Australian Government
Office for Women

Minerals Council of Australia

Unearthing New Resources

attracting and retaining women in the Australian minerals industry

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WISER
Women in Social & Economic Research

CSRM

The Minerals Council of Australia would like to thank members of the MCA Women and Mining Steering Committee for their contribution to the MCA's agenda on Women and Mining and to the production of these research reports:

Ms Christine Charles (Chair)	Newmont Australia Limited
Ms Pru Goward	Human Rights and Equal Opportunity Commission
Ms Rocky Clifford	Human Rights and Equal Opportunity Commission
Ms Cath Bowtell	Australian Council of Trade Unions
Hon. Ros Kelly AO	MCA External Sustainable Development Advisory Group
Prof. Marcia Langton	Professor for the School of Anthropology, University of Melbourne
Ms Kerry Flanagan	Australian Government Office for Women
Ms Lee Emerson	Australian Government Office for Women
Ms Melissa Stutsel	Australian Government Office for Women
Ms Geraldine McGuire	Sustainable Solutions Consulting Pty Ltd
Ms Fran Burgess	Zinifex Rosebery Mine
Mr Bruce Harvey	Rio Tinto Limited
Mr Brian Phillips	Leviathan Resources Limited
Mr Scott Jones	Newcrest Mining Limited
Ms Sue Border	AusIMM Women in Mining Network
Mr Mitchell H. Hooke	Minerals Council of Australia
Ms Melanie Stutsel	Minerals Council of Australia

The Minerals Council of Australia would also like to thank the Australian Government for co-funding this research.

Foreword

The Australian Government has partnered with the Minerals Council of Australia to produce three reports examining the attitudes and experiences of women towards working in the minerals industry. The research finds that while some women are actively pursuing varied and fulfilling roles in the minerals industry, many women are unaware of the opportunities available and there is significant scope to increase women's employment within the industry.

The minerals industry offers a wide range of employment and career options to suit women of all ages and from all backgrounds. There is much scope for women to take an increased role in terms of the numbers of women working and training, the types of work they do and their participation in leadership and decision making-positions. To achieve this will require flexible and innovative approaches by the industry.

A focus on increasing women's employment in the minerals industry will result in a win-win outcome, where women are given greater employment opportunities in the minerals industry and the minerals industry have access to a greater pool of skilled and talented workers. Other benefits would flow on to the Australian economy and also address issues of potential labour force shortages, which are likely to be an increasing concern.

The research presented in this publication provides a solid foundation for the minerals industry to implement practical strategies to improve its attraction and retention of female employees. The minerals industry, through the Minerals Council of Australia, has made a commitment to increase the number of women employed in the industry over the next five years, and I feel certain that these reports and their recommendations will contribute to achieving this goal.

This research is part of a broader strategy to consider the impact of mining on both women employed in mining and women in communities affected by mining. The approach that the Minerals Council of Australia is taking to these issues offers a blueprint for other peak industry bodies on approaches to increasing the numbers of women in non-traditional occupations and improving their industry's engagement in family and community issues. I commend the Minerals Council of Australia on taking such a holistic and practical approach to these issues.

I recommend this series of research reports to those currently working in the minerals industry, those thinking of working in this area, and especially to those women who have not considered a career in the minerals industry. It has much to offer and reading these reports may be your first step to a new career.

Julie Bishop
Minister for Education, Science and Training
Minister Assisting the Prime Minister for Women's Issues.

The Minerals Council of Australia (MCA) established a Women and Mining Dialogue in 2004 to engage industry and external stakeholders on issues related to the effective participation of women in mining, and the extension of the socio-economic benefits of mining operations to women in neighbouring communities.

The business case for greater involvement of women in minerals operations is strong. Providing more attractive career options for women of all ages and cultures improves the industry's capacity to attract and retain skilled women adding breadth and depth to human resources.

The imperative for change has arguably never been greater. At a time of critical labour shortage in a rapidly growing industry, workplace flexibility and a diversity of skills and professions is key to the growth and prosperity of a modern minerals operation.

Creating a work environment that is gender diverse and maximising the opportunities for women in communities to effectively engage with our operations and business decision-making is also critical to building and maintaining our social licence to operate.

Accordingly, the MCA is focussed on identifying strategies, including those used successfully by other male dominated industries, to address the structural and cultural impediments to women working in the minerals industry and engaging with its operations. Our overall objective is to develop an industry agenda to substantially improve, over five years, the engagement of women in the minerals industry and the communities in which we operate.

We are delighted to have the support of the Hon. Julie Bishop MP, Minister Assisting the Prime Minister on Women's Issues, and the Australian Government Office for Women in our endeavour and, specifically, in undertaking this joint program of research.

We consider that these research reports, outlining the issues affecting the attraction and retention of women, provide a rigorous and transparent platform for the minerals industry to improve its performance in providing a more gender inclusive environment. We are in no doubt that this further progress in the industry's social development and performance will be good for business, good for the economy and good for the Australian community.

Peter Coates
Chairman, Minerals Council of Australia
Chief Executive Officer, Xstrata Coal Pty Ltd

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Overview

The statistics in the Australian minerals industry are stark:

- women comprise approximately 18% of minerals industry workforce (both sites and corporate) compared to a national participation rate of 45%;
- women represent just over 3% of all employees at mine sites and minerals processing operations; and
- Indigenous women represent 12% of all Indigenous employees.

It is widely recognised that the effective participation of women in the minerals industry is limited by a number of key structural issues, including:

- the low level of part time work in the minerals industry compared to other sectors, including other traditionally male oriented industries is an obvious impediment in that 40% of female employment nationally is part time;
- the industry's culture of overwork, long hours and intensity has had a more negative impact on women than men because of their additional caring responsibilities; and
- the remote nature of the industry is also a factor inhibiting female participation in the industry, though this is much less so in regard to the engagement of Indigenous women.

The age profile of women in the industry is also heavily concentrated on those aged 34 and under, a significantly younger cohort than men, who on average fall in the 45 to 54 age bracket.

This profile is likely the result of a lack of part time and flexible work arrangements for women of parenting age. Whilst women often take the decision to leave the industry to have children and to care for them, a lack of 'on-ramps' exist in terms of re-engaging them with the minerals industry when they are able to return to work. Where women have reported positively on their successful, if highly difficult, attempts to balance childbearing and caring with full time jobs, their success has relied heavily on a support base of other carers. For this reason, women with children working in the industry have the most difficulty when living in mining communities in highly remote areas, or in communities that are separate to that of their families.

There are also significant cultural impediments to women's participation that are linked to the structural issues in many ways. These cultural issues can manifest themselves in terms of a lack of mentor relationships and support networks, gender segregated nature of decision-making and task allocation, disadvantage, discrimination or harassment.

The Australian minerals industry recognises that as a highly gender segregated industry that there is a business imperative to address these constraints on the effective engagement of women in the workforce and the communities in which the industry operates.

The Minerals Council of Australia (MCA) welcomes the commitment of the Australian Government through the Office for Women, both financial and in-kind, to jointly undertake research to identify features of the industry that disadvantage women employees. The research also seeks to identify options to adjust the minerals sectors structures and culture to attract and retain high-quality and skilled women in the industry's current and future workforce.

The research program, undertaken by the Centre for Socially Responsible Mining at the University of Queensland, and the WiSER Unit in the School of Business at Curtin University, focuses specifically on two aspects:

- an analysis of the impact of existing workplace policies, structures and cultures on women's employment in the mining industry and an identification of alternative strategies, including policies and practices, to address these issues; and
- an analysis of the impact of existing workplace policies, structures and cultures on the attraction of employment in the mining industry to skilled and professional women and an identification of alternative strategies, including policies and practices, to address these issues.

A number of key factors for the minerals industry to consider in relation to enhancing the participation of women are highlighted by the research, including the need to:

- better demonstrate to women the range of jobs available in the industry and to link these to non-traditional disciplines (eg environmental science, social science, OH&S etc);
- establish a comprehensive university based program to promote vacation opportunities in the industry and establish a cooperative arrangement for extended work experience;
- provide a more gender inclusive work environment – this could be achieved by increasing the participation of women in professional and operational roles, by providing structured mentoring programs for women, or

by providing better gender awareness training for male employees;

- address key structural issues such as working arrangements and workplace facilities, and cultural issues such as workplace policies and practices;
- provide more family friendly work arrangements, including greater provision of part time work and career opportunities that enable people to transition in and out of employment in the industry;
- provide enhanced social infrastructure in rural and remote mining communities; and
- implement a range of cross cultural measures to increase the attraction and retention of Indigenous women.

While many good initiatives are underway, comprehensively addressing the barriers to the effective participation of women will require the input and support of industry, governments and the community.

The following research reports provide a rigorous analysis of key aspects associated with the industry's attraction and retention of women, and a suite of recommendations that will be further considered by the minerals industry and its stakeholders as part of a National Symposium on Women and Mining in mid 2007.

Summary of recommendations

The following list draws together the recommendations from across the three pieces of research prepared by the WiSER Unit at Curtin University and the Centre for Social Responsibility in Mining at the University of Queensland.

This summary of recommendations provides practical information regarding measures that minerals operations, companies and the industry can take to improve the level of women's employment in the minerals industry in Australia.

Industry Leadership

It is recommended that the minerals industry demonstrate stronger leadership regarding women's participation in the minerals industry.

This includes but is not limited to:

- Gender considerations should become a mainstream focus in the industry;
- Consideration could be given to hosting a conference of HR personnel to address the issue of workplace diversity, and to showcase leading practice;
- Stronger leadership should be demonstrated both vertically (industry) and horizontally (within companies) within the industry; and
- Within companies, both at corporate and site level, senior management should lead by example.

Attraction Strategies

It is recommended that the minerals industry address the negative image held by prospective women employees through a range of innovative marketing and networking initiatives.

This includes but is not limited to:

- The provision of information relating to:
  - the full range of professional opportunities that are available in the sector;
  - the demographic profile of the sector (as has been done by some of the larger accounting firms to show that it is a place for young people); and
  - the career opportunities that the sector offers;
- Marketing and networking through representative bodies, ensuring that the efforts that the industry is making to promote gender equity and accommodate more flexible work practices are well communicated and publicised to key identified community sectors, such as the secondary and tertiary education sectors;
- Developing promotional materials which highlight that personal success in the mining industry can be attained by a variety of paths and does not necessarily involve embracing the culture of long working hours; and
- Ensuring that a network structure is in place for female students at tertiary and secondary levels to facilitate their exposure to positive female role models and industry success stories.

It is recommended that a comprehensive university based program be established.

This includes but is not limited to:

- Promoting vacation employment opportunities in the industry for tertiary students at all levels of tertiary study and the opportunities that the industry provides for travel;
- Exploring options to formalise and strengthen industry and tertiary participation through a co-operative program of extended work experience for students in mining related courses. This could be modelled on similar co-op programs such as those offered by some overseas universities;
- Commencing at first year level, promoting graduate programs and other post-tertiary employment options available, ensuring students are informed of the scope of opportunity on offer by the industry; and
- Broadening students' conceptualisation of what a career in a mining related discipline could lead to, including all possible career paths available. This would entail the promotion of the diversity and complexity of mining careers and the options for horizontal and vertical career mobility.

Recruitment Strategies

It is recommended that the minerals industry review its recruitment strategies with the aim to increase the number of women applicants across all categories of professional positions.

This includes but is not limited to:

- Targeting university undergraduates across a range of relevant discipline areas so that they are aware of the sector;
- Providing vacation employment to women in mining related courses and other professional courses;
- Using of a range of advertising campaigns and media to appeal to different professional groups;
- Using images and language that are inclusive;
- 'Head hunting' senior women;
- Recruitment targets that aim at the same number of female and male applicants for vacant positions;
- Providing a range of scholarships to encourage women to study in areas where they are currently under-represented as a means of increasing the recruitment pool; and
- Positioning the industry as an employer of choice, eg. through entry and participation in 'best practice' awards such as the Equal Opportunity in the Workplace Agency's Employer of Choice Awards and Department of Employment and Workplace Relations' Work and Family awards.

Workplace policies, systems and processes

It is recommended that the minerals industry ensure that decisive action is taken at the operational level to implement systems and process improvements that directly address identified gaps in workforce management in respect to gender diversity.

It is recommended that the minerals industry implement a continuous improvement plan for management systems and processes relating to the attraction and retention of women.

This includes but is not limited to:

- Developing a framework that shows current baseline for flexible work practices, drawing on national and international case studies, against which organisations can drive for improvement;
- Implementing better systems for analysing Human Resources data from a gender perspective;
- Articulating measures of success, including both quantitative and qualitative indicators;
- Setting targets and/or goals for female participation[1];
- Monitoring progress against targets and goals;

1 Any such targets and/or goals must be in line with relevant EEO legislation.

- Undertaking independent company and/or site-level research to evaluate policy implementation;
- Conducting industry-level benchmarking studies in key areas such as maternity leave and return to work practices;
- Incorporating gender considerations into key performance indicators (KPIs) at a site level, particularly for senior leaders;
- Including a more comprehensive level of reporting of gender and employment in sustainability reports at the corporate and site levels; and
- Benchmarking leading sustainability reporters to understand how data on gender and employment is being reported and used to drive change in the workplace.

It is recommended that the minerals industry implement 'special measures' to assist in the attraction and retention of Indigenous women.

This includes but is not limited to:

- Working towards employing a 'critical mass' of Indigenous women at those sites located in areas where there is a significant Indigenous population;
- For sites with a critical mass, considering the appointment of a dedicated female contact officer to provide support to deal with complex home and life skills issues; and
- Reviewing cross-cultural awareness training of employees, supervisors and managers to ensure employment-related aspects are addressed (e.g. how Indigenous people manage family relationships in the workplace), in addition to important historical and broader cultural aspects.

Retention Strategies

Working arrangements

It is recommended that the minerals industry identify the structural changes that are needed to improve current work practices in relation to flexibility in rostering and the provision of part-time career opportunities (quality career building part-time work).

This includes but is not limited to:

- Providing the opportunity to attend significant family or personal events as a means of maintaining important relationships;
- Providing the opportunity for couples to be on the same roster pattern (even when one person is on another mine site);
- Developing and implementing a range of protocols that are designed to keep women connected with the organisation during any periods of parental leave;
- Providing a range of graduated return to work options for women who are returning from parental leave;

- Providing 'refresher' training for women who have been on parental leave that brings them quickly up to speed on any workplace changes that have occurred;
- Reviewing structural impediments to the offering of part-time work in professional areas;
- Reviewing opportunities for telecommuting;
- Ensuring that promotional opportunities are available for part-time employees; and
- Encouraging male employees to consider part-time options so that part-time positions do not become 'ghetto positions'.

It is recommended that the minerals industry identify the structural changes that are needed to improve current work environments from a quality of life perspective.

This includes but is not limited to:

- Addressing quality of life issues for fly-in-fly-out (FIFO) operations in relation to partner accommodation;
- Provision of medical/emergency coverage for FIFO families at home; and
- Addressing quality of services in remote residential locations, particularly health and education.

It is recommended that on-site facilities be maintained and enhanced, and be gender appropriate.

This includes but is not limited to:

- Ensuring that the environment is safe for women including adequate levels of security at on-site facilities;
- Ensuring that accommodation is maintained at a reasonable standard;
- Enhanced provision of communication technology, such as greater mobile phone access, web-based video conferencing etc;
- Ensuring that facilities such as air conditioning are maintained; and
- Providing a range of activities on-site that are inclusive.

Workplace culture

It is recommended that the minerals industry address the strong masculine culture through awareness raising and effective senior leadership that models an inclusive and active approach to supporting women's careers.

This includes but is not limited to:

- Leadership training for senior managers, managers and supervisors that focuses on organisational cultural change;

- Senior managers, managers and supervisors to be held accountable for improvements in organisational culture;
- Working towards eliminating tolerance of discrimination, sexual harassment and bullying in the workplace through ongoing workforce education about behavioural expectations;
- Reward structures that promote inclusive behaviour at all levels of the organisation;
- Effective processes that enable the safe reporting of sexual harassment/harassment and personal safety issues;
- Understanding and addressing reasons why women are reluctant to formalise complaints of discrimination and sexual harassment;
- Investigating why so many supervisors and managers resist flexible work options;
- Consulting women on issues that affect them; and
- Implementing practical changes to address the 'maleness' of the workplace.

It is recommended that the minerals industry develop a plan that supports all employees to achieve a balance between work, family and life commitments.

This includes but is not limited to:

- Promoting an organisational culture that encourages and supports family friendly work practices;
- Providing information and support for employees to help them understand their options and the resources available;
- Supporting the development and implementation of family friendly work practices and services; and
- Improving attraction and retention of employees with family responsibilities.

It is recommended that the minerals industry develop and implement stronger career planning strategies to assist women (and men) incorporate family-related career interruptions in a way that minimises the negative impact of these interruptions.

This includes but is not limited to:

- Building into the career development process early identification of strengths and development opportunities for individuals within the context of personal success factors (e.g. career and work style reviews) enabling tailored development plans; and
- Providing assistance with further study options, including during periods of maternity leave if desired.

Career Development

It is recommended that the minerals sector provide support for a range of initiatives aimed at developing women's careers.

This includes but is not limited to:

- Understanding and addressing blockages to the practical implementation of performance review and career management processes;
- Clarifying responsibility for career management at a site level;
- Establishing a leadership development program for women;
- Establishing a sector wide network for professional women;
- Providing gender awareness training for women;
- Establishing a mentoring scheme; and
- Identifying and profiling female role models in the sector.

Photo courtesy Zinifex Ltd

Young Women, Career Expectations & the Minerals Industry

Prepared by: Linley Lord, Alison Preston & Rebecca Crosbie
WiSER—Women in Social & Economic Research, Curtin University of Technology
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MAPPING

About W*i*SER

The Women in Social & Economic Research (W*i*SER) research unit was founded in April 1999 in response to a growing void in the gender analysis of the economic and social policy issues that confront women. As an inter-disciplinary unit W*i*SER brings together feminist and pro-feminist researchers and doctoral students with backgrounds in economics, industrial relations, law, leadership, marketing, management, social policy and social work.

Our high quality quantitative and qualitative research for the purpose of informing policy formulation and business practice, is supported through various research grants and consulting opportunities. Research findings are disseminated through W*i*SER working papers, W*i*SER reports, peer reviewed journal publications, conferences and public submissions.

As part of our commitment to engaging our community we also host a regular series of community forums on topical issues as well as an international *Women, Leadership and Management* Conference. Further details on W*i*SER events,W*i*SER research programs and W*i*SER research reports and papers may be found at our website: www.cbs.curtin.edu.au/wiser.

About the Researchers

Linley Lord is Director of the Master of Leadership and Management (MLM) program in the Graduate School of Business where she also lectures on Organisational Behaviour, Leadership and Future and Foresight Studies. Linley has a particular interest in women and leadership and is convenor of the W*i*SER *Women, Leadership and Management* Conference.

Alison Preston is Director of the Master of Business and Administration (MBA) program in the Graduate School of Business where she holds a personal chair in economics and teaches economics and industrial relations on the MBA program. She is also co-Director of W*i*SER and heads up a number of research programs including research on occupational segregation, occupational choice, minimum wages and pay equity, job quality and forms of employment.

Rebecca Crosbie is a research assistant with W*i*SER with a background in human resources. Prior to joining W*i*SER Rebecca worked in human resources in the minerals sector.

Acknowledgements

We would like to acknowledge Dr Therese Jefferson for input into design of the research methodology. We also gratefully acknowledge the assistance of various staff at the WA School of Mines, Curtin, ECU, Murdoch and UWA for their help and interest in this project. We would particularly like to thank Sally Male and Jacquie Hutchinson at UWA for their help in organising the discussion groups and, of course, we extend a warm thanks to all who participated in the initial survey and the subsequent discussions.

Executive Summary and Recommendations

This report has been produced in response to a research brief developed by the Minerals Council of Australia (MCA) and the Australian Government Office for Women (OFW) to address the recruitment and retention of women into careers within the minerals sector. In scoping this project the following research aims or objectives were determined:

- Identify the career goals and expectations of young women currently enrolled in minerals sector related degree courses;
- Identify the positive and negative aspects of employment in the minerals sector as seen by young women;
- Explore attitudes of young women to professional careers in the minerals sector;
- Recommend on factors that may facilitate or inhibit the attraction and retention of women in the minerals sector.

The research informing the report has been undertaken in two stages. The first involves an analysis of a 2003 First Year University Student Survey (FYUSS) designed to obtain information on the career choice and career expectations of young people. In analysing the data women enrolled into mineral related courses (MRCs) are compared to women in other professional courses (OPCs) and men enrolled in MRCs. Stage two, which builds on stage one, examines findings from a series of discussion groups involving third and fourth year female university students from a variety of discipline backgrounds.

Overall there is a high degree of congruence in the findings generated through the quantitative and qualitative components. Students surveyed/interviewed clearly have a strong commitment to their career. They are looking for varied, interesting, challenging, meaningful and fulfilling work and are prepared to move from one employer to another to gain such job satisfaction.

The views of the young women described here are consistent with the literature regarding Gen Y where Gen Y women are characterised as being confident, financially astute and who expect to get a good return on their investment with an employer. The search for meaning and the connection of work with other important aspects of their lives is also seen as a defining characteristic of this generation's attitudes to work.

Whilst money was an important factor influencing occupational and career choice, good conditions and flexibility was, for many, just as important if not more important. Thus the type of rostering arrangements, the degree of flexibility and the type of facilities that were offered are highly important when considering a job offer. Indeed a number of the participants in the discussion groups considered these factors to be more important than the money and indicated they would be prepared to sacrifice salary if it meant that they could have more control over their life. Respondents to the survey also placed particular weight (ranked highest) their ability to select jobs that allow them to balance their work and personal responsibilities.

Participants in the discussion groups held a range of views regarding the sector as a site of employment. Notwithstanding efforts to improve the image of the sector many participants still see it as a place where there are few professionals, where gender roles are very defined (sexist) and where women have to prove themselves (change to fit in). They were also able to identify a number of positive characteristics including interesting work, flexibility, financial rewards and opportunities to travel.

The key challenges facing the industry therefore include:

- changing the dominant masculine culture;
- implementing new work arrangements and structures; and
- changing the image of the industry.

The following summarises our key recommendations in this regard.

Recommendations

The following recommendations, including some suggested strategies, are grouped under four headings. Recommendations 1 and 2 focus on the minerals sector as a potential employer (recruitment), recommendations 3, 4, 5 and 6 focus on retention, while recommendation 7 addresses career development.

It is recommended that the minerals sector:

1. Address the negative image held by prospective women employees through a range of innovative marketing initiatives.
2. Review its recruitment strategies with the aim to increase the number of women applicants across all categories of professional positions.
3. Address the strong masculine culture through awareness raising and effective senior leadership that models an inclusive and active approach to supporting women's careers.
4. Identify the structural changes that are needed to improve current work practices in relation to flexibility in rostering and the provision of part-time career opportunities (quality career-building part-time work).
5. Develop a plan that supports all employees to achieve a balance between work, family and life commitments.
6. Maintain facilities and accommodation at an acceptable standard.
7. Provide support for a range of initiatives aimed at developing women's careers.

1 Introduction

This report has been produced in response to a research brief developed by the Minerals Council of Australia (MCA) and the Australian Government Office for Women (OFW) to address the recruitment and retention of women into careers within the minerals sector. Their brief outlined the need for a project examining the factors that may facilitate or inhibit the attraction of women into the minerals sector.

The minerals sector, as has been widely documented elsewhere, is currently experiencing an acute skills shortage as a result of surging demand for commodities. Moreover, although demand for commodities may soften in 2007, available forecasts predict strong growth thereafter. Skill shortages are expected to endure for several years to come. Faced with such capacity constraints there is growing recognition that remedies should encompass attraction and retention strategies. There is also growing acceptance of the need to draw upon a broader labour pool (eg. women, young people and Indigenous Australians). Currently around 88 per cent of employees in the minerals sector are male with the industry typically attracting 'older' males relative to other industry sectors.[1] In contrast young women (aged 25–34) are over-represented relative to their distribution across other

1 In 2001 57 per cent of male employees in the minerals sector were aged between 35 and 54. (Source: NCVR & NILS (2005), *Prospecting for Skills: The Current and Future Skill Needs in the Minerals Sector* report. Attachment 3 (Statistical Analysis), Demand for Skills Section, Table 1, p.61). See Appendix A for more insight into the demographics of the minerals sector.

industries.[2] The long hours, lack of part-time work and undesirable job characteristics such as shift work and fly-in-fly-out (FIFO) arrangements, along with the dominant masculine culture within the industry are frequently cited explanations for the under-representation of women in this sector, particularly mature age women.

In scoping this project the following research aims or objectives were determined:

- Identify the career goals and expectations of young women currently enrolled in minerals sector related degree courses;
- Identify the positive and negative aspects of employment in the minerals sector as seen by young women;
- Explore attitudes of young women to professional careers in the minerals sector;
- Recommend on factors that may facilitate or inhibit the attraction and retention of women in the minerals sector.

The research for this report has been undertaken in two stages. Stage one reports on findings from an analysis of a 2003 First Year University Student Survey (FYUSS). Stage two, designed to build on stage one, examines findings from a series of discussion groups involving third and fourth year university students from a variety of discipline backgrounds.

The remainder of this report is organised as follows. In the following section (Section 2) we describe the research methods. Section 3 describes the findings relevant to the minerals sector from the FYUSS. Section 4 details the findings from the discussion groups. Section 5 draws the qualitative and quantitative research together whilst Section 6 details the recommendations arising from this research.

2 See figure A.4 in Appendix A for more details on the age-gender composition of the minerals sector.

2 Research Method

As indicated above, the research for this project was undertaken in two stages: a quantitative analysis of responses to the 2003 First Year University Student Survey (FYSSS) and a qualitative analysis of data obtained through organised discussion groups.

2.1 Student Survey

In 2003 the WiSER unit surveyed 4500 first year university students in Western Australia to ascertain their understanding of career as well as obtain data on their career goals, objectives and attitudes to gender roles. The survey generated a response rate of approximately 34 per cent, with responses received from 1012 (67.3 per cent) female and 491 (32.7 per cent) male students.

After rejecting those enrolled in bridging courses the sample was reduced to 1441. Within our definition of 'minerals related' courses we included the following university course groupings: Civil/Resource Engineering; Electrical Engineering; Mechanical Engineering; Oil and Gas Engineering (including Mining and Petroleum), Science (Chemistry and Physics), Chemical Engineering, Resources and Environment (including Environmental Science, Geology/Metallurgy and Archaeology). (See Appendix B for further details). Of all female respondents to the survey, women in minerals related courses (MRCs) accounted for three per cent (28 out of 962) of all female

respondents. The corresponding share for males was 14 per cent (65 out of 479 male respondents).

In the research reported below we use descriptive statistics and t-tests to explore the career drivers and expectations of young women enrolled in MRCs. We also endeavour to shed light on attitudes to gender roles as a way of understanding the constrained choices women are required to make.

It should be noted that although the survey is able to shed light on some of the career drivers of students enrolled in MRCs, the survey itself was not designed with the specific context of the minerals sector in mind; hence the relatively small sample sizes when disaggregated down to the sector level. To shed further light on some of the specific sectoral concerns, and to help contextualise some of the quantitative survey responses, we also undertook a series of discussion groups with questions focused exclusively on the minerals sector. The following sub-section describes the discussion groups in more detail.

2.2 Discussion Groups

As indicated above, the aims for this part of the research were as follows:

- Identify the career goals and expectations of young women currently enrolled in minerals sector related degree courses;
- Identify the positive and negative aspects of employment in the minerals sector as seen by young women;
- Explore attitudes of young women to professional careers in the minerals sector.

A qualitative research design (in the form of discussion groups) was seen as the most appropriate way to gather this data. They encourage discussion and allow for differing views and opinions of the same issue to surface[3]. In addition, this approach is consistent with methods used to expand or gain deeper insights from survey data[4].

Four discussion groups were held as well as individual discussions with a further four students who were unable to attend the discussion groups but were eager to contribute to the project. These students were invited to make an electronic submission based on the questions that had been developed for the discussion groups.

The following groups of students were present at the discussion forums we hosted. Firstly, students who were studying in areas that could reasonably be expected to have a strong interest in employment within production-focused areas of the minerals industry, such as mining, metallurgical engineering and geological science. Secondly, students who were studying in discipline areas that would lead to qualifications relevant, although not exclusively aligned with, on-site roles in the minerals industry, such as environmental science, social sciences (communications/community relations), anthropology and indigenous relations. These groups were both considered as consisting of students in minerals related courses (MRC). Thirdly, students whose area of study would lead to occupational qualifications that are relevant to ancillary or service sectors of the minerals sector such as accounting, commerce, law, human resources and information technology. These students were classified as being in other professional courses (OPC).

An overview of the minerals industry in Australia was given at the beginning of each of the discussion groups as was an outline of the research

3 Marshall, C & Rossman, G 1995 *Designing Qualitative Research*, 2nd Edition, Sage Thousand Oaks

4 Punch, K 1998 *Introduction to Social Research Quantitative & Qualitative Approaches*, Sage, London.

project. A set of questions (Appendix C) guided the discussion groups. The aim was to generate conversation around the topics rather than a question and answer format. The questions were paraphrased so that the flow of the conversation could be maintained and areas of interest that emerged during the discussion could be explored.

The discussion groups lasted between and hour and an hour and a half. They were recorded and subsequently transcribed and notes were taken to ensure complete capturing of relevant data. As indicated above, some students expressed interest in being involved but because of timing or location of a particular group they were unable to attend. These students were offered the opportunity to respond via email to the questions that were used to guide the focus groups. Their responses have been included as part of the data analysis process.

The data were analysed to identify key themes that emerged. The aim was not to develop a consensus view of attitudes towards a career in the minerals sector but to explore the wide range of views that had been presented in relation to the key themes. These are discussed in Section 4.

Photo courtesy Zinifex Ltd

3 Findings: Student Survey

3.1 High School Years

Within the literature on occupational choice reference is frequently made to the importance of school experience in shaping career expectations and career choice decisions.[5] This literature suggests that performance and interest in particular subjects can give rise to particular choices, as can the influence of parents etc.

Looking at the background characteristics of survey respondents (see Table 1) we see that of the sample of female student respondents enrolled in minerals related courses (MRCs) 85.2 per cent spent most of their high school years in a city location, 66.7 per cent attended a government school and most (82.1 per cent) were in co-educational (mixed sex) schools. There was no significant difference in the mean characteristics of these variables when compared to women in OPCs and men in MRCs.

Students were asked to self-assess their performance across a range of subjects (below average, average, above average, really good). Table 1 reports the shares indicating they perceived their performance as being above average or really good. Of the female students in MRCs 41.7 per cent indicated they were above average or really good in the physical sciences. The corresponding share among male students in MRCs was 69.4 per cent; the difference is statistically significant. Male self-assessment scores for maths were also significantly different (higher). Interestingly, across all three groups (female students in MRCs, female students in other courses and male students in MRCs) there were no significant differences in the aggregate reported Tertiary Entrance Exam (TEE) score.

There was also no statistically significant difference between male and female students in MRCs in the strength of encouragement from parents to enrol in their current courses.

3.2 Course Expectations

Respondents to the 2003 FYUSS were asked to reflect on the importance attached to various factors when deciding on their course of study. Responses shown in Figure 1 (over page) are only for women enrolled in minerals related courses (MRCs). It is apparent from these data that important drivers are good career opportunities (on completion of course of study), employment

5 Whitley, B. (1997) 'Gender differences in computer-related attitudes and behaviour: a meta-analysis' *Computers in Human Behavior*, 13(1), pp.1-22.

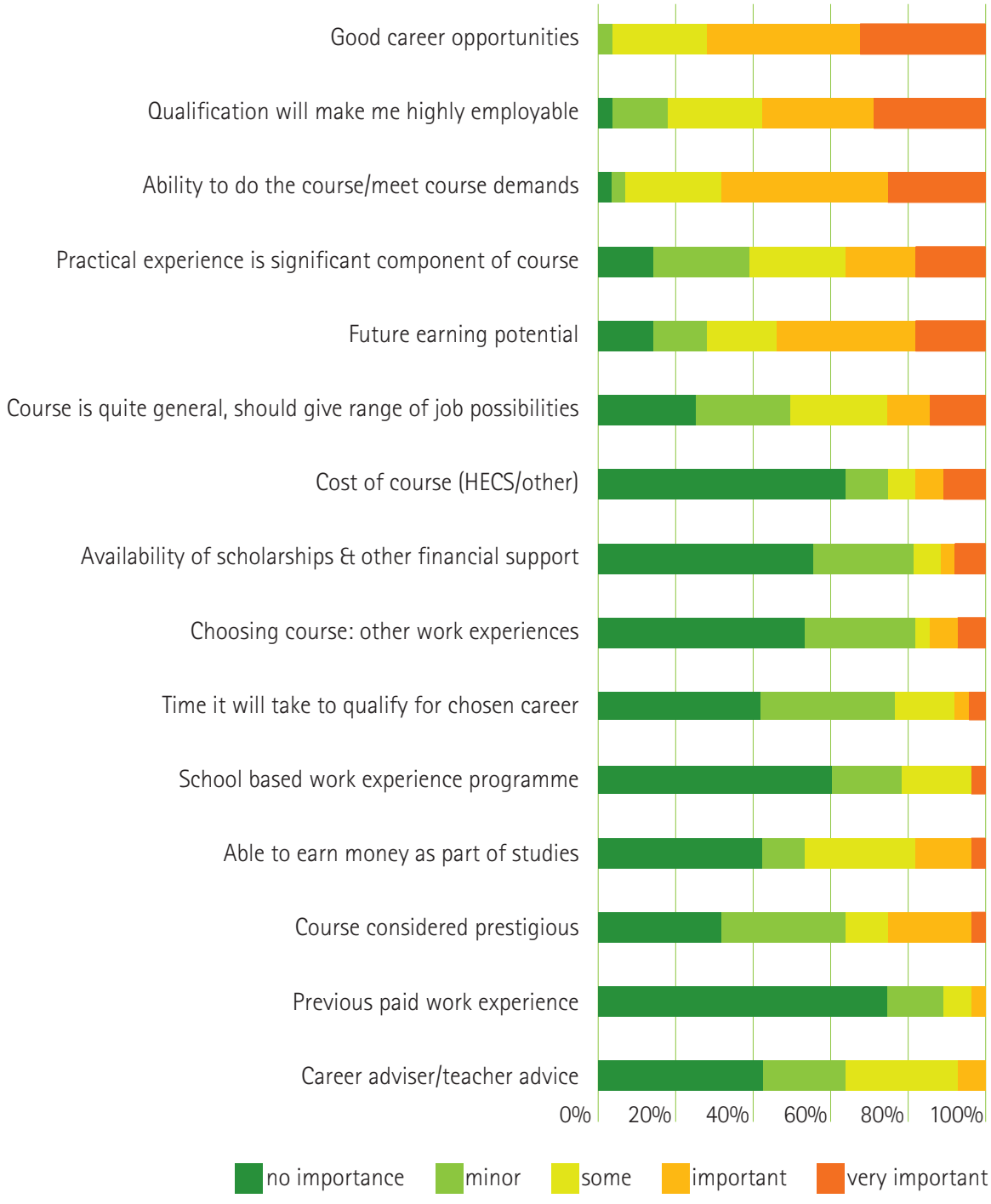
Table 1: Pre-university background characteristics of students in minerals related courses

	Female students (n=28)	Male students (n=65)
Where spent majority of high school years		
Australia – city	85.2%	86.2%
Australia – rural	7.4%	12.3%
Other	7.4%	1.5%
Type of high school attended *		
Govt school	66.7%	47.7%
Private school	33.3%	52.3%
Single-sex	17.9%	14.5%
Co-educational	82.1%	84.6%
Share of students whose self-assessed performance in the following subjects was above average		
Physical sciences (n=24, 62)**	41.7%	69.4%
Biological sciences (n=17, 23)**	82.4%	47.8%
Mathematics (n=28, 65)**	50.0%	76.9%
English (n=28, 65)*	50.0%	33.8%
Social Sciences (n=24, 57)	54.2%	71.9%
Average score in the TEE (Tertiary Entrance Exam) (n=26, 62) (Mark out of 100)	85.746	86.693
(standard deviation)	(6.605)	(7.404)
Influence on choice of current course		
Mother (or primary female care giver) actively encouraged (n=27, 63))	48.1%	31.7%
Father (or primary male care giver) actively encouraged (n=25, 59)	36%	40.7%
Siblings actively encouraged (n=22, 48)	31.8%	23.9%
My best friend actively encouraged (n=23, 51)	39.1%	19.6%

Notes: *, ** indicate significant difference in mean scores (using standard t-test) at the 10 and 5 per cent levels, respectively.

opportunities, and their perceived ability to do the course. Future earnings potential also rated highly with 53 per cent of respondents indicating that this was either an important or very important criteria. (65 per cent of male students enrolled in MRCs rated future earnings potential important; the mean level of importance attached to this 'course driver' was significantly different, with men attaching significantly more weight to this factor). Surprisingly the cost of the course (HECs) was not a particularly important determinant; only 24 per cent of women enrolled in MRCs identified it as such.

