



Above: Propagating seedlings. Below: Preparing irrigation and the MRM Environment Team tree planting at Barney Creek.

Barney Creek rehabilitation report

Civil works associated with the development of the Barney Creek channel have been completed, with the exception of the two bridges.

Irrigation lines have been installed and more than 5,000 tube-stock have been planted. The tube-stock includes a variety of native species common to riparian locations along the existing Barney Creek and fringing locations.

Seeds for the tube-stock were previously collected by the Environment Team who focused on planting native shrubs, trees and grass species during October.

Approximately 15,000 plants have been delivered to site for planting with more on the way. Initially these plants are hardened on site before being planted along sections of Barney Creek.

MRM's Health, Safety and Environmental Superintendent Jane Yelland said the rehabilitation strategy was to replicate the original channel's vegetation.

"The new channel has been planned in great detail to ensure it remains stable for flood events and throughout the life of the mine," Jane said.

"So we've collected seeds from the local area and we're replanting them into the channel. We're placing woody debris and rocks in the creek-bed to slow the velocity of the water and create a habitat for fish and other animals.

"We're aiming to create areas of reduced velocity that matches fish migration.

"We've completed five surveys so far on the fish in the area, including tagging, so we can get a good understanding of where they are, and what their habitats are like."





A message from the GM

As we prepare for the coming wet season, civil works at the mine site are winding down while our environmental rehabilitation action is ramping up.

2007 has been the first of two years under our \$110 million open pit development and we have made great progress with the river rechannelling, levee and bund walls and new infrastructure such as two new bridges over Barney Creek.

Importantly, this year has also seen a significant increase in our environmental monitoring programs and most recently, the start of work to rehabilitate the newly constructed elements of our open pit operation.

In particular, 15,000 seedlings of local native plants have been delivered for the re-establishment of the Barney Creek environment around the new channel. These are just part of the estimated 35,000 seedlings we will use in our overall rehabilitation program.

Our aim has always been to recreate the natural river and creek environments so they continue to support the plants and animals that are a feature of this region.

To this end, we have also continued studies with leading experts in local birds and fish.

This edition of *MemoRanduM* covers a lot of news about our action on all environmental fronts.

Together, all these stories give a good indication of the significant investment MRM is making to ensure the environment we influence both around the mine and downstream is protected.

From everyone at MRM, we wish you a very happy and safe Christmas and look forward to bringing you more news in 2008.

Brian Hearne
General Manager

2007 HSEC audit

Over the past months people from across all areas at MRM have been busy preparing for the Health, Safety, Environment and Community (HSEC) audit.

The audit took place during the week commencing 26 November 2007 and preliminary feedback from the auditors has been positive, with a final report to be provided later in the year. The panel of auditors were Michael Woolley from URS Australia, Jim Batey from Focus on Safety, and Brendan Callaghan and Jenny Sutcliffe from Xstrata Zinc.

The hard work involved with preparing for the audit is crucial to ensure MRM accurately measures and continuously improves sustainable performance within all areas of the operation and for the local community.

Xstrata's HSEC Management Standards are internationally recognised principles that guide strategic decision making, work behaviours and operational procedures. The standards ensure everyone at MRM (and Xstrata worldwide) maintains the highest possible standards in health, safety, environment and community management.

Sustainable development is commonly described as the concept of balancing the needs of the present without compromising the ability of future generations to meet their own needs (UN World Commission on Environment and Development 1987).

In terms of implementing the 17 HSEC Management Standards it means MRM agrees to:

- Offer an attractive employment opportunity with a focus on occupational health and safety, and career development
- Expand its environmental management program in accordance with obligations for open pit mining and with community expectations for the highest standards of protection
- Support enterprise and employment growth in the Northern Territory and local economy
- Work with community, government and other stakeholders to implement a visionary regional development plan for the area influenced by the mine.

All MRM employees are responsible for the delivery of the HSEC Management Standards to ensure MRM continuously improves its operations.

MRM staff news

At the end of November 2007, MRM had 186 permanent employees and 504 contractors.

