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Closure Through a Process of Collaboration — Suggestions as to How Mining Companies and Contractors Can Work Together to Make Closure Processes Successful

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Abstract

Newmont Asia Pacific's Closure and, Reclamation Group facilitates the delivery of Newmont's Closure Standards throughout Newmont's Australasian operations. This involves facilitating high quality rehabilitation and decommissioning activities at Newmont's closed operations, and through coordination of closure planning and implementation activities at active operations. A key factor for achieving successful closure processes is building and maintaining an effective team of skilled earthworks operators who are able to contribute, and influence, throughout the design and implementation process, build diverse experience in closure works, and enjoy what they do while maintaining high levels of safety performance and productivity. This paper describes the processes and approaches that Newmont and its contractors take to establish and maintain high quality teams of earthmoving and consulting specialists as a critical part of the closure process.

1 Introduction — closure project teams

The closure of a mine site is much more than designs based on agreed criteria which are then implemented, and much more than the application of a system through which one can apply "best practice" via a formula worked out based on uniform standards relevant to all locations. Although science and organisational controls are essential, critical and central to successful mine closure and rehabilitation are the people who implement and make the programme happen.

People influence the closure and rehabilitation process in many ways and a range of skills and knowledge are required. There are many aspects to be considered when undertaking closure and rehabilitation protects. For example: Are the people selected to be involved in the project experienced in the specific field of rehabilitation and closure? Are they well led and will accept and where necessary challenge leadership, are they to be supported and well resourced? Are they the type of people able to provide feedback, accept and deliver constructive criticism and make observations at all levels? Are they familiar with the physical and climatic environment they are in and its various cycles and events? Do they collaborate and contribute across disciplines or focus only on their own? Do they care about what they do and are they willing to be part of a creative, dynamic and learning process to see the best results that can be achieved within a framework of acknowledged, but frequently checked and tested constraints? Can they respond to new information or emerging patterns?

The answer to these questions will have as much a bearing on the long-term sustainability and performance against completion criteria of a mine site closure project as the quality of the science, the respectability of the quality assurance process or indeed, the size of the project's budget. Science can be misconstrued, suppressed, ignored and misapplied, systems can be subverted and budgets misspent, by people either through conscious, or more often unconscious, actions and behaviour. This is where leadership and the self knowledge ("the capacity to know one's self") of the leaders is critical to making judgements in relation to the management of the people – the critical resource in a mine closure programme.

It is often at this important juncture in the life of a mine site that the process is sometimes deserted by the people who are needed the most. Towards the end of an operation there is often a departure of long serving

managers to greener pastures. This can also occur at supervisory levels and across disciplines. Despite the best corporate intentions and policy and years of commitment to high closure performance standards, this process occurs in an environment of negative cash flow. At these times companies sometimes involve managers to minimise costs and stem the flow of expenditures, or install individuals who are rising through the ranks of middle management and are taking control of an entire site for the first time, after years of specialising in mine engineering or metallurgy and with little experience in mine closure and rehabilitation.

In addition, site based earthworks contractors and the owner's supervisors are assigned closure works as a task supplementary to their mainstream production tasks. They may have little or no rehabilitation experience, perhaps even no surface mining experience but are placed in such roles because there is no other immediate work elsewhere, or to extend their tenure at the project a little bit longer. They often bring skills and traits which can be counter-productive to closure projects, despite the good intentions of company policy and management. Complex rehabilitation works which require detailed planning and implementation and careful supervision are inadvertently turned into production processes, often using a suite of management attitudes, procedures, systems, and often earthmoving equipment entirely inappropriate for the job.

2 The collaborative approach

This paper presents an alternative to this scenario, that is focuses on engaging, maintaining, developing and supporting specialist teams within companies and specialist contractors to carry out closure and rehabilitation works in order to:

- Develop appropriate site specific and scientifically supported criteria, standards and designs appropriate for the location and conditions.
- Estimate, record and report costs and develop budgets based on robust processes.
- Provide high quality and accountable leadership for projects.
- Implement projects to the agreed standards with a strong focus on safety and cost control.
- Encourage innovative thinking from all participants in projects to create improvements in standards and reductions in costs.
- Negotiate and interpret closure processes to regulators, indigenous people, landholders and other stakeholders.
- Record and report activities through manageable processes.
- Benchmark and understand leading practice and disseminate learnings.
- Promote the development of a rewarding work environment.

