided to relevant employees on actions to be taken to prevent recurrence of incidents/accidents once investigations completed	Yes/No			
	2.4	5.6	Ensure elected Safety and Health Representatives are routinely involved in incident/accident investigations that occur within their area of responsibility	Yes/No			

MINE MANAGEMENT ACTION PLAN (Recommendation 1)

Issue	ACTION No.	SECTION Ref.	Issues and Recommended Actions	Action Required	ACTION TO BE TAKEN	RESPONSIBILITY	COMPLETION DATE
3.0 Provision of Safety Information			<b>3.0 Improve the type of safety information being provided to employees to ensure that it is relevant and can be easily understood</b>				
	<b>Actions</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	3.1	4.2	Identify what safety information (e.g. incidents, hazard information, etc.) is relevant to particular work groups	Yes/No			
	3.2	4.2	Provide work groups with relevant information and ensure it is readily accessible (e.g. via noticeboards, discussed at shift-change meetings, etc.) and can be easily understood	Yes/No			
4.0 Promoting 'Safe Production' Behaviours			<b>4.0 Developing a culture of 'safe production' in the WA mining industry based on consistent standards of behaviour and ensuring that all employees are aware of unacceptable risk-taking behaviour</b>				
	<b>Actions</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	4.1	4.3 & 8.6	Develop formal standards of behaviour (in consultation with employees) that emphasise 'safe production' and taking unacceptable short-cuts/risks	Yes/No			
	4.2	4.3, 6.4 & 8.6	Implement programs that provide positive encouragement and reinforcement of safe behaviours	Yes/No			
	4.3	4.3, 5.4, 6.4 & 8.6	Implement processes to ensure managers and supervisors take a leading role in setting an example in complying with standards of behaviour	Yes/No			
	4.4	4.3 & 8.6	Communicate standards of safe behaviour to all areas of operations, including to contractors and sub-contractors	Yes/No			
	4.5	4.3 & 8.6	Conduct regular audits of compliance with standards, including contractors and sub-contractors, to monitor compliance and identify areas for improvement	Yes/No			

**MINE MANAGEMENT ACTION PLAN (Recommendation 1)**

Issue	ACTION No.	SECTION Ref.	Issues and Recommended Actions	Action Required	ACTION TO BE TAKEN	RESPONSIBILITY	COMPLETION DATE
<b>5.0 Management-Employee Communications</b>			<b>5.0 Improve communications between employees and management to promote better cooperation, encourage 'safe production' and reduce differences in perceptions on key safety issues</b>				
	<b>Actions</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	5.1	4.2	Ensure all employees (including contractors, sub-contractors and labour hire employees) attend a formal safety communication meeting at least once a month	Yes/No			
	5.2	4.4	Communicate the need to all managers to act constructively and positively when safety issues are raised by employees to promote open communications	Yes/No			
	5.3	4.4	Communicate the need to all managers and supervisors to discuss employee concerns openly and not to disadvantaged or otherwise discriminate against employees who refuse to undertake tasks they genuinely consider unsafe	Yes/No			
	5.4	4.4 & 6.5	Ensure that all managers spend adequate time discussing safety issues with their employees to provide encouragement and to promote 'safe production'	Yes/No			
	5.5	4.4 & 8.5	Ensure that all managers speak with contractors, sub-contractors and labour hire employees on a regular (at least monthly) basis to promote 'safe production'	Yes/No			
<b>6.0 Management-Supervisor Communications</b>			<b>6.0 Improve communications between mine management and supervisors</b>				
	<b>Actions</b>		<b>Recommended Action</b> The Management needs to review current status and				
	6.1	4.5	Ensure that processes are in place for communicating management's expectations for 'safe production' and expected standards of behaviour to all site supervisors	Yes/No			
	6.2	4.5	Monitor the effectiveness of site supervisors in encouraging and promoting safe employee behaviour	Yes/No			
	6.3	5.1 & 5.3	Ensure that processes are in place that allow supervisors to express any safety concerns to management, including concerns over production demands and effective and timely follow-up of any issues raised	Yes/No			

