

# MINUTES OF MEETING STRATHALBYN COMMUNITY CONSULTATIVE COMMITTEE

Thursday 15 November 2012 @ 7.00 pm

Senior Citizens Hall, 6 Parker Street, Strathalbyn

## PRESENT:

Charles Irwin - Chair	Mike Farrier	Susan Jettner	Fred Carrangis
Mark Dale	Malcolm Twartz	Katherine Stanley-Murray for Anne Woolford	Ben Brazzalotto
Julia Currie	Rhonda McCarthy	Adrian Pederick MP	Karen Rogerson
Merri Tothill – Sec			

## DMITRE:

Greg Marshall                      Hans Bailht

## TERRAMIN:

Matt Daniel                      Joe Ranford                      Nic Clift, Managing  
Director and CEO                      Yullinah Wylie

## EPA:

Glenn Sorrenson

## APOLOGIES:

Anne Woolford

Gallery approx 20 - including Terramin staff and URS Consultant (Mine Closure Planning) - Andrew Piggen

Meeting commenced at 7.10 pm

### 1. WELCOME, INTRODUCTIONS AND APOLOGIES

Charles Irwin welcomed all and thanked everyone for attending.  
Apologies were accepted, as outlined above. Thank you to Katherine Stanley-Murray from the Angas Bremer Ward of Alexandrina Council for filling in for Cr Woolford.

### 2. REVIEW OF MINUTES OF LAST MEETING

Corrections to August minutes –  
Thanks to Don, not Bill for catering.

Minutes as amended, accepted as true and correct record.

### 3. DMITRE: COMPLIANCE OVERVIEW - Compliance and Inspections report

**Greg Marshall** – report on water management follow up; site inspections and approval of mineral exploration.

#### Water Management

Monthly reports have been received and showing more encouraging results on water levels in the TSF. Terramin will go through this in more detail in their report. Noted that the slope on the graph is heading in the right direction but not quite meeting the monthly targets to achieve 68RL by the end of the year. Terramin are still committed to achieving that target.

DMITRE focus has been on the underground workings and the re-injection of water to manage the water balance, including the RO and evaporation. With the mine water there are 2 different streams – one is clean and no issues, the other is raw mine water. Terramin has talked about how it has disposed of this raw mine water through re-injection of filtered mine water. All approvals for this are now in place, water quality is checked and there is a management plan for monitoring this. It is also

of great assistance to be able to use treated and filtered mine water in the plant; there is a significant improvement on the water balance as that water does not go through the RO. RO brine is now the major waste product that goes into the TSF. There is also the effect of the placement of tailings so Terramin is trying to get more water underground and are ahead of their targets for this. There is a requirement to do underground backfill. DMITRE Mining Engineer has looked at this and is satisfied that Terramin are filling in the voids.

The issue is to focus on optimising the performance of RO capacity at the site and to increase the utilisation of the O2 and V2 plants. Additional clarifier equipment is available for pre-treatment work, resulting in overall improvement of RO use, including water available for irrigation through the FABAL pipeline.

Evaporation is removing water out of the system and this amount has increased and there is capacity to increase this further; currently achieving 90,000 of 150,000 cubic metre target.

Overall it is encouraging to see the best performance in the management of water and the removal of water out of the system but it is not quite on target.

Additional drilling is being done on Adelaide Hills Recycling land.

### **PEPR**

DMITRE attended sub committee meetings to ensure that process complies with the Mining Act regulations. Everyone is working well, including Terramin; community and DMITRE staff and hope to bring the process to a conclusion at the end of the year.

### **Site Visits**

Looking to see maximum opportunities to manage water balance. Other issue was clean up of scats which is waste material from the mine that is used as part of aggregate. These were found in another area and required cleaning up. Now reporting that this has been done – Hans visited the site. They have been contained on site and cleaned up.

### **Questions:**

*What are legacy scats?*

There was some drainage into the TSF, so berms were placed to take that drainage away from the TSF and into a dam before it left the site; in the process some scats got covered in clay and when it rained these scats were exposed. Now they have been cleaned up and we have done some extra work on the drain.