This is a very different approach to the completion of closure and rehabilitation works as an afterthought. Naturally a company needs a critical mass of activity to support such an approach. Newmont has been taking this approach for several years and the benefits are clearly demonstrated in the standards achieved, the budgets met and the capacities developed within the group. This approach brings together a range of people into a project team. These people may be devoted only to the specific project, or working on several closure projects. They might be consultants, contractors or work for the company. They might meet regularly as a project team, or some members of the broader team might never meet.

There are a great variety of people within a broader closure project team, any of whom can have a significant positive or negative impact on the process. Indeed in a remote project, the principal leader based in the head office can have as big an impact as any of the project leadership, if he/she is heavily instrumental in maintaining or driving away the talented operators, trades and professional personnel. A site supervisor can stifle or liberate the incalculable value of having the people who do things effectively influence how things are done. The designer of contracts can debilitate an otherwise promising project by creating commercial relationships which lead to conflict rather than collaboration. Consultants from various disciplines can undermine a project by presenting designs which, rightly or wrongly, are considered impractical and impossible by those applying them, and not convincing these key stakeholders of the merits or essential rationale behind the designs. Those who determine completion standards and those who set operating

budgets can easily debilitate a project by creating a sufficiently large gap between the standards promoted publicly and the capacity of budgets to meet them, or by making the standards unfeasible, hence leaving the project in non compliance from the outset.

Although many of these issues regarding the quality of people and how they are led, are common to the operating phase, they are of heightened relevance to the closure phase because the people aspects of these processes are all the more challenging. There is often less security of tenure, other more inviting and secure positions on offer and there is relatively little appreciation from the leadership for closure activities, no matter how well they are performed. In spite of the rhetoric, closure is seen as an expensive, if necessary evil. In a regulatory paradigm which allows relatively easy transfer of assets and liability, a closing project is just as likely to be divested before it moves from planning to action or, even worse, divested in the middle of active closure.

These challenges occur at a time when the risk to mining company credibility and to the environment is at a point when there is a high focus in relation to long-term liabilities being absorbed by the wider community and state. There are dozens of failed closures in the Australian mining industry, often due to a lack of focus on planning, knowledge gathering, transitional and preparatory work, resources, and attention to the application of the actual designs and follow up works to make necessary amendments to design failures.

Due to the rapid career cycle of managers, supervisors, environmental personnel, regulatory and contracts, some very poor work can be done with no real feedback or consequence to those accountable, because the companies and people change, and as often as not, the next owners accountable, repeats all of the same mistakes before moving on to repeat the process. Owners are often able to divest themselves of the liabilities they acquire by appealing to the goodwill of regulators and disclaiming themselves of the responsibilities acquired in the acquisition. The regulators themselves are influenced by their response for example not having to have to deal with a potential abandoned mine and all the difficulties this presents – due to a new owner appearing on the scene. This bleak assessment is perhaps becoming lessened, as regulators apply the "polluter pays" principal through implementation of statutory law, but is still far from uncommon.

So who are these people and what traits do they need to display to make for successful mine closure and rehabilitation?

2.1 Corporate — the sponsors

Corporate sponsors have the integral responsibility of instilling leadership and accountability in their workforce. Corporate sponsors have to be prepared to stand by and deliver on company policy specific to closure – in fact a raft of operational polices are relevant to mine closure. It is important that the corporate sponsors of closure projects fully and actively display and support the company's leadership values and standards throughout the life of the mine to achieve successful mine closure and rehabilitation. A long-term vision that considers closure risks and opportunities is required for appropriate planning, design and implementation, from feasibility to closure. Importantly, this vision must be delivered to managers and employees as a requirement, with assigned responsibility and measured performance.

Corporate sponsors of successful mine closure require a willingness to engage in issues of a difficult nature and make informed, considered decisions. Corporate sponsors must be willing to provide adequate budgets and resources, but must be interested and informed of closure activities to ensure that budgets are planned and executed appropriately. A high standard of rehabilitation is not necessarily one that costs the most money. Sponsors must be interested in achieving outcomes of high standards, whilst also focussing on cost management.

2.2 Regional — the facilitators

Regional personnel facilitate the resource flows into the project and are an important bridge between the corporate sponsors and those that actually apply the resources. They tend to spend a great deal of their time justifying the projects in environments that are perennially finding it difficult to come to terms with the realities of cessation of cash flow from an operation and it's need for such large amounts of funding.

Regional personnel need to facilitate the creation of an environment in which those who apply the resources can function without continual interference, changes of direction or ultimately the threat of cessation of

works. The regional personnel need to build the relationships with regulators and landholders, corporate personnel, technical and operational personnel who have a bearing on the project and the consultants and peer reviewers they select or those who are sometimes selected for them. Ultimately regional personnel control the key processes of contractor and consultant selection, management of the team needs and dynamics and analysis of the performance monitoring associated with the projects.