New starters

MRM would like to welcome:

Administration Department

Darren Trevena – Supply Officer
Mal Logan – MST Superintendent

MST Trainees: Clayton Anderson, Peter Anderson, Terry Armstrong, Lesley Devery, Ivan Hogan, James Huen, Anthony Larsen, Ashley Lennon, Lachlan Raymond, Kathy Roberts, Susan Ahwon, David Cutta, Renetta Ahwon, Veronica Mulholland, Russell Thompson, Patricia Pluto, Marcus Finlay and Geraldine Larsen.

Environment and Health and Safety Department

Sandy Thomas – Senior Safety Advisor
Jeremy Barnett – Environment Officer
Emma Spokes – Injury Management Coordinator

Mining Department

Colin Fox and David Frost as Mine Production Supervisors Perti Kuusissalo and Eric Turner as Mining Operators

Metallurgy

Michael Sobieralski and Keith Shaw who commenced as Fixed Plant Fitters

Internal Transfers

Louise Manis transferred to the Mining Department as a Mining Supervisor
Grant Gibson is now a Level 2 Operator Maintainer

Farewell

Farewell and thank you to Emily Mancini who resigned from her position as Mine Accountant in August. MRM would also like to thank Eric Turner Gavin Ross, Deon Coates, Stephen Price, Anthony Robertson and Adam Roy.

Careers Expo

In August Human Resources joined forces with Community Relations and toured the Northern Territory with displays at the Careers Expo. The Expo aims to inspire and encourage students to consider a career in mining.

The MRM display featured careers in professional roles, trade, operational or entry level positions across all departments. Students, teachers and parents who attended the expo were very interested in careers available at MRM and had many questions about the mining industry.

CDU Engineering Career Fair

Kate Morse attended the Engineering Career Fair at Charles Darwin University (CDU), which was well represented by various companies in the Northern Territory.

MRM received numerous queries from students interested in pursuing a career within the mining industry, in the areas of mechanical, electrical, mining, and civil and project management engineering.

Feedback from the Career Fair was positive, and applications were received from prospective students interested in Student Vacation Placements.

Overall the recruitment drive in August and September was positive and may generate potential future employees.



Aerial view of MRM, October 2007

Women in hard hats

MRM women may soon be showcased online as a part of a Queensland Government strategy to promote the efforts of those who take up traditional 'men's work' professions.

'Women in Hard Hats' is a Queensland Government initiative that helps women explore careers in the mining and construction industries.

As part of this strategy some participating women showcased are already achieving great things in the mining industry.

Electrical Engineer Carmel Johnston is a perfect example at MRM.

Carmel has worked at MRM for three years and her work involves the coordination, effective planning and resourcing of all electrical, instrumentation and control projects and certifying installations to statutory standards.

"I also ensure a safe and continuous electrical supply is maintained to site equipment and that all electrical, instrument and control system documentation is developed and maintained," Carmel said.

"I believe the mining industry enables me to gain experience in a variety of areas with a big advantage being able to undertake projects from start to finish."

Carmel likes to play Aussie Rules and Rugby Union in her spare time. She also belongs to the Army Reserves and likes fishing and camping.

Because of an ongoing skills shortage in the mining industry, Governments and industry have been keen to encourage women to build careers in what is traditionally a male area.



Electrical Engineer Carmel Johnston

Open pit update

The rechanneling works for Barney and Surprise Creeks are 100% complete and demobilising of plant and personnel is now underway. Some plant is being retained for the completion works in 2008. The civil contractors' camp has also been off-hired.

Barney Creek rechanneling

Barney Creek is almost finished. Only minor excavation and rock protection under the haul road bridges needs to be completed.

Rock lining has been completed along its length and at the Surprise Creek intersection including several drainage chutes on either side. In all, 1.5 million metres of clay, rock and material has been excavated and 350,000 cubic metres of rock armour has been placed on batters and the floor of the channel.

Irrigation has been set up for the rehabilitation works which are due to start in late November.

Trial planting completed before the last wet season has been very effective. See the Barney Creek rehabilitation article on the cover to read more.