*Note that in last minutes it was reported that all the scats were cleaned up but since then more have been discovered.*

They have all been cleaned up in the north west and in all the clean areas, they are now only used in the “dirty areas”.

*Joe is the best manager we have seen and it is good that Terramin is going in the right direction but it is not on target and there is a good chance that they will not reach this target. When/or if they do not reach it, will DMITRE change the targets or as a regulator are you going to hold to this?*

Given Terramin's commitment it is not appropriate to talk about this yet.

*Why has it taken so long to achieve any progress?*

Terramin has analysed every aspect and process and steps have been taken. The team is very focussed on getting results and is still committed to getting to that level, we have self regulated pressure. DMITRE visits on a regular basis and is putting on the pressure. Some things have been put into place but have been offset by other things. We have achieved the biggest drops in level ever and in the last week, the same drop as for the whole of September. We think we will be able to get there, we remain committed and we have daily meetings to maintain our focus.

*It is important that SCCC is kept up to date during December with emails. Note that we will get back to this issue, later in the agenda.*

*What about the Bond review, need to know if it is adequate; what has happened with this issue?*  
Will get back to this after the PEPR review.

*What about the 2000 MARC review? What is the MARC review timing?*

Still working on this and will have more on this at the next meeting. The timing will be less as this is an internal process.

#### **4. TERRAMIN: REVIEW OF MINING OPERATION** (presentation available on website)

##### **Joe Ranford**

“Movember” - Last year a huge success; many AZM employees participating in 2012, raising funds for prostate cancer and male mental health (Beyond Blue)

Safety – Lowest recorded Total Recordable Incident Frequency Rate (TRIFR) since mine operations commenced.

Employment - maintaining stable workforce

##### **Mining and Processing**

Underground development has advanced to over 10km, completed to the 340 metre level. Currently further development is on hold.

A total 109,446 tonnes of ore were processed, 16,606 tonnes of zinc concentrate and 8,237 tonnes of lead copper concentrate. We have hit the “sweet spot” in the ore body, planning is going well and have the equipment needed.

##### **Exploration**

As coming close to end of mine life, have been exploring for potential mine life extension near current mine. Will have 500m extension of existing infrastructure in next few weeks. Targets will not have any further surface influence.

##### **Matt Daniel – Environmental report**

Please see Terramin Quarterly Report #24 (July to September 2012), available in full on the PIRSA/DMITRE website [www.pir.sa.gov.au/minerals/sa\\_mines/approved\\_mines/angas](http://www.pir.sa.gov.au/minerals/sa_mines/approved_mines/angas) under Wider Community Engagement and also emailed to all members prior to the meeting. Hard copy also made available at the meeting.

Matt reported on the QER, focusing on exceptions, the unusual and any exceedances.

##### **Environmental Activities**

PEPR review - sub committee meetings on site, have received feedback from DMITRE and committee.

Waste Management- 100 tonnes of scrap metal removed from site

National Pollution Inventory (NPI) completed and submitted in August

High survival rates (95%) from April and July tree plantings

TSF Rehabilitation trial – good growth of oats and good data. There is enough moisture for plants to grow. The soil has been tested and we are looking at how far roots are penetrating into the soil profile. Reasonable evidence at this stage to show that vegetation (annual oat pastures) may be sustainable in the long term.

More rabbit fumigation around TSF and surrounds and continued weed spraying – has been big focus and having good impact.

Next issue is fire preparation and management.

##### **Community Interaction**

Mine engineering students from University of Adelaide

Year 11 Geoscience students from Yankalilla Area School

SACOM Mining for non-miners tour

Wesley Life force community training

##### **Questions**

*Can you explain more about the TSF trial results?*

The deeper profile is holding more moisture. The big test will be over summer.

##### **Dust Monitoring**

AECOME report identified reporting should be against total insoluble solids instead of total solids.

Gauges 1, 3 and 10 are considered to be background locations due their location.