2.3 Contracting — the administrators

It is impossible to mount complex closure activities without capable administration. Contracting, accounts payable and accounting systems are becoming more complex and are sometimes very difficult to penetrate. Where large sums are required to complete non metal production activity, approval can be difficult enough to achieve but without all of the right corporate systems appropriately managed, it can dramatically impact the efficiency of the project and lead to a focus on administrative details rather than strategic planning and considered responsiveness.

2.4 Project planners — the planners

It is important that project planners have a good understanding and experience in mine closure and rehabilitation processes. In addition, they require an intimate knowledge of the site and site conditions, as well as maintaining objectivity that allows the identification of gaps in knowledge and understanding. Rehabilitation designs must be specific to the site and site conditions. Planners must be inquisitive, flexible, welcome feedback and able to adapt and incorporate changes as required.

2.5 Project/site — the coordinators

Without a positive culture, and one whereby all parties can achieve gratification, it is difficult to realise a good closure outcome. If there is a gap between the standards proclaimed and the standards applied, if there are differences in how people are treated at the operations, whether in the workplace or the camp or in the transit process, the flow of information and cooperative spirit between the key participants can be jeopardised. Coordinating a project requires a capacity to manage both details and strategy and most of all people. Resolving and avoiding conflict, rewarding good performance, encouraging feedback, soliciting innovation are all as, or more, important than technical proficiency. The maintenance of talent and experience is one of the key outcomes and measures of management and this is no more important than in remote area sites where there is no long-term job security and a skills shortage making labour tight in the surrounding industry. Of course all this needs to occur in an environment where supervision is firm in addition to being fair. The best co-ordinators have a long standing commitment to a location and a genuine desire to see the works completed appropriately.

2.6 Contractors — the builders

This is an undeniably essential component of a project team (assuming owner mining is not the approach). No matter how much companies talk about performance management, contractors know about performance because when it comes down to it they are there to implement plans and to physically do the work. They have the ability to provide invaluable insights into the merit of different approaches and the benefits of alternatives. The routines of communications through daily and weekly meetings, inspections, hazard and issue management are essential and must be conducted in good faith without repressive or intimidatory cultures. Contractors need to be innovative and confident in suggesting and discussing ideas and concerns to contribute as a part of the team dynamics. Of course a culture where this is welcomed must be established and encouraged.

Contractors ultimately have a great deal of influence on how much earth is moved, how much fuel is burned, how much cover is placed, how level the cross ripping and so on. The contractor's capacity to maintain experienced personnel is critical, as is their capacity to move on personnel who don't have the appropriate competencies or are not culturally suited to remote area work. Contractors need to achieve all this and be cost competitive. The market is not overloaded with such contractors. Earthworks contractors are not made better or more sustainable by being pressured on price, provided with poor facilities, low levels of tenure security and lack of parity in provision of camp and transit services.

2.7 Consultants — the enablers

Previously we mentioned how consultants can be ineffective through promotion of impractical ideas and design. Management of consultants can be difficult if the vision of the principal leaders is not understood by consultants and they are not listening to the wider team they are interacting with. Good consultants will enable the best outcome in the complex mix of many competing interests and realities in mine closure by limiting their natural and strong opinions. They will stand aside from their fixed positions – and respect that good project managers will provide the opportunity for their position and experience to be brought to the programme. Sometimes relationships between project managers and consultants will be strained. A consultant telling you what you want to hear all the time is a bad consultant. A company representative accepting without questions what a consultant puts forward is failing in their duty. There is no singular, definitive right answer in rehabilitation. There should be lively debate and disagreement or something is wrong (Lacy and Haymont, 2006). Good Consultants often are accredited members of professional associations and bring professional ethics and standards with them to projects – they can bring many values of worth: by way of example, (www.eca.org.au/new/downloads/CodeOfConduct.pdf) those of the Environmental Consultants Association W.A. (2008).

3 Conclusion

It is through effective and dynamic interaction of the people maintaining the various parts of the closure process that a closure project will be successful. People need to have the capacity and the time to focus on producing quality work, and having the space to think strategically and responsively. This is the key difference between the mechanical application of received wisdom, designs, action and task processes, with ultimately limited and poor outcomes, and that of people who are provided the environment to, sometimes courageously, go beyond the prevailing wisdom at the time and apply closure approaches specific to the site's requirements - with outstanding final outcomes.

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