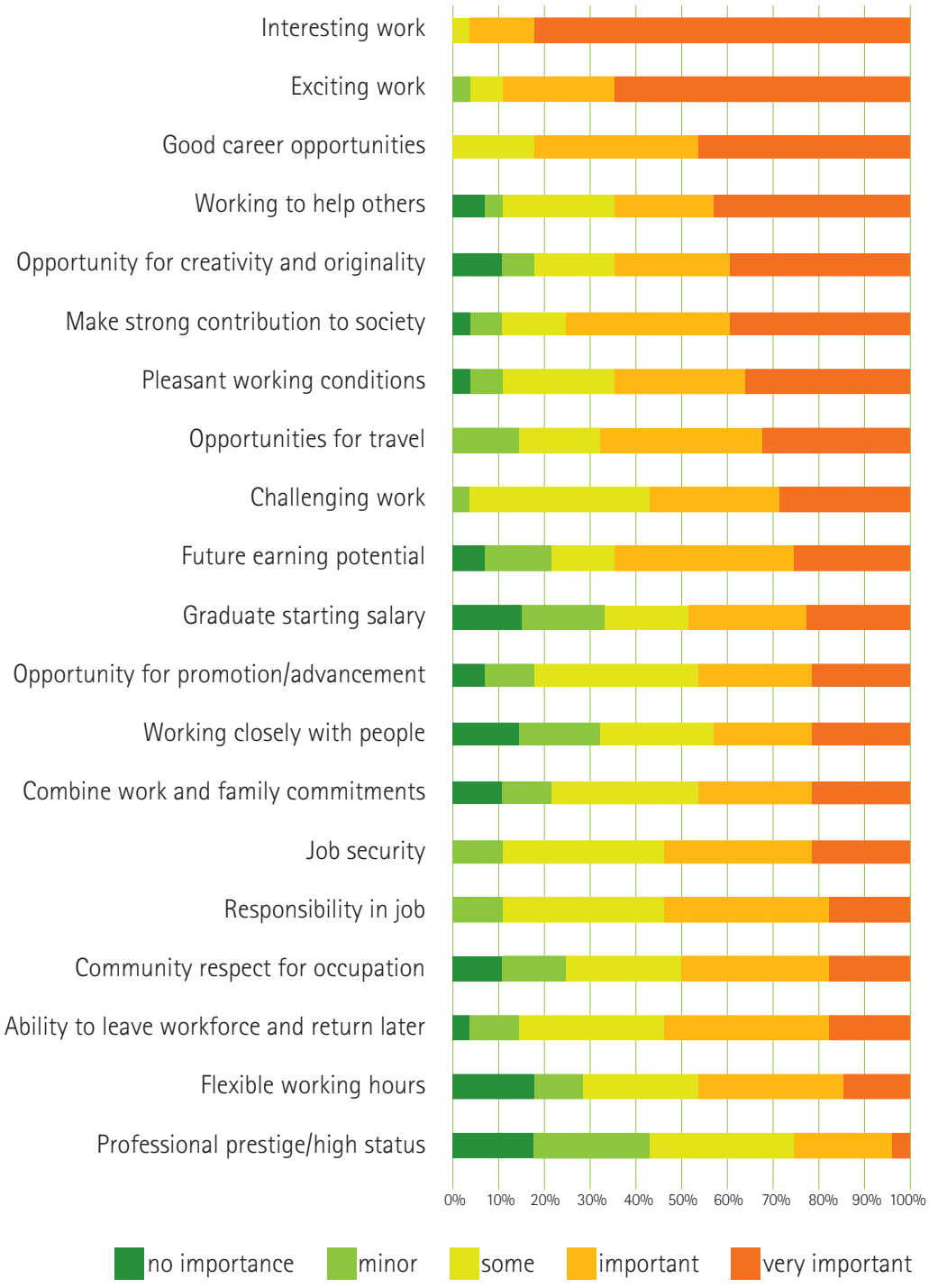
Figure 1: Importance of factors influencing choice of course



3.3 Occupational and Career Expectations

Respondents were also asked to identify the importance of a series of job or occupational attributes such as the nature of the work, job conditions etc. Figure 2 (below) shows that the rank importance of the various attributes. Nearly 100 per cent (96.4 per cent) of respondents (female students enrolled in MRCs) indicated that they were seeking an occupation or career with interesting work. A further 89 per cent of respondents identified exciting work as either an important or very important factor while 82 per cent rated good career opportunities as important or very important. Future earnings potential and graduate starting salary were

Figure 2: Importance of factors in preferred occupation



only ranked very important by 25 and 22 per cent of respondents respectively. This may have implications for a sector relying on monetary rewards as a means of attracting labour.

Table 2 reports the mean response against each of the occupational attributes surveyed via the questionnaire. T-tests suggest little difference in the career drivers of female students enrolled in MRCs and female students in other courses. The only areas where significant differences were revealed were with respect to interesting work and graduate starting salary. In both cases the mean response of female students in MRCs was higher than the mean response of their counterparts in other courses. In contrast the importance they attached to 'working closely with people' was significantly lower than the mean response of students in other courses. Interestingly there was no significant difference between the groups

Table 2: Importance of occupational attributes: mean ratings of females enrolled in minerals related courses.

	Mean	Std. Deviation
Interesting work	**4.786	0.499
Exciting work	4.500	0.793
Good career opportunities	4.286	0.763
Make strong contribution to society	4.000	1.089
Working to help others	3.893	1.227
Opportunities for travel	3.857	1.044
Pleasant working conditions	3.857	1.113
Challenging work	3.821	0.905
Opportunity for creativity and originality	3.750	1.351
Job security	3.643	0.951
Future earning potential	3.607	1.227
Responsibility in job	3.607	0.916
Ability to leave workforce and return later	3.536	1.036
Opportunity for promotion/advancement	3.429	1.168
Combine work and family commitments	3.357	1.254
Community respect for occupation	3.321	1.249
Graduate starting salary	**3.222	1.396
Working closely with people	**(3.179)	(1.362)
Flexible working hours	3.143	1.325
Professional prestige/high status	2.679	1.124

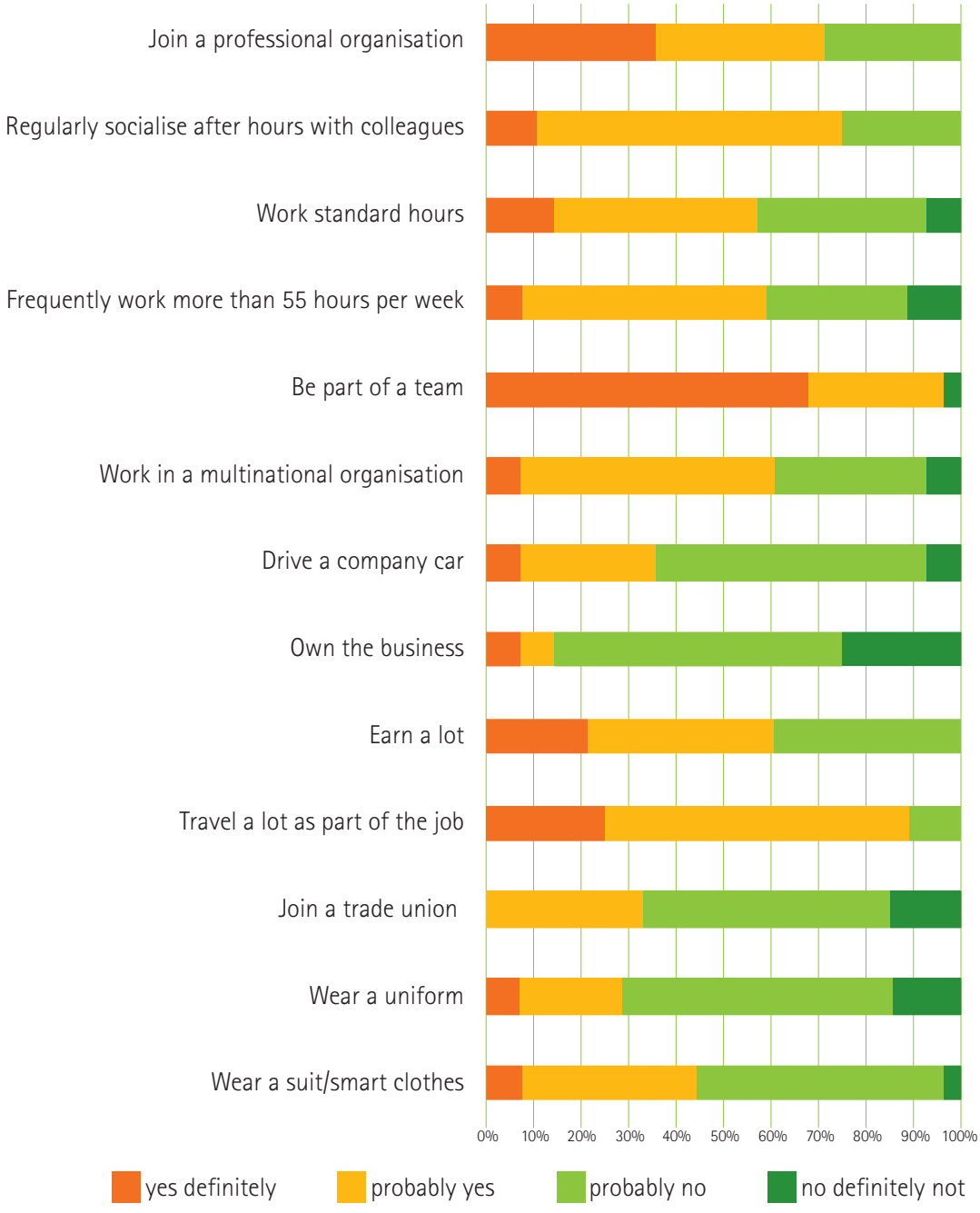
Notes: The question posed was 'What are you looking for in an occupation? Please indicate the importance, if any, you attach to each of the following job characteristics.' Scale: 1=no importance at all; 2=minor; 3=some; 4=important; 5=very important. ** indicates a significant difference in the mean response of women enrolled in MRCs and women enrolled in other courses. The parentheses shows a significant lower difference. Source: 2003 FYUSS.

in the importance attached to the 'ability to combine work and family responsibilities'.[6] In the economic literature considerable weight is given to this as a predictor or determinant of occupational segregation. The assumption is that women who attach more importance to this characteristic, choose courses and occupations traditionally dominated by women, where the ability to combine work and family is thought to be easier (eg. nursing and teaching).

Figure 3 provides some insight into how female students in MRCs see themselves as graduates in the workforce. The majority (71.4 per cent) believe they will probably or most definitely join a professional

6 Just under half (46 per cent) of women enrolled in MRCs indicated that the ability to combine work and family commitments would be an important/very important career driver for them. The corresponding share amongst men enrolled in MRCs was 40 per cent and for women enrolled in other courses it was 62 per cent. Statistically there was no significant difference in the mean response of women and men enrolled in mineral related courses or between women enrolled in MRCs and women enrolled in other courses.

Figure 3: Imagining work as a Graduate. As a Graduate will you:



association. As similarly high share (75 per cent) believe they will most probably or most definitely socialise after hours with their colleagues. More than half believe they will probably or definitely work standard hours and many expect to work long hours. They see themselves being part of a team (96 per cent indicated either definitely or probably) and around 60 per cent envisage working (probably or definitely) for a multinational corporation. A similar share believes they will earn a lot and 89 per cent envisage travelling a lot as part of their job. Interestingly a third believe they will most probably join a trade union, less than 30 per cent see themselves in a uniform and less than half see themselves in a suit or smart clothes.

Table 3 indicates there is little statistically significant difference between how the two groups of students (females enrolled in MRCs and females in other courses) see themselves as graduates in employment. The only significant differences are with respect to clothes and travel. Female MRC students see themselves as less likely to wear a suit or smart clothes and more likely to travel when compared to female students in other courses. The data also suggest they are more likely to see themselves in a job where they drive a company car.

Figure 4 and Table 4 summarise the mean scores of respondents to various questions on career outcomes over their first 10 years of working life post-graduation. Amongst the female students enrolled in MRCs,

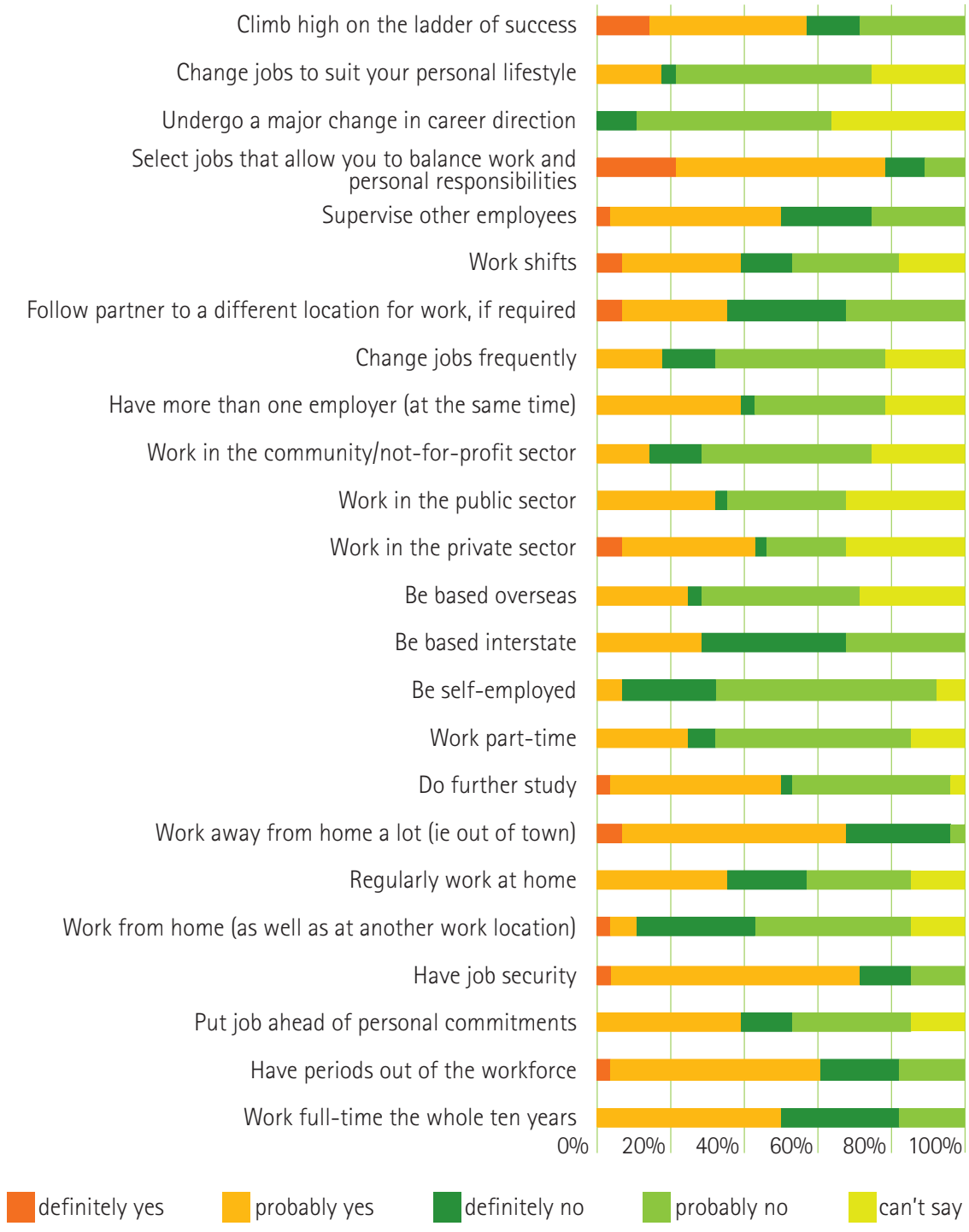
Table 3: Differences in the mean responses of female students in MRCs and other courses: images of self as graduate in the workplace.

	Mean	Mean Difference
Wear a suit/smart clothes	2.519	0.386**
Wear a uniform	2.786	0.109
Join a trade union	2.815	0.064
Travel a lot as part of the job	1.857	-0.384**
Earn a lot	2.179	-0.021
Own the business	3.036	-0.025
Drive a company car	2.643	-0.368**
Work in a multi-national organisation	2.393	-0.194
Be part of a team	1.357	-0.161
Frequently work more than 55 hrs per week	2.444	-0.078
Regularly socialise after hours with colleagues	2.143	0.049
Join a professional association	1.929	-0.162
Work standard hours	2.357	0.033

Notes: ** significant at the 5 per cent level or less. The mean difference is computed as mean score (for females enrolled in OPCs) minus the mean score (for females enrolled in MRCs). A negative sign on the mean difference therefore indicates that the overall mean for female students enrolled in MRCs was higher than the mean for female students enrolled in other courses. Eg. female students in MRCs are more likely than female students in other courses to visualise themselves driving a company car. For additional statistical details please refer to Table D1 in Appendix D.

nearly 80 per cent (see Figure 4) believe they will either definitely (1) or probably (2) 'select jobs that allow them to balance work and personal responsibilities. Around 40 per cent indicated that over the first 10 years post-graduation they would probably put their job ahead of personal commitments and close to 60 per cent believed they would 'climb high on the ladder of success'. A sizeable share (40 per cent) also envisaged working shifts and a similar proportion envisaged working in the private sector and having more

Figure 4: Over the next ten years, will you...



than one employer (multiple jobs). Around two thirds thought they would probably work away from home a lot and a similar share anticipated having good job security.

Also of interest are the responses to questions on workforce attachment. Around half the female students in MRCs expected to work full-time during the first 10 years post-graduation while close to 60 per cent anticipated having periods out of the workforce. From a practitioner perspective these responses, if realised,

Table 4: Comparing female MRC and OPC student expectations during their first 10 years of work post-graduation.

Over the next 10 years will you:	Mean	Mean Difference
Select jobs that allow you to balance work & personal responsibilities	1.880	-0.016
Climb high on the ladder of success	1.988	0.012
Have job security	2.125	0.227
Have periods out of the workforce	2.217	-0.131
Work away from home a lot (ie out of town)	2.222	-0.562**
Supervise other employees	2.286	-0.042
Work in the private sector	2.316	0.024
Follow partner to a different location for work, if required	2.368	0.112
Work full-time the whole 10 years	2.391	-0.014
Do further study	2.481	0.151
Have more than one employer (at the same time)	2.545	-0.338
Be based interstate	2.579	-0.270**
Work in the public sector	2.579	0.242
Work shifts	2.609	-0.093
Be based overseas	2.700	-0.152
Put job ahead of personal commitments	2.708	-0.243
Work part-time	2.792	-0.024
Change jobs to suit your personal lifestyle	2.810	0.157
Regularly work at home	2.833	-0.274
Change jobs frequently	2.955	-0.075
Work in the community/not-for-profit sector	3.000	0.065
Undergo a major change in career direction	3.167	0.205
Be self employed	3.192	-0.009
Work from home (as well as at another work location)	3.208	-0.138

Notes: 1=Yes, definitely; 2=probably yes; 3=probably no; 4=no, definitely not; 5=can't say. ** indicates significant at the 10 per cent level or less. See also notes to Table 3.

are likely to impact on retention and, of course, labour (skill) supply. We shall return to this again at Section 3.4 below.

Table 4 reports the means and mean differences between female students enrolled in MRCs and female students in other courses with respect to anticipated career outcomes. Interestingly, with the exception of two items 'work away from home a lot (i.e. out of town)' and 'have more than one employer (at the same time)' there was no significant difference between the two female groups in their responses to the various factors raised. In the case of the identified factors, where differences were revealed, the female students in MRC courses had a lower mean score (ie. were more likely to have indicated yes or probably against this factor).

3.4 Work, Family and Gender Roles

A small share of female students enrolled in MRCs do not plan on having children. Of the remainder, the expected mean family size held by female and male MRC students is 2.56 and 2.39 children respectively. For females enrolled in OPCs the anticipated family size is 2.16 children. Of perhaps more interest is the average age respondents expect to be when they have their first child. The average female and male students in MRCs expect to be around 27 at the birth of their first child, which is around five years post-graduation (assuming no gap years and progression from high school straight to university)—see Table 5.

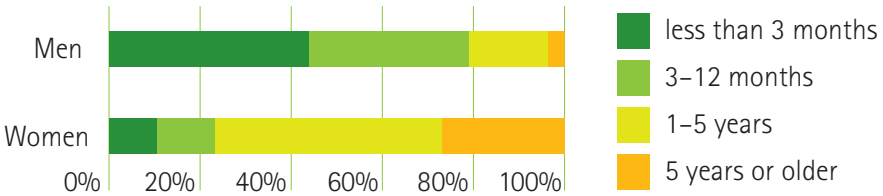
Table 5: Parenting Plans/Preferences

	Female (MRC)	Female (OPC)	Male (MRC)
Average number of (anticipated) children	2.56	2.16	2.39
Anticipated average age when have first child	26.59	28.38	27

Close to 100 per cent of students responding to the survey anticipate returning to work after they have had children. However, important differences arise when timing (length of time out of the workforce) is considered.

Of the MRC female students who do envisage having children, around 50 per cent envisage taking a significant career break of between 1 and 5 years. Fewer than a quarter (22.7 per cent) of the female students in MRCs see themselves returning to work before their youngest child is one year old. In contrast, 78 per cent per cent of the male students enrolled in MRCs imagine being back at work before their youngest child is one (see Figure 5).

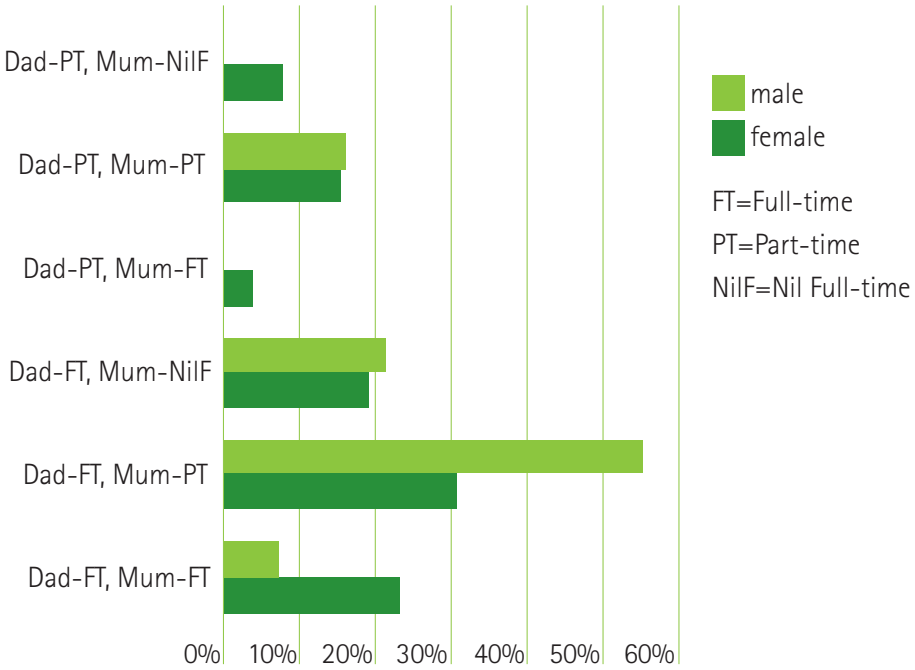
Figure 5




Roche
PASMINCO
CENTURY
MINE
HWE
SITE
SAFETY INDUCTED
PASMINCO
CENTURY

Figure 6 shows the imagined employment arrangements of the students in MRCs as parents within a couple relationship. Nearly a quarter (23 per cent) of the MRC female students imagined themselves in a couple partnership where both parents work full-time. The most commonly imagined arrangement (by all groups) is one where the father works full-time and the mother works part-time.

Figure 6



Based on the data presented here it seems fair to conclude that the vast majority of young professional women in Australia, at least initially, expect to become the primary care giver should they have children. They similarly expect to have lengthy periods of time out of the workforce. Whether these women see themselves making this decision by 'choice' or because of prevailing ideologies and social norms surrounding motherhood is something we can't determine from these data. The qualitative data discussed below will shed further light on this issue.

4 Findings: Discussion Groups

4.1 Important factors in choice of course

The students were asked why they had chosen their particular course of study. They were also asked if they had changed their course of study once they had commenced university and if so why. For those in MRCs their choices focussed on:

- the areas in which they had achieved at high school;
- the impact of role models;
- being encouraged by others to consider MRCs;
- being able to work outside both a city environment and an office environment;
- choosing subjects because it suited their university timetable;
- choosing subjects that sounded interesting.

They did not speak about their course choices in terms of career opportunities as such. They did however talk about the type of work they would be able do once they had completed their studies.

For those in civil engineering programs the chance to 'build things' and the sense of achievement in being able to walk past infrastructure and know that it was their work was a real motivating factor for choosing their course of study. For those in other MRCs it was the chance to use their 'head and the hands' that was important. They saw themselves in jobs where the decision making and problem solving was immediate. They did not want to be office bound and therefore remote from the action.

For some, role models had been important in helping them choose a particular course of study. This was often a parent, sometimes an

older brother and almost never a female role model in a professional minerals related industry role.

'I'm doing civil engineering and I chose it because my dad and my brother were doing it.'

'My dad is a mining engineer…he said he really enjoyed it so I figured that I could try.'

Many of those who were in MRCs had been good at maths and science in high school and so engineering and science based courses seemed to be a 'natural' choice which they didn't particularly question.

'I was good at maths and physics in high school so it was the right profession.'

Others had stumbled across their current course through 'luck' in that they had chosen subjects that they knew relatively little about and found areas that they really enjoyed and were now pursuing as a career option.

'I'd never heard of geology before I came to uni…one of those things I picked with my eyes closed and I ended up liking it.'

For some it was through events such as year 12 career nights or vacation work experience that they became aware of particular areas of study, or were encouraged to consider particular pathways.

'…one of the guys there convinced me into engineering instead.'

For the students who were in OPCs their choices related mainly to keeping their options open. Many were unsure what they wanted to do. They had chosen courses of study that provided them with the maximum degree of flexibility so they could determine what areas for them held the most interest and therefore offered a possible career direction.

Of those who had changed their course of study since first year the main reasons offered were:

- finding the course they were in had limited job opportunities;
- finding particular areas of interest and pursuing them;
- timetable clashes which resulted in alternative choices being made.

'I was minoring in geology and I just liked it better so followed it through to a career.'

4.2 Important factors in choice of career

The students were asked to describe what they were looking for in a career. They were also asked to comment on what they expected from potential employers. Across both the MRC groups and the OPC group a number of common themes emerged. These are listed below. Of particular importance were

- Flexibility and work life balance;
- Opportunities for travel;
- Variety and interest;
- Loving the work they do;
- Employability;
- Opportunities for promotion.

Other factors identified included:

- Reasonable hours;
- The ability to leave work at work;
- Workforce diversity (to work with diverse and interesting people);
- Opportunities for self-employment/consulting;
- Knowing about the industry.

Flexibility and balance was of particular importance to the students who were in MRCs. Different types of flexibility and flexible work arrangements were also discussed in relation to possible future family responsibilities. This is discussed in more detail in section 4.5. Maintaining friendships and relationships was very important and they expected to like and socialise with their work colleagues.

Almost all identified a strong need for a challenging, interesting job and importantly a life outside of work. They understood the challenges of working in remote locations but wanted the flexibility to be able to vary their shift pattern, for example, to attend an important family event or a significant social event such as a close friend's wedding. They saw this as important because it meant that

> *'...you aren't missing out on too much.'*

Travel was an important factor for a number of the discussion group participants in both MRCs and OPCs. They saw their degree as providing the opportunity to work overseas and many were keen to pursue this option. For those in MRCs the chance to work in varied locations within Australia was also attractive.

> *'I want to travel and I [would] like my job to pay for it.'*

They also saw that international experience could be very beneficial for their career;

> *'...everyone wants you because no one else has that in WA.'*

Most spoke of their strong desire for varied and interesting work which was linked to their expectation that they would have jobs where they loved the work they were doing. They saw themselves as most likely entering full-time work through some form of graduate program. They did not see themselves staying with employers who were unable or unwilling to provide variety and interest.

> *'I really only want to be in the same role for a year to a year and a half...I wouldn't want to do the same thing for a few years straight'*

> *'If they say you will be doing the same thing that you are doing now, well I can probably get better options somewhere else thank you very much.'*

Of the other factors that were identified, working reasonable hours and being able to leave 'work at work' was for many a response to the working patterns of their parents. Many had observed one or both parents working long hours and bringing their work home both physically and emotionally. It was a pattern they did not want to repeat in their own lives.

Some of the students in OPCs spoke about the efforts of major firms in their particular discipline areas to recruit them while they were still at university. The potential employers had provided information about the type of work that was available (varied and interesting), the demographic profile of the sector (the average age, showing it was a young person's firm) and had provided work experience while they were in their first year at university. This kept them interested in the particular area of study and gave them a good understanding of the profession.

4.3 Images of the Minerals Sector

The overwhelming image of the minerals sector is that it is very masculine in its culture. It is seen as hot, dirty and remote but the money is good. It is not a place where you can be yourself; you can't be a 'girl' on site. Students in the OPCs had a more negative view of the industry than those in MRCs. They characterised the industry as one where there are :

'Men in king gee shorts...old men, they call everyone Sheila.'

However, students in MRCs who had worked on site as part of vacation employment also noted that they were likely to be expected to respond to a variety of terms that many would consider sexist or patronising.

'No name calling please like luv, sweetie, darling—totally unnecessary.'

A number of the students in MRCs had had direct experience of the industry through vacation programs. They generally had a much more positive image of the sector and despite the attitudes some had encountered were pragmatic about the challenges they faced as women in non-traditional roles in remote locations. They expected to have to 'prove themselves' in order to be accepted.

'It just seems to take a little longer to let them let you prove yourself. You have to do it more than once or you have to do an exceptional job and it takes a little bit longer.'

'They didn't seem to trust me anywhere near as much [as the male vacation students] to do jobs on my own.'

For some, the experiences were such that they potentially impacted on their personal safety.

'A few Neanderthals in the underground that try to run you over.'

'My donga was broken into...safety is a major concern.'

Despite such experiences they had for the most part enjoyed their time on site, seeing it as providing valuable practical experience. They spoke about the conditions they had encountered on the various sites. What they wanted was:

'To come back to good food and a nice place to sleep...and hot showers.'

'It doesn't have to be great, it just has to be nice.'

What some had found was:

'Ants in your room all the time, or the air con isn't working or you are always having blackouts.'

A question that was raised by both students in the MRCs and OPCs was 'why can't I be a girl?' This related to two main issues. Firstly to be accepted for who they are rather than as a:

'Sexual object or intimidating because you are an intelligent woman.'

How they experienced being objectified was for example walking into a room:

'...and everyone turned and looked at me simply because I was a girl.'

or working on a project where:

'…they start making jokes in front of you, about you.'

They spoke of the 'grapevine' that operates across the sector, particularly in relation to 'gossip', 'innuendo' and 'rumour'. Having a drink with workmates can become the source of gossip and rumour that spreads from one mine site to another. This limits the social interaction of women on site which can make it more lonely and isolating particularly if they are the only woman on a particular shift.

Secondly was the expectation that they are the ones who need to modify their behaviour to fit in. They didn't feel that they could be themselves.

'Just got to not show emotion.'

'You can't have a girl reaction to anything.'

'Women who are successful have to forget they are a woman.'

4.4 Minerals Sector as a Site of Employment

The minerals sector was seen as an attractive site of employment for students in the OPCs because it provided the opportunity to earn a high salary. This would help them to 'set themselves up'. 'Setting themselves up' involved options such as paying back student debt or being able to buy a house particularly before they considered having children. Many saw it as something they would undertake with a partner where they would both work on a mine site which would enable them to maintain a relationship whilst saving for their future. It was always expressed as a short-term option, three to five years at most.

For some in environmental courses the reputation of the mining sector particularly in relation to environmental issues was a concern. They did not want to work for a large company where their role was:

'…to cover the company's arse.'

However, if the 'right' type of job (one where they felt they were making a real difference) was available they would be happy to work in the sector.

The students who were in MRCs generally expected to work on mine sites at least in the early part of their career. The money was attractive and they could accrue knowledge and experience that would enable

them to get a city based position at some later stage. They expressed much greater interest than those in OPCs regarding the conditions that would be offered both on site and with respect to their ongoing professional development. Some were prepared to accept lower salaries if it meant better on-site facilities, or living in a nice town and having better control of their lives through more flexible rostering.

> *'I'm after job satisfaction, a good site, good position and good work environment.'*

The issue of fly-in–fly–out (FIFO) compared to residential provoked considerable discussion and a range of views. One consistent theme was that FIFO could work for the short-term but it was not a viable long-term option. It was seen as negatively impacting on relationships and friendships and as a potentially exhausting way to work so for most moving to residential jobs was an important aspect of their future work life. Others had a strong preference for living in the area of the mine and establishing their life at the local town. They wanted to be part of the community. Those who had contacts within the industry were warned not to do FIFO for any length of time.

> *'It gives me the feeling of living a stunted life.'*

> *'They don't see their friends anymore, their lives are sort of disappearing.'*

Some students liked the idea of FIFO because it gave them a block of time away from work that they could use to good effect. It was seen as a cheap way to live because expenses were met whilst on site. It was also seen as a way of maintaining a city lifestyle whilst working in remote locations.

Interestingly, a number of students in the OPC group (eg. one student enrolled in communications) hadn't considered a career in the minerals sector prior to their involvement in the discussion groups. Students in the OPC group also noted that graduate recruitment by minerals companies was typically targeted at traditional MRCs (such as engineering) and that this had critically shaped their understanding of available opportunities.[7]

4.5 Gender Roles and Gender Order

Most of the students but certainly not all expected to have children at some stage of their working life. Some were adamant that children were not part of their career plan because:

> *'...taking too much time off would lower my credibility as an engineer and I would not run that risk.'*

Most accepted with little questioning that it would be their role to care for children and this was their preferred option. Some had found it confronting that their partners expressed a desire to be the primary care giver.

Some saw shared parenting arrangements as being very effective, with both parents having time out of paid employment or working part-time or some other combination that they would work out at the appropriate time.

Most intended to continue working after they had children and expected to spend at least part of their working life working part-time. Nearly all those that said that they intended to have children expected to take time out of the paid workforce. Some indicated that they would probably give up paid employment in favour of being a stay at home mum. Others saw themselves being out of the paid

7 Supporting this comment we happened to notice a minerals sector graduate recruitment advert on the student notice board in the department (Department of Organisation and Labour Studies) where we ran the OPC discussion groups. Graduates in fields such as Chemical Engineering were encouraged to apply!

Photo courtesy Newmont Asia Pacific

workforce whilst their children were young with a number indicating that when a child started school they would consider returning to paid employment.

Despite seeing having children as part of their life plan most expected that having children would impact negatively on their career. Very few could point to female role models in the minerals sector who were successfully combining work and family.

> *'I think especially being a woman, if you fall pregnant I think that would totally stand in the way of your professional career'*

> *'The moment you fall pregnant you're out…you are a liability.'*

They did not see any possibility of combining FIFO with motherhood. They wanted flexibility in the industry so that there was the possibility of working part-time particularly while children were very young. For some the idea of combining motherhood with a consulting role appeared to be an attractive option particularly if the company they were working for at the time was unable or unwilling to offer any real flexibility that would enable them to combine their professional life with parenthood.

It was somewhat surprising given the discussion regarding their career ambitions that across the MRCs and OPC groups most held traditional gender stereotypical roles regarding the care of children. There was virtually no discussion relating to structural changes that would make it easier for women to combine work and family responsibilities. It was something they intended and many wanted to take responsibility for. The only other choice appeared to be that of not having children if they wanted to pursue a career. Some did comment that it was just too hard for an individual to change the system.

5 Overall Discussion

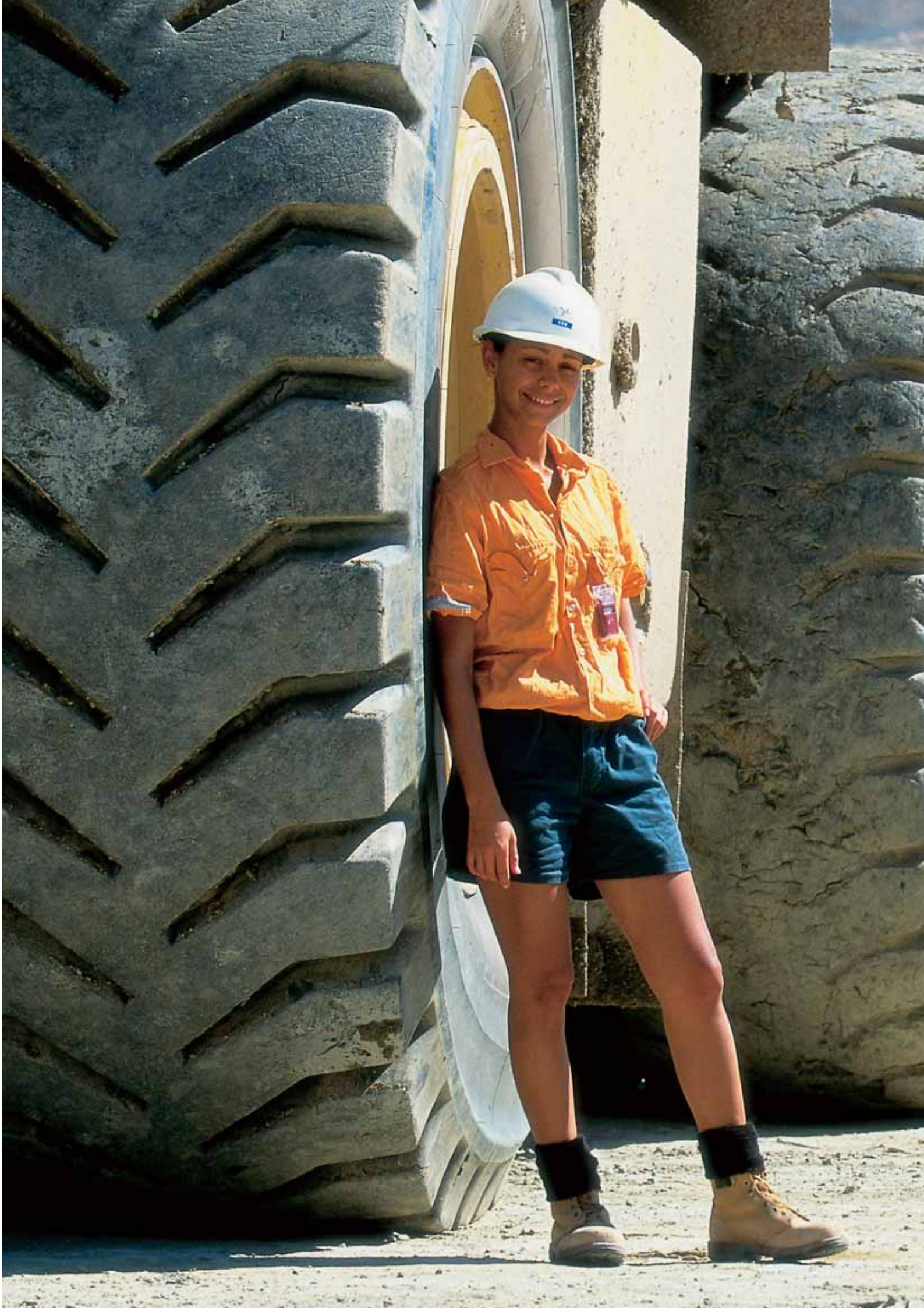
Our aim in this section is to bring together the key findings from Section 3 (quantitative results from the 2003 first year university student survey (FYUSS)) and Section 4 (qualitative responses from the discussion groups) with a view to addressing the following research objectives (as noted in the introduction and restated here):

- Identify the career goals and expectations of young women currently enrolled in minerals sector related degree courses;
- Identify the positive and negative aspects of employment in the minerals sector as seen by young women;
- Explore attitudes of young women to professional careers in the minerals sector.

5.1 Career goals and expectations

Overall it is apparent that there is a high degree of congruence in the findings presented in Section 3 and Section 4. Students surveyed/ interviewed clearly have a strong commitment to their career. They are looking for varied, interesting, challenging, meaningful and fulfilling work and are prepared to move from one employer to another to gain such job satisfaction.

Across the discussion groups we observed different interpretations on the term 'meaningful' career. For example, amongst students from OPCs meaningful career involved helping people (at a broader societal level), making a difference (to society) and caring for the environment.



In other words the focus was on altruistic desires rather than attainment of material goals. For those in MRCs meaningful was more likely to be about the creative processes (eg. 'I built this').

The views of the young women described here are consistent with the literature regarding Gen Y which characterises Gen Y women as being confident, financially astute and who expect to get a good return on their investment with an employer.[8] The search for meaning and the connection of work with other important aspects of their lives is also seen as a defining characteristic of this generation's attitudes to work.

Employment opportunities were raised in the FYUSS but there was relatively little comment regarding employment opportunities in the discussion groups. This is probably a reflection of the current Western Australian labour market which is experiencing labour shortages across a range of professions including those found in the minerals sector.