Mineral/ash analysis could be used to provide an indication of dust source i.e. ratio of total dust to lead could give an indication of where dust comes from and where it is going.  
Recommended Australian best practice average dust deposition guideline value of 4g/m<sup>2</sup>/month be applied but this is being assessed by DMITRE.

### **Question**

*What happened to Gauge number 5 in September?*

It was broken and not functioning.

*Need that explanation on the table.*

### **Noise Monitoring**

**Eastern monitor results** – within compliance but se peaks not able to be explained, could be due to some truck movements.

**Western monitor results** – some small peaks and these correlated with high winds. Note the hay bales are still in place.

### **Questions**

*If the blue line is in exceedence, how can you explain this if it is not related to wind?*

Wind speed is on thing that contributes but there are some anomalies and this could be related to using equipment.

*Too often we hear it could be this and it could be that, you should put in sensors for before and after so that you can limit this.*

Yes, if we were consistently outside the line then we would do this but the results are not consistently high.

*Can you explain the green and magenta line?*

The light green is early warning and the original limit and magenta is the current limit.

The real indication of issues is through complaints.

### **Community Feedback and complaints**

2 community complaints - 1 blast complaint, explained by stope blast notification not sent via SMS/email. 1 noise complaint and this was related to vehicle movement at night. Vehicles are scheduled to stop at 10pm. We have spoken to the person.

2 internal environmental events recorded – 1) Paste line ruptured, (contained in bunding) and immediately cleaned up. Standard Workplace Procedure for regular inspections was put in place.  
2) Scats in the clean zone: these works have been completed.

### **Upcoming activities**

Program for Environmental Protection and Rehabilitation (PEPR) review (ongoing)

Mine Closure plan – URS have this about 90% complete and will get it to DMITRE at the end of the month.

Waste Management Plan has been updated and continuing recycling campaign

Water management – have had requests from the community, need to balance this with delivery to FABAL

Weed survey

Noise monitoring in December

Increased dust suppression efforts – extra water truck in summer

Continuation of feral animal (summer is good time to control rabbits) and weed control

TSF Rehabilitation Trial remains ongoing

Bushfire season preparation – have had a burn off to reduce weeds and fuel load, fire breaks in all paddocks.

### **Questions**

*If the Mine Closure Plan is 90% done, when is it coming to the community or at least the sub committee?*

It will be reviewed by DMITRE before it goes out to the sub committee. Cannot give an exact time.

*You are doing the Rehab trial with annuals, however if you were using perennials it would make more sense.*

Perennials have had poor seed viability, so we have used annuals but understand that it would be better with perennials. Next year getting better seed, have picked the seeds from the site but need a better more reliable supply.

## **5. TERRAMIN: PEPR REVIEW AND MINE CLOSURE PLAN**

**PEPR review** - going well. Four meetings with the SCCC sub-committee and reviewed Operational, Rehabilitation and Closure Criteria for all chapter 7 sections. Words have been modified and updated to match the criteria. MARP now being re-formatted to a PEPR

**Mine Closure Plan** – up to version 6. Scheduled for submission at the end of the month, includes review of TSF cover design for optimal environmental longevity.

Presentation by Andrew Piggen, URS, Principal Engineer and in charge of writing the plan. Proposed cut and fill plan, showing some flattening out of the site and revegetation but can't be finalised until know where 335,000 cubic metres can be moved to.

TSF cover – not sure of the best option, looking at how far roots are going, with native grasses the roots re down to 600-700mm already.

### **Question**

*Isn't the PEPR prescription for the TSF a continuous slope with a HDPE (high density polyethylene) liner?*

We need to look at current best science. HDPE will break down with temperature and oxygen and you have to ensure that no trees are on it. There are now other mechanisms that allow trees. Also important to get the moisture out of the cap.

There is a commitment to cover the TSF with HDPE but we will be doing trials to get a better understanding of the best cover. We are working with EPA and DMITRE as there could be better options. It could be up to 5 months trial, looking at a safe, stable and free from erosion site. Lease condition 69 does say HDPE and for trees to be kept off it but there are a number of things to be done before we find the best way to go.