Overburden Emplacement Facility (OEF)

The OEF haul road is 80% complete. The two bridges over the Barney Creek channel are under construction and the first bridge is scheduled for completion at the end of December 2007. The second bridge will be finished in February 2008.

OEF works will commence in April 2008.

McArthur River rechanneling

The new McArthur River channel is 85% complete with 3.3 million cubic metres of clay and rock moved so far. The blasted rock was carted to the Barney Creek channel to be used as armouring and levee protection.

Work on the final connections to the existing river and rehabilitation works will be done in early 2008.

Mine levee wall

The main flood protection levee is now 66% complete, and all works allowed under the 2007 MMP are now finished. The final gaps over the two existing McArthur River connections will be completed in 2008.

In all, 1.7 million cubic metres of conditioned clay has been placed with about 750,000 metres more to come in 2008.

Southern Anabranch wall

The Southern Anabranch temporary bund

is now complete and the existing Southern Bund removed. This has enabled mining of Stage D in the open pit to continue.

Mining

Transitional ore production from Stage D commenced on 29 July 2007 and the fresh ore was delivered to the mill in early October.

Most of the transitional ore has been stockpiled and is scheduled for treatment in May 2008.

Stage C and D are mined concurrently to maintain ore stocks to the ROM. Although it is of lower metal content overall, the mill performs better on Stage C ore because of lower levels of oxidation from ore mined at deeper levels.

Tight control on the more complex geology in Stage D has mitigated most of the effects of the Whelan Fault and the sudden regional flattening of dip in this area. So far this year ore production to the end of October was 1.63 million tonnes at 10.3% Zinc which is significantly better than the budget of 1.29 million tonnes at 10.2% Zinc.

Stage E mining commenced in October and will continue over the wet season with the addition of another excavator and truck fleet. Post wet season Stage F is due for commencement.



The Barney Creek Channel and construction on the Barney Creek Bridge

Independent environmental monitor appointed

In October 2007 the Northern Territory Government appointed specialist consultancy, Environmental Earth Sciences (EES), to conduct an independent review of MRM's environmental monitoring.

Brian Hearne said he and his team were pleased to work with this independent expert which has an important role in providing information to the community about the outcomes of the mine's extensive environmental monitoring program.

"After reviewing our history of environmental monitoring in 2006, the NT Environment Protection Agency's Assessment Report 51 found there is no evidence the mine has adversely impacted on the McArthur River or Gulf environments.

"EES now has the responsibility to review our current and future monitoring under a five year contract and to advise the community on whether this record has been maintained.

"We are committed to upholding the highest standards of environmental protection and will work with the Department of Primary Industries, Fisheries and Mines (DPIFM) and the consultant to ensure they have the data required," Brian said.

EES was appointed by DPIFM and costs will be fully covered by MRM.

The consultant's role is to review the results of MRM's regular environmental monitoring program and the Department's regular compliance auditing under the Mine Management Plan. The results of the review will be made public.

MRM's program includes: mine site monitoring of water quality, dust and soil; tailings system management; erosion and sediment monitoring of the bund walls and river diversions; rehabilitation monitoring; fish and bird studies; and the annual marine monitoring program.

During 2007, this program was expanded to increase the number of locations tested and the scope of the studies.

"We have more than doubled our investment and resources in environmental management to support a comprehensive program that closely tracks a wide range of potential impacts," Brian said.

Environment update

Water and soil

Routine sampling of groundwater and surface water sites have continued up and down stream within the McArthur River region as part of MRM's monitoring program and trends are similar to previous monitoring with no issues detected.

Soil samples have been taken from the Barney Creek rechannelled section and are being monitored closely in a shade house environment to gauge weed species present which will aid in weed management techniques within the rehabilitated sections.

In late August environmental technicians from site completed a macroinvertebrate monitoring course. A macroinvertebrate is an animal without a backbone, large enough to be seen without a microscope, such as worms, clams, crustaceans and insects.

Knowledge from the monitoring course will be incorporated into future environmental monitoring programs for the site.

Bird monitoring

Paul Barden from Ecological Management Services was on site in October to conduct the late dry season Riparian Bird Survey.