Money was an important factor in both the FYUSS and the discussion groups, however having good conditions and flexibility was for many just as important. Thus the type of rostering arrangements, the degree of flexibility and the type of facilities that were offered were also highly important when considering a job offer. A number of the participants in the discussion groups considered these factors to be more important than the money and indicated they would be prepared to sacrifice salary if it meant that they could have more control over their life.

Students in MRCs who participated in the discussion groups spoke of the need for flexibility in order to maintain personal relationships. They were happy to work hard for the money but not at the expense of 'a life'. They wanted the flexibility to be able to match shifts if they were in a relationship and to be able to attend significant family and other events. They saw this as being an exception that you would need to be careful not to abuse but one which make finding balance in their lives significantly easier.

The students in the discussion groups in MRCs expected to stay in the minerals sector at least until they had children. It was at that stage that they anticipated problems due to type of work they expected to be doing (on site and/or FIFO) and the lack of accommodation of pregnant women by employers. Some anticipated having enough experience to be able to move to a city based job at that stage of their working life. Others saw working independently as a consultant as a more likely option that would enable them to balance work and family. Most expected some time out of paid employment and to work part-time for a period while their children were young.

The findings reported here emphasise the blurring boundaries between private and public lives (i.e. between work-life and self). From a career choice perspective it challenges earlier models of career choice, particularly models which seek to explain choice using extrinsic factors such as monetary rewards.[9]

8 Jacobs, H. 2006 'Gen Y sisters are doing it for themselves' *B&T Weekly* July 28 pp15

9 Human capital theory (a dominant economic theory for explaining occupational choice) for example, assumes that individuals seek to maximise their life-time earnings. Using this model or theoretical framework economists have suggested that women who anticipate having time out of the labour force (eg. for family reasons) are more likely to select jobs where the penalties (eg. skills atrophy) for career breaks are lower. Working backwards such explanations are used to 'explain' high levels of observed sex segregation in the workforce (eg. the highly feminised nature of nursing). For more on human capital theory see Becker, G. 1975 *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, 2nd Edn. National Bureau of Economic Research, New York.

The results here also highlighted the similarities in the career goals and aspirations of women in MRCs, women in OPCs and men in MRCs. In other words, amongst this cohort of students the desire for interesting, challenging, meaningful and satisfying work topped the list. Organisations unable to deliver on these career drivers will undoubtedly face recruitment and, more importantly, retention difficulties.

5.2 The working environment—negative and positive aspects

The students interviewed identified a number of negative and positive characteristics associated with work in the minerals sector. Some arose as a result of their direct experience through vacation programs, others were the result of stories from family and friends in the sector and others had developed their images of the sector from a variety of sources. Many of the views presented may not accurately reflect the minerals sector but they may still need to be addressed if the sector wants to widen its employment pool to recruit and retain more women from both MRCs and OPCs.

Negative Characteristics/Images

Some of the perceived negative features of working in this industry were as follows:

- Masculine work environment;
- Sexual harassment and harassment;
- Not being able to be a girl;
- Having to prove yourself;
- Long hours / unattractive shifts / travel to site;
- Sheltered life / lack of workforce diversity;
- Predominately uneducated workforce;
- Gossip / rumour / innuendo;
- Isolation / remoteness;
- Hot and dusty;
- Image of the industry being exploitative;
- Pressure on family / friendships / relationships;
- Work and family balance / child care hard to organise and expensive / few part-time opportunities.

Positive characteristics/images

- Interesting work;
- Money;
- Lifestyle;
- Quality time off;
- Ability to leave work at work;
- Direct interaction with the project;
- Opportunities to make a difference to society / environment / gender composition of the workforce;
- High quality experience that enhances employability;
- Having a qualification and experience that you can use for travel;
- The work is not city based.

As can be seen from the points above the negative images of the minerals sector, held by the discussion group participants, outweigh the positive images. Whilst this may be of concern in terms of the ability of the sector to attract and retain women it also offers the greatest opportunity for change.

It is clear that the minerals sector remains a non-traditional area for women and from the experience of those who have undertaken vacation

work it is still one where they have to 'masquerade as men'[10]. Women remain highly visible in the workplace which places additional pressure on them to perform at a higher level than their male counterparts. The young women in MRCs who had undertaken some form of work experience generally loved the work. For many it was the chance to work in locations outside of a city or office environment. They saw the industry as being able to provide interesting and challenging jobs where they could make a difference.

However, living on-site raised a number of challenges. As women on-site they are more likely to be the subject of gossip and innuendo if they socialise with their work colleagues. Yet the FYUSS results indicated that an important aspect of working life was being able to socialise after hours with work colleagues. The experience however, is more likely to be one of isolation because there are few women working in the industry and potentially one in which they can find themselves ostracised if they socialise to any great extent with their workmates.

There are a number of recurring themes that occur in relation to the gendered nature of organisational cultures in male-dominated occupations and industries. They include men's exclusionary behaviour which results in women's exclusion from information and decision making, men recruiting in their own image, engaging in practices that ostracise and undermine women and maintaining ways of working that are comfortable for men and which do not challenge the status quo[11]. The embedded nature of gender discrimination is present in what are often seen as neutral work practices and in the cultural norms of organisations. Such practices appear to be common and mundane and therefore are rarely scrutinised or challenged.

Strong masculine cultures are difficult to challenge as an individual. Six types have been identified by Maddock and Parkin. The 'Gentlemen's Club', the 'Locker Room' and the 'Barrack Yard' reflecting traditional and stereotypical views of the different roles women and men are expected to play. 'Gender Blind', 'Smart Macho', and the 'Pretenders' are cultures which maintain traditional dynamics of gender relations despite a rhetoric of equality and no differences in capabilities between women and men[12]. It is probably the latter three types of culture that are more difficult to challenge because the appearance is one of equality, that is, there is company policy in place, training programs on diversity are given, and some women are successful in the system but the experience is highly gendered.

The masculine organisational cultures played out for the women who had worked on mine sites through the need to 'prove themselves' in order to be accepted as a 'girl on site'. It was accepted by them as being the way it is and something that was too difficult for them to challenge or change. There was a fear of being seen as a feminist and this would make the situation even worse. They recognised that that it was not possible to behave in ways that may be considered stereotypically female, that is they couldn't be a 'girl' on-site but there appeared to be little or no sanction for men who behaved in stereotypical masculine ways. They found having to prove themselves annoying and in some instances limiting because they were prevented from taking on responsibilities that would be commensurate with their experience and which they saw being offered to their male counterparts.

10 Bagilhole, B 2002 *Women in Non-Traditional Occupations Challenging Men*, Palgrave Macmillan, Houndsmill pp1

11 Bagilhole, B 2002, *Women in Non-Traditional Occupations Challenging Men*, Palgrave Macmillan, Houndsmill. Morley, L 1999, *Organising Feminisms The Micropolitics of the Academy*, St Martin's Press, New York.

12 Maddock, S & Parkin, D 1994, 'Gender cultures: How they affect men and women at work', in M Davidson & R Burke (eds), *Women in Management*, Paul Chapman Publishing Ltd, London, pp. 29-40.

The students in OPCs had a quite different view regarding the minerals sector as a working environment. The image they held was generally negative and their focus if they considered employment in the sector was much more short-term. It was for them, a sector where you worked for three to five years. As a result you could 'put up' with less than ideal conditions (such as remoteness, FIFO) because you would not be there for any length of time.

5.3 Attitudes towards professional careers in the minerals sector

A number of students from OPCs had not previously considered the minerals sector as a possible site of employment. It was not a sector that they saw actively pursuing them compared for example to some of the large accounting firms. When they did think about working in the sector it was more of a 'job' than a career focus. It was seen as a place where they could earn good money in a short period of time that would then set them up for the rest of their life. Notwithstanding their view of the sector, the students interviewed were very open to the idea of pursuing a career in the sector.

Some of the positive features of a professional career in the minerals sector (as envisioned by students in the discussion groups) included:

- Opportunity to make a difference;
- Opportunities to acquire considerable and varied experience that would facilitate their career progression;
- Opportunities to be involved in hands on projects rather than be removed from projects if based at head office;
- Opportunities to work in a dynamic and growing industry, especially one that offered favourable travel opportunities and good extrinsic rewards (money).

When probed on the possible reaction of parents or partners if they were to end up in such a masculine industry they were adamant that parents (mothers in particular) would be happy to support their career aspirations, decision making and changing career choices. They also expressed a clear intention to do whatever they wanted to do without deference to the opinions of others.

The views of the sector of those in MRCs and OPCs as an employer offering professional career opportunities raise interesting retention challenges. Those who are in OPCs enter the sector with a view that it is a short-term option, not the start of a long-term career in the sector. Those who are in MRCs who intend to have children question the possibility of a long-term career in the sector unless they move to different roles or work independently. The students in MRCs noted the lack of older female role models in the sector. It is perhaps the lack of identifiable role models that helps to perpetuate a short-term focus even for those who have trained specifically for the sector.

6 Summary and Recommendations

This section provides a number of core recommendations aimed at facilitating the minerals sector's ability to attract and retain women. The key question for the minerals sector to consider is, is it willing to change so that women are accepted into the industry for who they are, that is they can be in mining and be, as one of the discussion group participants put it, a 'girly-girl'? This comment was echoed by others who spoke of not being able to be a 'girl' when they were on site. Or is the expectation that the women will have to change so that they can 'fit-in'; are they expected to become one of the boys[13]? Women will survive in such cultures, at least for a period of time, but not thrive and so their full potential will be lost to the sector regardless of how long they actually remain in it. Being an employer of choice for women can provide a competitive advantage to individual mining companies as well as raising the profile of the sector as one that is women friendly.

The Times newspaper in the UK recently published its list of top 50 companies where women want to work[14]. The companies with a thousand or more employees in the UK were required to provide evidence of their achievements across ten categories that included recruitment, retention and development of female talent. The companies listed are considered amongst the most progressive in the UK. The ten criteria are listed below and where

appropriate have been incorporated into the core recommendations for the minerals sector.

- Inspiring leaders
- Training and development
- Work-life balance
- Networking opportunities
- Rewards and recognition
- Employee satisfaction
- Workforce diversity
- Innovative recruitment
- External reputation
- Accountability

13 Bagilhole, B 2002 *Women in Non-Traditional Occupations Challenging Men*, Palgrave Macmillan, Houndsmill.

14 *The Times* 2006 'What criteria were used to identify the 50 most progressive organisations in the UK? October, 4 at www.timesonline.co.uk/article/0,,31909-2381968,00.html

6.1 Core Recommendations for the Minerals Sector

The following recommendations including some suggested strategies are grouped under four headings. Firstly, the focus is on the minerals sector as a potential employer (recommendations 1 and 2). Secondly the focus is on retention (recommendations 3, 4, 5 and 6), and thirdly the focus is on career development for women in the sector (recommendation 7).

6.1.1 The minerals sector as a potential employer

On the basis of research reported here we offer two core recommendations aimed at enhancing attraction and recruitment of women into the sector.

(1) It is recommended that the minerals sector address the negative image held by prospective women employees through a range of innovative marketing initiatives.

This includes, but is not restricted to:

1.1 Information about the full range of professional opportunities that are available in the sector;

1.2 Information about the demographic profile of the sector (as has been done by some of the larger accounting firms to show that it is a place for young people);

1.3 Information about the career opportunities that the sector offers.

(2) It is recommended that the minerals sector review its recruitment strategies with the aim to increase the number of women applicants across all categories of professional positions.

This includes but is not restricted to:

2.1 Targeting university undergraduates across a range of relevant discipline areas so that they are aware of the sector;

2.2 Providing vacation employment to women in MRCs and OPCs;

2.3 Using of a range of advertising campaigns and media to appeal to different professional groups;

2.4 Using images and language that are inclusive;

2.5 Head hunting for senior women;

2.6 Recruitment targets that aim at the same number of female and male applicants for vacant positions;

2.7 Providing a range of scholarships to encourage women to study in areas where they are currently under-represented as a means of increasing the recruitment pool;

2.8 Positioning the industry as an employer of choice, eg. through entry and participation in 'best practice' awards such as the EOWA's Employer of Choice Awards and DEWR's Work and Family awards.

6.1.2 Retention

The following four recommendations offer suggestions aimed at enhancing the retention of women in the sector.

(3) It is recommended that the minerals sector address the strong masculine culture through awareness raising and effective senior leadership that models an inclusive and active approach to supporting women's careers.

This includes but is not restricted to:

3.1 Leadership training for senior managers, managers and supervisors that focuses on organisational cultural change;

3.2 Senior managers, managers and supervisors to be held accountable for improvements in organisational culture;

3.3 Reward structures that promote inclusive behaviour at all levels of the organisation;

3.4 Effective processes that enable the safe reporting of sexual harassment/harassment and personal safety issues.

(4) It is recommended that the minerals sector identify the structural changes that are needed to improve current work practices in relation to flexibility in rostering and the provision of part-time career opportunities (quality career building part-time work).

This includes but is not restricted to:

4.1 Providing the opportunity to attend significant family or personal events as a means of maintaining important relationships;

4.2 Providing the opportunity for couples to be on the same roster pattern (even when one person is on another mine site);

4.3 Developing and implementing a range of protocols that are designed to keep women connected with the organisation during any periods of parental leave;

4.4 Providing a range of graduated return to work options for women who are returning from parental leave;

4.5 Providing 'refresher' training for women who have been on parental leave that brings them quickly up to speed on any workplace changes that have occurred;

4.6 Review structural impediments to the offering of part-time work in professional areas;

4.7 Review opportunities for telecommuting;

4.8 Ensuring that promotional opportunities are available for part-time employees;

4.9 Encouraging male employees to consider part-time options so that part-time positions do not become ghetto positions.

(5) It is recommended that the minerals sector develops a plan that supports all employees to achieve a balance between work, family and life commitments.

This includes but is not restricted to:[15]

5.1 Promoting an organisational culture that encourages and supports family friendly work practices;

5.2 Providing information and support for employees to help them understand their options and the resources available;

5.3 Support the development and implementation of family friendly work practices and services;

5.4 Improve attraction and retention of employees with family responsibilities.

(6) It is recommended that the facilities provided including accommodation be maintained at a reasonable standard.

This includes but is not restricted to:

6.1 Ensuring that the environment is safe for women including adequate levels of security at on-site facilities;

6.2 Ensuring that facilities such as air conditioning are maintained;

6.3 Providing a range of activities on-site that are inclusive.

6.1.3 Career Development

(7) It is recommended that the minerals sector provide support for a range of initiatives aimed at developing women's careers.

This includes but is not restricted to:

7.1 Establishing a leadership development program for women;

7.2 Establishing a sector wide network for professional women;

7.3 Providing gender awareness training for women;

7.4 Establishing a mentoring scheme;

7.5 Identifying and profiling female role models in the sector.

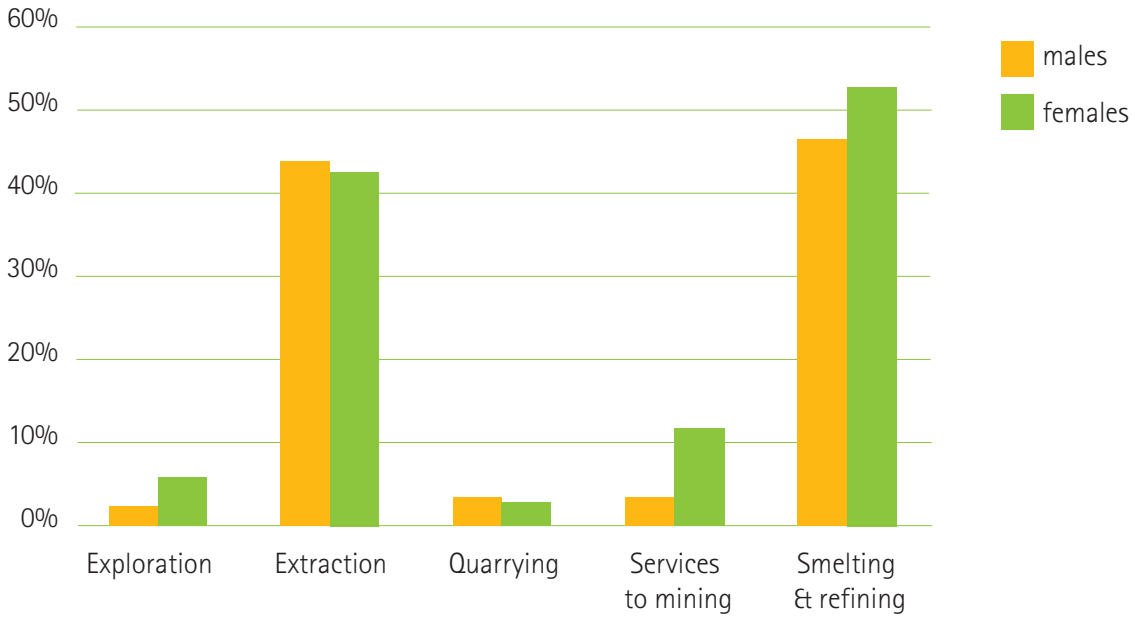
15 These recommendations draw on recommendations from the WA State Health Advisory Committee on Family Friendly Initiatives (of which one of the authors was a member). For further details on the work of this committee, including background papers, see: http://www.health.wa.gov.au/familyfriendly/history/index.cfm

Appendix A:
Profiling the Minerals Sector

The following figures are based on data contained within a recent 2005 National Centre for Vocational Education Research (NCVER) report prepared for the Chamber of Minerals and Energy Western Australia in conjunction with the National Institute of Labour Studies (NILS) at Flinders University. The report, titled *Prospecting for Skills: The Current and Future Skill Needs in the Minerals Sector* is available from the NCVER website (http://www.ncver.edu.au).

Figure A.1 below, based on 2001 Census data, shows the employment distribution across the sectors. The two main areas of production are Extraction and Smelting and Refining. Of all males in the industry 46 per cent work in Smelting and Refining and a further 44 per cent in Extraction. The corresponding figures for women are 53 and 43 per cent, respectively. As may be seen from Figure A.1 women are more likely than men to be found in Services to Mining and Exploration. Figure A.2 further illustrates this point. Of all employees in 'Services to Mining' 31 per cent were women, the highest share of women to be found in any minerals sector shown.

Figure A.1: Distribution of males and females across minerals sector.
Source: 2001 census data



Figures A.3 and A.4 below illustrate the age structure of the industry. As shown, there is an over-representation of older males in the sector. This is particularly apparent when compared to the age distribution of other industry sectors (see figure A.4).

Figure A.2: Employment distribution by sector and gender.
Source: 2001 census data

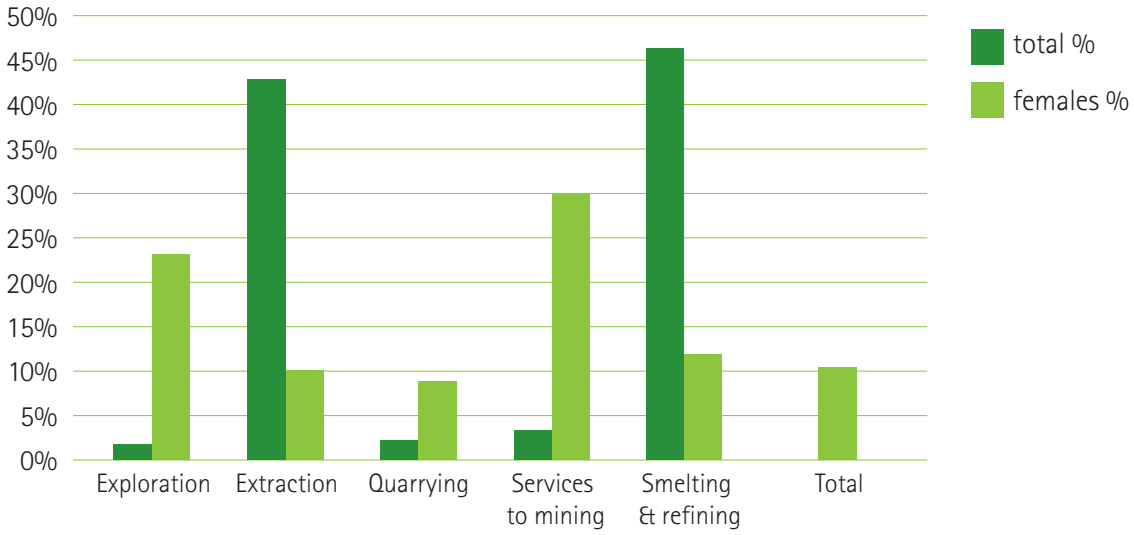
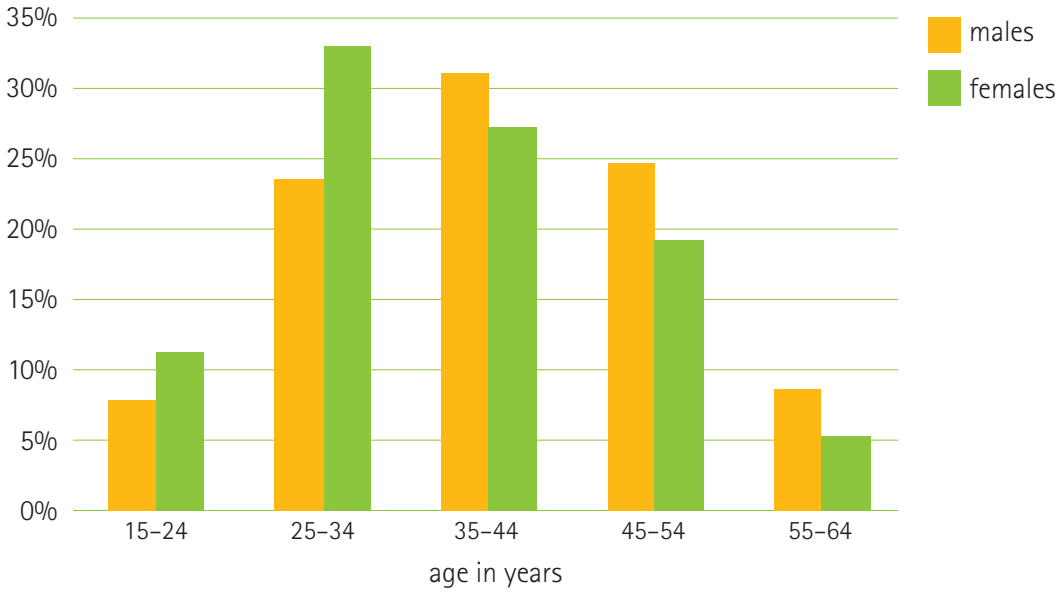


Figure A.3: Age distribution of minerals employees.
Source: 2001 census data



Figures A.5 and A.6 provide insight into the occupational structure of the industry. Whilst Tradespersons and Intermediate Production and Transport workers dominate the industries, it is also apparent that there is strong demand for Managerial and Professional employees. Figure A.6 shows the projected growth in demand for these groups within Western Australia. We can take this indicative of growing demand for Managerial and Professional employees in the minerals sector as a whole.

Figure A.4: Age distribution of employees in minerals sector and total sectors

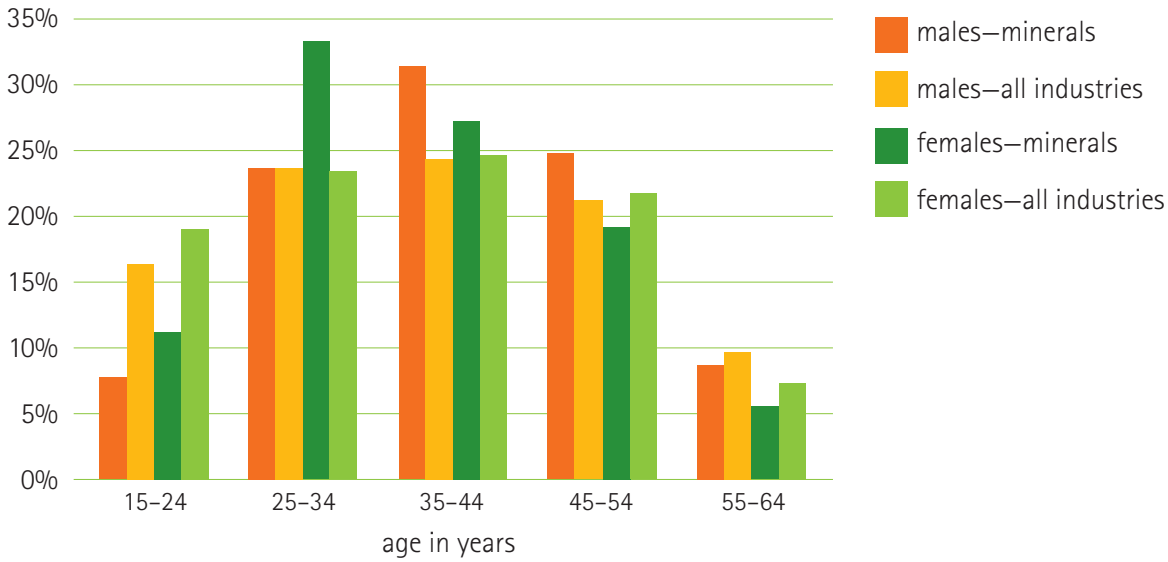


Figure A.5: Employment in the minerals sector by occupation.
Source: 2001 census data, reported in NCVR & MCA report *Prospecting for Skills*

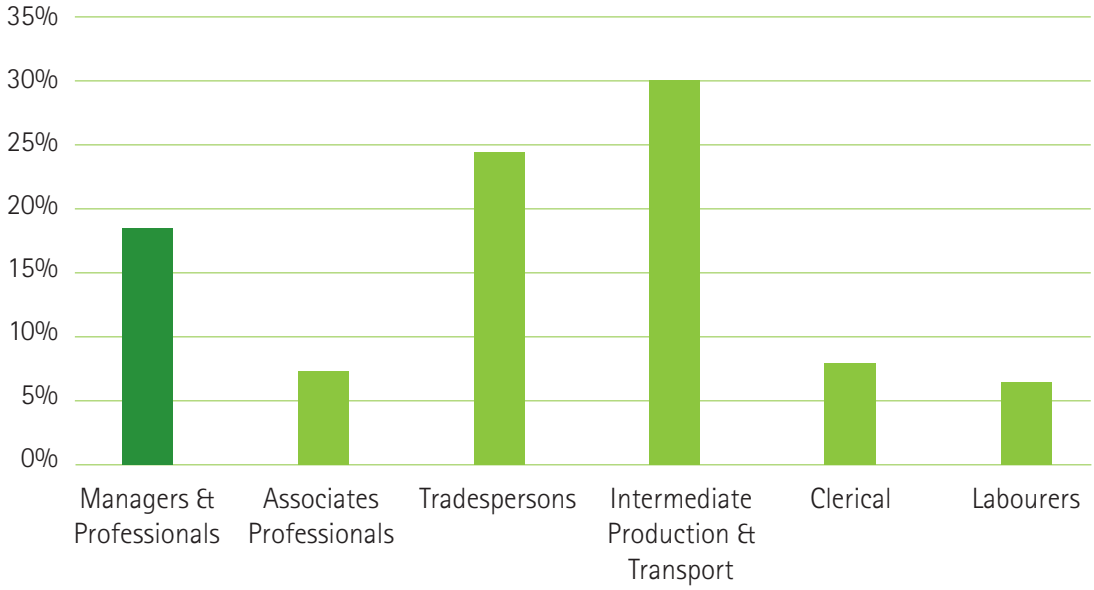
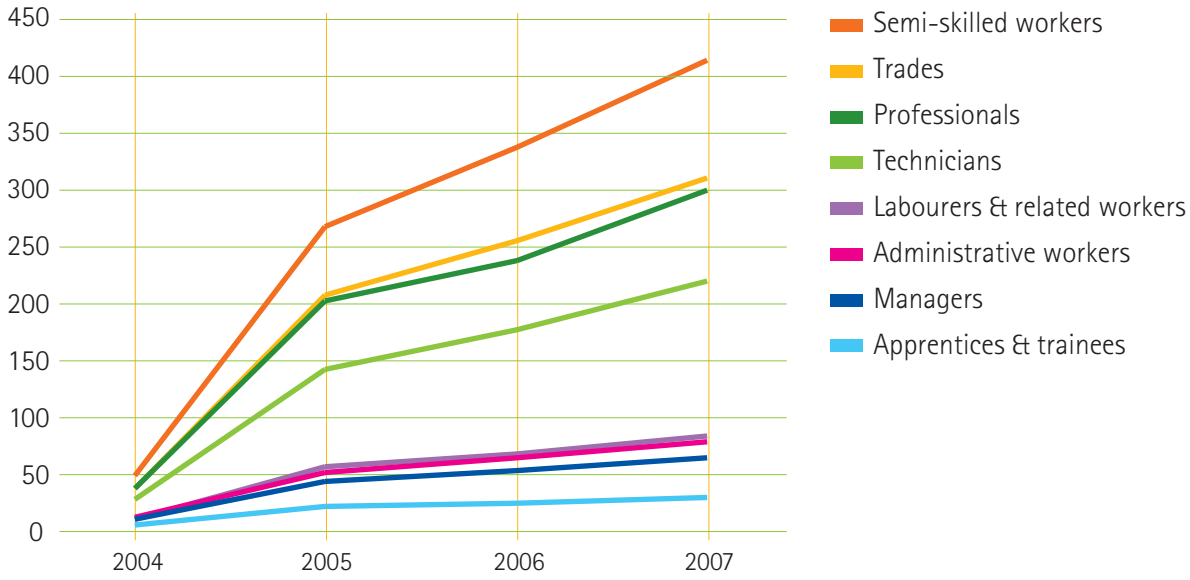


Figure A.6: Average annual employment demand on committed WA projects.
Source: Angus Research 2004



Appendix B: Minerals Related Courses (MRCs)

The following details the broad course descriptors which combine to form the group of 'minerals related courses' (MRCs) as used in Section 3 of this report.

- Social Science
  - Environmental Management (includes Natural Resource Management)
- Engineering
  - Civil/Resource / Construction Management
  - Electrical
  - Mechanical / Mechatronics
  - Oil & Gas (including Mining / Petroleum)
  - Science – Chemistry / Physics (includes Chemical Engineering)
- Recourses and Environment
  - Environmental Science
  - Geology / Metallurgy
- Archaeology.

Appendix C: Discussion Group Questions

This discussion group is focussing specifically on the minerals industry as a possible employer of graduates. We are interested in understanding your current course of study, your career goals and drivers, your expectations with respect to family and family care and your understanding and impressions of the minerals industry, particularly as a site of employment—what would attract you to the sector and what would keep you there?

1. What were some of the reasons you decided to undertake your current course of study?
2. Has any one changed from one course to another or from one major to another? What were some of the reasons for making the change?
3. Have any of you undertaken work in the minerals industry for example as part of an internship or holiday work program?
    a. What was it like working in that environment?
    b. What were the aspects that you really enjoyed?
    c. Were there any aspects that you didn't enjoy?
4. When choosing a career what factors do you see as most important? [notes: looking for responses such as money, job satisfaction, promotion opportunities, travel etc.]
5. Will you look for work in the minerals industry when you finish your program?
    a. What are some of the positive and negative aspects associated with work in this industry? What will attract you to the industry?
6. What sort of things would you be looking for from your employer? What would you expect them to offer?
7. If you are working in the minerals industry would you want it to be on a fly-in–fly-out basis?
    a. What would be the attraction of fly-in–fly-out?
    b. If not working fly-in–fly-out what type of working arrangement would you be looking for?
8. How long do you see yourself staying with the same organisation? What would make you stay? What would make you leave?
9. What difference if any do you think having children would make to your career?
    a. If you have children would you expect to continue working or would you expect to take some time out of paid employment?
    b. If taking time out how long do you think you might take out?
    c. If remaining in the paid work force would you like to work part-time? Full-time?

d. What would you expect your partner to do when you have children—leave the paid workforce (for how long?), work part-time, work full-time

10. What difference if any do you think being female could make to your career? What difference if any do you think it's made to date?

Appendix D: Occupation & Career Expectations—Mean Responses

Table D1: Differences in the mean responses of female students in MRCs and other courses: images of self as graduate in the workplace.

	t	df	Sig. (2-tailed)	Mean	Mean Difference
Wear a suit/smart clothes	2.219	936	**0.027	2.519	0.386
Wear a uniform	0.586	946	0.558	2.786	0.109
Join a trade union	0.418	925	0.676	2.815	0.064
Travel a lot as part of the job	-2.518	948	**0.012	1.857	-0.384
Earn a lot	-0.162	950	0.871	2.179	-0.021
Own the business	-0.163	951	0.870	3.036	-0.025
Drive a company car	-2.616	953	**0.009	2.643	-0.368
Work in a multi-national organisation	-1.227	946	0.220	2.393	-0.194
Be part of a team	-1.367	951	0.172	1.357	-0.161
Frequently work more than 55 hrs per week	-0.531	942	0.595	2.444	-0.078
Regularly socialise after hours with colleagues	0.411	949	0.681	2.143	0.049
Join a professional association	-1.116	946	0.265	1.929	-0.162
Work standard hours	0.205	956	0.838	2.357	0.033

Notes: ** significant at the 5 per cent level or less.

Table D2: Comparing female MRC and OPC student expectations during their first 10 years of work post-graduation.

Over the next 10 years will you:	t	df	Sig. (2-tailed)	Mean	Mean Difference
Select jobs that allow you to balance work & personal responsibilities	-0.116	886	0.907	1.880	-0.016
Climb high on the ladder of success	0.073	756	0.942	1.988	0.012
Have job security	1.851	869	0.065	2.125	0.227
Have periods out of the workforce	-0.934	810	0.351	2.217	-0.131
Work away from home a lot (ie out of town)	-3.616	845	**0.000	2.222	-0.562
Supervise other employees	-0.271	769	0.787	2.286	-0.042
Work in the private sector	0.145	627	0.885	2.316	0.024
Follow partner to a different location for work, if required	0.605	745	0.546	2.368	0.112
Work full time the whole 10 years	-0.083	809	0.934	2.391	-0.014
Do further study	1.014	822	0.311	2.481	0.151
Have more than one employer (at the same time)	-2.395	764	**0.017	2.545	-0.338
Be based interstate	-1.566	772	0.118	2.579	-0.270
Work in the public sector	1.501	647	0.134	2.579	0.242
Work shifts	-0.467	830	0.641	2.609	-0.093
Be based overseas	-0.846	781	0.398	2.700	-0.152
Put job ahead of personal commitments	-1.576	843	0.115	2.708	-0.243
Work part-time	-0.157	818	0.875	2.792	-0.024
Change jobs to suit your personal lifestyle	0.982	768	0.326	2.810	0.157
Regularly work at home	-1.689	876	0.091	2.833	-0.274
Change jobs frequently	-0.555	795	0.579	2.955	-0.075
Work in the community/not-for-profit sector	0.391	769	0.696	3.000	0.065
Undergo a major change in career direction	1.300	713	0.194	3.167	0.205
Be self employed	-0.065	862	0.948	3.192	-0.009
Work from home (as well as at another work location)	-1.001	882	0.317	3.208	-0.138

Notes: 1=Yes, definitely; 2=probably yes; 3=probably no; 4=no, definitely not; 5=can't say.; ** indicates significant at the 10 per cent level or less.

Female Mining Engineering and Minerals Processing Students: Career Drivers, Expectations and Perceptions

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Tables

Figures

List of abbreviations

ABS	Australian Bureau of Statistics
AusIMM	Australian Institute of Mining and Metallurgy
CBSR	Colmar Brunton Social Research
CSRM	Centre for Social Responsibility in Mining
EEO	Equal Employment Opportunity
MCA	Minerals Council of Australia
MTEC	Minerals Tertiary Education Council
OfW	Australian Government Office for Women
SPSS	Statistical Package for Social Sciences
QRC	Queensland Resources Council
VET	Vocational Education and Training
WiSER	Women in Social and Economic Research

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Acknowledgements

The CSRM would like to thank the staff and students at The University of Queensland, The University of New South Wales, Curtin University of Technology (Western Australian School of Mines) and Murdoch University who contributed to this study.

We are grateful to the Australian Government Office for Women and the Minerals Council of Australia (MCA) for jointly funding the research.

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Executive Summary

This report presents findings from a survey of second, third and fourth year students enrolled in mining engineering and minerals processing programs at The University of Queensland, The University of New South Wales, Western Australian School of Mines (Curtin University of Technology) and Murdoch University.

The survey was designed to address the following key research questions:

- What motivates female students to enrol in mining-related degrees?
- Having enrolled, how likely are they to take up a career in the minerals industry and how long are they likely to stay?
- What factors are likely to influence their decisions to stay or leave the industry?
- What are their personal and career goals and how, if at all, do they differ from those of male students?
- What are their impressions of the minerals industry as a place for women to work?
- What suggestions do they have on how to attract more women into mining-related courses?

The survey was distributed and completed during class time. In total, 329 students completed the survey, of whom 51 (15.5%) were female and 277 (84.5%) were male.

Key findings

Profile of female respondents.

- Most had come straight from school to University.
- 69% were single.
- 53% were in receipt of a scholarship or cadetship, compared to 38% of the males.
- 69% had done vacation experience work with a mining company and 73% had been on field trips.
- Two-thirds had family or friends who worked in the industry.

Career plans

- Nearly all respondents—male and female—were planning to work in the mining industry after graduation.
- Just under half of both males and females said that they expected to spend 15 years or less working in the industry.
- 78% of the females—compared to 48% of the males—agreed that it was likely that they would interrupt their career at some stage for personal reasons.
- Females were considerably more likely than males (88% vs 55%) to want a career that gave them the ability to adapt work arrangements to life circumstances.

Motivations for choosing a mining career

- Male and female students gave similar reasons for choosing their field of study, except that females were more likely to acknowledge the influence of family or friends.
- Both males and females identified the opportunity to do vacation work as an important consideration in their choice of a course of study.
- For both males and females, the most important considerations when choosing a career related to income, job security, and opportunities for advancement.
- Being able to combine work and family was seen as an important consideration by more than half of the females.
- Only about a third of students cited the availability of financial support as an important factor in selecting a course of study.

Perceptions of the Industry

- Both female and male students generally had positive views of the industry.
- The aspects of the industry which were seen as most unattractive related to the difficulty of balancing career demands with parenting and relationships.
- More than one-third of all students agreed that it was more difficult for women than men to have a career in the minerals industry.
- A small proportion of the females saw sexual harassment as a problem in the industry.
- Close to half of the female respondents gave a neutral answer when asked about the strength of the industry's commitment to equal opportunity.
- About one-third of the females—and a similar proportion of the males—agreed that working in the industry is harder for women than men.

Suggestions for attracting more female students

The main suggestions made by students were to:

- educate the public about the industry to correct misconceptions of mining and the associated negative image
- advertise the benefits of working in the industry more widely
- ensure that there are more female role models and mentors.

