

A PROACTIVE INTEGRATED APPROACH TO SAFETY SYSTEMS AT OSBORNE MINES

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SUMMARY

Osborne Mines developed and established its Occupational Health and Safety system based on the Placer Pacific safety system framework, recognising the importance of a team base culture. The safety system was developed as an integrated system of OH&S, which has focus on the "critical few" lead indicators, rather than the lag indicators for its performance measures.

Through empowerment of developing, implementation and improvement, the work teams have taken ownership of the system. The flexibility of designing and owning the system allows continuous refinement through the team base culture encouraged at Osborne Mines.

Osborne Mines efforts to date have been recognised by the Minerals Council of Australia's presentation of the 1996 MINEX Award for excellence in Occupational Health and Safety.

INTRODUCTION

The Osborne Mine (100% owned and managed by Placer Pacific Limited) is a significant copper/gold concentrate producer located 195 km south east of Mt. Isa, Queensland. It is currently Australia's third largest copper producer, after Mount Isa and Olympic Dam.

Osborne is a member of the Placer Dome/Placer Pacific group, one of the world's largest gold mining companies, which has interests in 15 mines in many countries of the world. Placer integrates OH&S considerations into design, planning, purchasing, construction, production and maintenance activities, and requires that recognised safe work procedures are established for all work activities. Increased accountability and recognition that Management and each and every person have a shared responsibility in OH&S have contributed to significant improvements in safety performance.

Construction at Osborne commenced in June 1994.

Commissioning of the one million tonne per annum copper/gold plant was completed during July 1995. Commercial production commenced in

August 1995. Underground mining commenced in January 1996 when open pit operations were completed. The mine life is in excess of ten years. Over this two year period, Osborne has already demonstrated a strong occupational health and safety record, performing at the highest levels of comparative statistics.

Prior commencing the Osborne project, the management team sought to maximise every possible advantage to having a greenfield site. The management team saw the need to foster an environment where the company's core values of integrity, respect, trust and open and honest communication are displayed in every activity.

These values allow for creativity and innovation to be supported and encouraged, and contributions from every person to be valued and recognised.

This operating philosophy and culture at Osborne is an extension of the Placer Dome philosophy.

Many Placer mines have operated along these lines in an informal sense for many years, and Corporate Management hold and operate under similar values. However, at Osborne we have pushed this philosophy much further and have a more systematic and documented approach. Osborne is now regarded as the benchmark of the Placer Dome group.

The Osborne management team recognised that four related aspects were important to the success of a culture developed to achieve a safe and healthy environment. They were:

- a total commitment by the team themselves;
- the need to have individuals recognise that safety is a personal responsibility and a responsibility they have for other people they work with, be it at work or outside work related activities;
- the importance of having a system;
- importance to recognise good health and the wellbeing of the complete family unit, given the extenuating circumstances of a fly in/fly out operation.

When considering alternatives, the management team determined that a team-based culture was the only way to achieve these goals. The team environment is not a new concept to the mining industry, some mining companies have established and developed this operating philosophy, but with varying degrees of success. The management team

reviewed the performance and cultures of leaders in this concept.

A team-based culture requires empowerment of all team members. Leadership must be shared, and decision making be a process involving all team members. Only then can teams and team members responsibility and accountability be realised.

The plan to develop a team-based approach was immediately formalised through the development of our mission statement, aims, values, key performance areas and indicators, and business objectives.

An extensive pre-employment selection program was conducted to recruit people not only with a high level of skill but who demonstrated the ability and willingness to be part of a team-based culture.

We developed a comprehensive and vigorous employment process based on best practice research and experience from a range of industries.

To ensure the selection of suitable and high quality people, key selection criteria were designed to guide the recruitment process. Key assessment areas included:

- safety orientation
- team orientation;
- communication skills;
- interpersonal style
- maturity;
- technical knowledge;
- industry experience.

Specifically, safety orientation involved candidates demonstrating an understanding and awareness of safety issues in the mining industry and a commitment to ensuring the safety of self and others.

The concepts of people involvement and accountability are two-way. It is a requirement that all people at Osborne take responsibility and accountability for their actions. The principle accountabilities relating to safety lie clearly with the individual and his/her work team. An essential characteristic of the Osborne philosophy is that safety accountability is NOT devolved to a Safety Officer or the like.