This survey captured and tagged more birds along the McArthur River and also identified previously tagged birds.

Tagging birds provides valuable information on bird species, their numbers and distribution. Several species were tagged during late August including the Purple Crowned Fairy Wren.

In the August Migratory Bird Survey the southward migrating shore birds study showed an increase in birds compared to the June survey.

Most species identified in the August study were concentrated in the regions between Port McArthur and Pelican Point.

In fact, the estimates from these counts exceeded the international thresholds for the Black Tailed Godwit. The numbers were similar for the Red Knot and Lesser Plover.

All figures for bird numbers are approximate and are based on ground counts, which is about a quarter of the number of birds seen from the air.

Fish monitoring

In October, Dr Dean Thornburn from Indo Pacific Environmental Pty Ltd undertook the fourth round of fish monitoring studies at sites along the McArthur and Glyde Rivers. Significant amounts of fish were tagged including a Freshwater Sawfish (*Pristis microdon*).

At the end of November, Paul Barden from Ecological Management Services conducted the aquatic macroinvertebrate monitoring at surface water sites along the McArthur River. The results of this monitoring will be compared with rehabilitated regions of the river.

Visitors

Sean Bellairs from Charles Darwin University visited MRM to determine suitable sites for the comparison of vegetation within the McArthur River and sections of Barney Creek to gauge rehabilitation success.

Marj King from Top End Seed Supplies visited site to update the Environmental Team with a few more ideas and species to utilise within the rehabilitated areas.

Brad Saur from the Weeds branch in Borroloola visited site to input into the ongoing review of MRM's annual Weed Management Plan.

Brett Anderson Steele and Michael Delosa from DPIFM, were present on site in early September to conduct a Mining Management Plan compliance audit which included the Bing Bong operations.

Cesar Junco, (Xstrata Zinc HSEC Manager) and Fernando Suarez (Xstrata Zinc Risk Champion) visited the operations in early October and received a general update and tour of the civil operations.

Introducing ESS Supplier Services

Who is ESS?

ESS Support Services is the business arm of parent company Compass Group PLC – the world's leading food service company and the largest provider of integrated support services to defence, offshore and remote site clients worldwide.

ESS provides food, vending and related services to clients and customers with over 360,000 employees in over 80 countries.

ESS provides services to companies in over 50 countries with varying conditions from the icy environment of Russia to hot desert conditions of Australia. ESS provides a full spectrum of services, from designing and building camps to operational support in catering, housekeeping, technical support and logistics.

What does ESS do at MRM?

ESS has been servicing MRM and the Bing Bong loading facility for six years. They supply accommodation management, such as catering (serving in excess of 4,000 meals per week), housekeeping, facilities cleaning, wet canteen management and industrial laundry services for site linen and mine clothing.

ESS also undertakes aircraft baggage handling and ticket allocation at McArthur River Airport.

Contact details

ESS Support Services Worldwide
MRM
Ph 08 8975 8131



Scott Mills, ESS Site Manager

2007 Science Awards

Local students from the Borroloola Community Education Centre (CEC) have again made an outstanding effort participating this year in the MRM Science Awards.

From early childhood right through to secondary level, all the students spent many hours on projects for the 2007 Science Awards, which are part of the regular education studies.

Students can choose to work individually or in small groups and their projects are monitored and recorded with the assistance of their teachers. The projects included:

- Wetland plants – predicting the result of placing a cut celery stalk in a glass of dyed water
- Lifecycle of turtles – research task
- Making a volcano – this acid-base experiment (vinegar is used as the acid and baking soda is used as the base) produces water and releases carbon dioxide gas which can be made to either fizz or flow out like a volcano
- MRM – research task.

This year, the projects were judged by the CEC Principal Geoff Perry, the MRM Health, Safety and Environment Superintendent, Jane Yelland and Community Relations Officer, Jeremy Hastings. Projects were judged on their creativity, perseverance and ability to demonstrate primary experimental research in an area that has everyday applications.

At the CEC annual assembly in December, all students were awarded with a certificate for participating, and winning entries received a Certificate of Merit and a gift from MRM.