Recommendations

Actions that would assist in attracting more female students into mining programs include:

- develop a network structure for female students at tertiary and secondary level to expose them to positive female role models and industry success stories
- formalise and strengthen industry and tertiary participation through a co-operative program of extended work experience, such as through internships or industrial placements for students in mining-related courses
- commencing at first year level, promote the graduate programs and other post-tertiary employment options that are available, to ensure that students are informed of the scope of opportunities on offer by the industry
- promote to potential students the diversity and complexity of mining careers and the options for horizontal and vertical career mobility
- promote vacation employment opportunities in the industry and the opportunities that the industry provides for travel
- highlight that personal success in the mining industry can be attained by a variety of paths and does not necessarily involve embracing the culture of long working hours
- ensure that the image the industry seeks to convey to prospective female employees is aligned with practice on-the-ground. This will require:
    - taking decisive action at the operational level of the industry to implement systems and process improvements to the management of gender diversity in the workforce
    - critically reviewing the practice of long working hours and determining whether this practice is operationally and managerially appropriate given other considerations, such as labour supply and attraction/retention issues
    - developing and implementing stronger career planning strategies to assist women (and men) to manage family-related career interruptions in a way that minimises the negative impact
    - investigating, identifying, and promoting opportunities for flexible work arrangements, particularly at the site level.

1 Introduction

This report presents findings from a survey of students enrolled in mining engineering and minerals processing programs at four Australian tertiary institutions belonging to the Minerals Tertiary Education Council (MTEC): The University of Queensland, The University of New South Wales, Western Australian School of Mines (Curtin University of Technology) and Murdoch University. The survey focused on identifying factors that may facilitate or inhibit the attraction of female students into the industry and their propensity to remain in the industry.

The survey was undertaken as part of a larger program of work commissioned by the Minerals Council of Australia (MCA) and the Australian Government Office for Women (OfW) which is aimed at supporting the development of an industry agenda to increase significantly, within five years, the participation of women in the minerals industry. Other relevant studies are:

- a study by the Centre for Social Responsibility in Mining (CSRM) of women currently working in the minerals industry (Kemp & Pattenden 2007)
- a study by Curtin University's Women in Social and Economic Research (WiSER) unit of female University students enrolled in 'minerals related courses' in Western Australian universities (Lord et al. 2007).

1.1 Background

The Australian minerals industry is currently enjoying economic boom conditions, where opportunities for further development are being constrained by a lack of suitably qualified and skilled employees. There is a shortage of skilled tradespersons and professionals across all industries in Australia, which is particularly acute in the minerals industry (Lowry et al. 2006). In a recent survey of minerals industry professionals, 40% of respondents identified the shortage of skilled personnel as the most important issue facing the minerals industry in Australia (CSRM & UQCSR 2006). According to research undertaken by the National Institute of Labour Studies, over the next 10 years the industry is likely to need to recruit an additional 27,000 tradespersons, 22,000 semi-skilled workers and 7,700 professionals (Lowry et al. 2006).

A priority industry strategy for ameliorating the skill shortage in the industry is to encourage more women to take up careers in the minerals industry. Currently, women comprise only around 13% of the total mining industry workforce, being employed principally in clerical and administrative roles. In the high demand area of skilled trades, only 1.5% of the industry workforce is female (ABS 2006). The situation is somewhat better in relation to professional occupations, with women accounting for around 22% of the industry workforce. However, the ABS definition of a professional does not distinguish between those employed in operational roles (e.g. mining engineers) and those in support functions (e.g. accountants, human resource professionals). In the more technical professions, where the skill shortage is most acute, the representation of women is considerably lower. Notably, women constitute only around 7% of the membership of the Australian Institute of Mining and Metallurgy (AusIMM) the main professional association for the industry.

In recent years, there has been a concerted effort made to encourage more young women to enrol in University programs, such as mining engineering and minerals processing, that are likely to lead to a career in the minerals industry. These initiatives have included outreach programs into the secondary school system, advertising campaigns and scholarship schemes targeted specifically at female students. These initiatives are yet to be systematically evaluated, but their impact to date appears to be fairly limited. For example, there has been little change in the number of female students enrolling in mining engineering at The University of Queensland over the last four years (unpublished data provided by Dr Mehmet Kizil).

Given the apparently slow rate of progress being made in attracting more women into the mining professions, there is clearly a strong case for conducting research into student perceptions of the industry and the factors that impact on student choices about programs of study. Both this study and the WiSER study address this need.

1.2 Objectives and scope

The original brief for this project was to survey women enrolled in courses relevant to the minerals industry in the Vocational Education and Training (VET) and University sectors, in order to collect data about:

- prevailing attitudes to women's employment in the minerals industry
- perceptions regarding structural and cultural barriers to women's employment in the minerals industry
- students' views on strategies that may increase the attractiveness of the minerals industry as a potential employer, and assist women to enter and remain employed in the minerals industry.

Following consultation with the MCA, it was decided to focus specifically on the university sector, due to the logistical difficulties of undertaking research in the VET sector and the very different structures, programs and administrative processes in place in the two sectors.

In contrast to the WiSER study, which had a broader focus and included students who did not intend to work in the industry, the CSRM survey was restricted to students in second year and beyond enrolled in Mining Engineering and Minerals Processing programs. These were students who, by and large, had already decided to embark on a career in the mining industry. The survey encompassed both female and male students enrolled in the relevant programs. This was done partly to provide a comparison point and partly to facilitate administration of the survey (see next section).

1.3 Report structure

This report documents the main survey findings, discusses implications for the minerals industry and concludes with a series of recommendations. The next section of the report (Part 2) describes the research method. Part 3 presents the findings from the survey and compares them with outcomes from the WiSER study, where relevant. Part 4 assesses the implications of these findings for industry and contains our conclusions and recommendations.

2 Research Method

The research strategy for this project comprised a literature review, a survey of students currently studying mining-related courses at MTEC universities, and consultation with other researchers conducting concurrent projects in this field.

2.1 Literature review

The first stage of the project involved a review of the literature on female engineering students and on women who work in non-traditional occupations. The purpose of this review was to identify the major issues relating to the attraction of women into the minerals industry and to determine the likely impact of these issues on female students currently undertaking mining engineering or minerals processing degrees. The literature review encompassed:

- government and mining industry reports
- academic literature and research reports
- statistical data from the ABS, MTEC and from university records.

This material helped us to identify the key issues relating to the attraction of female students to traditionally male dominated study programs and informed the development of the survey design.

2.2 The survey

2.2.1 Sample selection

The survey sample comprised students at the four MTEC Universities which offer Mining Engineering and Metallurgy/Minerals Processing degrees: The University of Queensland, The University of New South Wales, Curtin University of Technology (including the Western Australian School of Mines campus at Kalgoorlie) and Murdoch University. The survey was restricted to undergraduate students in the second, third or fourth year of their degrees. First year students were excluded because The University of Queensland has a common first

Photo courtesy CRL

year for all Engineering students and students are not required to nominate their program of study until the second year.[1]

Although the primary focus of the study was on understanding the attitudes and motivations of females considering a career in the minerals industry, men were also included in the survey. This decision was made for two reasons: to facilitate the administration of the survey in class, and to enable statistical comparison of the data by gender.

At each campus, one staff member took responsibility for overseeing the distribution of the survey and collecting all of the completed surveys and mailing them back to CSRM. The instructions were to distribute the survey to classes which: (a) were notionally attended by all students in that year of the program; and

1 The MTEC initiative also covers Earth Sciences at several universities. Students enrolled in these programs were not included in the current study as Earth Sciences is more of a generalist degree than a qualification specifically tailored to working in the minerals industry.

(b) contained at least one female student. Surveys were distributed, filled out and collected during the designated lecture period. This ensured a very high rate of response amongst attendees, although it meant that the students who were absent from class on that day were likely to have been excluded.

In total, 329 students completed the survey, of whom 51 (15.5%) were female and 277 (84.5%) were male, and one was unidentified. The breakdown of responses by each institution is shown in Table 1.

Table 1: Gender profile of responses from participating universities

University	Male	Female	Total
UQ	114	25	139
Curtin	83	17	91
UNSW	77	8	85
Murdoch	3	1	4
Total	277	51	328

2.2.2 Survey design and analysis

The survey was designed to address the following key research questions:

- What motivates female students to enrol in mining-related degrees?
- Having enrolled, how likely are they to take up a career in the minerals industry and how long are they likely to stay?
- What factors are likely to influence their decisions to stay in or leave the industry?
- What are their personal and career goals and how, if at all, do they differ from those of male students?
- What are their impressions of the minerals industry as a place for women to work?
- What suggestions do they have on how to attract more women into mining-related courses?

The questionnaire took approximately 15 minutes to complete and comprised mainly closed response questions. A copy of the questionnaire is reproduced in Appendix 1.

Survey responses were analysed using SPSS software to obtain basic frequencies and to test for differences between groups.

2.2.3 Informed consent

Ethical approval was obtained from The University of Queensland for this study. Approval was provisional on obtaining informed consent from all participants prior to collecting data.

Background information on the study was provided to all students and they were advised that participation in the study was strictly voluntary and that their responses would be treated as confidential. They were then asked to indicate their consent regarding the voluntary nature of their participation.

Completed surveys were placed in a sealed envelope and returned to CSRM for processing, where the data were de-identified.

2.3 Methodological Issues

2.3.1 How representative are the findings?

Given the method used to administer the survey and the size of the sample, the findings should be broadly representative of the views of female (and male) students enrolled in mining engineering and minerals processing degrees at the participating universities. However, female students enrolled in these programs may not be representative of the larger group of students who are potentially eligible to undertake these programs (such as those doing engineering or science degrees). This is because there is a 'selection bias' factor: that is, students who are positively inclined towards the mineral industry and perceive that they have the qualities necessary to be successful in the industry can generally be assumed to be more likely to enrol in mining-related programs than their counterparts. For information about students who form part of the same catchment group, but are not enrolled in a mining professional degree, readers are referred to the WiSER study (Lord et al. 2007).

2.3.2 Reporting of differences

At various points in the survey, comparisons are made between the responses of male and female students. It is standard research practice to report only those differences which meet a test of statistical significance. This is to guard against the possibility that apparent differences between groups are simply a random result rather than being indicative of a 'real' difference. The level of probability that is normally used to signify statistical significance is 0.05, meaning that there is a less than 1 in 20 likelihood that the result was obtained by chance.

Photo courtesy Zinifex Ltd

3 Survey Findings

The survey findings are presented under five headings:

1. **Participant profile:** basic demographic information about survey participants and their study choices.
2. **Career plans:** how respondents see their career developing.
3. **Motivations:** participants' reasons for choosing their current course of study, general career expectations and their perceptions of the attractiveness of the minerals industry as a career option.
4. **Impressions of the minerals industry:** perceptions about personal qualities that may be required for a successful career in the industry and views on the minerals industry as a place for women to work.
5. **Student suggestions** on how to attract more women into the industry.

3.1 Participant profile

3.1.1 Gender

As noted above, 329 students responded to the survey, of whom 51 (15.5%) were female and 277 (84.5%) were male.

3.1.2 Age

- The women ranged in age from 18 to over 24 years (Table 2).
- Around 85% were aged 21 or younger.
- Based on their ages, it is apparent that most of the women had commenced university directly after completing their secondary education.

Table 2: Age profile of female respondents

Age (years)	% (n=51)
18	8
19	24
20	33
21	20
22	8
23	4
24	4

The male respondents had a similar age profile.

3.1.3 Family and relationships

- More than two-thirds of the women (69%) were single.
- One respondent (2%) had a child.
- One respondent (2%) identified as being of Aboriginal or Torres Strait Islander descent.
- Around two-thirds (67%) of the females and 59% of the males reported that they had family or friends who worked in the minerals industry.

3.1.4 Course of study

The majority of female respondents (57%) were studying mining engineering and 29% were studying minerals processing/metallurgy. By comparison, 79% of the males were studying mining engineering and only 13% were studying minerals processing/metallurgy (Table 3).

Table 3: Current course of study

Course	Female % (n=51)	Male % (n=277)
Mining Engineering	56.9	78.8
Minerals Processing / Metallurgy	29.4	13.5
Other	13.7	7.7

Table 4: Current year of study

Year	Female % (n=51)	Male % (n=277)
2nd year	41.2	39.9
3rd year	31.4	34.8
4th year	17.6	13
Other	9.8	12.3

Table 4 shows the proportion of students in each year of study. The concentration of students in the earlier years of their degree is consistent with MTEC data showing that the number of students enrolling in minerals processing and engineering courses has increased in the last two years. This increase probably reflects the current mining boom.

3.1.5 Financial support

Slightly more than half of the female respondents (53%) were in receipt of a scholarship or cadetship, compared with 38% of the males. This is an indication that there are good support systems in place for women students who show an interest in pursuing a career in the industry.

3.1.6 Exposure to the minerals industry

Participants were asked a range of questions about their level of exposure to the minerals industry. Most of the students, particularly those in later years, had spent at least some time at a mining operation:

- around 73% of the females had been on field trips and/or site visits during their studies
- more than two-thirds (69%) of females had also had vacation experience with a mining or minerals processing company.

This was similar to the exposure that the male students had received.

Profile of female respondents

- Women made up 15% of the total sample.
- More than two-thirds (69%) were single and only one had a child.
- The majority (53%) were in receipt of a scholarship or cadetship, which is indicative of a good level of support.
- More than two-thirds (69%) had done vacation experience work with a mining company and 73% had been on field trips.
- Two-thirds had family or friends who worked in the industry.

3.2 Career plans

The vast majority of the students—male and female alike—were planning on a career in the minerals industry following graduation (Table 5). This was not surprising, given that the programs they were enrolled in had a strong vocational focus.

In nearly all cases, the students were intending to work for a mining company rather than for a contractor or a consulting firm. Only a small percentage were considering further study as an option.

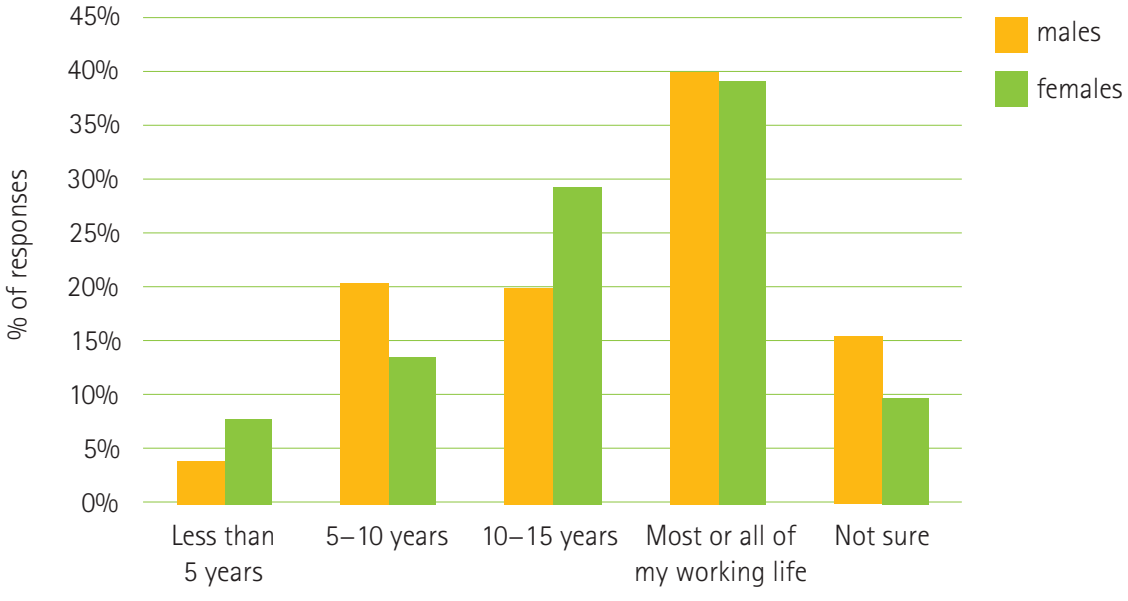
Table 5: Student intentions on completion of current study program

Likely Career Option	female % (n=51)	Male % (n=277)
Work for mining company	86.3	85.9
Work for a contractor	3.9	9.0
Join a consulting firm	5.9	4.3
Work in another industry	3.9	1.8
Undertake further study	7.8	4.7
Other	3.9	1.4
Unsure	5.9	6.1

Note: percentages add to more than 100 as some students gave more than one answer.

Students were next asked to indicate how long they were planning to stay working in the minerals industry. Again, there was little difference in the responses of the two groups (Figure 1). Notably, less than half (40%) of either group envisaged working in the industry for most or all of their working lives, whereas, close to half indicated an intention to stay in the industry for 15 years or less.

Figure 1: Intention to stay working in the minerals industry



Although males and females had similar expectations about how long they would stay in the industry, there were significant differences in terms of their expectations about career continuity.

Table 6, below, shows that 78% of the females—compared to 48% of the males—agreed with the proposition that 'I expect to interrupt my career at some stage for personal reasons (e.g. to have a family, or provide support to a partner)'. Females were also significantly more likely than males (88% vs 55%) to agree that 'I want to be able to enter, leave and re-enter the workforce or work part-time, depending on my life circumstances'.

Table 6: Career aspirations: male and female responses

Aspiration	Female % agreeing or strongly agreeing	Male % agreeing or strongly agreeing
Interrupt career for personal reasons	78.4**	48.2
Ability to adapt work arrangements to life circumstances	88.2**	54.9
Work more than one career	52.9	50.5

** male/female difference significant at the .01 level

Career plans of female respondents

- Nearly all of the survey respondents—both male and female—were planning to work in the mining industry after graduation.
- Just under half of the females and a similar proportion of males said that they expected to spend 15 years or less working in the industry.
- Most of the female students (78%) agreed that it was likely that they would interrupt their career at some stage for personal reasons; significantly fewer males (48%) shared this expectation.
- Females were considerably more likely than males (88% vs 55%) to want a career that gave them the ability to adapt work arrangements to changing life circumstances.

3.3 Motivations

A major objective of the project was to understand the motivations of women planning a career in mining engineering or minerals processing. To this end, the survey design incorporated a series of questions relating to:

- study choices at university level
- student perceptions of a desirable career
- student perceptions of the minerals industry
- longer term personal and career aspirations.

3.3.1 Study choices

Questions about study choices were designed to find out what motivated females to undertake specialised courses such as mining engineering and minerals processing.

Table 7 shows that the female students gave similar reasons to the male students for choosing their course of study. For both groups the two most commonly cited reasons were: 'to equip me for a career in the minerals industry' (75%) and 'to learn about the minerals industry' (69%).

The one statistically significant gender difference was that females (44%) were more likely than males (27%) to cite 'encouragement from family or friends' as an important influence in their study choices.

Opportunities to undertake vacation work were a significant drawcard, being cited as an important factor by 51% of females and 56% of males. Notably, this factor was given a higher rating than the availability of financial support in the form of scholarships or cadetships.

At the other end of the scale, few students identified career guidance at school/university as a significant influence on their study choices. This was also a finding of the WiSER survey of first year students undertaking minerals-related courses at Western Australian universities (Lord et al. 2007).

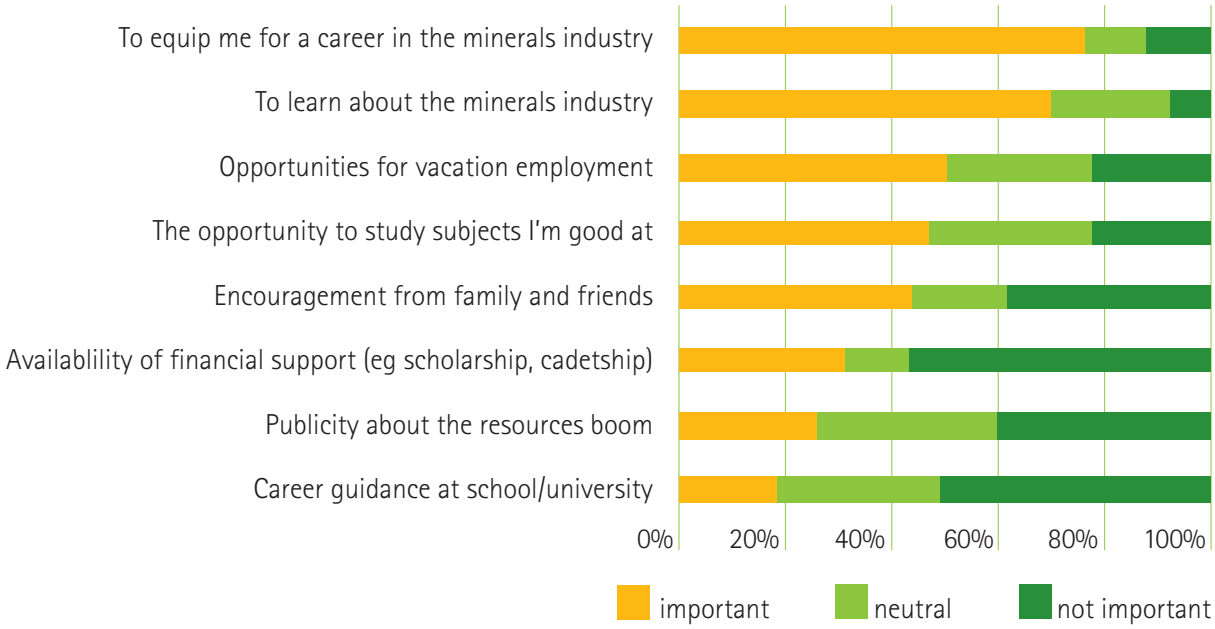
Table 7: Reasons for choosing current course of study: male and female responses

Year	Female % rating as important or very important	Male % rating as important or very important
Equip me for a career in the minerals industry	76.0	78.9
Learn about the minerals industry	70.0	67.4
Opportunities for vacation employment	51.0	56.1
Opportunity to study subjects I'm good at	46.9	50.0
Encouragement from family or friends	44.0*	26.6
Availability of financial support	31.3	32.4
Publicity about the resources boom	26.0	29.5
Career guidance at school/university	18.3	16.4

*male/female difference significant at the .05 level.

Figure 2 provides a more detailed breakdown of the responses provided by the female students. The factor that was most often cited as **not** important was the availability of financial support, followed by career guidance at school.

Figure 2: Reasons given by female students for choosing current course of study



3.3.2 Characteristics of a desirable career

Study participants were asked to indicate how important various factors were in choosing a career (as distinct from a course of study). Again, there was little difference in the responses of male and female respondents, apart from males giving an even higher rating than females to the earnings potential of a job (Table 8).

For both males and females, the key factors were:

- being able to work in an area where they can use their strengths
- earnings potential
- job security
- career potential and development
- travel opportunities.

The ability to combine work and family was identified as important or very important by more than half of the female respondents (56%), compared to 40% of the males.

Table 8: Factors influencing career choices: male and female responses

Factor	Female % rating as important or very important	Male % rating as important or very important
Being able to work in an area where I can use my strengths	84.3	84.9
Job security	78.5	83.3
Earnings potential	78.4*	90.3
Travel opportunities	78.4	77.9
Doing work that gets me out of the office	77.5	74.5
Opportunity for rapid advancement	76.5	79.8
Challenges that the career offers	74.5	76.2
Having time for interests outside of work	72.6	73.9
Being able to work in an industry where there is a blend of professional disciplines	66.7	68.9
Working in a profession that gains respect from others	64.0	56.4
Opportunity to move between workplaces	61.2	58.7
Doing something that contributes to society in a practical way	56.0	54.5
The ability to combine work and family (e.g. by working part-time)	56.0*	40.0
Ability to work as part of a team	53.0	56.9

*male/female difference significant at the .05 level.

Several of these survey items were similar to those used in the WiSER study (Lord et al. 2007). Because of differences in wording care must be taken in comparing the two surveys, but there appears to be both common and divergent themes.

In both surveys, female respondents on mining courses assigned a similar level of importance to:

- career opportunities
- career challenges
- the opportunity to travel
- earnings potential
- community and professional respect
- job flexibility.

The main apparent differences were that the students in the WiSER study:

- appeared to be less concerned about job security
- were more likely to highlight the opportunity to contribute to society as a motivating factor.

Further research, using identically worded survey instruments and sampling methods, would be required to confirm whether these differences are real and, if so, to explore the implications.

Motivations for choosing a mining career

- Overall, male and female students gave similar reasons for choosing their field of study, except that females were more likely to acknowledge the influence of family or friends.
- Both males and females identified the opportunity to do vacation work as an important consideration in their choice of a course of study.
- Only about a third of students cited the availability of financial support as an important factor in selecting a course of study.
- For both males and females, the most important considerations when choosing a career related to income, job security and opportunities for advancement.
- Being able to combine work and family was seen as an important consideration by 56% of the female respondents and 40% of the males.

3.4 Perceptions of the Industry

3.4.1 Personal qualities required to be successful in the minerals industry

There was a high level of agreement amongst male and female respondents about the qualities that were needed to have a successful career in the minerals industry. Almost all respondents nominated as important qualities:

- a willingness to work in remote locations
- being prepared to work long hours
- personal qualities such as being confident and liking a challenge; and
- being a team player.

In addition, more than half of both groups agreed that 'having a supportive partner/spouse' and 'being prepared to put your career first' were important considerations. The only difference of note was that males were more inclined than females to rate as important 'having a strong desire to prove yourself'.

Table 9: Personal qualities required for a successful career in the minerals industry: male and female responses

Quality	Female % rating as important or very important	Male % rating as important or very important
Being willing to work in remote locations	96.1	91.0
Being a team player	96.0	89.9
Being prepared to work long hours	94.1	91.0
Liking a challenge	88.2	88.4
Being confident and self-sufficient	86.3	85.6
Being emotionally strong	66.7	66.4
Having a supportive partner/spouse	62.7	66.1
Being prepared to put your career first	56.9	53.1
Having a strong desire to prove yourself	54.0*	70.0

*male/female difference significant at the .05 level.

3.4.2 Unattractive aspects of a career in mining

Having addressed the issue of what factors made for a desirable career, survey participants were then asked if there were aspects of the minerals industry that made it unattractive as a career option. Results for both male and female respondents are shown in Table 10.

Table 10: Aspects of a minerals industry career considered unattractive: male and female responses

Aspect	Female % agreeing or strongly agreeing	Male % agreeing or strongly agreeing
Difficulties in balancing parenting and career	59.2	45.4
Difficulties in balancing relationships and career	53.1	60.3
Having to work in remote locations	26.5	34.5
Course requirements are daunting	22.4	15.9
Unattractive work arrangements	20.4	27.5
Negative media image of industry	16.3	9.3
Lack of social life	22.5 **	41.6
Masculine culture of industry	29.2 **	13.9
Other	0.0	2.5

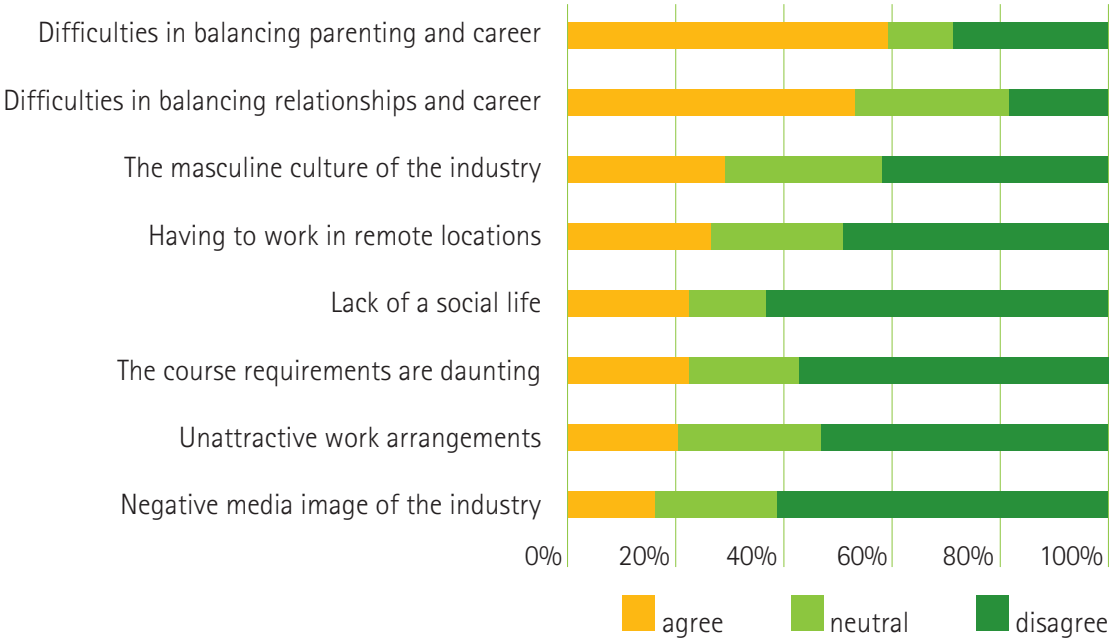
** male/female difference significant at the .01 level.

Key points to note from these data are:

- for both female and male respondents, the most frequently nominated negative aspects related to the difficulty of balancing a career in the industry with parenting and relationships
- 29% of females agreed that the masculine culture of the industry was an unattractive aspect, compared to 14% of males
- males were considerably more likely than females to nominate the lack of a social life as a negative aspect (44% vs 22%).

A more detailed breakdown of the responses of female participants is provided in Figure 3.

Figure 3: Perceived unattractive aspects of a career in the minerals industry: female respondents



3.4.3 General impressions of the minerals industry

Respondents generally had positive impressions of the minerals industry, with the great majority of both males and females agreed that:

- there are lots of job opportunities in the minerals industry at present and job security is not an issue
- the minerals industry is safety conscious
- the industry is an exciting place to be working
- the industry is technologically advanced (Table 11).

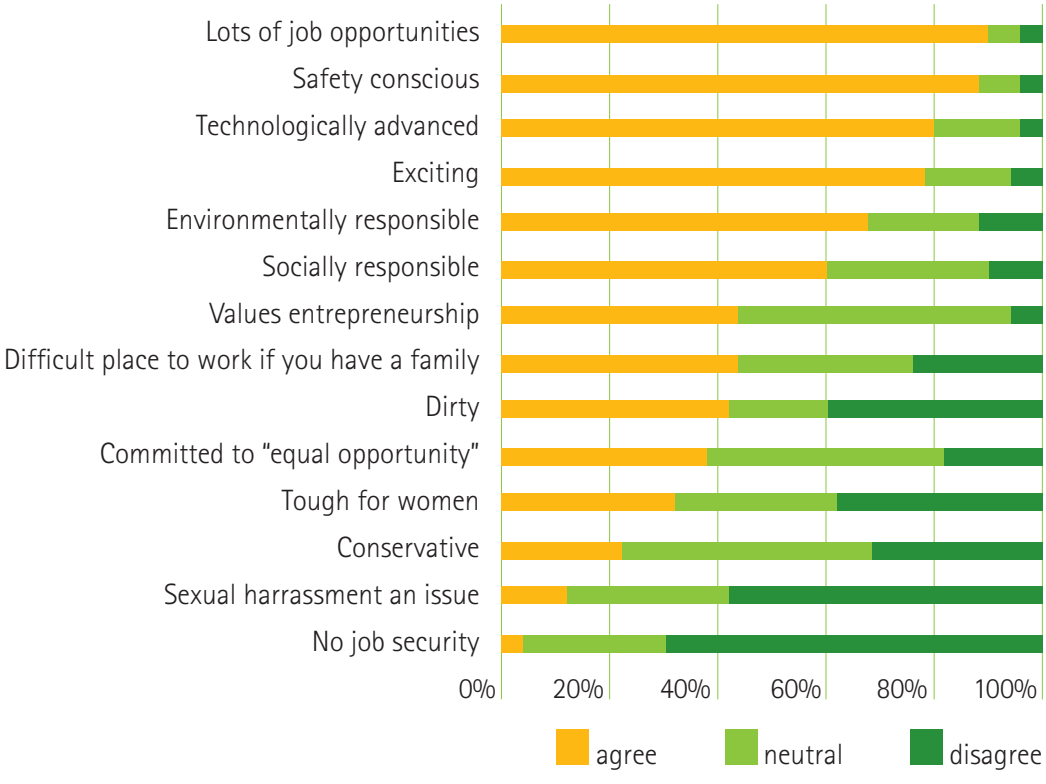
In addition, a clear majority of respondents agreed that the industry is environmentally and socially responsible and very few viewed its performance in these areas in a negative light.

Table 11: General impressions of the minerals industry: male and female responses

Aspect	Female % agreeing or strongly agreeing	Male % agreeing or strongly agreeing
Lots of job opportunities at present	90.0	90.6
Safety conscious	88.0	86.3
Technologically advanced	80.0	80.2
Exciting industry to be working in	78.0	83.4
Environmentally responsible	68.0	60.2
Socially responsible	60.0	57.8
Values entrepreneurship	44.0	50.2
Difficult place to work if you have a family	44.0	47.7
Dirty	42.0	31.8
Committed to 'equal opportunity'	38.0	51.1
Tough for women	32.0	32.6
Conservative	22.0	27.5
Sexual harassment is a problem	12.0	14.8
No job security	4.0	10.9

Figure 4 provides a more detailed breakdown of the responses of female participants.

Figure 4: General impressions of the minerals industry: female respondents



3.4.4 The mining industry as a place for women to work

Around 32% of females and a similar proportion of males concurred with the statement that 'working in the industry is tough for women'. Also, as noted above, 29% of the female respondents agreed that the masculine culture of the industry was an unattractive aspect.

Only a small minority of the female respondents (12%) agreed that sexual harassment was a problem in the industry, whereas close to 60% disagreed, with the balance being undecided (see Figure 4, above).

Responses were more ambivalent on the question of whether the industry was committed to equal opportunity, with 43% indicating that they neither agreed nor disagreed with the statement 'The minerals industry is committed to equal opportunity.' and a further 18% expressing a negative view (Figure 4).

It should be noted that, while the majority of the students who completed the survey had had some direct exposure to the industry via vacation work and field trips, this was often of a short term nature. Consequently, their perceptions of how the industry treats issues such as sexual harassment and discrimination is unlikely to be as firmly grounded in experience as those of women already working in the sector. The WiSER study (Lord et al. 2007) found that sexual harassment continues to be seen as a negative characteristic of the industry and so may remain a determinant for women considering a career in mining. Similarly, the CSRM Retention of Women in Minerals Industry survey (Kemp & Pattenden 2007) found that about a third of survey respondents (32%), all of whom currently work in mining, considered sexual harassment to be an issue for some women in the industry.

A separate question asked respondents if it was more difficult for women than men to have a career in the minerals industry. Thirty-six per cent of the female respondents and 37% of the males agreed with this proposition, with a further 20% from both groups being unsure.

The majority of the female students who agreed that the industry was a more difficult place for women said it was because of the male dominated nature of the industry and the masculine culture that was associated with this. Comments included:

> *'It's a masculine industry and boys like it that way. Have to toughen up as a woman to get anywhere then get paid out for it.'*
>
> *'Site work can be more difficult given the average 20% female population out there.'*
>
> *'Bit of an old boys club.'*
>
> *'...masculine culture, feeling like you have to prove yourself. Lack of females to relate to especially in coal.'*
>
> *'Negative view of women in industry—masculine 'occa' type view of women who choose careers in mining.'*
>
> *'...change of culture needed among older miners.'*

Family was the second most mentioned theme. Comments included:

> *'Women play a big role in bringing up children so they might find the rosters difficult.'*
>
> *'...women do not want a career that doesn't accommodate for family.'*
>
> *'Because we want to have a family and be a good mother and this is hard with long work hours and remote locations.'*

Student perceptions of the Industry

- Both the female and male students had generally positive views of the industry.
- The aspects of the industry which were seen as most unattractive related to the difficulty of balancing career demands with parenting and relationships.
- Close to half of both the male and female respondents agreed that the minerals industry was a difficult place to work if you have a family.
- More than one-third of male and female respondents agreed that it was more difficult for women than men to have a career in the minerals industry.
- Only a small proportion of the female respondents saw sexual harassment as a problem in the industry.
- Close to half of the female respondents gave a neutral answer when asked about the strength of the industry's commitment to equal opportunity.
- About one-third of the female students—and a similar proportion of the males—agreed that working in the industry is harder for women than men.

3.5 Suggestions for attracting more female students

The issue of the industry's poor image in the broader community was referred to several times by women in the qualitative responses to this survey. When asked what would attract more women to the mining industry, 58% of the women who responded suggested educating the public on the misconceptions of mining and the associated negative image. Comments included:

'Try and lose the stigma that it is a dirty industry.'

'Take away the stigma attached to mining such as being an all male, dirty job in a remote location.'

'Not all the roles in the industry require getting dirty and [having] male strength.'

'Women need to know…it is not only for the tomboy.'

When asked what factors would attract more female students into mining-related courses, two-thirds of women (68%) suggested that the industry could advertise the benefits of working in the industry more widely. Comments included:

'More insights into opportunities/diverse jobs within this industry.'

'More knowledge of industry, exposure in year 12.'

'Advertise the social aspects of the degree and career, advertise salaries [and] travel opportunities.'

'More publicity about what social aspects are available, and the lifestyle, [in] a remote town.'

'More programs to show what jobs entail—more info at schools.'

One male responded:

> *'When I was in high school I had no idea what a minerals process engineer actually did and I knew very very little about the industry then. There were no subjects, no seminars, nothing.'*

Several students commented on the need for more female role models and mentoring. Suggestions included:

> *'Having females in prominent positions.'*
>
> *'Women speaking to high school students about careers in the industry—including all girl schools etc.'*
>
> *'Keep up publicity of profiles of women in [the] industry.'*
>
> *'School visits from females currently working in the industry.'*
>
> *'Mentoring for students in Years 11 and 12.'*
>
> *'Education on industry in schools, mentoring opportunities.'*

The issue of lack of role models and mentors also features prominently in industry studies into the attraction and retention of women in the minerals industry. Effective mentoring is seen as crucial in providing support to women in situations of geographic or social isolation (Pattenden, 1998), for professional development (Ground Control Group, 2004 cited in CBSR 2005) and to enable career advancement (Gibson & Scoble 2004).

4 Conclusion

4.1 Discussion

4.1.1 Attraction

Most of the female students who completed this survey felt confident in their choice of career and their academic abilities. The students also had a generally positive view of the minerals industry, based on their experiences to date.

Although the study was restricted to students who had already decided to specialise in a mining-related area, the findings can nonetheless assist in developing strategies for increasing the representation of women in core mining professions, such as mining engineering and minerals processing.

A key finding in this regard is that many of the students perceived the industry as not being family or relationship friendly. Having a successful career in the industry was seen as being dependent on a willingness to work in remote locations and to work long hours. A substantial proportion of both males and females also agreed that the industry is a tough place for women to work and that it is more difficult for women than men to have a career in the industry. Although the women who participated in this survey generally felt confident enough to meet these challenges (see above), the WiSER study indicates that these factors are deterring other, potentially eligible, women students from considering a professional career in the industry.

The industry needs to address these perceptions not just through marketing, but by making a concerted effort to change practices on the ground. Amongst the key findings and recommendations of the CSRM's *Retention of Women in the Minerals Industry* report (Kemp & Pattenden 2007) is the need for the industry to implement systems and process improvements which directly address identified gaps in workforce management in respect to gender diversity. These gaps include poor or absent reporting structures on female participation, the *ad hoc* or limited implementation of flexible work practices which inhibit women's return to work following maternity leave, and the reported ambivalence of many managers and supervisors to

supporting women's professional development, particularly following maternity leave. This ambivalence, or open opposition in some instances, is frequently in direct conflict with company EEO and other workplace policies. Reducing the gap between policy and practice is critical if the industry is to make headway in its efforts to attract more women into the sector.