The recruitment of the "right" people is only part of the equation in developing a workplace comprised of people with the right attitudes, skills and behaviours. It is important to recognise that recruitment alone is only part of the competitive edge in people development. After recruitment, the answer then lies in training and continuing to shape and construct the ideal environment.

A competency based training approach has been adopted in all aspects of training development to provide a quality assured process in delivering the skills, knowledge and attitudes required of the

workplace. Focus groups are used to conduct job/task analyses to develop clear competency standards which form the basis for training module development. The following key criteria are incorporated into the training design:

- technical/operational knowledge and skills
- safe work procedures
- integrated maintenance requirements
- contingency management
- team development skills

This form of training-needs analysis ensures high ownership of the learning outcomes and the "best fit" approach to the development of user friendly OH&S training resources. The ultimate test of training effectiveness is to ascertain whether workplace behaviour has changed.

Our intention is to eventually move towards self-managed work teams that contribute to the continual improvement of the OH&S management system by auditing and performance assessment, and by studying better practices and systems both within and outside the mining industry. The potential for performance enhancement is real, however, the need to employ the right people and provide training is a critical pathway to success.

Training, development, education, analysis and measurement of OH&S are "woven" into our work or culture.

To analyse and evaluate Osborne's performance in OH&S, it is necessary to understand Osborne's operating structure.

Osborne adopted a flat organisational structure for several reasons. Such a structure:

- is highly responsive to operational requirements
- allows for a team based approach
- allows for enhanced communications effectiveness; and
- is the best method of involving all people (not just employed from the shoulders down)

The management team felt Osborne was an excellent opportunity to develop a new workplace culture.

In preliminary development work, the team decided not to purchase or implement a packaged system, but to develop a mine specific OH&S system, able to fulfill Osborne's business goals.

It was recognised by the team that early on there may be some inefficiencies (due to the lack of readily transposed systems), but in time, a totally tailored system would emerge, with long term sustainable benefits. A two year time frame was established for the full implementation of the OH&S plan.

The main elements of the OH&S system are:

- safe work procedures;
- workplace inspections;
- hazard ID;
- accident investigation;
- training and educational induction;
- tracking and recording;
- emergency preparedness;
- purchasing;
- communications; and
- rehabilitation and counselling

Work teams are involved with the development of work procedures. With an average individual work life in the industry of eight years, accumulatively over 2000 years of experience existed at Osborne Mines. This experience and associated skills were gained from various companies, within many countries and within many types of environments, and is a very valuable resource which should never be ignored.

Site specific safety procedures that address the real issues have been developed in-house, with three basic results:

- the procedures are practical and user friendly
- the procedures are reviewed with full understanding and are easily modified if improvements are required or the site specific issues change over time
- people are aware of the correct procedure and practice required to perform work duties efficiently, effectively and safely

Training in hazard identification and problem solving has given team members and teams the ability to identify the primary cause of the hazard and use proactive measures to either rectify the hazard or reduce it to an acceptable risk. This is a key area of the total OH&S management system. By adopting the proactive practice of eliminating hazards, accidents are reduced.

The development of a "no blame" culture encourages people to identify, report and correct hazards. Those hazards which are more complicated undergo a risk assessment conducted by the appropriate work teams which ensure the appropriate level of response.

All Osborne people are formally trained in hazard identification, risk assessment and accident investigation. This enables a consistent, proactive approach to hazard management.

An increase in hazard identification and awareness has indicated problem areas and been the catalyst for improvement in preventative processes. Hazard identification is the proactive approach to incident

investigation, and ensures that potential problems are controlled before they evolve into more serious concerns. An improvement in hazard awareness has enabled us to rectify problems before they become incidents.

Workplace inspections address compliance issues, hazard management, housekeeping and environmental management. Inspection guidelines are developed by work teams, and issues within the inspection procedure are ranked on a scaled score system. After priorities have been set, it is the responsibility of the affected work team to allocate resources and implement rectification of non-conforming issues.