Fitness tips from MRM's HSE team

If you can't quit smoking, exercise may still help.

A new Spanish study has suggested that moderate to high levels of exercise may help slow down any decline in lung function among smokers and decrease their risk of developing chronic obstructive pulmonary disease (COPD). COPD is a serious condition and results from chronic bronchitis and emphysema.

The study found that moderate to high physical activity levels were linked to a 21% reduction in potential new cases of COPD the discovery was attributed to the possibility that regular exercise can impede the production of inflammatory markers in the lungs, which are caused by smoking.

The authors had previously believed the only way to reduce the risk of COPD was to stop smoking entirely and avoid passive smoke intake. The findings appear to offer hope to individuals with healthy intentions but cannot to kick the habit.

Why dieters lose the will, not the weight

Although many people attempt to lose weight, most fail to keep any substantial amount off for any real length of time, and within five years many will actually weigh more than they did prior to dieting.

Researchers are now claiming to have gained some insights into what makes for a successful and an unsuccessful dieter. The main reason for failed diets, according to Barbel Knauper, an Associate Professor of Psychology at McGill University, Montreal, is setting unrealistic goals such as losing large amounts of weight in too short a period of time. It is far better, say weight-loss experts, to aim for an achievable half to one kilogram per week.

The second reason is failure to plan, and properly manage, eating in social situations. Many dieters will leave their decision making process until they are at a restaurant or party, whereas it would help if they decide beforehand to order smaller, lighter meals and to resist being influenced by less calorie conscious friends.

Many dieters also underestimate the number of calories that certain foods contain, and overestimate how many calories are burnt during exercise.

Professor Knauper said most people who create their own 'diet rules' do not have particularly high rates of success. He recommends that dieters keep calorie and exercise diaries and have diet coaches (either friends, health professionals or doctors), who can help them achieve their goals.

Information sourced from the Australian Fitness Network

CRG meeting summary

The MRM Community Reference Group (CRG) met on Monday 22 October 2007 to talk about current mining operations and new or existing community programs. This article outlines what was discussed as well as additional information now available.

MRM Civil Works Program

Brian Hearne provided an update on the MRM Civil Works Program. The first stage of the airport is now finished and works on Barney and Surprise Creeks is almost complete.

See the Open pit update on page four for more detail.

MRM Royalty payments

Brian Hearne answered a question raised at the previous CRG meeting – Where does the money MRM pay in royalties go?

Brian Hearne explained that royalty arrangements for the mine are dictated by the *McArthur River Project Agreement Ratification Act 1993* and the *Mineral Royalty Act*. Under these Acts the Northern Territory Government is the sole recipient for royalties paid by MRM.

Corporate Social Involvement

Swimming Pool Project

Community Relations Manager, Patrick Collins, and Community Relations Officer, Jeremy Hastings, updated the CRG on the Swimming Pool Project.

In a meeting with the Department of Primary Industry and Fisheries (DPIFM), it was agreed the Department would attend

the next pool committee meeting. This will ensure the policy of 'No School, No Pool' is implemented and management of the pool will be determined. The CRG commented that local pools are normally managed by local government councils and the management of the Borrooloola pool should be the same.

A date for the completion of the Swimming Pool Project is still to be confirmed.

Dialysis Unit

Patrick Collins addressed the meeting with information on the status of the Dialysis Unit. The building originally constructed did not meet current cyclone standards. As a result, the building will be moved to Kiana Station to be used as a medical facility as this area has a different cyclone rating to Borrooloola.

A new building with the required cyclone rating will replace the original Dialysis Unit. MRM will cover the cost for constructing the new building which is due for completion in approximately two months.

Barramundi Hatchery

Darwin based Environmental Consultants, URS Australia, has been appointed to undertake the environmental planning for a proposed Barramundi Hatchery at King Ash Bay.

Field work was conducted in November to support the preparation of a Notice of Intent to the Northern Territory Department of Aquaculture and applying for an aquaculture licence. MRM is covering the cost of this study and application as a community sponsorship.

Cultural Awareness Program

Brian Hearne updated the CRG on the Cross Cultural Awareness Program currently being implemented at MRM.