*Have 2 concerns, firstly need to see the science, has this been done? Also it is a near town mine site with the Angas River nearby, if you get it wrong, you get it wrong for a long time. This is the first I have heard of HDPE breaking down, what else is there that we don't know? Important to get it right the first time.*

I am not saying that it is the wrong decision but the view on HDPE has changed. We have a commitment to leave the site so that it doesn't cause a problem and we will get it right. The science is not just about the top of the tailings dam, it is underground also. We have data on different materials and it is real data that is backed up.

*Have you all the information and statistics?*

Yes, we have this, also a "model" and the data to back it up. Evapotranspiration (ET) covers that are more of a natural system is the ways things are now done.

*Does it have a usage, weight limit?*

You can drive on it after you have allowed for a period for setting. It can be returned to its prior use and whatever you can do next door you can do on this site. It is more sustainable in the long term. For added protection there will be conditions on the title. We still have a long way to go to get to the final design but the landform will be stable and then we can engage with what use it will be. Much rather have the ability to grow trees on it. The difference would be that we would have an engineered soil cover (ET) that can store and release runoff in a high rainfall environment, with plants on top, instead of a plastic cover that stops water going through. There is still enough material on site, the issue is, is the fill appropriate? Our commitment is that the site is not degraded.

*Who is going to manage the site?*

Currently Terramin has the commitment to manage this, there is money in the bond and it will not be handed back if the site is not in a satisfactory condition.

*In 50 years time, what will DMITRE do?*

The land title will set out the responsibility (land encumbrance) and the land owner will be responsible. There will be a land management agreement. This is part of the Mine Closure Plan.

*Will the Council make sure the encumbrance is in place and will they check that it's adhered to?*  
It is council's responsibility, a bit like a Development Application. We understand that it is an important issue.

*Note that we have had 4 meetings of the sub committee mostly dealing with the PEPR and not the Closure Plan, so this is all very interesting information. We do need a time table for this. Thank you for your presentations and new directions.*

**SHORT BREAK - recommenced at 8.40pm; resumed at 9.05pm**

## **6. TERRAMIN: COMMUNITY ENGAGEMENT PROGRAM UPDATE**

Newsletter will be out soon.

Monthly water reports, require more rigorous delivery prior to 31 December.

School visits in next few weeks.

## **7. TERRAMIN: UP DATE ON WATER MANAGEMENT**

### **Rene van Oevelen - Update on Environmental Direction**

Reduction in RL (to 70.74m on Nov 15th), Surface Area and Volume of the TSF Decant Pond due to a number of improved management strategies;

- Increased Paste Fill
- Additional Clarifier installed
- Decrease in underground water treated through O2
- Enhanced Evaporation, more sprinklers and a very good method, noted some crystal deposits on the banks.
- Re-injection of filtered underground water
- Increased dust suppression
- Increased pump capacity, now have 3 pumps operating and getting another one to spray more water to increase loss through evaporation. Trying to keep TSF wall wet to allow for evaporation.

### **Pastefill**

With the V2 have additional pre-treatment using a clarifier, running very well the last few months. This has decreased the amount of underground water going through the RO, now it is filtered and going into the bores.

Maximising paste fill reduces amounts of both tails and water volumes placed into the TSF.

16,013m<sup>3</sup> placed underground in August, best performance to date. This resulted in approximately 10,200 m<sup>3</sup> of water not entering the TSF. 10,322m<sup>3</sup> of paste was placed underground in October.

### **RO treatment**

Additional clarifier installed, automatic pH control - higher feed to V2, clarified TSF water to glands opposed to raw water

Increased RO production through V2, higher than revised model number (309m<sup>3</sup>/day)

Trialling O2 to treat TSF water - working through a number of issues, V1 is treating clarified TSF water in the mean time.