**ACTION PLAN FOR MINE MANAGEMENT (Recommendation 1)**

Issue	ACTION No.	SECTION Ref.	Issues and Recommended Actions	Action Required	ACTION TO BE TAKEN	RESPONSIBILITY	COMPLETION DATE
6.0 Management-Supervisor Communications			<b>6.0 Improve communications between mine management and supervisors...continued</b>				
	<b>Actions</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	6.4	5.1 & 5.3	Ensure that processes are in place that enable timely follow-up of any issues raised by supervisors and provide feedback on action taken by management to supervisors	Yes/No			
	6.5	5.3, 6.6 & 8.6	Ensure that supervisors are provided with adequate time to properly discuss safety with employees while on the job	Yes/No			
7.0 Procedures and Training			<b>7.0 Improve the level of compliance with safe work procedures and eliminate short-cuts and unsafe work practices</b>				
	<b>Actions</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	7.1	4.7 & 8.3	Ensure that employees who understand the tasks to be performed are involved in the development of safe work procedures	Yes/No			
	7.2	4.7 & 8.3	Ensure that employees involved in the development of safe work procedures are trained in how to develop SWPs, (e.g. using JSAs)	Yes/No			
	7.3	4.6	Ensure that all employees are effectively trained in the use of the safe work procedures that apply to their job	Yes/No			
	7.4	4.6	Ensure that work-area specific inductions contain information about hazards, procedures and other controls that are relevant to the particular workplace	Yes/No			
	7.5	4.7	Ensure that all procedures are kept up-to-date and are made readily available to all relevant employees, including contractors and sub-contractors	Yes/No			
	7.6	4.7 & 8.3	Implement appropriate programs (e.g. task observation) to monitor compliance with safe work procedures and to effectively address non-compliance issues	Yes/No			

**ACTION PLAN FOR MINE MANAGEMENT (*Recommendation 1*)**

<i>Issue</i>	<b>ACTION No.</b>	<b>SECTION Ref.</b>	<b>Issues and Recommended Actions</b>	<b>Action Required</b>	<b>ACTION TO BE TAKEN</b>	<b>RESPONSIBILITY</b>	<b>COMPLETION DATE</b>
<b>8.0 Manager and Supervisor Training</b>			<b>8.0 Improve the people management and communication skills of managers/supervisors and supervisors' understanding of risk management and statutory responsibilities</b>				
	<b>Action</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	8.1	5.2, 6.2 & 8.6	Ensure that programs are in place to provide all managers and supervisors (including contractors and sub-contractors) with skills/competency in people management and effective communications consistent with the Frontline Management Initiative (FMI)	<b>Yes/No</b>			
	8.2	5.2 & 8.6	Ensure that programs are in place to provide all supervisors (including contractors and sub-contractors) with training in risk management and understanding of statutory responsibilities	<b>Yes/No</b>			
<b>9.0 Fatigue Management</b>			<b>9.0 Identify issues associated with fatigue and develop and implement appropriate fatigue management programs in consultation with employees</b>				
	<b>Action</b>		<b>Recommended Action</b> Mine Management needs to review current status and				
	9.1	8.2	Determine concerns and issues associated with fatigue at the mine site through consultation with employees, including contractors and sub-contractors	<b>Yes/No</b>			
	9.2	8.3	Develop and implement appropriate fatigue management programs (e.g. using MOSHAB Fatigue Management Guideline) in consultation with relevant employees	<b>Yes/No</b>			



**ACTION PLAN FOR MINE MANAGEMENT (Recommendation 1)**

Issue	ACTION No.	SECTION Ref.	Issues and Recommended Actions	Action Required	ACTION TO BE TAKEN	RESPONSIBILITY	COMPLETION DATE
10.0 Injury Reporting, Reporting and Management			<b>10.0 Ensure that all injuries are reported by employees, ensure that all injuries are properly recorded and ensure that there are no incentives to mis-report or encourage/require employees to work when they are unable to</b>				
	<b>Action</b>		<b>Recommended Action</b> Mine Management needs to review current status and:				
	10.1	8.10	Ensure that the need to report all injuries is clearly communicated to all employees, including contractors and sub-contractors (e.g. at induction)	Yes/No			
	10.2	8.10	Remove any disincentives for employees or contractors to not report injuries or to mis-report injuries (e.g. safety awards or bonuses/penalties based solely on accident statistics)	Yes/No			
	10.3	8.10	Ensure that measures other than just Lost-Time Injuries are used to measure safety performance on the mine site; proactive or leading indicators should be used wherever possible	Yes/No			
	10.3	8.10	Ensure that proper injury management programs are in place that do not place undue pressure on employees to return to work when unable to do so or it is not appropriate to do so	Yes/No			
11.0 Drug and Alcohol Impact Management			<b>11.0 Identify issues associated with drug and alcohol use and develop and implement appropriate programs in consultation with employees</b>				
	<b>Action</b>		<b>Recommended Action</b>				
	11.1	8.13	Determine concerns and issues associated with use of drugs and alcohol at the mine site through consultation with employees, including contractors and sub-contractors	Yes/No			
	11.2	8.13	Develop and implement appropriate drug and alcohol management programs in consultation with employees	Yes/No			