As the mine is located on Gurdanji country, the program is about respecting, appreciating and understanding the Gurdanji people's unique culture, and educating all employees, contractors and visitors on their history, beliefs, traditions, music and sacred sites.

The program involves the Gurdanji Traditional Owners in identifying sites of cultural significance on the mining lease.

Their involvement in community initiatives like these are among the important ways MRM works closely with local people.

For the first component of the training program, MRM has produced a DVD featuring Gurdanji Traditional Owners who explain the history and significance of the sacred sites surrounding the mine.

Upcoming meetings

Brian Hearne proposed to have CRG meetings quarterly, with the next meeting scheduled for February 2008.

Mule Creek Road upgrade

In response to community complaints about the dangerous condition of Mule Creek Road, MRM has upgraded a section of the road.

The maintenance work was on a section of Mule Creek Road near the dredge spoil that often becomes waterlogged after rain. The area was repaired using the Bing Bong Loader, and staff from Chris Williams' team at Bing Bong.

MRM has scheduled further roadwork and is currently sourcing a local contractor to grade the road.

Sugar Glider rescue

When two sugar gliders needed relocating during clearing operations, the MRM Environment Team (Bundy, Kelly and Jane), Mines Rescue Coordinator, Justin Laws, and Dozer Operator – Mining Department, Peter Allwright, were at the ready.

The procedure for clearing at MRM includes taking special care with trees that are hollow which may be a potential home for birds, possums and other wildlife. The trees are knocked and checked several times before being felled.

During this process, two sugar gliders were found and transported to the Darwin Wildlife Park. The new owners were very excited and will use the male for their breeding program.



The team dealing with a fire barrier around simulated aircraft

ERT news

The MRM Emergency Response Team (ERT) has been tested twice in recent months and in both cases demonstrated a high standard of performance.

In August the team competed in the annual Mines Rescue Competition – a three day event now a permanent fixture at the Darwin showgrounds.

Day one saw the team test their knowledge with individual skills and a team theory examination covering all rescue disciplines.

On Saturday and Sunday the team was put through its paces with 45 minute scenarios in fire fighting, hazmat, road accident rescue, multi casualty first aid, rope rescue and search and rescue.

The team had a great result in winning the first aid scenario and were challenged the whole weekend bringing back valuable skills to site.



Team photo after a successful vehicle extrication scenario

Then in October the site emergency plan for the airport was tested for the bi-annual exercise that examines the team's capabilities to deal with situations at the aerodrome.

Operation 'Gulfair' involved the ERT, Site Incident Management Team, Police and medical personnel from the Borroloola clinic.

Feedback from the team assessing the exercise was extremely positive for all personnel especially the scenario assessment.

Over the next few months we expect to see many new faces within the rescue team, we welcome Kate Morse, Aaron Hocking and Geoff McCumstie.

Unfortunately we also farewell Troy Bell, Anthony Robertson, Gary Chisholm, and Adam Clarke.



The team in action removing a casualty from the vehicle

Bringing together Borroloola schools and families

In September 2007 MRM agreed to support the Families and Schools Together Program (FAST) with the objective of helping to achieve greater school attendance rates and outcomes.

FAST is one of the programs run by Education Transformations, an initiative of Northern Territory Christian Schools Association (NTCSA).

The program is aimed at building strong ties among children, parents and their schools and uses relationship based processes that:

- Empowers parents
- Strengthens family functioning
- Encourages school attendance
- Prevents substance abuse by the children and family members
- Reduces stress from daily life situations.

Families are invited to participate in weekly sessions commonly held at school. These multi-family sessions engage parents and children in fun, structured, research-based activities.

FAST was delivered in the local language and culture by Indigenous people in Borroloola (trained and supported by Education Transformations).

The eight week program ran at the school in Term Four, 2007 and is also scheduled for Term Two in 2008.

MRM has agreed to assist the FAST organisers by providing return flights for the Program Manager from Darwin to McArthur River.

For MRM, helping to keep children in school and encouraging their performance, particularly in the areas of literacy and numeracy, is critical to building their self esteem, work ethic and skills for future employment.