In addition to providing broader insights into factors that impact on the attraction of women to the industry, the survey findings point to some specific strategies that might facilitate recruitment into relevant programs of study.

The opportunity to do vacation work was a significant attractor for female and male students alike. Promoting these opportunities more actively to students in first year university programs could help to win over some who are undecided about which areas to specialise in. Also, rather than companies and industry associations offering more scholarships and cadetships, it may be better to concentrate on increasing the number of summer employment opportunities, especially for students at the end of their first year. In a similar vein, highlighting the opportunities for travel that the industry provides would strike a responsive chord with many students.

A more ambitious program of change at the tertiary level could involve the development of stronger and more formalised links between industry and the tertiary sector through student 'internships' and industrial placements. Similar co-operative programs are already operating successfully in some overseas universities such as the School of Engineering at Queen's University in Canada, the Norman B. Keevil Institute of Mining Engineering at the University of British Columbia, and the University of the Witwatersrand in South Africa, which incorporates a formal, assessed vacation work component in its mining engineering degree. Such programs could provide students with the opportunity to more clearly identify career objectives early, and develop a more grounded understanding of the realities and complexities of the modern mining workplace. Implementation of such a program would require extensive research and evaluation, strong industry support, and the development of closer company and institutional working relationships.

For female students in particular, encouragement from family or friends—often from those who are already working in the minerals industry—appears to be a significant influence in selecting a course of study. This suggests that the industry should look at how it might make greater use of existing employees to encourage more young women to consider taking up a career in the industry, through processes of networking or mentoring.

A final observation is that career guidance at school and University was not seen as a significant influence—a finding also supported by the WiSER study. This could be because this guidance was not available, although an alternative interpretation is that students rely mainly on other influences when making career choices. A review of career guidance materials and approaches may be appropriate to ensure the effective targeting of potential candidates for mining related courses. Pathways to maximise alternate resources in career guidance, such as its existing employee networks, should also be explored.

4.1.2 Retention

The survey findings also have implications for the development of strategies to increase the retention of female professionals working in the industry. Various studies (Pattenden 1998; Kemp & Pattenden 2007; Lord et al. 2007) have reported that many women working in the industry perceive that women's family responsibilities are incompatible with the minerals industry lifestyle

and that this impacts adversely on retention. The findings from this survey are consistent with this general picture.

The survey results show that, even as students, women are aware that parenting responsibilities are likely to be incompatible with the requirements of the minerals industry workplace. They see that their own careers are likely to be interrupted for personal reasons, such as to have a family or support a partner. Along with male students, they also rank difficulties in balancing their career with family and relationships as the most unattractive aspects of the minerals industry.

Although not the primary focus of this study, the findings suggest that family and relationship issues are significant for many males as well. Initiatives aimed at providing for more flexible, relationship and family-friendly working arrangements might deliver more general benefits in terms of increasing the retention of professionals within the sector.

4.2 Recommendations

A key aim of this study was to investigate the motivations influencing female entry into mining related tertiary programs, early perceptions and experiences of the industry, and anticipated career and personal trajectories.

The recommendations below relate to the main findings of the study and address the following areas:

- Attraction.
- Perceptions of mining (including personal success factors).
- Career planning and retention (including flexible work practices).

4.2.1 Attraction

Findings

- The motivation for undertaking mining related courses were very similar for males and females and included an identified desire for a career in the minerals industry, opportunities for vacation employment, and the chance to build on existing academic strengths.
- Family and friends appeared to be a more important influence in the decision-making process for the female students.
- The attraction of working in the minerals industry included income, job security, and opportunities for advancement.
- Students place a high value on the opportunity to travel.
- Vacation work plays an important part in career planning and is rated more highly than financial support in career choice.
- Over half of the female students identified the ability to combine work and family as an important consideration in choosing a career.
- Female role models and mentors were seen as important for attracting more women into the industry.

Recommendations

These findings point to several actions that the industry could take to attract more women into mining professions.

- Ensure that an industry network structure is in place for female students at tertiary and secondary level to facilitate their exposure to positive female role models and industry success stories.

- Promote vacation employment opportunities in the industry for tertiary students at all levels and the opportunities that the industry provides for travel.
- Explore options to formalise and strengthen industry and tertiary participation through a co-operative program of extended work experience, such as through internships or industrial placements, for students in mining related courses. This could be modelled on similar co-op programs such as those offered by some overseas universities (see above).
- Commencing at first year level, promote graduate programs and other post-tertiary employment options that are available, ensuring students are informed of the scope of the opportunities on offer by the industry. (This point is linked to issues of Career Planning and Retention, outlined below.)
- Broaden students' conceptualisation of what a career in a mining related discipline could lead to, including all possible career paths available. This would entail promoting the diversity and complexity of mining careers and the options for horizontal and vertical career mobility.

4.2.2 Perceptions of mining (including personal success factors)

Findings

- Perceived attractive characteristics of mining were: job opportunities, being safety conscious, technologically advanced, exciting, and socially and environmentally responsible.
- Perceived unattractive characteristics of mining were: difficulties balancing parenting and other relationships with career, masculine culture, remote locations, lack of social life. This may be linked with issues associated with long working hours (see below).
- Personal success in the mining industry was seen as being dependent on: being willing to work in remote locations; being a team player; being prepared to work long hours; 'liking a challenge'; and being confident, self-sufficient and emotionally strong. Contributing factors include having a supportive spouse and putting your career first.

Recommendations

Actions that the industry could take to promote a more attractive image of the industry amongst female students include:

- Ensure that decisive action is taken at the operational level to implement systems and process improvements which directly address identified gaps in workforce management in respect to gender diversity (see Kemp & Pattenden 2007).
- Through representative bodies, ensure that industry efforts to promote gender equity and accommodate more flexible work practices are well communicated and publicised to key identified community sectors, such as the secondary and tertiary education sectors.
- Make an industry wide commitment to critically investigate the practice of long working hours and whether this practice is operationally and managerially appropriate given other pressures, such as labour supply and attraction/retention issues.

- Develop promotional materials which highlight that personal success in the mining industry can be attained by a variety of paths and does not necessarily involve embracing the culture of long working hours.

4.2.3 Career planning and retention (including flexible work practices)

Findings

- Nearly all of the female students surveyed anticipated commencing a career in the mining industry after graduation.
- Just under half of all students (male and female) expected to spend 15 years or less working in the industry. This may be linked with the anticipated challenges, highlighted above, of balancing parenting and career while working in the mining industry.
- About half of all students surveyed (male and female) expected to have more than one career during their working lives.
- Most of the female students (78%) anticipated a career interruption for personal reasons at some stage. Only 48% of male students held a similar expectation.
- Similarly, 88% of females, compared to 55% of males, wanted a career that gave them the ability to adapt working arrangements to changing life circumstances.

Recommendations

The companion report to this study (Kemp & Pattenden 2007) contains detailed recommendations on actions that the industry can take to improve the retention of female employees, including those in professional roles (see also QRC 2006). Actions that are particularly relevant to addressing issues identified by this study include:

- Develop and implement stronger career planning strategies to assist women (and men) manage family-related career interruptions in a way that minimises their negative impact. This could include encouragement to stay in touch with the workplace through a formalised contact program.
- Investigate, identify, and promote opportunities for flexible work arrangements, particularly at the site level. This could include developing a framework that defines current benchmarks for flexible work practices, against which organisations can drive for improvement.

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Appendix 1: Survey of tertiary sector student choices about mining careers

ABOUT THE PROJECT

What is this study about?

The purpose of this study is to better understand what factors influence students to pursue a career in the mining industry. The aim is to support industry initiatives to attract and retain staff in vocational and professional roles in the mining industry.

Who is funding the study?

The study is being conducted by the Centre for Social Responsibility in Mining (CSRM). It is jointly funded by the Minerals Council of Australia, and The Australian Government through the Office for Women (OfW).

How long will this take?

Filling out the survey will take about 10-15 minutes.

What do you do with this information?

The survey responses will be coded and combined with all other survey data in the study.

Confidential and anonymous

Your survey responses are anonymous. Please *do not* put your name on the survey. Your answers to the questions, and any comments you make cannot not be linked to you in the research outcomes.

How is confidentiality maintained?

All data is "de-identified". That means your responses are coded without reference to personal identifying information and all surveys are kept securely at the University of Queensland.

What will happen with the findings?

The outcomes of the research will contribute to better job design and career paths for men and women in the industry. Findings from the research will be used to provide advice to the minerals industry on what attracts students to mining roles, what encourages, what encourages them to continue with their careers in mining, and what discourages them from pursuing careers in the industry.

Do I have to participate?

Your participation is voluntary, you don't have to answer all the questions, and you can stop at any time. There are no risks to you personally for being involved in the research, or for withdrawing from the research.

Can I find out what the results of the study?

Yes. Towards the end of the research a brief overview of the results will be made available to participants and their course coordinators. Please let us know if you wish to receive this feedback personally by contacting Mary Anne Barclay at the address below

Ethical concerns?

This study adheres to the Guidelines of the ethical review process of the University of Queensland. If you would like to discuss your participation in this survey with one of the researchers, you are welcome to contact Mary Anne Barclay on (07) 3346 4047. If you would like to speak to an officer of the University *not* involved in the study, you can contact the Ethics Officer on (07) 3365 3924.

Returning the survey

Please hand in the survey form to your lecturer at the end of this class.

For more information the project, please contact:

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Email: j.parmenter@smi.uq.edu.au
Web: www.csrm.uq.edu.au

Please complete <u>all questions</u>.

Even if you feel unsure, have a go!

Do NOT put your name on the survey.

Please read the information sheet above before answering these questions

PART 1: GENERAL INFORMATION

Q 1 Have you read the information sheet about this survey and do you consent to participate (*please tick)*	❑ Yes	
Q 2 You are	❑ Male ❑ Female	
Q 3 Your age is…	❑ 18 ❑ 19 ❑ 20 ❑ 21	❑ 22 ❑ 23 ❑ 24 ❑ 25+
Q 4 Do you identify as an Aboriginal person or Torres Strait Islander?	❑ Yes ❑ No	
Q.5 Are you currently …	❑ Single ❑ Partnered / in a relationship	
Q 6 Do you have any dependent children?	❑ Yes ❑ No	
Q 7 Do you have family or friends who work in the minerals industry?	❑ Yes ❑ No	

PART 2: PROGRAM INFORMATION

Q 8 Which of these best describes your current program of study?	❑ Mining Engineering ❑ Minerals processing / Metallurgy ❑ Other program *(please specify)*_____	
Q 9 What year of the program are you currently studying?	❑ 2nd year ❑ 3rd year ❑ 4th year	❑ Other
Q 10 Are you in receipt of a scholarship or cadetship?	❑ No ❑ Yes *(please specify)*_____	
Q 11 Do you have any prior work experience in the minerals industry? (*you may tick more than one box)*	❑ Field trips/ site visits during my course ❑ Vacation experience with a mining/ minerals processing company ❑ I previously worked in the industry ❑ No prior experience	
Q 12 How likely are you to work in the minerals industry after you complete your current program of study?	❑ Not likely ❑ Not sure ❑ Likely	
Q 13 When you complete the program, do you intend to…	❑ Work for a mining company ❑ Return to your previous employer in the minerals industry ❑ Join a consulting firm ❑ Work for a contractor ❑ Undertake further study ❑ Work in another industry ❑ Unsure ❑ Other *(please specify)*_____	
Q 14 If you plan to work in the minerals industry, how long do you intend to stay?	❑ Less than 5 years ❑ 5-10 years ❑ 10-15 years ❑ Most or all my working life ❑ Not sure	

PART 3: MOTIVATIONS

Q 15 Why did you choose this course of STUDY?

Please show how important each of the following factors were in your decision by circling the number that best represents your view. 1 =Not at all Important to 5 = Very Important.

	Not at all Important				Very Important
a) To equip me for a career in the minerals industry	1	2	3	4	5
b) To learn about the minerals industry	1	2	3	4	5
c) Publicity about the resources boom	1	2	3	4	5
d) The opportunity to study subjects I'm good at	1	2	3	4	5
e) Encouragement from family or friends	1	2	3	4	5
f) Career guidance at school/university	1	2	3	4	5
g) Availability of financial support (.e.g. scholarship, cadetship)	1	2	3	4	5
h) Opportunities for vacation employment	1	2	3	4	5
i) Other *(please specify)*	_____				

Q 16 In choosing a CAREER, how important are the following factors to you?

Please show how important you think each of the following factors is by circling the number that best represents your view. 1 = Not at all Important to 5 = Very Important

	Not at all Important				Very Important
a) Being able to work in an area where I can use my strengths	1	2	3	4	5
b) Being able to work in an industry where there is a blend of professional disciplines	1	2	3	4	5
c) The challenges that the career offers	1	2	3	4	5
d) The earnings potential	1	2	3	4	5
e) Job security	1	2	3	4	5
f) The opportunity for rapid career advancement	1	2	3	4	5
g) Having time for interests outside of work	1	2	3	4	5
h) Travel opportunities	1	2	3	4	5
i) Working in a profession that gains respect from others	1	2	3	4	5
j) Doing something that contributes to society in a practical way	1	2	3	4	5

	Not at all Important				Very Important
k) Doing work that gets me out of an office	1	2	3	4	5
l) The opportunity to move between workplaces	1	2	3	4	5
m) The ability to combine work and family (e.g. by working part-time)	1	2	3	4	5
n) The ability to work as part of a team	1	2	3	4	5

Q 17 What aspects of a career in the minerals industry do you consider UNATTRACTIVE?

Please indicate whether you agree or disagree with each of the statements by circling the number that best represents your view. 1 = Strongly Disagree to 5 =Strongly Agree.

	Strongly Disagree				Strongly Agree
a) The course requirements are daunting	1	2	3	4	5
b) Having to work in remote locations	1	2	3	4	5
c) Unattractive work arrangements (e.g. 12 hour shifts, fly-in fly-out operations)	1	2	3	4	5
c) Lack of a social life	1	2	3	4	5
d) Difficulties in balancing relationships and career	1	2	3	4	5
e) Difficulties in balancing parenting and career	1	2	3	4	5
f) The masculine culture of the industry	1	2	3	4	5
g) Negative media image of the industry	1	2	3	4	5
h) Other *(please specify)*	_____				

PART 4: GENERAL VIEWS ABOUT THE MINERALS INDUSTRY

Q 18 What are your GENERAL IMPRESSIONS of the minerals industry?

Please show your level of agreement or disagreement with the following statements by circling the number that best represents your view. 1= Strongly Disagree to 5= Strongly Agree.

	Strongly Disagree				Strongly Agree
a) The minerals industry values entrepreneurship	1	2	3	4	5
b) The minerals industry is conservative	1	2	3	4	5
c) The minerals industry is committed to 'equal opportunity'	1	2	3	4	5
d) The minerals industry is technologically advanced	1	2	3	4	5
e) The minerals industry is an exciting industry to be working in	1	2	3	4	5
f) The minerals industry is safety conscious	1	2	3	4	5
g) The minerals industry is environmentally responsible	1	2	3	4	5
h) The minerals industry is socially responsible	1	2	3	4	5
i) Working in the industry is dirty	1	2	3	4	5
j) There is no job security in the minerals industry	1	2	3	4	5
k) Working in the industry is tough for women	1	2	3	4	5
l) Sexual harassment is a problem in this industry	1	2	3	4	5
m) There are lots of job opportunities in the minerals industry at present	1	2	3	4	5
n) The minerals industry is a difficult place to work if you have a family	1	2	3	4	5

Q 19 How important do you think the following PERSONAL QUALITIES are to a successful career in the minerals industry?

Please show how important you think each of the following qualities is by circling the number that best represents your view. 1 = Not at all Important to 5 = Very Important

	Not at all Important				Very Important
a) Having a strong desire to prove yourself	1	2	3	4	5
b) Being a team player	1	2	3	4	5
c) Liking a challenge	1	2	3	4	5

	Not at all Important				Very Important
d) Being emotionally strong	1	2	3	4	5
e) Being confident and self-sufficient	1	2	3	4	5
f) Being willing to work in remote locations	1	2	3	4	5
g) Being prepared to work long hours	1	2	3	4	5
h) Being prepared to put your career first	1	2	3	4	5
i) Having a supportive partner/spouse	1	2	3	4	5

PART 5: ASPIRATIONS AND EXPECTATIONS

Q 20 What are your CAREER ASPIRATIONS and EXPECTATIONS?

Please show how important the following aspirations are to you by circling the number that best represents your view. 1 = Not at all Important to 5 = Very Important.

	Not at all Important				Very Important
a) I expect to be in a managerial role within 5 years	1	2	3	4	5
b) I want to be able to live and work in a capital city	1	2	3	4	5
c) I expect to be in a corporate role within 5 years	1	2	3	4	5
d) I expect to follow more than one career in my life	1	2	3	4	5
e) I expect to interrupt my career at some stage for personal reasons (e.g. to have a family, or provide support to a partner)	1	2	3	4	5
f) I want to be able to enter, leave and re-enter the workforce, or work part time, depending on my life circumstances	1	2	3	4	5
g) I want to be able to travel through my career	1	2	3	4	5
h) I want to maintain a good balance between work, social and family commitments	1	2	3	4	5

Q 21 What do you think would attract more STUDENTS to take up mining-related subjects?

_____
_____
_____
_____
_____
_____
_____
_____

Q 22 Do you consider it more difficult for women than men to have a career in the minerals industry?

- ❑ Yes
- ❑ No
- ❑ Not sure

Q 23 If yes, please indicate why…

_____
_____
_____
_____
_____
_____
_____
_____
_____

Q 24 What do you think would attract more WOMEN to a career in the minerals industry?

_____
_____
_____
_____
_____
_____
_____
_____
_____

THANK YOU FOR COMPLETING THIS SURVEY.

7 Please pull off this page and keep it with you.

8 Please hand the survey to your lecturer at the end of the class.

Your answers to the questionnaire will be coded and combined with all other survey information to build an overall picture of perceptions of students in mining-industry related courses. Your answers to the survey are anonymous and cannot be linked to you.

A brief report of the results will be prepared and distributed to participants in a newsletter format. Please let us know if you wish to receive this feedback by contacting Mary Anne Barclay.

Mary Anne Barclay

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This study adheres to the Guidelines of the ethical review process of The University of Queensland. You are welcome to discuss your participation in this study with the researcher s (contact Mary Anne Barclay on 07 3346 4071). If you would like to speak to an officer of the University not involved in the study, you can contact the Ethics Officer on (07) 3365 4042.

Retention of Women in the Minerals Industry

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Figures

List of Abbreviations

ABARE	Australian Bureau of Agricultural and Resource Economics
ABS	Australian Bureau of Statistics
AusIMM	Australian Institute of Mining and Metallurgy
CBSR	Colmar Brunton Social Research
CSRM	Centre for Social Responsibility in Mining
EEO	Equal Employment Opportunity
EOWA	Equal Opportunity for Women in the Workplace Agency
FIFO	Fly-in-fly-out
GRI	Global Reporting Initiative
HR	Human resources
ICMM	International Council on Mining and Metals
MCA	Minerals Council of Australia
OfW	Office for Women
QRC	Queensland Resources Council
UQSRC	University of Queensland Social Research Centre
WIMNet	Women in Mining Network
WiSER	Women in Social and Economic Research
WRAP	Women in Resources Action Plan

Photo courtesy CRL

Photo courtesy Newmont Asia Pacific

Executive Summary

Research Aim

The aim of the *Women in Mining* research program is to contribute to the development of an industry agenda to significantly increase the participation of women in the minerals industry, including Indigenous women, across all work roles and at all levels. The purpose of this particular study was to identify strategies, policies and practices to facilitate the attraction and retention of female employees in the industry.

Overview of Research Methods

In addition to desktop research, the study involved the collection of primary data at four case study sites[1] in Queensland, the Northern Territory, Western Australia and New South Wales. Each site produced a different commodity, including coal, iron ore, lead/zinc and gold. Two of the sites were fly-in-fly-out (FIFO) operations, one was a residential operation in a remote area and the fourth was located in a settled area. Each of the case study sites has a different parent company. The sites were chosen to reflect the diversity of operations in the Australian mining industry.

Primary Research

Multiple methods were used, including a quantitative survey, semi-structured interviews and focus groups. Given the small number of participating sites, this multi-method approach provides a comprehensive data set and allows for some comparison of responses across different contexts and working conditions.

The survey was distributed to approximately 450 female employees across the four case study sites, including direct company employees and employees of contractors and sub-contractors. A total of 189 responses were received from women working at operating sites, representing a response rate of 42 per cent.

CSRM research teams comprising two female researchers visited the four case study sites for approximately five days each to undertake a series of interviews and focus groups with women and men, across all work roles. Interviews with key personnel, such as human resource (HR) personnel, were used to gather HR data and information about

1 One of these was a multi-site location with three sites in close proximity, all owned by the same parent company.

organisation policies and practices. In all, 177 company employees and employees of contractors across the four research sites participated. Of this number, 128 were women, including 26 Indigenous women.

Secondary Research

The study included a desktop literature review of both academic and industry publications addressing gender and cultural diversity in the workplace. Relevant findings from this research are incorporated into this report for comparative purposes.

Generalising to the Industry

Although detailed data were gathered from only four locations, a reasonable level of generalisation on some points is possible because:

- the study covered a cross section of sites and companies
- many of the results are confirmatory, being supported by other studies.

The main limitation of the study design, in terms of the ability to generalise is that it did not encompass junior and second tier mining companies. The study did not collect data from 'stand out' sites known to have a higher than average representation of women and/or leading practice initiatives in gender and employment.

Main Findings

Profile of Survey Respondents

Of the 189 women surveyed:

- Demographics:
  - 80% of respondents were aged between 20 and 40 years of age.
  - 10% of respondents identified as Aboriginal or Torres Strait Islanders.
  - 71% were partnered or married.
    - Indigenous women were more likely to be single: 67% of Indigenous respondents were single compared with 25% of non-Indigenous respondents.
  - 18% had dependent children. Of these, 6% had children less than five years of age.
    - Indigenous women were more likely to have dependent children: 44% of Indigenous respondents had dependent children compared with 15% of non-Indigenous respondents.
- Industry experience:
  - 60% of respondents had worked in the industry five years or less, with 20% of these having worked in the industry for less than one year.
  - 70% had worked at their current site for two years or less.
  - 41% of respondents had worked at only their current site, with one-third having worked at more than three sites.

- Workplace arrangements:
  - Two-thirds (67%) were employed by a company rather than a contract company.
  - Most worked full time (94%) and did not work nights.
  - Two-thirds (69%) were from a residential site.
  - Two-thirds (65%) worked in a department or section dominated by men.
- Work Type
  - The sample was evenly split between women working in traditional and non-traditional areas[2], with 42% representation in each. The remaining 16% did not specify their area of work.

Management of Female Employees

- Each of the companies involved in the study had corporate policies that expressed a commitment to Equal Employment Opportunity (EEO) and workforce diversity. However, none of the case study sites were putting concerted effort into managing, attracting and/or retaining female employees.
- HR systems and processes, including career development, promotion and performance review, were generally lacking for both males and females.

Retention of Women

- Retention is an important issue in the industry more generally, but the evidence is inconclusive as to whether retention is more of an issue for women than men.
  - Retention data were not readily available from case study sites, and not directly comparable, as definitions varied across sites.
  - Annual turnover rates of female company employees at the case study sites varied from 24% to 34%. At two sites, the turnover rate for female employees was higher than males.
  - Two-thirds of the respondents (67%) said that in two years time they expected to still be in the industry (at their current site or another site), 12% said that they were intending to leave the industry and 21% did not know what they would be doing.

Reasons Women Leave Mining

- Most women leave the minerals industry when they start a family.
- Other reasons for leaving relate to:
  - Quality of life, such as the isolation from family and friends and long distance commutes at FIFO sites, or lower standard of basic services in remote locations, such as health and education.
  - Personal circumstances, such as the achievement of a particular financial goal, to be closer to family and/or friends if living in a remote location, or to follow a partner to another work location.
  - Management issues, such as lack of communication or a significant change in organisational structure.

2 Traditional 'female' roles are those work roles usually associated with women, including administration, catering/cleaning and professional support roles such as HR, public relations, community relations. Non-traditional roles are those that have historically been associated with men, such as mine engineers, metallurgists and operational roles, such as truck driving.

Sexual Harassment and Discrimination

- Based on the findings from the four case study sites, mine site culture still accepts moderate levels of sexual harassment and bullying, such as inappropriate comments and displays of sexually offensive material. However, serious sexual harassment, particularly physical harassment, is not the issue it once was.
- Site management were generally considered to be responsive to reported incidents, but women tend not to formally report incidents until issues escalate.
- Discrimination against women is seen by women who participated in the study as a serious and systemic issue, particularly for career development and progression. By contrast, most of the males interviewed did not consider gender discrimination to be a significant issue.

General Perceptions of Mining

- Both men and women do not see mining as 'family friendly'.
- The 'maleness' of the mining workplace deters some women from working or remaining in the industry.

Attraction to Mining

- Women are initially attracted to work in the industry by career development and job-related factors (e.g. acquiring skills and experience, pay, interest, the work).
- They are likely to remain in the industry if the work suits a range of personal and lifestyle factors.

Indigenous Women

- Several Indigenous women stated that they were attracted by the opportunity to be a role model for others.
- Indigenous women often value the opportunity to work alongside family and friends.
- Indigenous women share some issues with non-Indigenous women, but face additional challenges, such as systemic social disadvantage and complex family responsibilities. Some also face issues associated with holding positions of authority over Indigenous men.

Key Recommendations

Future Research

Going forward, the industry's emphasis must be on practical strategies and the implementation of action plans. Future research should be targeted, rather than broad-based, focussing on specific aspects, such as the experience of Indigenous women and site-level issues.

Recommended Actions:

Systems and Process Improvements

- Articulate measures of success for female participation, including both quantitative and qualitative indicators.
- Implement better systems for analysing HR data from a gender perspective.
- Monitor progress against targets and goals.
- Undertake independent company and/or site level research to evaluate implementation of diversity policies at the operational level.
- Conduct cross-industry benchmarking studies in key areas such as maternity leave and return to work programs.
- Consult women on issues that affect them.

Job Related

- Address high priority issues of maternity leave and return to work.
- Investigate options for providing greater flexibility for women (and men) with family responsibilities, such as even-time rosters for FIFO operations.
- Investigate why so many supervisors and managers resist flexible work options.

Personal and Professional Development

- Understand and address blockages to the practical implementation of effective performance review and career management processes at site level.
- Clarify responsibility for personal and professional development at a site level.

Quality of Life

- Address quality of life issues for FIFO sites in relation to partner accommodation, provision of medical/emergency coverage for families at home, and accommodation and amenity standards.
- Improve quality of services in remote residential locations (e.g. health and education).

Indigenous Women

- Work towards employing a 'critical mass' of Indigenous female employees at those sites located in areas where there is a significant Indigenous population.
- For sites with a substantial Indigenous workforce, consider appointing a dedicated Indigenous female contact officer to provide support in dealing with complex home and life skill issues.
- Review cross-cultural awareness training of employees, supervisors and managers to ensure employment-related aspects are addressed (e.g. how Indigenous people manage family relationships in the workplace), in addition to informing participants about important historical and cultural aspects.

Cultural Shift

- Work towards eliminating tolerance of discrimination, sexual harassment and bullying in the workplace through ongoing workforce education about behavioural expectations.
- Ensure outcomes of actions taken by management to address formal complaints are periodically reviewed and evaluated.
- Understand and address reasons why women are reluctant to formalise complaints of discrimination and sexual harassment.
- Implement practical changes to reduce the 'maleness' of workplaces; for example, by ensuring that there are appropriate facilities and amenities for female employees.

Public Reporting: Gender and Employment

- Undertake more comprehensive reporting of gender and employment data in sustainability reports at the corporate and site level.
- Benchmark leading sustainability reporters to understand how gender and employment data are being reported in other sectors and used to drive change in the workplace.

Promoting Good Practice

- Gender considerations should become a mainstream focus of the industry, such as at industry conferences and on websites.

Strong Leadership

- The leadership being shown by peak industry associations in addressing diversity issues needs to be replicated at all levels of the industry.
- Site management must lead by example.


NEWMONT
NEWMONT

1 Introduction

1.1 Aim and Purpose of the Current Study

The aim of the current research program is to contribute to the development of an industry agenda to significantly increase the retention of women, including Indigenous women, in the minerals industry across all work roles and at all levels within five years.

This research program is one of two CSRM projects commissioned by the Australian Government's Office for Women and the Minerals Council of Australia. The second project considers issues specific to the attraction of women into the industry, whereas this project focuses on the retention of women, including reasons why women remain employed in the industry, and why they leave. However, as issues of retention and attraction overlap, there is some discussion of attraction in this report.

The purpose of the study is to identify strategies, policies and practices to help ensure the retention of female employees in the industry. The future growth and development of the minerals industry will be built upon its capacity to attract and retain a highly skilled and high calibre workforce. To achieve this, the industry must increase its utilisation of all possible sectors of the Australian workforce, half of which is women.

Aside from the workforce challenges associated with employing adequate numbers of skilled and semi-skilled people to meet the

demands of Australia's current resources boom, there are well recognised benefits of diversity in the workplace. Companies with diverse workforces identify important benefits that strengthen long-term competitiveness and, in certain instances, also produce short and medium-term improvements in performance, in particular strengthening organisational and human capital (European Commission 2003).

1.2 Industry Drivers for Focusing on Female Employment

There are several converging factors driving the need to focus on female participation in the minerals industry. This section briefly outlines some of these factors.

1.2.1 Current Employment Market

The Australian minerals industry is currently enjoying economic boom conditions, with the value of minerals and energy exports forecast to be around $108 billion in 2006–07, a rise of 18% from $92 billion in 2005–06 (ABARE 2006). Opportunities for further expansion and development may increasingly be constrained due to several related human resource issues, including; a national skills shortage, low unemployment, an ageing workforce and insufficient expansion in the labour force to meet demand (Lowry et al. 2006).

Historically, skills shortages in Australia have been a cyclical problem, but the current shortage is likely to be a more permanent feature of the Australian economy. In the resources sector, research shows that demand is already outstripping supply in key occupations, such as metallurgy, mine engineering and some trade occupations such as electricians (JEEMI 2005). Further, a recently released Minerals Council of Australia (MCA) report predicts that the minerals sector will require an additional 70,000 workers by 2015, 42,000 of these needed in Western Australia alone (Lowry, Molloy et al. 2006).

Australia's skills shortage sits against the backdrop of the biggest generational shift in six decades (McCrindle Research 2006). Like most developed nations, Australia faces an ageing workforce, which will eventually see a significant labour and management void (McCrindle Research 2006). Australia does not have an adequate number of new workers entering the workforce to fill the gap (NCVER 2005), with some commentators arguing that the minerals industry may be suffering from a people shortage, rather than a skills shortage (Lowry, Molloy et al. 2006). Whether the problem is people, skills, or a combination of the two, it is harder than ever to attract and retain workers.

The current employment market is challenging for Australian industry generally, but the minerals sector faces an additional hurdle with the steady decline in male labour force participation over the past twenty years (Commonwealth of Australia, 2002). As males continue to dominate the minerals industry, the industry is likely to face increasing challenges in attracting sufficient skilled workers to meet its growing demands.

As is the case with other developed nations, the decline in the size of Australia's male labour force has been accompanied by a steady increase in female participation; a trend that is likely to continue (Commonwealth of Australia, 2002). In Australia, the active female workforce has risen to its highest ever rate of 45 percent of the total workforce (EOWA 2004).

From a minerals industry perspective, women are currently an underutilised source of human resources. The minerals industry's track record for attracting and retaining women has never been strong. According to the quarterly Australian Bureau of Statistics (ABS) Labour Force statistics, participation of females working full-time in the minerals industry was, on average, 13 per cent of the total workforce for the period May 2005 to May

2006 (ABS 2006), reflecting an average increase of three percentage points over the past ten years. Despite small gains, mining remains one of the most male dominated industries in Australia.

Given the opportunities created by the current resources boom, the skills and/or people shortage and the current low rate of female participation in the industry, there are strong imperatives for developing explicit strategies for attracting and, just as importantly, retaining women within the industry.

1.2.2 Other Business Drivers

In addition to the resources boom and labour market challenges, there are other business drivers for focusing on the retention of women in the minerals industry, including minimising costs associated with employee turnover and maximising the benefits of gender diversity.

High levels of employee turnover characterise much of the mining industry workforce (Beach, Brereton and Cliff 2003). In a recent study of mining industry professionals who were members of the Australian Institute of Mining and Metallurgy (AusIMM), turnover was identified as the second most important issue facing the industry, second only to the current skills shortage (CSRM and UQSRC 2006).

While some employee turnover is beneficial for workplaces and societies more generally, there is broad agreement within the mining industry that continuing high employee turnover can have substantial adverse operational and financial impacts on mining operations, including:

- high ongoing recruitment, replacement and training costs
- decreased productivity due to loss of site specific knowledge and work group synergy
- reduced capability to develop workforce skills to meet specific management targets, such as increasing the proportion of Indigenous employees
- declining morale amongst remaining employees
- increased difficulty in relation to workplace safety (Beach, Brereton and Cliff, 2003).

These issues aside, companies with diverse workforces identify important benefits that strengthen long-term competitiveness and, in certain instances, also produce short and medium-term improvements in performance, in particular strengthening organisational and human capital (European Commission 2003). Further, as women are often considered to have better communication and negotiation skills, the participation of women in male dominated industries such as mining is sometimes perceived as providing a normalising or moderating effect on the workforce, although some commentators argue that this perception may reinforce stereotypes (Eveline and Booth 2002).

1.2.3 Industry Commitments to Diversity

At a global level, the industry has made strong commitments to sustainable development and corporate social responsibility, which emphasise the importance of issues such as workforce diversity, from both gender and cultural perspectives. For example, Principle 3 of the International Council on Mining and Metals' (ICMM) *Sustainable Development Principles* states that member companies will 'uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities' (ICMM 2003).

Subsequent to the release of the ICMM's *Sustainable Development Principles*, the MCA developed its *Enduring Value* Framework. In relation to Principle 3 above, the MCA requires signatory companies, for example, to ensure fair

Photo courtesy Zinifex Ltd

remuneration and work conditions for all employees; implement policies and practices designed to eliminate harassment and unfair discrimination; ensure that all relevant staff are provided with appropriate cultural and human rights training and guidance; and respect the culture and heritage of local communities, including Indigenous peoples (MCA 2004). While many minerals companies already have diversity and EEO policy frameworks in place, *Enduring Value* provides signatory companies with support at the highest industry level in pursuing gender equity across salary, recruitment, promotion, and cultural aspects of employment.

Both the MCA and the AusIMM have established dedicated committees and networks to ensure a continued focus on gender within the industry. The MCA's Women and Mining Steering Committee has set about building a solid platform of research on which to base future strategies in the area of gender issues in mining, including by commissioning this research. This Steering Committee is not only focussed on gender and employment but also the engagement of women in the areas in which Australian mines operate (MCA 2005).

The AusIMM established a special taskforce nearly a decade ago to consider gender imbalance in its membership. This taskforce, now called the Women in Mining Network (WIMNet), emphasises the

advantages and importance of gender balance (Pattenden 2002); the potential for women to work in all aspects of mine life (Horsely 2000) and the potential for professional women to return to work after maternity leave and continue their careers (Sarder and Keogh 2005). WIMNet has put forward strategies and ideas for improving workforce diversity, largely based on the findings of an industry-wide survey. These strategies include:

- considering strategies to address the male-dominated and conservative working culture
- addressing long working hours, lack of flexibility, paid maternity leave and childcare assistance
- redressing negative public perceptions of the industry (WIMnet 2003)
- the AusIMM (2002) also has an EEO and Diversity Policy advocating an industry free from discrimination on the grounds of gender, colour, creed, race or marital status.

1.3 Structure of the Report

This report addresses the following key research questions, drawing on results from both the quantitative, as well as qualitative data, plus other research where relevant:

- How do the case study sites manage female employment?
- Is the retention of women within the industry a significant issue?
- Why do women leave the industry?
- How significant an issue is sexual harassment of women?
- How significant is discrimination against women?
- What attracts women to mining?
- Are issues different for Indigenous women?
- What would attract and retain more women in the minerals industry?

Before answering these questions, the report provides a brief statistical overview of female and Indigenous employment in the Australian minerals industry and reviews some of the existing literature on female employment in the industry. An overview of the research methodology is provided, plus background on the four case study sites and a profile of survey respondents and employees who participated in interviews and focus groups.

2 Female and Indigenous Employment in the Australian Minerals Industry: Statistical Overview

This section provides an overall picture of female employment in the minerals industry by drawing on publicly available information, including ABS data, industry research, academic literature and company and legally mandated reports.

2.1 Female Employment: ABS Statistics

Quarterly ABS Labour Force data (2006) for the period May 2005 to May 2006 puts the average number of women working full time in the minerals sector in Australia at approximately 14,320 women, which represents 13% of the industry's full time workforce[3], up three percentage points on the same period for the previous year.

Part time workers comprise 10.4% of the entire workforce in the minerals sector. More than half of all part-time workers are women.

The coal sector consistently employs fewer women than any other commodity group. Quarterly ABS Labour Force data (2006) for the period May 2005 to May 2006 puts the average number of women working in coal at 1,011 women, representing 4% of the coal sector workforce. By comparison, metalliferous mining employs 6,785 females, representing 17% of the full-time metalliferous workforce. The remaining number of women are accounted for in the non-metallic mining and mining services categories, leading to an overall sum of 13% female participation across all sectors of the mining industry.[4]

One feature of the ABS data is the relatively consistent ratio of women to men over time (Figure 2.1). The proportion of the workforce in the minerals industry who are female has increased by only three percentage points in the past ten years. Even through the current boom period from mid-2000, there has been little change in the industry's overall gender balance.

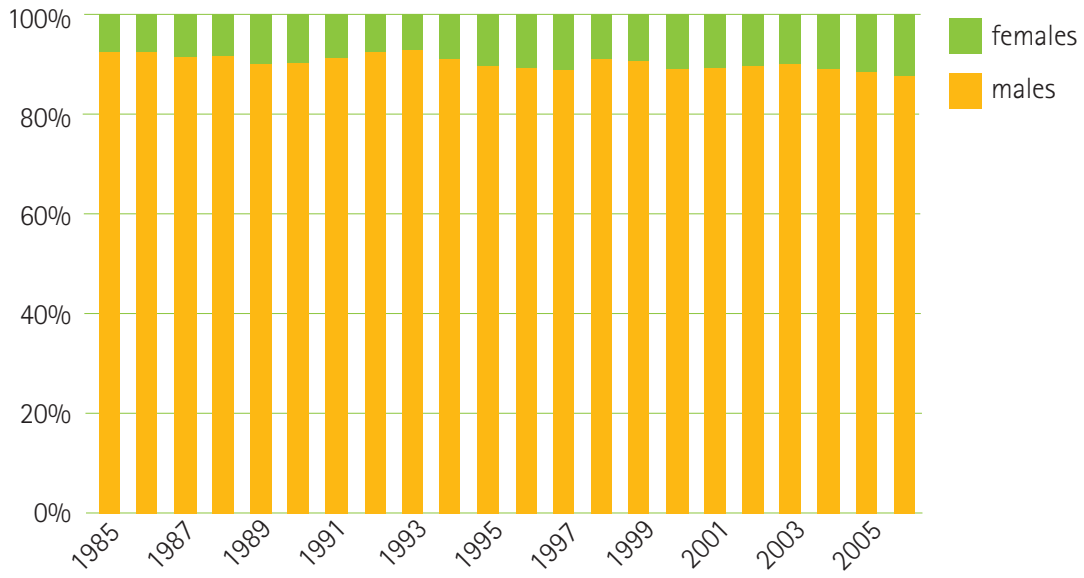
The significant gender imbalance in Australia's minerals industry is not dissimilar to other industries, such as manufacturing, agriculture and construction[5]. Other major mineral exporting nations, such as Canada, Brazil and Chile, show a similar workforce profile. In fact, the Australian female percentages appear to be slightly higher than these nations (Maxwell 2006).