These inspections are carried out by teams brought together from all work areas to identify hazards with a "fresh set of eyes". This process ensures information is dispersed throughout all work areas. Formal training in risk assessment, which commences during inductions and continues later, has empowered the work teams to assess hazards systematically, enabling the best solution to be found. This process justifies what resources and capital are required to remove or control the hazard. Ideally, the hazard will be engineered out, although modifying work procedures or personal protective equipment controls are often implemented where a low risk hazard may not justify a high capital engineered solution.

Workplace inspections and hazard identification are considered to be the key tools to improvement in safety performance. Training in hazard identification and timely rectification are recognised as necessary elements of a healthy hazard identification system and safe work culture. Inspection reports are collated by the Area Coordinators and compiled to give a weekly site performance assessment. Trend analysis highlight areas to be addressed with respect to either hazard rectification or improvement in safe work practices. Osborne's intention is to eliminate hazards by determining the underlying cause of unplanned events. By maintaining an open communication environment, information sharing occurs between all areas to rectify hazards identified. All incidents are investigated, and the findings generally identify an underlying hazard. Incident investigations, however, are the reactive way to identify hazards. It is Osborne's intention to eliminate hazards before they cause an accident, however we recognise that investigation of accidents is an important part of the system.

All incidents and accidents are investigated at the location of the event, and not from an office. All information is collected and the report completed. The investigation identifies the hazards which contributed to the event.

Formal training in accident investigation is provided for all Osborne personnel. Although accident investigation is a reactive process, it is quickly converted to proactive by identifying the hazards present and how these hazards are to be controlled and managed. Hazard recognition has increased after formal training identifying what is needed to improve Osborne systems.

By team involvement in investigations and through report writing, hazards are identified and rectified by the work teams involved wherever possible. Focus groups conduct risk assessments of hazards identified which need further attention.

Open communication is totally integrated into everyday operations. At all daily production meetings, safety is at the forefront, where any incident reports or hazard identifications are conveyed to all personnel.

All meetings at Osborne are open, two-way processes with OH&S issues being on the agenda of every meeting. In this way, issues can be raised and dealt with at the time rather than waiting for designated safety meetings or lengthy approval processes.

The flat organisational structure at Osborne further enhances communication effectiveness by reducing the filters traditionally presented by excess levels. The team-based structure makes work teams accountable for two-way communication, "Walking the talk" and listening and understanding are seen as essential attributes.

In terms of overall performance, the Osborne coordinating team have highlighted below the "critical few" OH&S performance indicators that are vitally important in monitoring the progress of the operation in achieving the OH&S strategic goals set.

A major factor in achieving set goals is to use proactive performance indicators, which encourage people to actively participate in a safety system. However, Osborne recognises that injury indicators are important to check the effectiveness of a safety system.

Those "critical few" elements of the OH&S system that are listed at Osborne are:

	TARGET 100%
Workplace inspections	% completed to schedule
Hazard identification and rectification	% timely rectification
Accident and incident investigations	% timely completed investigations % timely rectification

A full list of performance indicators currently used appears in the table below:

LEAD INDICATORS	LAG INDICATORS
Accident/incident investigation	Equipment damage costs
Risk assessment	LTi
Workplace inspections	LTIFR
Hazard ID and rectification	Days off/days unfit for duty
Housekeeping	Work injuries
Morale	Severity rate
Family feedback	No of accident/incident reports
Competency level	Medical aid injuries
% system compliance	Modified work injuries
Performance appraisals	No of emergency responses
Rehabilitation levels	Workers' compensation premiums and payments
	Conflicts

Osborne Mines recognises that OH&S performance is inextricably linked to overall business performance. It is widely accepted that a safe mine will be a highly productive mine, and for this reason, it is vital that OH&S planning is totally integrated into business planning.

Change or continuous improvement is an essential and integral part of Osborne's strategy business. To counteract any possible resistance to improvement, it is necessary for everyone to embrace change as a way of life. The only alternative is stagnation.

For this reason, continuous improvement was flagged as one of the key performance areas in Osborne's business plan. The approach is to create a culture which encourages individual involvement, input and ownership.

The Minerals Council of Australia's 1996 MINEX Award has formally recognised Osborne Mines OH&S system as best practice. Having attained this level Osborne acknowledges that constant review and improvement of the system is a perpetual process, striving to have no incidents ever.