Majority of RO permeate sent down the FABAL pipeline - 9,724m<sup>3</sup> in October

Locals have begun collecting water from the front standpipe again - 91m<sup>3</sup> in October.

### **Enhanced evaporation**

All process water reporting to the TSF, including brine from V2, enters only through sprinklers

Approximately 50 sprinklers installed in September, 2 large jet sprinklers in October

Additional Decant pond pontoon pump - pumps TSF water through sprinklers

Drift appropriately managed through; Wind forecast conditions, visual inspections - Daily TSF inspections increased, Shift Supervisors have been trained and sprinklers installed in sections - sections can be isolated depending on wind direction and can be turned off and on.

### **Management of mine water from underground workings (Raw water)**

Disposal of water from the underground working prior to treatment through the RO plants, (it has some salt in it but below the bore level), means this water will not enter the TSF water circuit. This is being achieved by;

- Reduction in underground water treated through O2 - no treatment of underground raw water since the 15th of October
- Re-injection of straight filtered underground water, 15,003m<sup>3</sup> injected in October
- Increased dust suppression
- Installation of sprinklers on the ROM Pad
- Increased water trucks
- Sprinklers at Adelaide Hills Recycling (as per EPA approval)

Moving forward the focus will be on evaporation and treatment of TSF water through O2. In terms of achieving the milestones, we do have a steep slope for the next 2 months but am confident that we can meet the target. We are also looking at new ideas. We know there is no buffer and it is tight but we are pushing very hard to get to it.

We had some significant rain events in October – 25mm and 27mm and it was higher than average on the site, so also did not get as much evaporation. Now we have a closed circuit system to the TSF it will be easier to manage.

### Questions

*As per salt lakes with increasing evaporation you will end up with bitters which does not crystallise or evaporate.*

It will not happen at this time, getting to 68RL but yes it will be an issue to work on for the future and it will be highly saline at the end.

*How significant is the water balance re water coming out of the mine and are you anticipating any more water?*

Water has been coming out up to 1200gl/day but now back down to normal – 900gl/day and we are dealing with this.

*Seems that most of the water is being sent down the FABAL pipeline, are there any operational issues with this?*

No issues.

*The crystals deposits in the dam, where are they from?*

These are from the dropping water level and evaporation from the sprinkler.

*Are you finding any spraydrift?*

No nothing and if there is anything it will drop onto the dam wall and then the sprinklers will be turned off.

### Comments

**DMITRE** – we can validate that what has been recently implemented has contributed to the decline in water level, there are also other opportunities.

**EPA** - not such close an involvement, more off site involvement. The reinjection information will go back and forth. Water quality is similar to the quality in the aquifers and we almost have a closed loop from the mine and then back underground. Also interested in the treated water off site.

**DMITRE** – monitoring data from the bores at the base of the TSF walls are not showing anything, so all good. Leakage into the double liner is a direct response to the drop in water level, there has been a drop in the head, less pressure and so less leakage.

**EPA** – analysis of the risks from pressure on liners hasn't occurred. To be addressed next meeting.

**DMITRE** – 68RL and 15,000l are maximum levels, there will also be milestones for lower levels.

### Questions

*What about the clogged drain?*

It cannot be unclogged, so this is compensated by use of other pumps. These can be pulled out and cleaned and we can add anti-scalents.

*The ground water monitoring bores show the level rising in September, has this been ascribed to the re-injection bore?*

This has been isolated and it is close to the re-injection bore. Other bores are still accommodating water.

*Are FABAL using the water?*

They will accept how ever much they are given. They are using it all and need additional water.

*It is very important to keep the community posted and maintaining regular contact throughout December, suggest every 2 weeks.*

We can send out the graph as that tells succinctly where we are at – the graph and the figures.

*There has been a huge amount of effort and significant progress has been made and still being made. We'll await the outcome at the end of December with interest.*

## **8. OTHER BUSINESS**

### **Terms of Reference**

All committees work in different ways. The tender process has been started. The project will review the Terms of Reference for all community reference groups. There is a need for more clarity around the process. It will deliver new terms of reference to be used at other mine sites that require community engagement. The tender is about to be let out and we will be selecting in the new year. The chosen consultant will be talking to the groups to find out what has worked well.