3 This data includes coal, metalliferous and non-metallic mining, in addition to mining services, both contract mining and field services. The 'mining services' category does not include catering and camp support. Although women largely perform these roles, the numbers are not significant by comparison to overall workforce numbers.

4 For the period May 2005 to May 2006, the ABS reported a total minerals industry workforce of 114,493 comprising 100,173 male (87%) and 14,320 female (13%).

5 The female participation rates for these industry sectors, at May 2006, was Machinery and Equipment Manufacturing 13%; Construction General 8%; and Agriculture 21% (ABS 2006).

Figure 2.1: Percentage of Men and Women Employed Full-Time in the Australian Mining Industry 1985–2005. Source: Compilation of data drawn from ABS Labour Force Australia (2006)



2.2 Female Indigenous Employment

There is currently no up-to-date and comprehensive source of information about Indigenous employment in the Australian minerals industry. The most recent data comes from the 2001 National Census and the Australian Bureau of Agricultural and Resource Economics (ABARE) survey[6] (Tedesco, Fainstein et al. 2003), both of which are now several years out of date.

The 2001 National Census identified 1,390 Indigenous workers in the minerals industry, which represents 1.9% of the total industry workforce. Of this, the total number of Indigenous females was 156, representing 0.2% of the total workforce, and 11.2% of the minerals industry's Indigenous workforce.

The ABARE study argues that the ABS data underestimates the extent of Indigenous employment. Through their own research and calculations (as at 30 June 2002) the ABARE researchers put the number of Indigenous people working in the Australian minerals sector at 2,460, representing 4.6% of the workforce. An overall estimate of the number of Indigenous females working in the industry is not provided.

The study does, however, provide other useful estimates about the Australian minerals industry's Indigenous female workforce including that 77% of mine sites did not employ any full-time Indigenous females. A further 18% employed between one and five Indigenous females. Employment of Indigenous males was higher, with 60% of mine sites employing more than one Indigenous male, and 14% employing more than ten Indigenous males.

6 The ABARE study involved a survey of 244 onshore Australian mine sites and petroleum operations. The survey was distributed by email and completed by site level representatives, using their own definitions of what constituted an Indigenous employee. One hundred and twelve completed surveys were received, giving a response rate of 46 per cent. ABARE applied a series of weightings to estimate the number of Indigenous people employed in the industry.

Other CSRM research highlights that the coal sector has by far the lowest overall Indigenous employment rate by commodity, at only 0.3% of the sector workforce. The very low level of Indigenous employment in the coal sector is partly due to most coal mines being located in areas where there are relatively small Indigenous populations. Mines located in close proximity to Indigenous communities typically have a higher rate of Indigenous employment, other than for the gold sector in Western Australia (Tiplady and Barclay 2006). However, even accounting for differences in the 'background' population, Indigenous representation in the coal sector is very low.

In summary, the minerals industry has low numbers of Indigenous employees, low numbers of female employees, but particularly low numbers of Indigenous female employees. As Bryant and Tedmanson (2005) highlight, Indigenous women, many of whom are likely to be living in remote areas as Traditional Owners with custodial rights and cultural knowledge of lands, are one of the least likely groups of people to be working at Australian mine sites.

2.3 Equal Opportunity for Women in the Workplace Agency (EOWA) Reporting

The *Commonwealth Equal Opportunity for Women in the Workplace Act 1999* stipulates that all companies with 100 or more employees establish a workplace program aimed at enhancing women's equal access to workplace opportunities. To comply, organisations are required to submit annual reports[7] detailing employment statistics and EEO initiatives and strategies against a range of specified criteria[8]. This process is administered by the Equal Opportunity for Women in the Workplace Agency (EOWA). Non-complying organisations who either do not submit a report, or whose report fails to comply with the Act, are named in Parliament and deemed ineligible for government contracts. Of the 13 non-compliant organisations for the 2005–06 reporting, none were from the minerals industry (EOWA 2006).

Guidelines are available from EOWA to assist organisations prepare their annual reports. The level of detail required is greater than for sustainability reporting frameworks such as the GRI, discussed later. With the exception of a few confidential sections, most reports are available for public access via EOWA, hence the reports potentially provide a basis for comparison of EEO initiatives within and across industry sectors. Upon review of a sample[9] of eight reports from the minerals industry, it became clear that the format, quality, and consistency of the data varies, making company comparisons problematic. Nevertheless some information about female employment in the minerals industry can be obtained from these reports.

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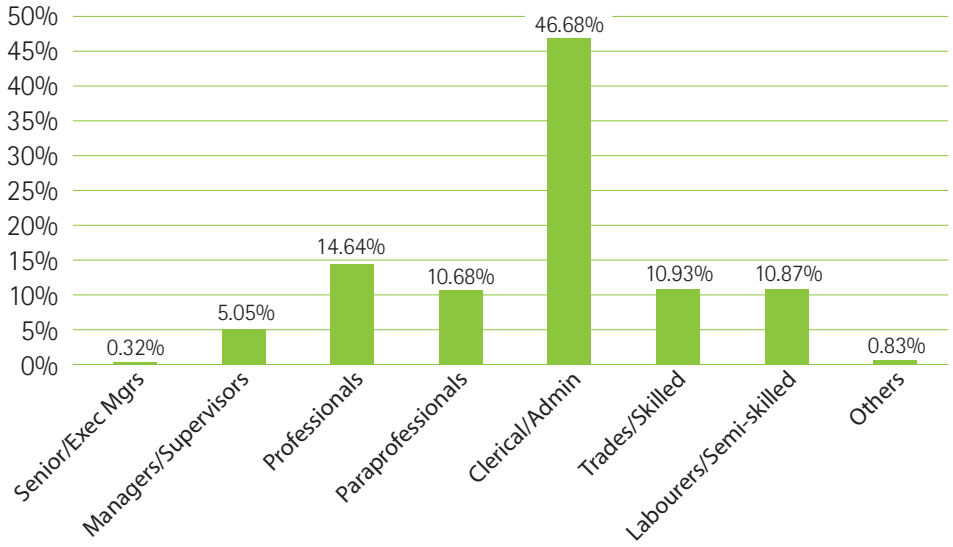
7 Companies can apply to waive their reporting requirements where they have complied with the Act for the previous three consecutive reporting years.

8 Reporting companies are required to present their analysis based on seven specific employment matters: recruitment and selection; promotion, transfer and termination of employment; training and development; work organization; conditions of service; arrangements for dealing with sex based harassment; and pregnancy, potential pregnancy, and breast feeding.

9 For the purposes of this project, eight reports from the 2004/2005 reporting year for the mining industry were reviewed. This sample was drawn from a total of 89 reports posted for the mining sector on the EOWA website for that year. The eight sample companies cover a range of sizes, commodities, and locations and include four operational sites (three residential and one FIFO), two corporate entities (one of which supplied employee breakdown by site), and two contractor companies. Both of the corporate entities specified that the majority of their staff are based at remote FIFO sites. None of the four companies participating in the fieldwork for this project are included in this review of EOWA reporting.

Figure 2.2: Distribution of female employees by employment category across eight EOWA mining industry reports (2004/2005)



Across the sample of eight reports:

- females account for 11.7% of the workforce
- clerical and administration roles account for more than 50% of the female workforce
- women in management or supervisory positions account for less than 1% of the total workforce
- representation of women at the professional level remains low, at just under 2%.

Employment rates for Aboriginal and Torres Strait Islander women are not differentiated as part of the EOWA reporting.

2.4 Summary

Available statistical data on employment of women in the minerals industry indicates as follows:

- women currently constitute around 13% of the minerals industry workforce
- there has been only a small improvement in the male to female ratio over the last 10 years
- there is a substantially higher level of female representation in the metalliferous sector than in the coal sector
- the majority of women working in the industry are employed in clerical and administrative roles
- women are under-represented in management and supervisory roles
- Indigenous people account for only around 5% of the minerals industry workforce; of this group, 10–15% are female
- Indigenous women were less likely to work in professional roles than non-Indigenous women.

3 Industry Research on Female Employment

A useful body of knowledge on female employment in the minerals industry is located within several key industry studies, most of which are publicly available.

3.1 Early Research

In 1998 the AusIMM's WIMNet commissioned Pattenden to undertake in-depth research on employment barriers inhibiting female participation in the industry. Pattenden's (1998) research focus was female technical professionals, including geology, mine engineering and metallurgy and was based on 158 interviews of men and women working in the Australian minerals industry across numerous states, companies and commodity groups. Her main findings identified a series of barriers to participation for female technical professionals, including:

- lack of exposure to the industry during study years
- poor perceptions of the industry in general
- issues of harassment and discrimination
- poor implementation and monitoring of EEO policies
- issues related to the professional development of women, including challenges of male-female mentoring relationships
- females believing they must out-perform males in order to be regarded equally
- salary inequity
- female exclusion from male-dominated professional and social networks.

The report is considered a seminal work within the industry (CBSR 2005), and has served to promote ongoing discussion and debate about female employment in professional ranks.

3.2 Recent Studies

There are several recent studies that provide further valuable insight into female employment in the minerals industry, including:

- A parallel CSRM study, focussing on the attraction of women to tertiary courses that lead directly to a career in the mining industry, such as mining engineering and minerals processing/ metallurgy. This project has also been funded by the MCA and the Office for Women (OfW) (Barclay et al. 2007).
- A study undertaken by Curtin University's Women in Social & Economic Research (Lord, Preston et al. 2007) also funded by the MCA and OfW, entitled *Young Women, Career Expectations and the Minerals Industry* (Lord, Preston & Crosbie, 2007) about young women and career expectations in the minerals industry.
- A report prepared by Colmar Brunton Social Research (CBSR) (2005) funded by the Queensland Resources Council (QRC) into retention of women in the Queensland minerals and energy sector.
- A report prepared by Rowland Communications (2004), also funded by the QRC, into graduate recruitment and retention in the Queensland resources sector.
- A survey of mining industry professionals who were members of the AusIMM undertaken by the CSRM and the University of Queensland Social Research Centre (2005). While not specific to female employment, this survey contains data that can be disaggregated by gender. In this study, survey participants were asked their opinions on a variety of issues relating to the current state and future prospects of the minerals industry.

- An industry-wide study by WIMNet (2003). This study comprised a questionnaire distributed to 114 AusIMM member companies (response rate 17.5%) and was aimed at furthering the understanding of how Australian mining companies define and implement diversity practice within their organisations. The study found that 45% of respondents had a formal EEO or diversity related policy, and that most (70%) rated diversity as important to their company, results which are perhaps not surprising given the self-selection of respondents. At the time these results were reported the study was ongoing, however no further results have been published.

The industry now has access to a significant body of knowledge on female employment, including examples of emerging practice. Notably, much of

the research reinforces, to a large extent, many of Pattenden's (1998) original findings, plus key findings from the current study. Many of the studies indicate that the achievement of gender equality for women in the minerals industry has been incremental and, in some respects, is at a standstill.

Of the research listed above, the CSBR study is the most relevant to the current study as it focussed on the retention of women working in the Queensland minerals and energy sector. The methodology involved an extensive literature review, a survey to member companies to gain retention data, and more than 160 interviews with HR staff, current and former workers.

CBSR makes a series of suggestions for increasing female retention in the Queensland minerals and energy sector, including:

- overcoming the perception that women have fewer opportunities than men to advance within the industry
- removing the perceptions of inequality through greater transparency and openness in recruitment and managerial selection
- improving HR monitoring and tracking to ensure women are given the same opportunities to advance within their companies as men
- introducing more family friendly and flexible working arrangements enabling all staff to meet outside work commitments and responsibilities
- adequate monitoring to ensure these flexible working arrangements are functioning suitably
- more consideration of women's needs in terms of amenities, accommodation, childcare and work clothing (CBSR 2005).

While the CBSR study is comprehensive, it differs from the current study in that:

- the primary research was limited to Queensland
- the study did not disaggregate data relative to Indigenous women
- issues were not separated by commodity group.

The current study aims to address these gaps.

Notably, as a follow-on from the CBSR report, the QRC has recently published *Leading Practice Principles for the Attraction and Retention of Women in the Minerals and Energy Sector* (QRC 2006) which outlines key principles for female participation, and provides some examples of leading practice in the minerals industry, and, where relevant, other industries.

3.3 Other Literature on Female Employment in Mining

There is a small body of academic literature specific to female employment in mining, much of which relates to coal mining in Britain, the United States and Australia. This literature provides insight into specific aspects of mining and gender dynamics. For example, Hammond and Mahoney (1983) and Tallichet (1995;

2000) examine labour division in underground coalmines and barriers to female advancement. This work is largely based on interviews, observation and document study. These authors highlight the sexualisation of work relations and the pervasive patriarchal nature of the industry. Insight into sexual harassment in coal mining is also provided by Yount (1991), who developed a typology of strategies which women use to cope with harassment in the workplace.

There is also an emerging body of activist and academic literature focusing on the role of women in mining in developing countries, including Indigenous women. For example, in a recently published work, Lahiri-Dutt and Macintyre (2006) bring together a range of case studies from the Asia Pacific, African and Latin American regions documenting the histories and experiences of women working in traditional, small scale mines and large scale operations. The book aims to make visible the roles and contributions of women as miners, and stimulate debate about how gender and inequality are constructed and sustained within the industry. The book also considers how ethnic identities intersect with gender.

More broadly, there is a growing and significant body of literature on the impact of mining on women, including Indigenous women, for example, Oxfam Australia's report *Tunnel Vision: Women, Mining and Communities* (Oxfam 2002). Such reports provide an important backdrop for the way mining is perceived to create barriers to realising women's rights on a global level, including limited access to employment for women.

4 Methodology

4.1 Overview

In addition to desktop research, the study involved the collection of primary data at four case study sites in Queensland, Northern Territory, Western Australia, and New South Wales. Each site produced a different commodity, including coal, iron ore, lead/zinc and gold. Two of the sites were fly-in-fly-out operations, one was a residential operation in a remote area and the fourth was located in a settled area.

4.1.1 Primary Research

Multiple methods were used, including a quantitative survey (Appendix 1), semi-structured interviews and focus groups. Given the small number of participating sites, this multi-method approach provides a comprehensive data set and allows for some comparison of responses across a different contexts and working conditions.

The survey was administered to approximately 450 female employees working at each of the four case study sites, including direct company employees and employees of contractors and sub-contractors. A total 189 responses were received from women working at operating sites, representing a response rate of 42%.

CSRM research teams comprising two female researchers visited each of the four case study sites for approximately five days each to undertake a series of interviews and focus groups with women and

men, across all work roles. Most interviews were conducted with women. Where possible, men were also interviewed in order to elicit their views on working with women, the challenges of working in mining and how these differ between men and women. Interviews with key personnel, such as HR personnel, were used to gather HR data. In all, 177 company employees and employees of contractors across the four research sites participated. Of these, 128 were women, including 26 Indigenous women.

4.2 Selection of Case Study Sites

Case study sites were selected in consultation with the MCA, and remain confidential. The aim was to select a balance of long distance commute and residential, and sites from different commodity groups and parent companies. Sites known to have female Indigenous employees were targeted. Once access to sites had been confirmed by the MCA, CSRM researchers liaised directly with each site to clarify research requirements and site logistics.

4.3 Methods

The following sections outline the approach followed for each of the three research methods: the survey, interviews and focus groups. Researcher observations were recorded and used to inform the research to a lesser degree.

Consistency between research teams was ensured through the development of a *Research Guide and Workbook*, which contained instructions on the collection of a core set of data, as well as standard templates.

4.3.1 Survey

Survey Design:

CSRM drafted a survey containing mostly closed, and some open, questions. Closed questions asked respondents to select answers from a pre-determined set of options. Open-ended questions allowed respondents to provide their own answers.

The draft survey was trialed with five women working at mines other than case study sites, or who had previously worked in site-based roles. Feedback was also sought from the MCA and OfW. The final survey asked women about their:

- demographic profile and employment arrangements
- factors that attracted them to their current job
- perceptions of their current workplace, and the mining industry more broadly, regarding factors such as sexual harassment, discrimination, work-life balance, promotion and advancement, and cultural aspects
- knowledge of work practices regarding performance reviews, maternity leave, support for women returning to work after having a family, and mentoring
- intention to remain in the industry, and factors influencing their decision
- ideas about encouraging women to stay in the industry long-term.

Survey Distribution:

The survey was distributed by on-site contacts at each site through a combination of email, internal mail and hand delivery. CSRM researchers distributed a small number of surveys at some sites, as required. Completed surveys were returned to the CSRM via email or reply paid envelopes, which were available to all respondents.

Survey Analysis:

Closed responses were entered into SPSS[10] to obtain basic frequencies, compare responses

10 Statistical Package for the Social Sciences

between groups and explore relationships between different variables. Open-ended responses to key questions were entered into Microsoft Excel and grouped according to themes.

4.3.2 Interviews and Focus Groups

Approach:

Semi-structured interviews were conducted with a cross section of individual women at each site. A small number of group interviews and some telephone interviews were also conducted. In addition to interviews, researchers conducted a series of focus groups of between six and ten people, organised as follows:

- females working in operational roles
- females working in support roles
- if appropriate, Indigenous women across all work roles
- male employees across all work roles.

Interviews and focus groups were pre-arranged in consultation with site contacts. Women in senior roles were particularly sought, as were female Indigenous employees from local communities and regional centres, as these groups comprise a small percentage of the female workforce. Interviews with key personnel, such as HR and Indigenous affairs representatives, were also undertaken.

In most cases, interviews and focus groups were led by a senior researcher, with the second researcher taking notes. In a small number of cases, researchers conducted interviews separately. Interview and focus group protocols prepared by the CSRM were used to guide discussions.

The methodology did not exclude women from participating in both focus groups and interviews, as participants often reveal different information in a group situation as compared to a private interview. However, very few women had the time to participate in both.

Analysis:

Analysis of data for both interviews and focus groups was largely inductive. As the research proceeded, patterns were identified and major themes emerged. Researchers summarised key themes from each interview, and then for each site as a whole.

4.3.3 Human Resource Data

Interviews with HR personnel from both the company and primary contractor were used to source workforce data. While information was not always available, the following was requested:

Annualised statistical and numerical data:

- The number of company/contractor employees and female employees
- The number of company/contractor Indigenous employees and female Indigenous employees.

Work roles:

- Locality and roles undertaken by women workers, including Indigenous women.

Retention and turnover:

- Retention rate of general employee population, female employees, Indigenous people and female Indigenous employees
- Turnover rate of general employee population, female employees, Indigenous people and female Indigenous employees
- The definition of 'turnover' within each organisation: was it site or company based? Did it include internal transfers within the organisation or only those individuals exiting the company?
- Exit interview data.

4.4 Ethical Considerations

Generally speaking, the field research was not highly sensitive in nature. Nevertheless, there were several important ethical issues to consider, such as informed consent, cultural considerations, confidentiality and participant feedback.

Informed Consent:

Ethical approval was obtained from the University of Queensland for this study. Approval was provisional on obtaining informed consent from all participants prior to collecting data.

Background information on the study was provided to research participants at various times. All women received a copy of the survey, which included background information on the study. Those employees involved in interviews and focus groups, whether they had completed the survey or not, received a Project Information Sheet (Appendix 2) along with a Consent Form outlining the voluntary nature of their participation. Data collection for interviews and focus groups did not commence until informed consent was secured.

Cultural Considerations:

Each of the three sites with Indigenous employees had an Indigenous affairs section or department. These departments were involved in coordinating contact with Indigenous women where appropriate. All available interview candidates were invited to participate on a voluntary basis.

Confidentiality:

Strict confidentiality provisions were applied to protect all employees involved in the research. Names, position titles and sites were not used in any of the typed notes as codes were used from the outset. As researcher notes are potentially identifiable, they have been securely stored at CSRM.

Participant Feedback:

Every participant involved in the research was asked if they wanted to receive a summary of the research, once complete. Feedback will be provided to all those who requested it.

4.5 Limitations of the Research

While CSRM researchers sought to understand both positive and negative aspects of working in mining, there was a tendency by participants to focus on limitations.

There was some feeling amongst researchers that senior managers, particularly HR personnel, were inclined to outline company policy, rather than discussing realities of the workplace.

4.6 Generalising to the Industry

Although detailed data were gathered from only four locations, a reasonable level of generalisation is possible because:

- the study covered a cross section of sites and companies
- many of the results are confirmatory, being supported by other studies.

The main limitation of the study design, in terms of the ability to generalise is that it did not encompass junior and second tier mining companies. The study did not collect data from 'stand out' sites known to have a higher than average representation of women and/or leading practice initiatives in gender and employment.

5 Background: Case Study Sites, Survey Respondents and Other Research Participants

5.1 Broad Description of Case Study Sites

The research involved four case study sites in Queensland, Northern Territory, Western Australia and New South Wales. Each of the four sites produces different commodities including coal, iron ore, lead/zinc and gold. Two sites are FIFO and remote, and two residential. Of the two residential sites, one is remote and the other regional. Each site has a different parent company. All four parent companies have policy frameworks for EEO and diversity. Some companies use contractors to do the mining itself. These primary contractors also have EEO policies in place.

At a practical level, none of the sites put concerted effort into managing, attracting and/or retaining female employees any differently from male employees. Systematic evaluation or monitoring of EEO policy implementation was not undertaken, nor were there any site-level targets, objectives or goals for increasing female participation in the workforce. Similarly, there was no systematic gender analysis of personnel data. Gender disaggregated data is provided to corporate offices primarily to fulfil legislative and voluntary reporting requirements, rather than to drive change at the site level.

The three remote sites have Aboriginal traditional ownership associated with the land on which operations are located. These three sites have compulsory cross-cultural awareness training and formal targets for Indigenous employment, although none of the four sites have targets for female Indigenous employment.

All four parent companies produce annual sustainability reports, two of which report overall workforce numbers by gender. Three sites produce site-specific sustainability reports, only one of which reports overall workforce numbers by gender.

5.1.1 Human Resource Data

Human resource data and employment statistics were collected from each of the participating sites, although obtaining consistent human resource data proved to be a challenge.

None of the four sites routinely tracked retention, and hence, we were unable to gather reliable data on longevity of employment. One site supplied information on retention, but this was a simple deduction of the turnover from the whole of workforce and, as with some of the turnover data, was calculated specifically for this project. Likewise, the calculation and definition of turnover data varied across the sites.

For two of the sites, data on the distribution of employees by gender and cultural background was not routinely gathered but was instead calculated specifically for this project.

While each of the four sites provided data on Indigenous employee numbers by gender, turnover statistics for Indigenous employees were more difficult to access and less clearly defined than whole of workforce numbers. One of the metalliferous sites did not track turnover for its Indigenous workforce.

Accessing consistent and reliable information from primary contractors proved even more difficult than the company data, and the format in which the information was provided made aggregation and interpretation of the data difficult in some instances.

The HR data provided for company employees and primary contractors indicates that:

- female participation ranged between 5.1% and 14% across the four sites
- Indigenous participation (males and females) ranged between 5.2% and 12.9% for the three metalliferous sites, and was less than 1% at the coal site
- female Indigenous participation as a percentage of the total workforce ranged between 1.2% and 4.2% for the three metalliferous sites. There were no female indigenous employees at the coal site.

A more detailed analysis of the case study site HR data is provided in Appendix 3.

5.2 Description of the Survey Sample

This section of the report presents descriptive data for the women who completed the CSRM survey at the four case study sites. Unless indicated, the number of respondents for each item was 189.

5.2.1 Personal Profile of Respondents

Of the women working at the four operating sites:

- 80% were aged between 20 and 40 years of age (Fig 5.1).
- 10% identified as an Aboriginal person or Torres Strait Islander.

- 71% were partnered or married, and 29% were single (Fig 5.2). Indigenous women were more likely to be single compared with non-Indigenous women.

Only 18% of survey respondents had children. Of these, 6% had children aged less than five years of age. Indigenous women were more likely to have dependent children than non-Indigenous women (Fig 5.3).

Figure 5.1: Respondent's Age. Source: CSRM Survey

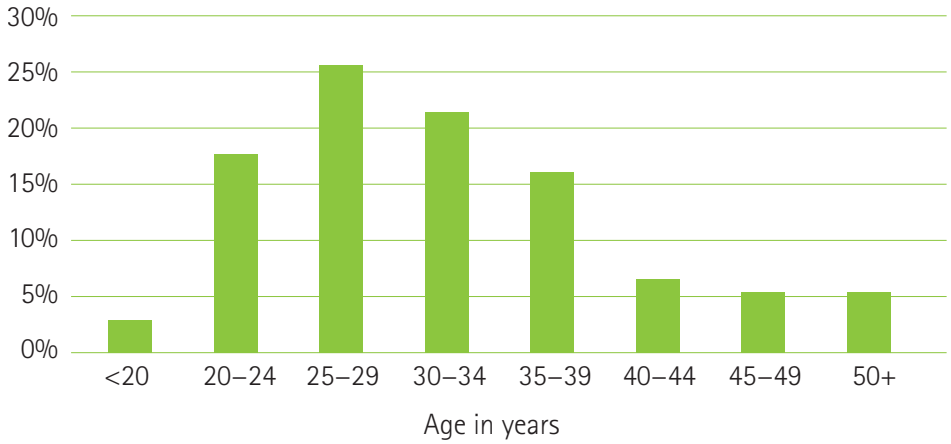


Figure 5.2: Percentage of Women Partnered/Single. Source: CSRM Survey

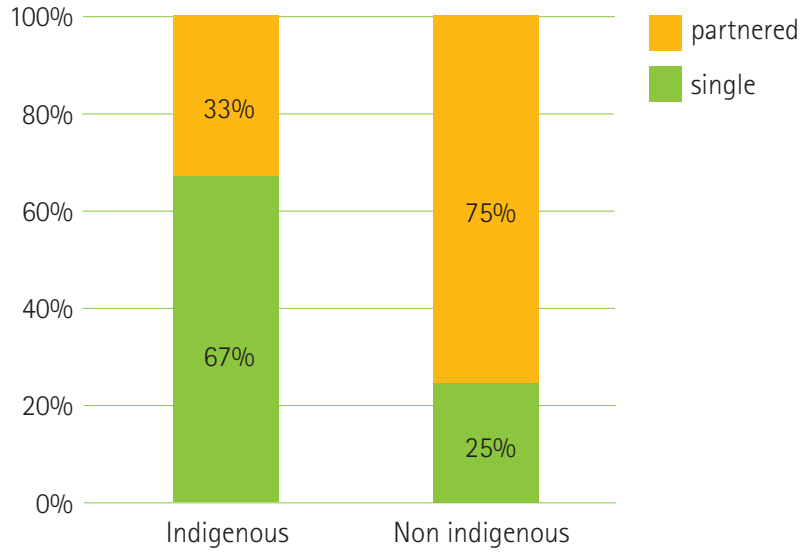
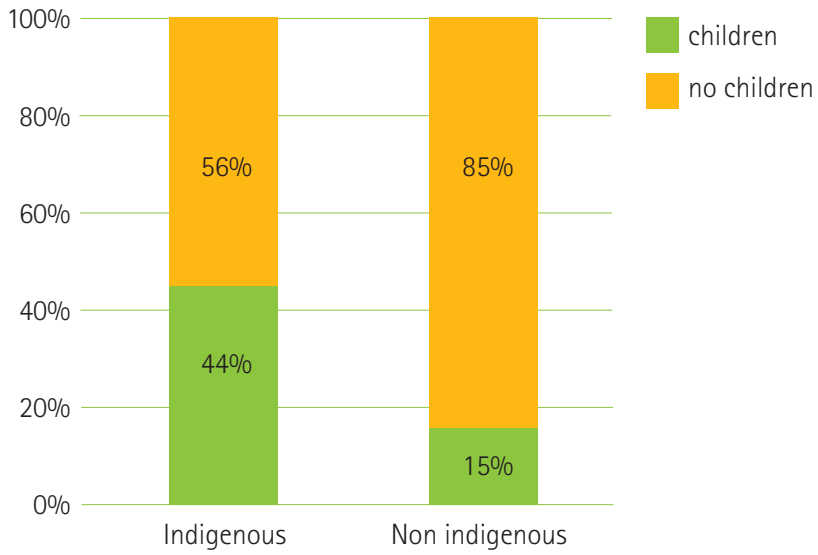


Figure 5.3: Percentage of Women With and Without Dependent Children. Source: CSRM Survey



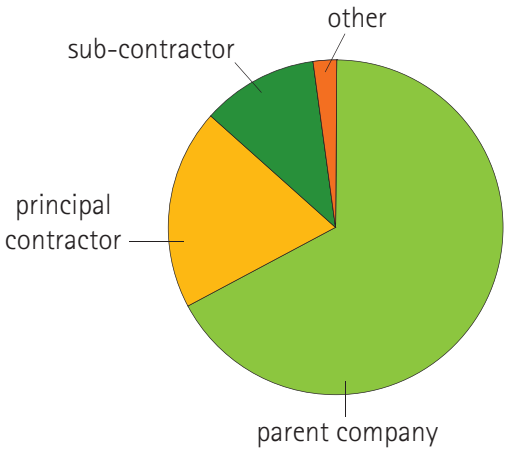
5.2.2 Industry Experience

- 60% of the survey respondents had worked in the industry for five years or less, with 20% of these having worked in the industry for less than one year.
- 70% had worked at their current site for two years or less.
- 41% of respondents had worked at only their current site, with one-third having worked at more than three sites.

5.2.3 Industry Profile of Responses

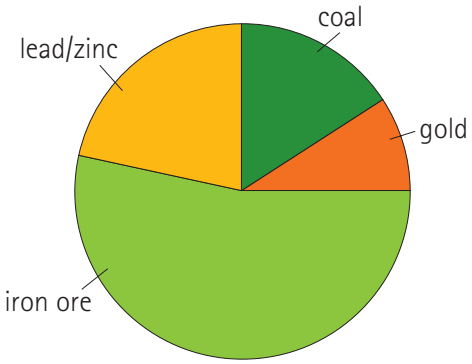
Two-thirds (67%) of respondents were employed by a parent company, with the remainder working for contractors, sub-contractors or another organisation (Fig 5.4).

Figure 5.4: Respondent's Employer Type. Source: CSRM Survey



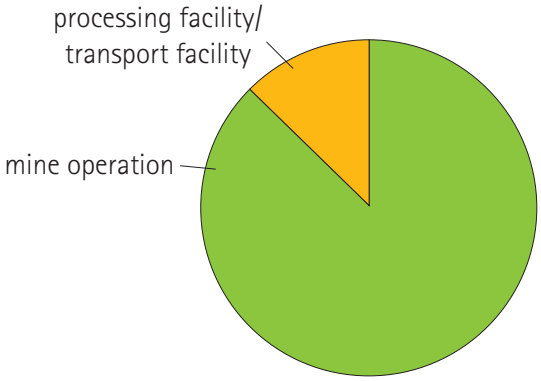
Respondents worked across four commodity groups: iron ore (53%), lead/zinc (22%), gold (9%) and coal (16%). Given this profile, women working in iron ore are over-represented in this study.

Figure 5.5: Respondent's Commodity Group[11]. Source: CSRM Survey



The great majority of survey respondents (87%) worked at an operating mine, with the balance working at a processing facility/transport facility.

Figure 5.6: Operation Type. Source: CSRM Survey



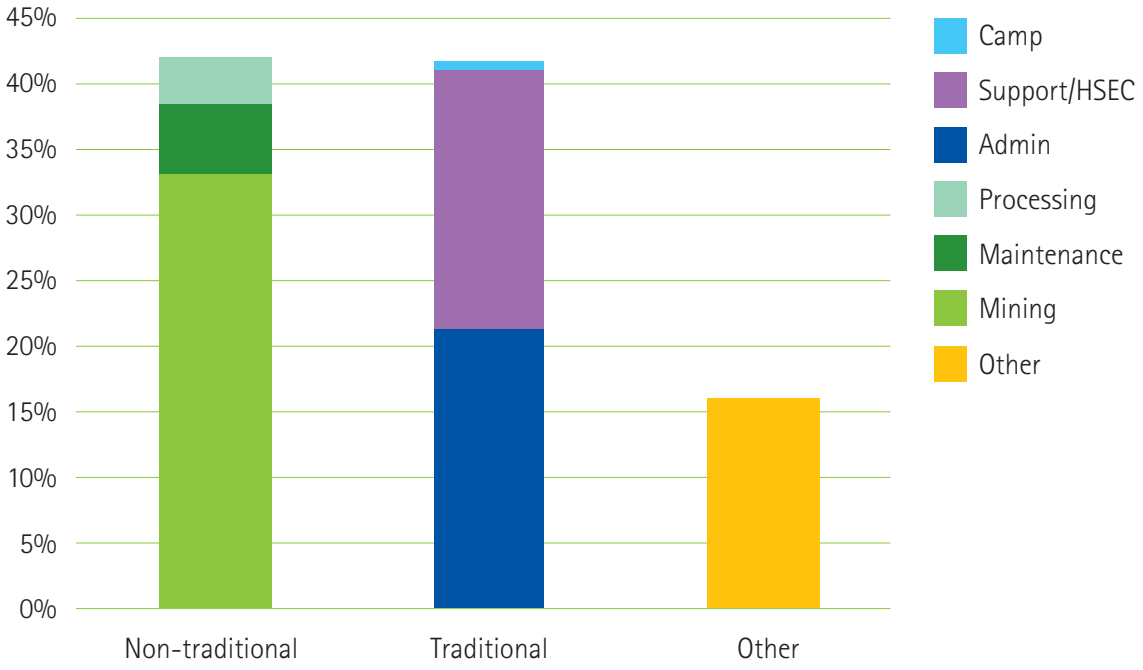
There were more responses from women working at residential sites than FIFO sites (approximately a 70%/30% split), mainly due to the large size of one of the residential operations.

5.2.4 Working Arrangements

The sample was evenly split between women working in traditional and non-traditional areas, with 42% representation in each. A further 16% did not specify their area of work (Fig 5.7, over page).

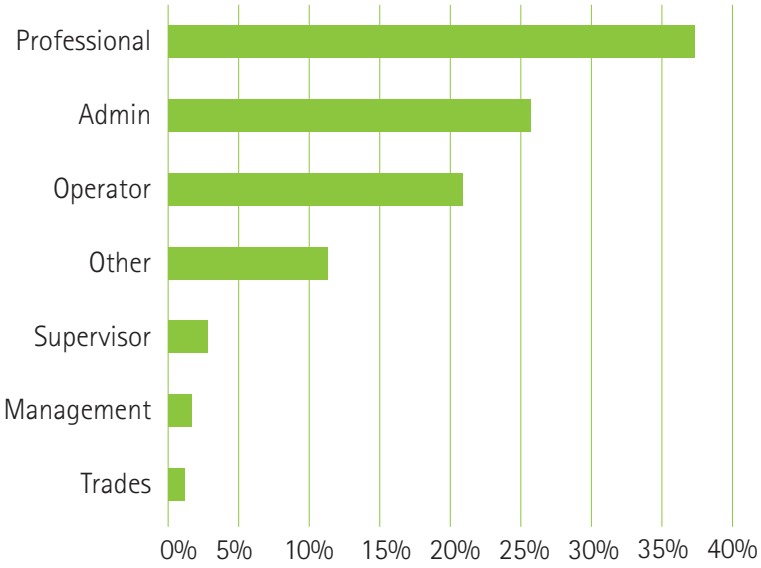
11 The higher proportion of responses from iron ore reflect the size of the participating operation.

Figure 5.7: Respondent's Job Type: Traditional Jobs / Non-Traditional Jobs. Source: CSRM Survey



Women also worked across a range of job types, including: professional (37%), administration (26%), operational roles (21%), supervisor (3%), management (2%) and trades (1%). A total of 11% did not specify their area of work (Fig 5.8).

Figure 5.8: Respondent's Job Type. Source: CSRM Survey



As far as working hours were concerned:

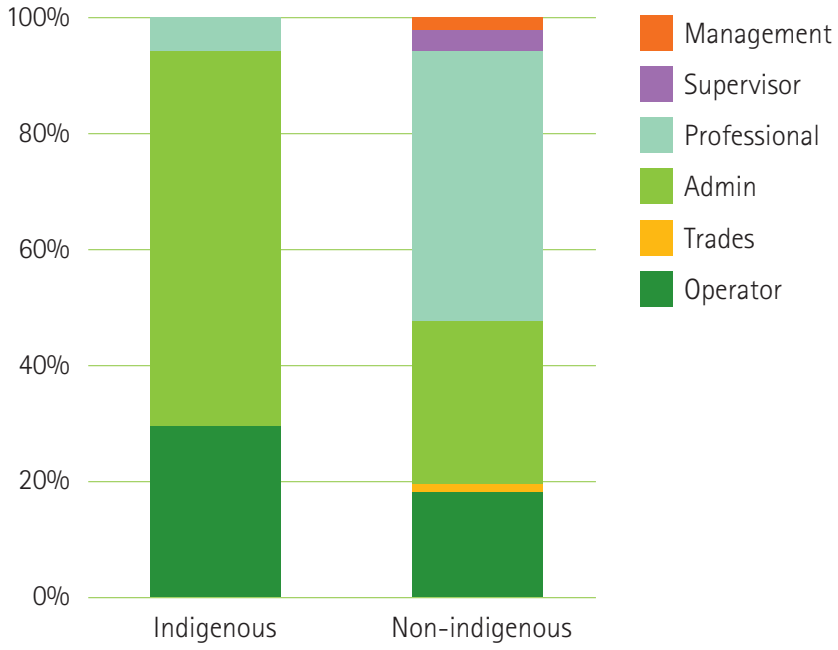
- the vast majority of respondents worked full time (93%)
- of those women working part time (7%), most worked at residential sites
- the vast majority were permanent workers (85%) mostly working days (75%)
- of those women working FIFO (30%), approximately half worked 14 days on, 7 days off on 12 hour shifts.

Around two-thirds of women (65%) worked in a department or section dominated by men, with the rest working in an area with either a balance of men and women (24%), or where women dominated (11%).

The vast majority of women (87%) had a male supervisor or manager.

Indigenous women were less likely to work in professional roles than non-Indigenous women.

Figure 5.9: Respondent's Job Type by Indigenous Status. Source: CSRM Survey



5.3 Profile of Interview and Focus Group Participants

A total of 177 male and female employees and contractors across the four case study sites participated in interviews and/or focus groups[12]. Of these, 128 were women, 26 of whom were Indigenous, and 49 were men, including two Indigenous males. Women who participated in the interview and focus groups worked in a range of positions (see Table 5.1).