### **Mine Closure Planning Process**

It has been very preliminary in terms of information to the community. It is into DMITRE for comments on options put forward by Terramin to achieve the lease conditions and no contamination of groundwater. The HDEP is one option. Terramin is looking at other options including the ET Liner but there is a long way to go before Terramin can demonstrate that it can deliver on post closure outcomes. There is the caveat part of the closure strategy and the residual risk assessment - a fair bit still to come and it is not yet resolved.

The closure is not being done in isolation. Need to sign off on revisions to the PEPR soon with its regulatory framework. Will have something in the interim so have some rules to follow. The PEPR will set out the process for the closure, so need an approved PEPR.

### **Comments and Questions**

*The SCCC need a 4-6 week review period for the PEPR. It appears that this group has not seen the PEPR and the sub committee has not seen anything final. The development and the context need to be sorted out.*

*What about full and complete disclosure? – this is not happening.*

That is not the case; DMITRE does not have the document. We are just flagging that we need something that signs off on the process. Terramin will provide a document; DMITRE will look at it and then SCCC will see it.

*The consultation with the subcommittee has been mostly on the PEPR, is there a need for more subcommittee meetings and if so when?*

There is no timeframe but it is likely to be next year.

Charles – those of the subcommittee that turned up are to be commended but we need to use volunteer time and capacity carefully.

DMITRE – the closure plan is part of the PEPR and we will use the design that is in the current PEPR to give some breathing space.

Charles – the Senior Vice President of the Show Society has presented a one page summary on future use of the site. We only have 2 proposals so far, any further ideas would be useful.

### **Round Table**

Adrian - the ET closure methods and any other measures, I would be interested to see some information on this, so we can make informed decisions, so we need more information.

Malcolm – What is the process for expressing interest in future uses for the site, who do we direct our interest to? – Terramin.

Sue – re the sprinklers are you checking at night i.e. 3 times per night and 3 times per day re the wind and will you be spraying at night. Terramin – we have put in place a process of managing this to the best of our ability.

### Questions

*How many rainwater tanks are monitored for lead?*

42 tanks monitored and we are not seeing any impacts.

*How many trees have been planted and are we near the target?*

1,000 this year and so have reached the target for this year. It is also area related and not just number of trees.

*What is the rationale behind moving away from artificial capping on the dam? Such a change would be of considerable concern.*

We have an agreement and that is part of the licence conditions but there are other techniques, so we are looking at these. We are not saying definitely what will be used but we are reviewing options. No decisions have been made. The HDEP liner is in the licence conditions but additional effort is being made to find a better solution. But if nothing better is available, then it will be a HDEP liner. Information on this will be made available and no decisions have been made yet.

Charles – a lot of research needs to be done with input from DMITRE and EPA.

*One of the reasons for the TSF to be encapsulated was to prevent and deactivate and remove oxygen and water so there was no acid leakage. The ET liner will not deactivate the process, so using it is not conceivable. You are now asking us to take on a new line of thinking, so we need evidence that this is a viable alternative, we need to be convinced.*

This is a speculative discussion. We will retain the HDEP option but if there is another solution we will also look at that. It is still a cap and we know we need to prove this, so we need a lot more information. A full risk assessment must be done, so that there is confidence in the long term that the science has been done. Terramin has committed time and money to achieve this.

**Thanks to Ruth and Don for hall and catering, to Merri for taking the minutes and thanks to all in attendance.**

### 9. FUTURE MEETINGS

Next meeting on Thursday 21 February 2013 at 7pm. Meeting schedule for 2013 – 16 May; 15 August and 21 November.

### 10. MEETING CLOSE.

Meeting closed at 10.30pm.

### ACTION LIST

Terramin	<b>Action – Terramin to circulate to Committee via email fortnightly updates i.e. graph up until deadline of 31 December 2012.</b>
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