Of the total number of female research participants, nearly two-thirds (60%) worked in traditional 'female' roles, with the remainder working in non-traditional roles. Indigenous research participants were evenly distributed across traditional and non-traditional roles.

Table 5.1: Female Interview and Focus Group Participants—Type of Work.
Source: CSRM Interviews and Focus Groups

Type of Work	Total number of women	Number of Indigenous women
Traditional 'female' roles		
Administration	34	3
Professional support (including HR, public relations, accounting, community relations etc.)	28	3
Catering/Cleaning	16	7
Sub-total	**78**	**13**
Non-traditional roles		
Operators	27	9
Mining Professionals (including geologists, mine engineers, metallurgists etc.)	17	-
Technical	2	1
Trades	1	-
Pre-vocational employees	3	3
Sub-total	**50**	**13**
TOTAL	**128**	**26**

12 At one site, five women participated in both focus groups and interviews. They have only been counted once.

6 Findings

This Chapter addresses the following key research questions, drawing on results from the quantitative and qualitative[13] data, plus other research where relevant:

- How do case study sites manage female employment?
- Is retention of women within the industry a significant issue?
- Why do women leave the industry?
- How significant an issue is sexual harassment of women?
- How significant is discrimination against women?
- What attracts women to mining?
- Are issues different for Indigenous women?

The results[14] presented here are largely confirmatory, with many of the findings and recommendations aligning with those of previous studies (Pattenden 1998; Rowland Communications 2004; CBSR 2005; QRC 2006; Lord, Preston et al. 2007; WIMNet undated).

The minerals industry now has a significant body of consistent findings and related recommendations regarding gender and employment. Going forward, the industry's emphasis should be on the implementation of strategies and action plans. Future research should be targeted, rather than being broad-based, focussing on developing a deeper understanding of specific issues, such as the employment of Indigenous women and site-specific issues.

13 Due to the confidential nature of the research, some specific examples have been omitted from the report in order to preserve the identity of particular women, or a site itself.

14 Interviews and focus groups were scribed rather than recorded. Quotes that appear in this section are as close as possible to the actual words spoken.

6.1 How Do Case Study Sites Manage Female Employment?

Key conclusions:

- Each of the companies involved in the study had corporate policies that expressed a commitment to EEO and workforce diversity. However, none of the case study sites were putting concerted effort into managing, attracting and/or retaining female employees
- HR systems and processes, including for career development, promotion and performance review, were generally lacking

All four case sites had policies in place for diversity and EEO, and a commitment to merit-based recruitment and promotion. Primary mining contractors also had EEO policies and/or formal commitments, but they were usually perceived to be less committed than the company to diversity.

In principle, it is difficult to dispute the importance of a merit-based approach to recruitment and promotion. However, in practice this approach does not seem to be increasing the female participation rate at the four case study sites. This may be because companies aspire to the merit-based approach as an ideal, but in reality fail to fully define or implement this model, or it may be that in the absence of more targeted actions promoting gender diversity and EEO, the emphasis on 'merit' is tending to result in homogeneity over diversity.

None of the sites monitored and/or evaluated diversity or EEO policy implementation. Moreover, none of the sites have targets, objectives or broad goals for increasing female participation, either for intake or promotion.

Furthermore, none of the sites systematically analyse personnel data on the basis of gender. This finding is largely consistent with findings from the CBSR (2005) study. Gender disaggregated data is collected largely for corporate sustainability reporting or to meet legislative requirements, rather than to drive change.

Processes for addressing women's particular needs were limited. Of particular note were the non-existent or rudimentary processes for facilitating women's return to work after maternity leave. It came as no surprise that almost half of all women surveyed said they did not know whether support was available to them if they take time out to have children[15].

Comments from female research participants included:

> *'I know someone who's pregnant…she asked about part-time work for after she has the baby, but hasn't been answered…it's like it's a foreign concept.'*
>
> *'It is the return process that's difficult. There are no systems. Women either come back to work full-time or they don't come back at all.'*
>
> *'It seems to be an ingrained thing in the mining industry that if you can't work full time, you can't work.'*

15 Unless otherwise indicated in the text, all italicised comments in this chapter are from female participants.

A male research participant said:

[Maternity leave is] '...a pain in the arse. It's the biggest loss of productivity. You lose a sense of stability.'

A review of maternity/paternity leave policy documentation shows that generally speaking each of the participating sites offered similar maternity/parental leave conditions comprising a minimum of 6 weeks paid leave as part of a 52 week leave period. The exception was one of the major contractors which did not offer any paid leave. All had eligibility criteria of 12 months continuous employment, with one site offering 10 weeks paid leave for employees with 5 years or more service. Most policy documents specify return to work conditions to the same or similar position as held at the time of commencement of maternity leave with part-time available subject to management approval on a case-by-case basis. Two of the policy documents make direct reference to the relevant State or Federal Industrial Relations Legislation covering parental leave.

Notwithstanding the existence of clear policies and procedures around maternity/parental leave, the execution of these policies continues to be a point of issue for many women. This is particularly the case when negotiating return to work practices. Women felt supervisors and managers were generally reluctant to provide flexible work options to accommodate family responsibilities, particularly at FIFO sites.

'Flexible work arrangements are a real problem...there's no availability of part-time work.'

[There is a need to] '...educate people that bringing women back part-time is valuable—there's still a lot of ignorance.'

'Some managers said outright no [to part-time work]. Others are flexible. It depends on the boss.'

'Part-time is accommodated for injury circumstances, but not for maternity leave.'

In discussions, both men and women said formal processes for personal and professional development, including performance reviews and career development processes were generally poor. Employees largely felt they had to drive their own career development. Those female employees who had supportive supervisors were a lot more positive about their career prospects.

'You can't see where you can go. Your career path isn't clear. I'm at a level where I feel I can't go up. There's nowhere else to go.'

'I have to identify [development opportunities] and then jump up and down and push for it.'

'One manager thought women should be at home having babies, and wouldn't promote women because of this.'

'I want to progress my career, but it won't happen here. You'd think a global company would have more opportunities.'

6.2 Is the Retention of Women Within the Industry a Significant Issue?

Key conclusion:

- Retention is an important issue in the industry more generally, but (as per previous studies) the data are inconclusive as to whether retention is more of an issue for women than men. HR systems and processes, including for career development, promotion and performance review, were generally lacking.

Low retention and high turnover are recognised as industry-wide issues. ABS mobility data suggests that the overall retention rate for women is only slightly higher than men working in the industry (Beach, Brereton et al. 2003). Data collected in the current study is inconclusive on this point, as are the findings of other studies (CBSR 2005).

Unfortunately, as none of the four sites in the current study routinely tracked retention, there are no reliable data available to analyse for gender differences in longevity of employment. Company turnover data provides some insight into personnel movement, although the data provided were not reliable across all sites, and not directly comparable, as definitions were different across sites. For example, while some sites included internal transfers as turnover, others did not. Turnover data were not readily available for contractors involved in the current study.

Figure 6.1: Company Employees (by number)—Gender and Turnover.
Source: HR data provided by participating sites

	Site A	Site B	Site C	Site D
Employee numbers female	112	39	11	28
Employee numbers male	634	226	320	137
Turnover female	24.1%	34%	0%	25%
Turnover male	8.5%	16.4%	2.8%	29.2%

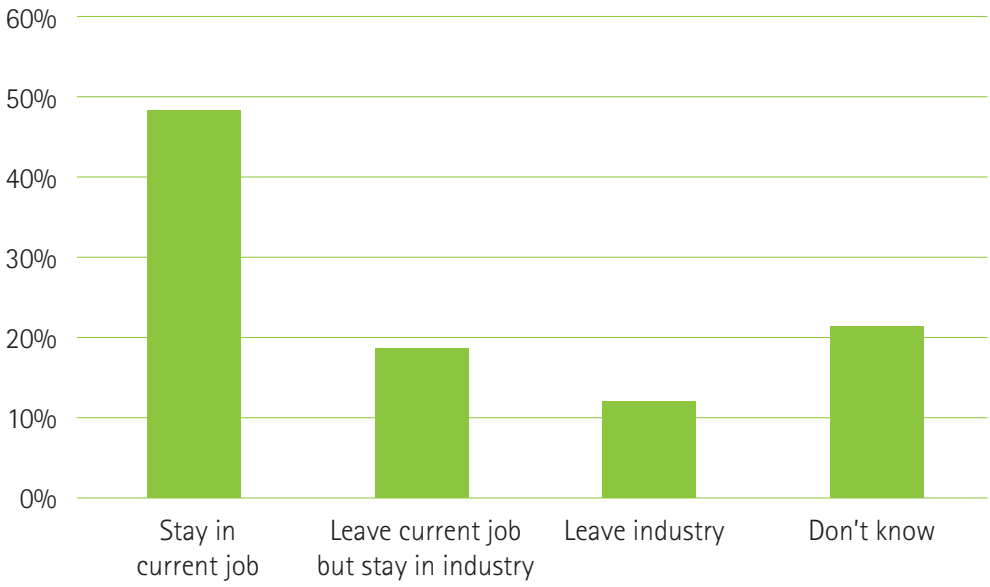
Turnover for both males and females was notably higher at the three metalliferous sites than at the coal site. At two of the three metalliferous sites female turnover was well above the rate for males; at the third there was little difference. Of the two sites displaying the greatest differential between male and female

turnover, one was residential and the other was FIFO. Conversely, the two sites displaying a close correlation between male and female turnover comprised one residential and one FIFO. These results suggest factors other than residential status are influencing turnover rates.

CBSR also reported that very few of the mines involved in their study collected, or had access to, data that could be used to monitor and understand trends and patterns in workforce turnover on site. From the company data provided, the CBSR researchers gained: 'no clear indication of whether retention rates for women are higher than for men...figures suggest slightly higher rates for female professionals and slightly lower rates for females in trades, with little difference between males and females in non-skilled occupations' (CBSR 2005:2).

In terms of the survey, it seems that despite the issues raised by women in the qualitative discussions, the majority of women plan to stay in the industry, at least in the short term. Two-thirds of the survey respondents (67%) expected to be still working in the industry in two years time (either at the current site or another site), 12% (mostly from one residential site) intended to leave the industry; and 21% didn't know.

Figure 6.2: Intention to Stay/Leave Mining within 2 Years. Source: CSRM Survey



The AusIMM study (CSRM and UQCSR 2005), which focussed on mining industry professionals, asked respondents about their future work intentions. Substantial numbers of respondents agreed that, in the next two years, they were likely to move from their current workplace (55%) or change employer (39%). A total of 9% stated an intention to move out of the minerals industry altogether. There was little difference in the way men and women responded to these questions.

6.3 Why Do Women Leave the Industry?

Key conclusions:

- Most women leave when they start a family.
- Both men and women do not see mining as 'family friendly'.
- Other reasons for leaving relate to quality of life, personal circumstances, or management issues.

The profile of survey respondents suggests that mine sites do not suit women with children, whether Indigenous or non-Indigenous. As reported, only 18% of all survey respondents had dependent children; this is low, considering that in 2004, the proportion of Australian women with children aged less than 15 years who were employed was 57% (ABS 2006).

One of the main reasons women look to leave mining is to start their family. Of the 12% of survey respondents who said that within the next two years they intended to leave the industry altogether, the most common explanation related to family responsibilities and/or caring for children. Notably, a total of 43% of all women surveyed either did not know if their site had family friendly policies, or said their site did not have such policies.

During discussions, women said FIFO was particularly problematic during late pregnancy and for new mothers. There were a few women with babies who worked FIFO, but this was rare. Two of these women worked rosters that were shorter than average (5/2 and 8/6), and said that if their roster changed, they would leave their current position. The most common problem for women at residential sites was finding access to childcare, particularly facilities that catered for shift work and long rosters.

'I'd love it [the industry] to be compatible [with kids], but it's not.'

'You couldn't pay me enough to be away from my son 5 days a week.'

'I wouldn't do FIFO with a young family. You just couldn't.'

Women working at residential sites appear to have more opportunities to work flexible working arrangements, but participants reported a fair amount of resistance from managers and supervisors to accommodating women's needs when their families are young.

There were several isolated cases amongst the case study sites where some women were offered very flexible working arrangements, even to the extent that babies were brought into the workplace for periods of time. However, these women were in high demand jobs, where replacing them would be difficult. Some women were clearly at an advantage in this sense.

During discussions, men and women agreed that working at a mine site usually poses significant challenges for balancing work and family life, particularly for women who typically have more childrearing responsibility. Most said balancing work and family was harder at FIFO sites, citing particular concerns around the ability to get home in an emergency.

There were several other reasons that prompt women to leave the industry, including quality of life, personal circumstances or management issues. Issues relating to quality of life were primarily around the FIFO lifestyle. Most employees considered FIFO to be a short to medium term option, rather than long term.

'It's a lousy lifestyle [working FIFO] with rosters etc...and the fatigue is terrible.'

Employees at remote residential sites cited frustrations relating to the quality of services, such as healthcare and education, particularly secondary education. Women also explained various personal considerations that may prompt them to leave, such as to move with a partner, to be closer to family and friends, to care for an ageing parent or achievement of a financial goal. Management issues, such as lack of communication or inflexible and non-family friendly work arrangements, were also given as a possible reason to leave the industry.

'I hated it [partner doing FIFO]. We did it for six months but it started affecting our relationship. I got depressed—too much time alone.'

Indigenous women had a complex set of family obligations that influence their decision to start or stay in mining. For most Indigenous women, family support and encouragement was crucial to their decision to join the industry, with most having family members working either at their current site of employment, or elsewhere in the industry. Once working in the industry, family pressures from partners or extended family often proved critical to their capacity to remain in the industry. Several Indigenous women spoke of friends or colleagues who had left the industry following pressure from partners (often prompted by jealousy and/or misunderstanding of mine site dynamics), or difficulties managing family relationships and childcare arrangements from a remote mine site.

6.4 How Significant is Sexual Harassment?

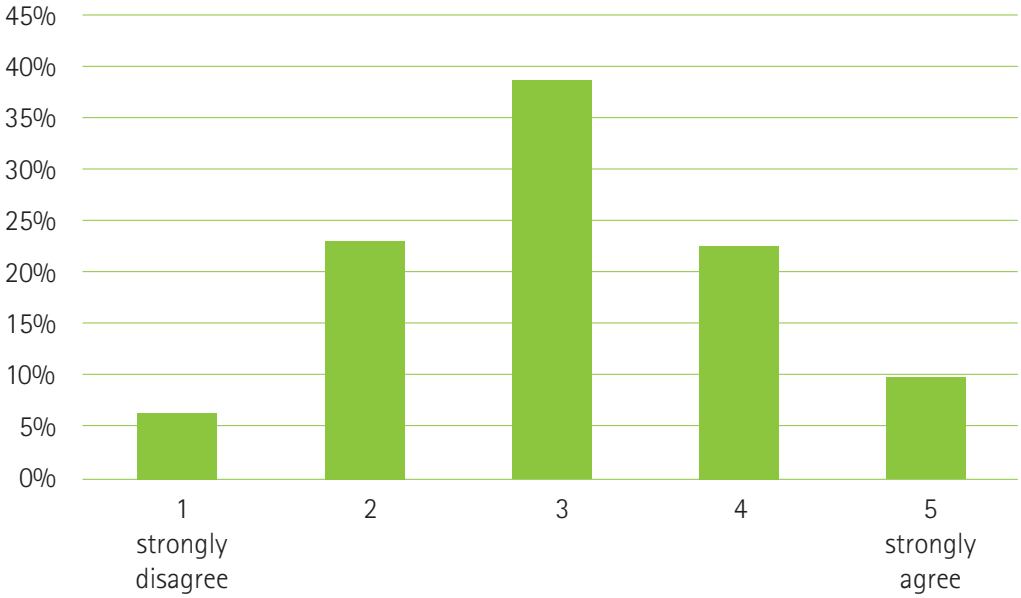
Key conclusions:

- Mine site culture still accepts moderate levels of sexual harassment and bullying, such as inappropriate comments, displays of sexually offensive material and general repartee. However, serious sexual harassment, particularly physical harassment, is not the issue it once was.
- Site management are generally responsive to reported incidents. However women tend not to formally report incidents until issues escalate.

Based on the survey responses, it would appear that serious sexual harassment of women in the workplace is not the issue it once was. This may be an indication of a cultural shift in the workplace, particularly compared to Pattenden's (1998) study, which found sexual harassment to be a significant issue.

'These days other blokes will pull them [perpetrators of sexual harassment] up, tell them to give it a rest if it's going too far.'

Figure 6.3: Respondent's View on Whether Sexual Harassment is an Issue in the Industry. Source: CSRM Survey



In response to the survey statement 'Sexual harassment is an issue for some women in the industry', results were evenly spread across those who disagreed or strongly disagreed (29%), those who were neutral (39%) and those who agreed or strongly agreed (32%).

Regardless of how widespread it is, and is perceived to be, sexual harassment is still a very important issue requiring careful management. During discussions with women, several said they would leave if they were sexually harassed, and the issue was not satisfactorily resolved. Several Indigenous women said they would simply leave, as they would not want to deal with the conflict.

The survey indicates that management is generally perceived as taking incidents that are reported seriously. In response to the statement 'If I had to report an incident of sexual harassment or discrimination, I think management would take me seriously', 78% agreed or strongly agreed.

> *'If you were harassed, the first thing you'd do would be to go to your supervisor, but there are also other avenues. That sort of thing has really improved.'*

Nonetheless, discussions with women indicated that while management took issues seriously, there were some outcomes that were seen as inadequate. For example, one woman explained that two men who had sexually harassed her had been made to give her a formal apology but no other disciplinary action had been taken. They have continued with some low level harassment.

Discussions with women revealed that, by and large, lower-level harassment (e.g. innuendo and repartee) is tolerated, and is something they routinely cope with.

> *'[The sexually explicit material] is not nice, but you just have to get used to it.'*

> *'People know the rules, and are unlikely to say stuff [to a woman] but will still do it behind closed doors.'*

Women appear to be largely reluctant to report low level incidents, and tend only to report

serious incidents. For example, female research participants from one of the focus groups talked about a defamatory rumour that had been started by a couple of male employees about a female employee having sex with men on site. The female employee was upset by the rumour but she did not say anything to management. The men eventually doctored and distributed sexually explicit photographs of the woman. Months later, when the female employee could no longer tolerate sniggering and innuendo from other employees, she finally made an official complaint.

Women tend to wait for issues to escalate before reporting. Some women are vilified for formalising complaints, even for serious incidents.

Discussions with women indicated that sexual harassment is more of an issue at FIFO sites, for younger single women, and women in non-professional roles.

Several women also spoke of other forms of harassment on site, such as bullying, and suggested that this remains an issue in some workplaces for both men and women.

One research participant said:

> *'Bullying can be a problem. Some managers think the only way to stamp themselves on their job is to bully other people.'*

This participant explained how her previous boss had verbally abused her and used 'standover tactics' to get others to do things for him. She said:

> *'I got to the point where I wouldn't go into his office unless someone else was with me…I worked this way for two years…in retrospect I should have done something about it…I kept a journal for a while…but in the end he moved on to another site.'*

According to another participant:

> *'I haven't had any issues [relating to sexual harassment], but I have heard about men bullying other men.'*

Male participants in interviews and focus groups made few comments on the issue of sexual harassment, although some did suggest that they consciously modify their behaviour and language when women are in the workplace because of uncertainty about how that behaviour may be interpreted. Amongst the male participants in this study, poor behaviour towards women was generally regarded negatively. For example, one underground truck driver said that:

> *'There's some chauvinist pigs who can't even be polite to them [women].'*

Although most of the women who participated in this research were relatively at ease in their work environments, being a woman within a male dominated workplace still carried with it significant challenges. Many interview and focus group participants spoke of the 'culture of mining' and how this culture can influence the relationship dynamics which underpin the everyday experience of a workplace. Terms such as 'old-school' and 'boy's club' were frequently raised, and women spoke of some of the ways in which they were reminded, often obliquely, that they were a different gender to the majority. Some women spoke of being given extra duties over and above their male colleagues because, as women, they were good at 'multi-

tasking', while others spoke of feeling by-passed when they saw their male colleagues, often with less experience then themselves, access highly desirable training and career development opportunities.

The legacy of male domination in the mining industry is one which potentially continues to impose standards of behaviour and norms that are inappropriate and out-of-step within a modern and equitable workplace. The challenge is to transition to a more diverse and productive workforce particularly in times of human resource scarcity.

6.5 How Significant is Discrimination Against Women?

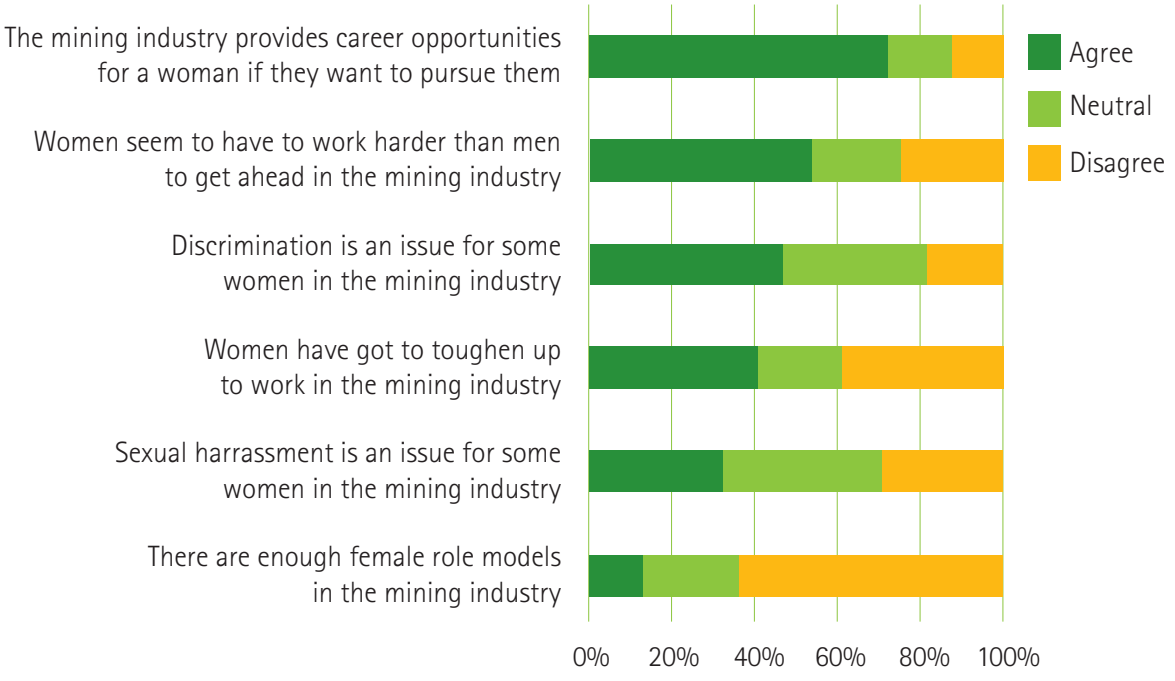
Key conclusions:

- Discrimination against women was perceived by the women who participated in the study to be a serious and systemic issue, particularly for career development and progression.
- By contrast, many of the males interviewed did not see this as a significant issue.

Discrimination against women, particularly in terms of career progression and opportunity, was a key theme in both the survey and discussions with women, which is in line with findings from the CBSR study (2005).

In the survey, a total of 72% of respondents agreed that the mining industry provides good career opportunities for women if they want to pursue them, but, at the same time, 54% agreed or strongly agreed that women seem to have to work harder than men to get ahead in the industry. A further 47% agreed or strongly agreed that discrimination against women is an issue for some women in the mining industry.

Figure 6.4: Respondent's View of Industry. Source: CSRM Survey



As can be seen from these results, discrimination was seen as a more significant issue than sexual harassment (Fig 6.4).

'They've got above that [sexual harassment] but it's still assumed that women can only go so far.'

In discussions with women, there was a widely held perception that career development and performance review processes are contrary to policy commitments, not based on merit, and are subject to the discretion of supervisors and managers. The often arbitrary nature of performance management and career development processes possibly exacerbates women's perceptions of discrimination. For example, amongst the administration and support personnel, some felt overlooked in their career development, with few training opportunities made available to them to help with career progression.

'So much [of the performance review process] depends on the departmental culture. A lot of people feel it's a tick-the-box exercise.'

'The career development aspect of the performance review is just one piece of paper…and you have to do it yourself.'

An Indigenous female research participant said:

'There's no career development here for Indigenous people.'

None of the women who participated in interviews or focus groups had formally reported concerns relating to discrimination, with the general feeling being that there was no benefit in doing this. EEO policies were seen to be effective for addressing sexual harassment, not discrimination. There were some instances where professional women were given a disproportionate amount of their department's administration workload, as compared to male colleagues.

Most men who participated in the research did not see discrimination as a serious issue. However, the examples provided above suggest this perception is not correct. Rather, shared understandings of what discrimination is, and its implications, may be lacking.

A male research participant said:

'There's nothing stopping women from getting ahead.'

A lack of awareness of what constitutes workplace discrimination was evident amongst both men and women. Understanding of what constitutes workplace discrimination was not consistent across workers, or workplaces. Research participants sometimes stated that there was little discrimination in their workplace, only to go on and describe cases of discrimination, either on the basis of race or gender.

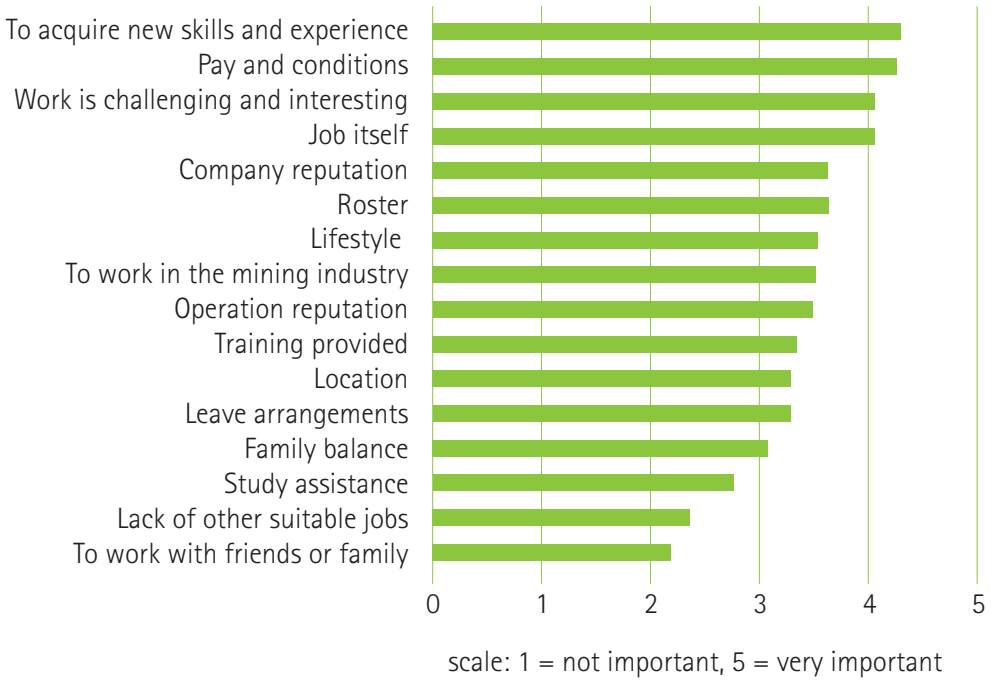
6.6 What Attracts Women to Mining?

Key conclusions:

- Overall, women are initially attracted by career development and job-related factors (acquiring skills and experience, pay, interest, the work).
- They are then likely to remain in the industry if the work suits a range of other, mostly personal and lifestyle factors.
- The overwhelming 'maleness' of the workplace deters some women.

Both the survey and site-based discussions indicated that women are attracted to their jobs in the first instance by job-related factors, such as acquiring new skills and experience, pay and the job itself. This can easily be seen by looking at the average ratings across factors that attracted survey respondents to their current position.

Figure 6.5: Factors that Attracted Respondents to their Job. Source: CSRM Survey



Women were then attracted by other factors, such as the ability to balance work and family, leave arrangements and the location.

The survey indicated that Indigenous women are more attracted than are non-Indigenous women by the opportunity to work with family or friends plus the availability of study assistance, whereas non-Indigenous women rate these factors as less important. Discussions with Indigenous women also indicated that the opportunity to be a role model for other Indigenous people was important.

'My father, brother, other relatives work here…there were also a few others [Indigenous women] working here…that made it easy for me.'

One Indigenous woman was initially attracted because her father, brother and other relatives worked in mining. She said: *'If they can do it, why can't I?'*

Discussions indicated that women in professional roles (mining and support) were primarily attracted by career development considerations, whereas women in non-professional roles are primarily attracted by pay and skills development (linked to pay).

Discussions on site also turned to factors that dissuade women from commencing a career in mining, and the role of friends and family in encouraging or discouraging women to enter mining. Most women believe that the industry's 'blokey' image and overwhelming 'maleness' are deterrents. Some women said that their non-mining friends and family think they should get a 'real job'. One woman's grandmother insisted she wear a wedding ring because a mine was no place for a single woman to work. Although women concerned did not regard these perceptions as serious, they are symptomatic of widespread misunderstanding of the industry and mine site dynamics in the general community. The industry's image problem has been highlighted in previous research (Pattenden 1998; Rowland Communications 2004; CBSR 2005; Lord, Preston et al. 2007).

'Some of the men just don't like us being here. They make that pretty clear.'

'Men just walk in and out of the toilets. They're used by both sexes. When you have a shower, that's uncomfortable.'

There were also issues relating to the appropriateness and suitability of the standard of on-site accommodation, toilets and women's need for privacy, clothing and other amenities (such as gym and exercise equipment). One woman said: *'It's pretty bad…all women should have their own toilet and shower.'*

In summary, there are a number of cumulative factors that contribute to the 'blokey' nature of the workplace, including the issue of discrimination.

6.7 Are Issues Different for Indigenous Women?

Key conclusion:

- Indigenous women share some issues with non-Indigenous women, but face additional challenges, such as systemic social disadvantage and complex family responsibilities. Some also face issues associated with holding positions of authority over Indigenous men.

Indigenous women share some of the same challenges as non-Indigenous women. However, they also face an additional set of challenges. The demographic profile of survey respondents suggests that Indigenous women are more likely to be single with dependent children. Thus, Indigenous female employees may face more challenges than non-Indigenous women in managing their caring and income earning roles. For Indigenous women living in remote communities, access to childcare centres is also likely to be limited.

Many Indigenous female interviewees said they utilise extended family to care for their children while they worked. However, these arrangements were not always straightforward. For example, one Indigenous women interviewed separated her children in order to take up employment, leaving some of her children in the care of her partner while another was sent to more distant relatives.

Indigenous women, particularly those from remote Indigenous communities, feel great family pressure to stay at home and look after children and other family members. Statistically, Indigenous women have children at a younger age than non-Indigenous women, and are therefore constrained in terms of starting a career in mining.

Amongst some Indigenous people, mining is still something to fear, in one way or another. One Indigenous woman said:

> *'They [some Indigenous people] are scared of mining and what it means for the land.'*

Others cannot cope with long absences from home, particularly at FIFO sites, and get particularly 'homesick'.

In some cases, Indigenous women would face cultural complexities if they were to take a position of authority that would require them to train and/or direct Indigenous men. This may be one factor limiting the advancement of these women. At FIFO sites, cultural complexities may also make some social activities, such as going to the bar, problematic for some Indigenous women.

Some of the Indigenous women who participated in this research acknowledged the historical lack of Indigenous female participation in the minerals industry. As such, they saw themselves potentially as role models for Indigenous women who might otherwise believe that a career in mining was beyond their reach. As discussed in Section 6.3, family support and encouragement was mentioned by several of the women as crucial to their decision to join the industry and their belief that they could rightfully take up a place as full and equal participants in the industry's workforce. For example, one Indigenous woman said that other women 'come to us' to find out about the job and how to apply for jobs, while another said that she saw her role as having the potential to influence Indigenous employment at her work site.

Nevertheless, even amongst this group of women, the challenges of being an Indigenous female working in mining were discussed, as outlined in previous sections of this report. In particular, the support of other Indigenous women at their worksite was highly valued and seen as important to their success in the workplace. More research about Indigenous women working in the minerals industry is warranted in order to more fully understand the challenges outlined above.

7 Recommendations

This Chapter addresses the final research question: 'What would attract and retain more women in the minerals industry?'

The recommendations listed below aim to address many of the key findings outlined above and relate to:

- Systems and process improvements
- Job design
- Personal and professional development
- Quality of life
- Cultural shift
- Indigenous women
- Public reporting
- Profiling good practice
- Stronger leadership

7.1 What Would Attract and Retain More Women in the Minerals Industry?

Systems and Process Improvements

As discussed, at four of the case study sites, there was little evidence at a site level of a strong commitment to increasing female representation in the workplace. This was despite high-level commitments at an industry and corporate level. Addressing this issue will require implementation of systems and processes to drive improvement at the site level, such as setting goals and/or targets, better information capture and analysis and systems for monitoring and evaluation. All this should be underpinned by a commitment to consultation with women on issues that affect them.

Goals and Targets:

- Articulate measures of success, including both quantitative and qualitative indicators.
- Consider setting targets and/or goals for female participation, having regard to the requirements of the relevant EEO legislation.

- Incorporate gender considerations into key performance indicators (KPIs) at a site level, particularly for senior leaders.

Industry bodies, companies and sites should consider setting quantitative indicators for success for female participation in the workforce. For example, a high level target may be to double the current overall percentage representation of women across all work roles. A more specific focus may be pursued for women in non-traditional roles, leadership roles, or the employment of Indigenous women. Turnover targets might also be set for sites with high female turnover rates. Participation of women in leadership roles may be another area where goals and/or targets may help to focus effort. Whatever the approach, specificity will help to drive change.

It is beyond the scope of this research project to suggest specific industry-level goals or targets. This is something the industry will need to debate and articulate itself, recognising that goals and/or targets will vary across sectors and sites. But, if a significant increase in female participation is being sought, the industry needs to determine what constitutes 'significant', at least at the level of participation.

Sites could look to incorporate targets on female participation into key performance indicators, in particular at a senior leadership level. Anecdotal evidence suggests that once individual targets are locked in at the leadership level, change starts to happen, as has been seen in the area of occupational health and safety, environment and community relations and, more recently, Indigenous employment.

Qualitative measures, such as levels of satisfaction, might also help track women's perceptions of progress in the area of gender equality, discrimination and/or harassment. This could be measured at an industry, company and/or site level.

Information Capture and Analysis:

- Implement better systems for analysing HR data from a gender perspective.

The well-known mantra 'what gets measured, gets managed' also holds true in the area of diversity. Unless mines collect and track better data in the area of gender and employment, they will not be in a position to track and report progress, whether targets are articulated or not.

While some sites need better data management systems for recording gender information, the issue was usually a lack of analysis. Most sites had access, in one form or another, to gender disaggregated HR data, but little use was being made of this information.

Monitoring and Evaluation:

- Monitor progress against targets and goals.
- Undertake independent company and/or site-level research to evaluate the implementation of diversity policies.
- Conduct industry-level benchmarking studies in key areas such as maternity leave and return to work practices.

Ongoing monitoring will be required to track progress towards the achievement of goals. A similar recommendation was made in the retention study commissioned by the QRC (CBSR 2005). Monitoring of results against agreed indicators should also be routinely included in site-level management meetings, in order that gender considerations become an integral aspect of operations.

Sites should also be encouraged to commission independent research to evaluate the extent to which diversity policies are understood, and are being applied in a practical sense. Evaluation could consider specific issues at an individual site and/or

company level. For example, at some sites, one of the key issues limiting female participation is childcare availability. An evaluation could investigate the situation and offer suggestions as to how a particular site, or company, might address gaps.

At an industry level, evaluation could include benchmarking against best practice in the industry and within other industries; for example, in key areas such as maternity leave and return to work programs. The industry could then provide broad guidance to companies on these matters.

Consultation:

- Consult women on issues that affect them.

The industry has become attuned to the need to consult the local community on social licence to operate issues. The same principles apply in the area of female employment. Women must be consulted about issues that affect them, and become part of the decision-making process. QRC's Leading Practice publication (2006) also advocates a consultative approach, through forums such as women's reference and diversity initiatives groups.

Job Related

- Investigate options for providing greater flexibility for women (and men) with family responsibilities.
- Focus effort on the high priority issues of maternity leave and return to work.
- Investigate why so many supervisors and managers resist flexible work options.

Case Study: Flexible Working Arrangements

Some sites are actively taking steps to accommodate women with families—an identified barrier to participation within the minerals industry.

One employment trend that has gained recent media attention is the so called 'mothers' or 'housewives' shifts. This arrangement occurs at residential sites where local female employees work in operator roles on short day shifts, usually on a permanent-part time basis for relief driving, such as during crib breaks.

Xstrata's Ernest Henry operation, a copper-gold mine located 38 kilometres north-east of Cloncurry in north-west Queensland introduced a permanent part-time shift from 9am to 3pm to overcome idle time issues on haul trucks. The shift was marketed to local mothers who were likely to have children in school or day care and who were looking for work that blended in with their family responsibilities. This shift has also attracted some men with children whose wives work full-time and who appreciate the extra time that it enables them to spend with their family.

Anecdotal evidence suggests that this has boosted staff morale and decreased the high turnover of drivers, increasing productivity and decreasing the costs required for training.

Sites must become more adept at managing female employees. This will require a dedicated focus on two of the key issues highlighted in this report; maternity leave and return to work programs - issues that have been identified in other studies (CBSR 2005; Sarder and Keogh 2005). Companies must determine whether maternity (and paternity) leave provisions are adequate, and make appropriate adjustments where necessary. Whatever provisions are available, employees must understand their entitlements and managers must be skilled in the implementation of company policies, both the delivery and implications. Open communication in this area will help to reinforce the industry's increased commitment to female employment.

In line with recommendations made by others (Pattenden 1998; CBSR 2005; Lord, Preston et al. 2007), companies and sites should also investigate options for providing greater flexibility for women (and men) with family responsibilities.

Reasons as to why flexible arrangements are currently so strongly resisted at some sites must be better understood, and addressed site-by-site. While there are logistical limitations at FIFO sites (e.g. the cost of flights), this is not a constraint for residential operations.

Personal and Professional Development

- Understand and address blockages to the practical implementation of performance review and career management processes.
- Clarify responsibility for career management at a site level.

Career management processes are in need of attention, again an issue highlighted in previous studies (Pattenden 1998; CBSR 2005). Career opportunities are a primary factor attracting women to work in the industry. However, in both the survey and during discussions with women on site concern was expressed about the lack of opportunity to develop and progress. In some cases, sites leave it up to individual employees to drive their own development. Women want opportunities, career and skills development; under the current system, women perceive that men get preference in these areas.

Anecdotal evidence from the study suggests that supervisors and managers are struggling to attend to individual employee performance reviews, set goals and support training and development. This issue was not explored in great depth during the study, but the general feeling amongst research participants was that many supervisors and managers lacked time and HR skills to fully implement procedures, many being 'stretched' for resources. Sites must understand why career management processes are problematic, and clarify where responsibility lies. For example, at some sites responsibility for career development may need to sit with HR departments, whereas at other sites, supervisors and managers may simply need more support to meet requirements in this area.

Quality of Life:

- Address quality of life issues for FIFO in relation to partner accommodation, provision of medical/ emergency coverage for families at home, communication technology and accommodation and amenity standards.
- Address quality of services in remote residential locations, particularly health and education.

There are a range of actions mine sites might consider to respond to the issues raised by research participants about general quality of life issues. It must be noted that few women cited these factors alone for leaving the industry. Quality of life was generally part of a broader cluster of issues.

Women working at FIFO sites suggested the following might help to improve quality of life:

- better access to partner accommodation for couples
- provision of medical/emergency coverage for FIFO families at home
- better provision of communication technology, such as greater mobile phone access, web-based video conferencing etc
- improved accommodation and amenity standards.

Women working at one of the residential sites indicated that an improvement in local services, in particular health and education, might influence their decision to stay in the area.

Indigenous Women:

- Work towards employing a 'critical mass' of Indigenous women at those sites located in areas where there is a significant Indigenous population.
- For sites with a substantial Indigenous workforce, consider appointing a dedicated Indigenous female contact officer to provide support to deal with complex home and life skill issues.
- Review cross-cultural awareness training of employees, supervisors and managers to ensure employment-related aspects are addressed (e.g. how Indigenous people manage family relationships in the workplace), in addition to informing participants about important historical and broader cultural aspects.

Indigenous women value the opportunity to work with family and friends, therefore the achievement of a 'critical mass' of Indigenous female employees may assist to attract and retain women, particularly at sites where there is an Indigenous community or communities in close proximity.

Many mining operations now require all new employees to complete cross-cultural training as part of their induction programs. Some operations also require supervisors to undertake more intensive training. The value of this training will be enhanced if it is used to inform supervisors and others about the day-to-day issues that Indigenous employees, particularly women, have to deal with, as well as providing participants with a general historical and cultural understanding.

Indigenous women would also benefit from access to a female Indigenous contact officer, or at least a female contact, rather than having to deal with a man. Such a person may be able to 'troubleshoot' and help employees balance complex family issues and work. Similarly, a dedicated Indigenous contact officer may also assist Indigenous men (Tiplady and Barclay 2006).

While the current research has provided some insight into the perspectives of Indigenous females, further research is needed. For example, there are particular issues for women from local communities who may come from a more traditional environment, compared with women from regional towns and centres.

Cultural Shift:

- Work towards eliminating tolerance of discrimination, sexual harassment and bullying in the workplace through ongoing workforce education about behavioural expectations.
- Ensure outcomes of actions taken by management to address formal complaints are periodically reviewed and evaluated.
- Understand and address reasons why women are reluctant to formalise complaints of discrimination and sexual harassment.
- Encourage a dialogue between company management and staff/contractors about what are appropriate and acceptable standards of behaviour in the workplace in respect to all workers.
- Implement practical changes to address the 'maleness' of workplaces; for example, by ensuring that there are appropriate facilities and amenities for female employees.

While sexual harassment may not be the issue it once was, a strong focus is still required for operations to achieve a cultural shift that does not tolerate even low level sexual harassment.

Women must be encouraged to report incidents of sexual harassment that are at the less serious end of the scale, or that have the potential to become serious issues, rather than only reporting issues once they have escalated. Women must also be encouraged to formally report instances of discrimination that concern them. For women to feel comfortable and confident enough to report there may need to be a review of systems to ensure that sites can respond adequately. Some companies may choose to provide a corporate service in this regard, such as through an EEO Ombudsman, that is used to investigate issues of concern. In relation to issues that have been formally reported, sites should consider reviewing how women feel about the final outcome of formal investigations, not just the initial response to a formal complaint.

Encouraging women to report their concerns may result in an increase in reported incidents in the short term, but this will also provide data that highlights problem areas and will enable sites to more easily focus on specific problem areas.

Adoption of the above recommendations will go some way to addressing the perception that the minerals industry discriminates against women on the basis of gender, particularly in the area of job design and career development. Greater communication and training will increase knowledge and reinforce expectations about tolerance levels.

The issue of mining being an overly 'male' workplace will be addressed, to some degree, through the above recommendations. However, there are other practical actions that could further address this. For example, there should be dedicated female toilets in all work areas. On FIFO sites, all accommodation should be fitted with dedicated female facilities as a matter of course. Amenities for women are also important, such as gym equipment that is more suitable for women, rather than the typical weights area for men. Clothing should be offered in women's sizes, a suggestion also made by CBSR (2005). Mine sites could look to improve the quality of FIFO accommodation across the board, for both men and women.

The first principle listed in QRC's *Leading Practice* publication suggests: 'providing a cultural and physical environment where women feel comfortable, included and valued', which is aligned with the recommendations made here. The QRC also makes recommendations around flexibility and career management and, importantly, monitoring the effectiveness of strategies, which are likewise addressed in this report.

Public Reporting: Gender and Employment:

- Undertake more comprehensive report of gender and employment data in sustainability reports at the corporate and site levels.
- Benchmark leading sustainability reporters to understand how data on gender and employment are being reported and used to drive change in the workplace.

Until now, there has been minimal focus on gender and employment in the context of the sustainability agenda, but expectations are changing. There is an increasing push for companies to voluntarily report against publicly stated commitments for diversity as part of the sustainability reporting process.

As part of this study we reviewed 18 sustainability reports from the minerals sector, six each from the corporate, regional and site level. This confirmed that companies currently tend to report gender and employment in an ad-hoc and inconsistent manner. Most, but not all, of the sustainability reports included overall workforce breakdown by gender. Aside from this information, comparability across sites or companies, or even the same company year-on-year, was problematic. There was limited information on the type of roles held by women and/or the percentage of female representation in management ranks. There were few targets identified for female employment and no gender disaggregated employment data. Notably, none of the reports included data on retention.

Until recently, little guidance has been provided on reporting gender and employment in sustainability reports. The Global Reporting Initiative's (GRI)

Sustainability Reporting Guidelines (2002) have been the most widely accepted voluntary framework for corporate sustainability reporting. The 2002 GRI guidelines largely required companies to report on gender and employment in a descriptive sense, rather than also requiring quantitative data.

However, the Guidelines have recently been revised, and are now more specific in terms of gender and employment. In addition to describing the diversity of the workforce, the following core performance indicators are now stipulated:

- total number and rate of employee turnover by age group, gender and region (LA2)
- composition of governance bodies and breakdown of employees per category according to gender, age group, minority group membership and other indicators of diversity (LA13)
- ratio of basic salary of men to women by employee category (LA14)
- total number of incidents of discrimination and actions taken (HR4)

Case Study: Gender and Sustainability Reporting at Westpac

Westpac is Australia's largest bank, and a leader in the sustainability area, having been named Australia's most socially responsible company several years running (Reputex 2005). Westpac was also named in 2005 as an EOWA Employer of Choice for Women (EOWA 2005), so represents best practice in diversity management not only in banking, but across industry.

The employee section of Westpac's 2005 sustainability report features a section titled Breaking Through The Glass Ceiling, highlighting Westpac's strategy for retaining women given Australia's shrinking and ageing workforce. This section explains how Westpac identified a bottleneck of women in middle-management positions who were unable to break through to senior roles. As part of a broader diversity strategy Westpac outlines their plan of action to address the bottleneck, highlighting that there is no 'silver bullet', and much work to be done in this area. Most mining companies, by comparison, are less inclined to openly discuss the significant challenges of achieving female advancement through organisational hierarchies.

Westpac also routinely reports data on various aspects of female employment, including:

- Gender and age profiles
- Male/female salary ratios at a management level
- Women in management at three management levels
- Numbers of employees accessing parental leave
- Utilisation of Westpac supported child care centres

Going forward, Westpac recognises the need to provide more detailed information under the new G3 requirements.

Disclosure is also required on the organisation's management approach to diversity and equal opportunity including: goals and performance, policy, organisational responsibility, training and awareness, monitoring and follow up (GRI 2006).

Full use of these indicators goes well beyond how the industry currently accounts for its diversity and EEO performance. With so many minerals companies claiming conformance to the GRI, the new reporting requirements will require a stronger focus on organisational systems to capture gender and employment data at a site level.

There is a clear opportunity for companies to comprehensively report gender information in corporate sustainability reports, especially as companies that are signatories to *Enduring Value* have committed to report publicly, including in accordance with the GRI framework. As sites collate more specific gender information to feed these reports, there is also an opportunity for site-based sustainability reports to include gender disaggregated HR data, as well as more comprehensive information about enhancing female participation in the workplace. Such information provides practical evidence of progress in this area, thereby enhancing the industry's image as 'female-friendly'.

At an industry level, a benchmarking exercise could be undertaken to understand how other industry leaders report gender information. For example, the banking industry may be used as a reference point. Like mining, banking has traditionally been dominated by male workers in senior ranks, with female workers clustered in clerical and administrative roles; although, compared with mining, banking does employ a greater percentage of women overall. Westpac's approach is outlined in the case study (previous page). By comparison, leading minerals companies provide limited information on gender and employment.

Promoting Good Practice:

- Gender considerations should become a mainstream focus in the industry.

At an industry level, gender and broader diversity considerations need to become a mainstream consideration. Responsibility and ownership should not continue to sit with specialist committees and groups alone, but become a mainstream focus. While this may seem like a significant step, it has been achieved in other areas, such as community relations, which is now a major focus of the annual MCA Sustainable Development conference. The following could be considered to facilitate 'mainstreaming':

- At the next MCA Sustainable Development conference:
  - encourage papers that address gender issues
  - consider a keynote speaker on gender and employment
- Consideration could be given to hosting a regular conference of industry HR personnel to address the issue of workplace diversity.
- Examples of 'good practice' could be showcased at industry conferences. The MCA's good practice website is another potential mechanism for sharing leading practice information.

Strong Leadership:

- The leadership being shown by peak industry associations in addressing diversity issues needs to be replicated at all levels of the industry.
- Site management must lead by example.

In order for there to be serious traction around increasing female participation in the industry, strong leadership is required, at corporate and site level. This will be vital to the success of all the recommendations made above. It should be noted that significant leadership in this area has been shown by the industry's leading representative bodies through The Minerals Council of Australia's 'Women and Mining Dialogue'; The AusIMM's WimNET; and QRC's Women in Resources Action Plan (WRAP). However, the prominence and visibility of this leadership could be further strengthened within the industry through promotion and advocacy. Individual companies also need to respond with stronger innovations in flexible work practices, and more significant analysis and action in respect to workforce diversity, particularly at a site level.

Within companies, both at corporate and site level, senior management should lead by example in all of the areas outlined above. This ranges from requiring gender data and encouraging the public reporting of gender information, to supporting a cultural shift in relation to discrimination and harassment, including for Indigenous employees. As one male interviewee stated, '[Workplace] cultures are built up over many years, and they're not going to crumble easily.' Strong leadership at a site level will be required to achieve the cultural change needed to support a sustained increase in female representation in the industry.

8 Conclusion

In discussing the issues of attraction and retention of women in the minerals industry, the findings of this report are consistent (with some exceptions) with most other similar studies conducted in Australia in the last decade or so. Although there have been some positive developments, such as an apparent decline in the occurrence of overt sexual harassment in the workplace, the findings reported here suggest that there is still considerable scope for improvement in diversity management if the industry is to progress to a new and sustainable level of engagement with women.

National labour force statistics support this observation and demonstrate a relatively static gender ratio in the minerals industry over the last twenty years, which runs counter to broader trends in the Australian workforce. This highlights the need to adopt new and innovative ways to push through the barriers which continue to inhibit the attraction, participation, and retention of women, especially given the skills crisis currently threatening the industry's capacity to meet its growth demands.

This report highlights a number of actions that can be taken to remove or lower these barriers. Principal amongst these recommendations are:

- Adopt systems and process improvements to bring about a more sophisticated understanding of gender diversity issues, and demonstrate adherence to the spirit of EEO through innovative approaches to flexible employment and alternate career pathways.

- Integrate quality of life considerations into employment practice, particularly in respect to services and amenities for remote workers and their families.
- Support indigenous women's employment through the enhancement of Indigenous support networks and the appointment of dedicated Indigenous female contact officers at sites.
- Encourage a cultural shift through an open dialogue with staff and contractors on acceptable standards of workplace behaviour, and support and 'take a stand' for this shift through strong site and corporate leadership.
- Strive for greater transparency of reporting of gender and employment data, and drive change by benchmarking against best-practice within the industry and across industries that compete for these resources.

The industry now has access to a significant body of knowledge on female employment, including examples of emerging practice. Future research in the area should be targeted rather than broad-based. In Australia, the employment of Indigenous women in the minerals industry has not received adequate attention and considerable scope for further research exists in this area.

The challenges faced by the industry in seeking to attract and retain more women to its workforce are substantial, and part of a broader set of issues relating to gender equality in the workplace. While the challenges are not the industry's to address in isolation, mining companies have an opportunity to show stronger leadership in their own sphere of influence in their workplaces.

The industry does not lack for leaders, both companies and individuals, capable of bringing about significant change and progress in this area. The attainment of sustainable workforce diversity is about more than just the employment of women – it is about ensuring an equitable and productive workplace for all members of the industry's workforce.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Appendix 1:
Survey of Women Working at Operating Sites in the Minerals Industry

RETENTION OF WOMEN IN THE MINERALS INDUSTRY

Survey of Women working at Operating Sites in the Minerals Industry

Centre for Social Responsibility in Mining
University of Queensland, Australia

August 2006

csrm@uq.edu.au
www.csrm.uq.edu.au

THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

About the Study

What is it about?

The purpose of this study is to better understand what factors encourage women to start, and then continue, a career in mining, and also factors that may make them leave. Findings will help support industry initiatives to attract and retain women, including Indigenous women, in all work roles in the mining industry.

Who is involved?

Four mine sites are involved in the study. They will not be identified in the research. The study involves a survey to all women at each of the four sites, in addition to a series of interviews and focus groups with women and men on site.

Who is funding the study?

The project is being jointly funded by the Minerals Council of Australia and the Australian Government, through the Office for Women. The research is being conducted by the Centre for Social Responsibility in Mining (CSRM) at the University of Queensland.

How long will this Survey take?

Filling out the survey will take about 15 minutes.

What will we do with this information?

Your answers will be coded and combined with all other survey information to build an overall picture of the experience of women working at operating mines.

Confidentiality and anonymity

Your survey responses are anonymous. Please *do not* put your name on the survey. Your answers and any comments you make will not be linked to you in the research outcomes.

Is confidentiality maintained?

All data is 'de-identified', which means your responses are coded without reference to personal identifying information. Given the small number of women employed in some roles, care will be taken to report data in large groups so that no-one is inadvertently singled out. For example, we report 'women in professional roles'. All data will be kept securely at the University of Queensland.

Do you have to do this?

Your participation is voluntary. You don't have to do this survey. There are no risks to you personally for being involved in the research, or for withdrawing from the research 'above the risks of everyday life'.

Can you find out what the results of the study are?

Yes. Towards the end of the research a brief overview of results will be prepared and distributed to participants in a summary format. If you wish to receive this feedback please contact either:

- Deanna Kemp on (07) 3346 4003 or 0407 155 558 or deannakemp@pacific.net.au or
- Joni Parmenter on (07) 3346 4005 or j.parmenter@smi.uq.edu.au

Ethical Issues?

This study adheres to the Guidelines of the ethical review process of the University of Queensland. If you would like to discuss your participation in this survey with one of the researchers, you are welcome to contact Deanna Kemp on (07) 3346 4003. If you would like to speak to an officer of the University *not* involved in the study, you can contact the Ethics Officer on 07 3365 3924.

Please complete all questions.

Even if you feel unsure, please have a go!

Do NOT put your name on the survey.

RETURNING THE SURVEY:

By Post:
If the survey has been **posted** or **handed** to you, return the completed questionnaire using the reply paid self-addressed envelope provided.

By Email:
If the survey has been **emailed** to you, there are two options:

1. Return via email to Joni Parmenter at the University of Queensland: j.parmenter@smi.uq.edu.au. All emails will be treated confidentially and any potentially identifying information (e.g. email addresses) will be removed.

2. If you are concerned about confidentiality, print the survey to complete. A reply-paid self-addressed envelope can be obtained from:

- <name site contact> or
- by contacting Joni at the University of Queensland (details below)
- one of the CSRM researchers when they are at your site

RETURN DATE:

Please return the survey by **<date>.**

NEED HELP?

Please feel free to contact either of the following people from the CSRM for assistance:

Deanna Kemp
Project Manager – Retention of Women in Mining Study
Centre for Social Responsibility in Mining
University of Queensland
Phone: 07 3346 4003 or 0407 155 558
Email: deannakemp@pacific.net.au
Web: www.csrm.uq.edu.au

Joni Parmenter
Research Officer
Centre for Social Responsibility in Mining
University of Queensland
Phone: 07 3346 4005
Email: j.parmenter@smi.uq.edu.au
Web: www.csrm.uq.edu.au

PART 1: GENERAL INFORMATION

1. Your age is…

- ❑ Less than 20 years
- ❑ 20-24
- ❑ 25-29
- ❑ 30-34
- ❑ 35-40
- ❑ 41-44
- ❑ 45-49
- ❑ 50+ years

2. Do you identify as an Aboriginal person or Torres Strait Islander …

- ❑ Yes
- ❑ No

3. How long have you been working in the **mining industry**?

- ❑ Less than12 months, or ____ number of years

4. **How many** mining operations have you worked at?

- ❑ Only this operation
- ❑ 1 other operation
- ❑ 2 other operations
- ❑ 3 or more other operations

5. Which of these best describes your current **employment arrangements**? *(please tick one)*

- ❑ Company employee
- ❑ Employee of a principal contractor
- ❑ Employee of a sub-contractor
- ❑ Other _____

6. How long have you been working for **this company**?

- ❑ Less than12 months, or ____ number of years

7. Which **commodity** is produced at this location? *(please tick one)*

- ❑ Coal
- ❑ Gold
- ❑ Iron Ore
- ❑ Lead/Zinc

8. Where do you **currently work**? *(please tick one)*

- ❑ Operating Mine
- ❑ Processing facility/port operation
- ❑ Regional or head office

9. How long have you been working at this **location**?

- ❑ Less than12 months, or ____ number of years

10. Which of these best describes your current **area** of work? *(please tick one)*

- ❑ Mining
- ❑ Processing
- ❑ Maintenance
- ❑ Administration
- ❑ Support (e.g. supply, community relations, environment, human resources)
- ❑ Camp management/catering
- ❑ Other *(please specify)*

_____
_____
_____

11. Which of these best describes the type of work you do?
(please tick one)

- ❑ Plant or equipment operator
- ❑ Trades
- ❑ Administration
- ❑ Professional
- ❑ Supervisor
- ❑ Management
- ❑ Camp worker
- ❑ Other (please specify)

_____
_____
_____

12. Do you work …

- ❑ Full-time
- ❑ Part-time / flexible hours

13. Are you employed as a…

- ❑ Permanent
- ❑ Casual
- ❑ Temporary/Contract

14. Do you regularly work nights?

- ❑ Yes
- ❑ No

15. What is your usual work pattern?

- ❑ Monday to Friday (5 days on/2 off)
- ❑ Other (please specify: e.g. 4 days on/ 4 days off, 2 weeks on/2 weeks off etc.)

_____
_____
_____
_____

16. Average length of workday …

- ❑ Less than 8 hours
- ❑ 8 hours
- ❑ 9 hours
- ❑ 10 hours
- ❑ 11 hours
- ❑ 12 hours
- ❑ 13 or more

17. Is your direct Supervisor or Manager …

- ❑ Male
- ❑ Female

18. Is the Department or Section where you work …

- ❑ Mostly male
- ❑ Mostly female
- ❑ A balance of male and female

19. Are you currently …

- ❑ Single
- ❑ Partnered or married

20. Do you have any dependent children?

- ❑ Yes (go to next question)
- ❑ No (go to Part 2)

21. What is the age of your youngest child? _____ years old

PART 2 : SURVEY QUESTIONS

1 What factors attracted you to your <u>current job</u>?

Please rank each of the factors listed below on a scale of 1 to 5, where 1 is 'not at all important' and 5 is 'very important'.

	Not at all important/ Not relevant				Extremely Important
The pay and conditions	1	2	3	4	5
The location	1	2	3	4	5
The work was challenging/interesting	1	2	3	4	5
The job itself (i.e. you were looking for this sort of work)	1	2	3	4	5
The working time arrangements (e.g. the roster pattern)	1	2	3	4	5
Leave arrangements	1	2	3	4	5
The reputation of the operation	1	2	3	4	5
The reputation of the company	1	2	3	4	5
The attraction of the lifestyle	1	2	3	4	5
The opportunity to acquire new skills and experience	1	2	3	4	5
The availability of study assistance	1	2	3	4	5
The level of training provided	1	2	3	4	5
The opportunity to work with friends or family	1	2	3	4	5
The work fitted with your family situation	1	2	3	4	5
The opportunity to work in the mining industry	1	2	3	4	5
The lack of other suitable jobs in the area where you live	1	2	3	4	5

1A Were there other factors not listed above that were important to you when you took up your current position?

Please specify .....

_____
_____
_____
_____
_____
_____
_____

2 For your <u>current workplace,</u> how much do you agree or disagree with the following statements?

	Strongly Disagree				Strongly Agree
This is a friendly workplace	1	2	3	4	5
At this workplace, women have to cope with different issues than men	1	2	3	4	5
At this workplace, men and women are treated the same	1	2	3	4	5
If I had to report an incident of sexual harassment or discrimination, I think management would take me seriously	1	2	3	4	5
Balancing work and home life is easy in my current job	1	2	3	4	5
Balancing work and home life is harder for women than it is for men at this work place	1	2	3	4	5
Women at this workplace support each other	1	2	3	4	5
At this workplace, men are advanced in preference to female colleagues who are just as capable	1	2	3	4	5
Working here requires a lot of support on the 'home front' from family and friends	1	2	3	4	5
This workplace is supportive of people from different cultural backgrounds	1	2	3	4	5

3 Focusing now on what you know about the mining industry in general, how much do you agree or disagree with the following statements?

	Strongly Disagree				Strongly Agree
Women have got to 'toughen up' to work in the mining industry	1	2	3	4	5
Sexual harassment is an issue for some women in the mining industry	1	2	3	4	5
Discrimination against women is an issue for some women in the mining industry	1	2	3	4	5
The mining industry provides good career opportunities for women if they want to pursue them	1	2	3	4	5
Women seem to have to work harder than men to get ahead in the mining industry	1	2	3	4	5
There are enough female role models in the mining industry	1	2	3	4	5

4 Does your workplace provide the following for its female employees?

	Yes	No	For some people only	Don't Know
Annual performance reviews	❑	❑	❑	❑
Career planning and development	❑	❑	❑	❑
Family friendly policies and conditions	❑	❑	❑	❑
Maternity leave	❑	❑	❑	❑
Support for women returning to work if they take time out to have children	❑	❑	❑	❑
Processes to deal with discrimination and harassment	❑	❑	❑	❑
Employee health and well being services (eg counselling service)	❑	❑	❑	❑
A mentoring system that involves women	❑	❑	❑	❑

5 In the next <u>two years</u>, is it most likely that you will …

Please tick one …..

- ❑ 1. Stay working at your current workplace
- ❑ 2. Leave your current workplace to get a job elsewhere in the mining industry
- ❑ 3. Leave the industry altogether
- ❑ 4. Don't know / Unsure

5A Please provide reasons for your answer to this question…

_____
_____
_____
_____
_____
_____
_____

6 In your opinion, what factors would encourage women to stay in the industry long-term?

	Strongly Disagree				Strongly Agree
More flexibility in working arrangements	1	2	3	4	5
More support for women after they start a family	1	2	3	4	5
More support for partners who relocate with their spouse	1	2	3	4	5
More women on site	1	2	3	4	5
Regional communities that are more attractive to live in	1	2	3	4	5
Better career development	1	2	3	4	5
Better financial rewards	1	2	3	4	5

6A Are there other important factors not listed above that would encourage women to stay in the mining industry long-term?

Please specify .....

_____
_____
_____
_____
_____
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_____
_____

7 If you have any other comments about your experience of working in the minerals industry, or suggestions for making the industry a more attractive place to work for women, please write in the space below:

_____
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THANK YOU FOR COMPLETING THIS SURVEY

Appendix 2: Retention of Women in Mining: Background on the Study

Project Aims

The aim of the Retention of Women in the Minerals Industry research project is to contribute to the development of strategies for increasing the participation of women working in the minerals industry, including women in managerial positions and Indigenous women.

Background

The Australian minerals industry is currently enjoying economic boom conditions, but opportunities for further development are being constrained by a lack of suitably qualified and skilled employees.

Over the same period, female participation in the Australian workforce has increased significantly. However, the participation rate of women in the industry has increased only marginally.

Traditionally the Australian minerals industry is a highly gender-segregated industry. This project will:

- understand and identify industry features that may disadvantage current female employees and possibly dissuade others from joining the industry,
- support the development of policies, practices and workplace cultures that will make the industry more attractive to female employees.

Case Study Process

Researchers from the University of Queensland are conducting case studies at four different mines during August and September 2006. At each site, we will:

- ask all female employees and contractors to complete a brief survey
- conduct interviews with women working in different roles at the mine
- conduct interviews with key staff, such as the Human Resources Manager
- where appropriate, conduct focus groups on site, including with men.

The case study process involves gaining a comprehensive understanding of how each participating mine operation engages women within the workplace.

The four case studies will identify key issues in the attraction and retention of women in a variety of roles, from mining-related roles to administration and other support roles.

Research Findings

Findings from the research will be used to provide advice to the minerals industry on what attracts women to mining roles, what encourages them to continue working in mining, and potential reasons for leaving.

The outcomes of the research will contribute to better job design and career paths for women in the industry. Please note, there is no direct material benefit to individual participants in this research.

Industry Feedback

The researchers will provide general feedback to all participants in the study. Please let us know if you wish to receive this feedback by contacting Deanna Kemp at the address below.

Project Funding

The research is being conducted by the Centre for Social Responsibility in Mining (CSRM). It is jointly funded by the Minerals Council of Australia and The Australian Government through the Office of Women.

CSRM Research Team

The Centre for Social Responsibility in Mining (CSRM) research team on this project involves: Professor David Brereton (CSRM Director) and Dr Deanna Kemp, Dr Catherine Pattenden, Ruth Beach, Joni Parmenter and Mary-Anne Barclay.

For more information the project, contact:

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Appendix 3: Site HR data

For the purposes of this research, and in order to provide a comprehensive picture of the four participating sites, the human resource data presented below incorporates all of the data provided where that data has comparative value across the sites. However, the following limitations should be noted:

- The data represented in this report have been annualised for comparative purposes. Although annualised data was requested from all sites, some sites reported their data on a six or seven monthly basis only, and one of the larger contractor companies provided raw data covering the previous 15 months of operation.
- Overall, female participation rates for the four sites correlates with industry-level statistics (See Section 2.1). Given the human resource data for the four sites in this sample does not include head office or corporate personnel, the female participation rate is higher than average for the minerals industry, including for the coal site. This is not unexpected as sites with significant number of females were targeted as part of the research.
- Two of the sites provided workforce and gender information for all of their contractors, meaning that their data represented all-of-site participation rates, whereas the other two sites provided information on one or two large contractors with no information provided on the smaller contractors. All participation data provided have been included in this analysis.
- Only one site provided contractor turnover by gender. Contractor data from the other three sites either did not include turnover data or the data provided was not disaggregated by gender. For this reason, turnover analysis in this report has been confined to company data only.
- Data supplied for Indigenous employees was similarly inconsistent. While Indigenous employment statistics were provided for each of the companies, we were unable to obtain the equivalent contractor data across all sites, particularly in respect to turnover. Measures of turnover of Indigenous contractor employees were for the most part unavailable. Only one site provided Indigenous turnover data for its main contractor, however these data were not disaggregated by gender.

It is helpful when interpreting the data to be aware of the basic characteristics of the various case study sites (Fig A1).

Figure A1: Characteristics of Four Case Study Sites. Source: HR data provided by participating sites

Site	Total workforce number	Contract miner	Workforce	Commodity Type	Location
Site A	896	Yes	Residential	Metalliferous	Remote
Site B	705	Yes	Fly-in-fly-out	Metalliferous	Remote
Site C*	689	Yes	Residential	Coal	Regional
Site D	520	Yes	Fly-in-fly-out	Metalliferous	Remote

*A cluster of three sites in close proximity

Workforce Employment Statistics: Gender Distribution:

Across the four sites, female participation ranged from 5.1% to 14%[16] (Figure A2).

The greatest variation in female participation is between the two residential sites, rather than the FIFO sites, suggesting that lifestyle issues associated with fly-in-fly-out are not necessarily the primary factor influencing female participation. However more comprehensive analysis of a larger sample would be required to confirm this observation.

Figure A2: Gender Distribution by Percentage of Total Workforce (Company and Contractor).
Source: HR data provided by participating sites

	Site A	Site B	Site C	Site D
% Females of total workforce	14%	11.1%	5.1%	12.7%
% Males of total workforce	86%	88.9%	94.9%	87.3%

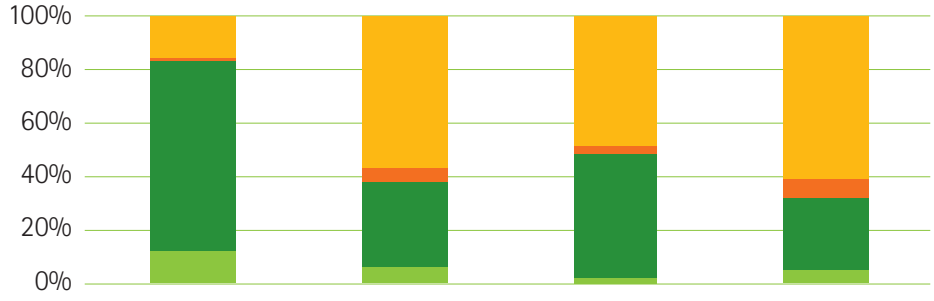
Female Participation: Company/Contractor Comparison:

A review of the company and contractor[17] employee ratios (Figure A3) indicates that company female participation rates for site A are significantly larger than other sites, whereas there are very few females working for contractors. By contrast, site C has the lowest company employee female numbers but a higher female contractor workforce. It is difficult to draw any substantive conclusion from these numbers however it does appear that primary contractors employ fewer females than companies, largely due to the non-traditional nature of the work undertaken by mining contractors.

16 Note that while employment data were sourced from primary contractors, this information was not sourced from catering contractors, which traditionally employ a higher proportion of women than other contractors in mining.

17 All contractor information provided by the participating sites is included in this analysis. However, for most sites this was for primary contractors only and did not include secondary or support contractors.

Figure A3: Comparison of company and contractor workforce participation rates by gender.
Source: HR data provided by participating sites

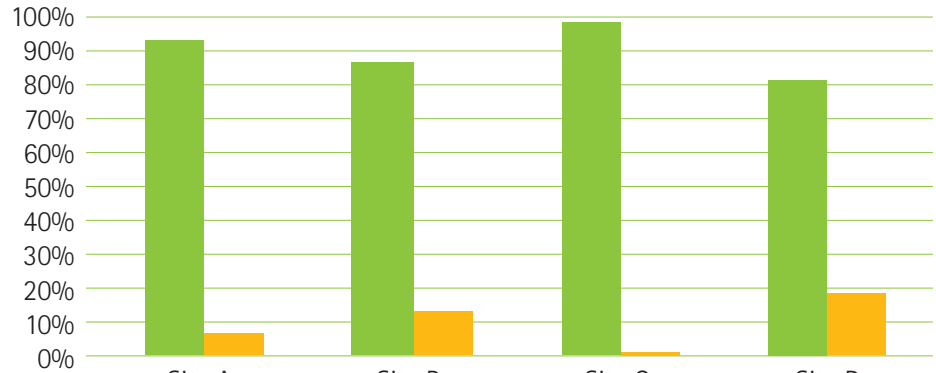


	Site A	Site B	Site C	Site D
Male contractors	137	401	334	317
Female contractors	13	39	24	38
Male employees	634	226	320	137
Female employees	112	39	11	28

Indigenous Employment:

Aggregated company and contractor data (Figure A4) show that across the three metalliferous sites, Indigenous participation ranged from 0.6% to 18.3%. However, the full composite of contractor data for Indigenous employment was not available for all sites. The information contained in Figure A4 is based on all data supplied. The coal sites have the lowest Indigenous representation with 0.6%.

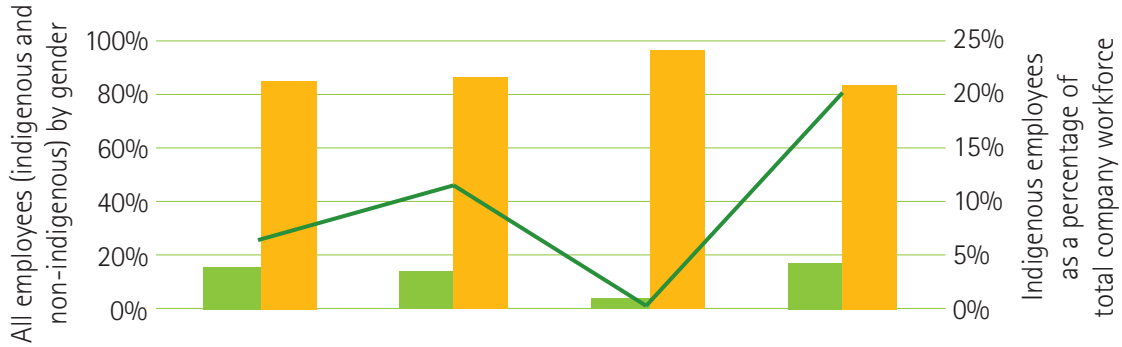
Figure A4: Total Workforce (company and contractor) by Indigenous Status.
Source: HR data provided by participating sites



	Site A	Site B	Site C	Site D
Total non-indigenous	93.9%	87.1%	99.4%	81.7%
Total indigenous	6.1%	12.9%	0.6%	18.3%

Figure A5, which looks at company only data (rather than combined company/contractor data), shows that the site with the highest proportion of female representation, Site D, also has the highest proportion of Indigenous representation. It would require further investigation utilising a larger sample to determine whether this is an anomaly or indicative of broader diversity trends at operating sites.

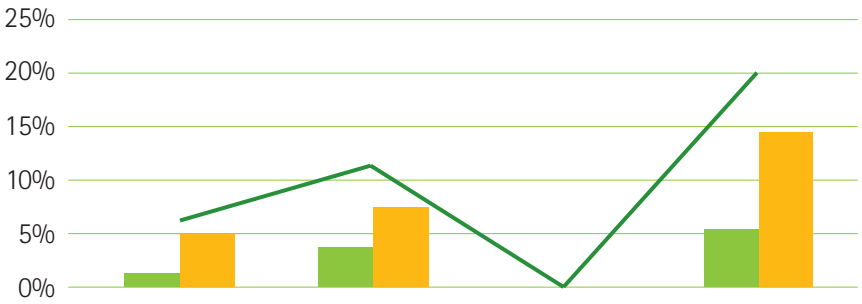
Figure A5: Company-Only Workforce by Gender and Indigenous Status .
Source: HR data provided by participating sites



	Site A	Site B	Site C	Site D
Total female	15%	14.7%	3.3%	17%
Total male	85%	85.3%	96.7%	83%
Total indigenous	6.2%	11.3%	0%	20%

Figure A6 illustrates the gender breakdown of Indigenous company employees. The two FIFO operations have the highest representation of female Indigenous workers, when measured against the total company workforce as well as the total Indigenous company workforce.

Figure A6: Indigenous Employees by Gender as a Percentage of Total Company Workforce.
Source: HR data provided by participating sites



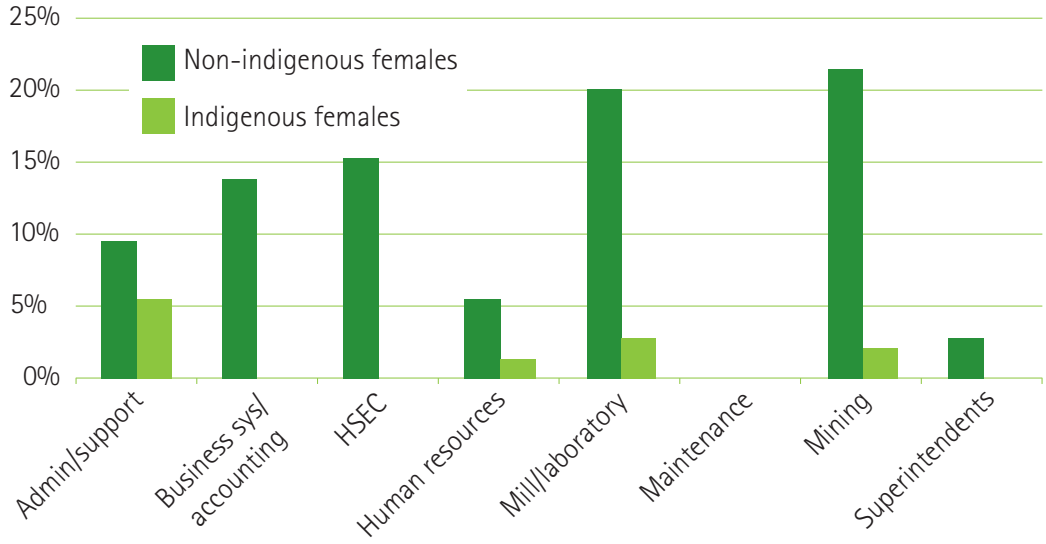
	Site A	Site B	Site C	Site D
Female indigenous	1.2%	3.8%	0%	5.5%
Male indigenous	5%	7.5%	0%	14.5%
Total indigenous	6.2%	11.3%	0%	20%

Type of Work Performed by Women

Each participating site was asked to provide information about the distribution and locality of their female workforce by company and contractor. Only two sites provided a sufficiently comprehensive breakdown to enable cross-site comparisons to be made. Of the remaining sites, data were either incomplete or contractor and company personnel. For this reason, the analysis of the distribution and locality of the female workforce utilises data provided by only two of the four sites.

Figure A7 shows that the majority of women working at these sites are located within the mining and mill/ laboratory areas. This reflects the fact that the sites participating in this study are operational and do not include head office or corporate personnel.

Figure A7: Location of Work Performed by Women. Source: HR data provided by two participating sites



Information provided by sites does not distinguish seniority, so it is not possible to draw comparisons with EOWA reporting (Section 2.3) which utilises a hierarchical rather than locality format, when assessing the distribution of females in the workplace.

Exit interviews

Exit interview data were mostly unavailable at the participating sites. Sites reported that their exit interviews are conducted on an ad hoc basis and usually involve the supervisor of the departing employee. It would appear that where exit interviews are conducted, little to no analysis of their content is undertaken.

One site did provide quantitative analysis of exit interviews showing that the most frequently cited reason (44%) for female exits is the lack of opportunity for development or enhancement, which is consistent with the key findings of the current research. Amongst male exits, career progression was also rated highly, however it was ranked more or less equally with issues of salary packaging and roster arrangements.

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