

MINUTES OF MEETING (Draft)

STRATHALBYN COMMUNITY CONSULTATIVE COMMITTEE

Thursday 21 August @ 7.00 pm
Senior Citizens Hall, 6 Parker Avenue, Strathalbyn

PRESENT:

Charles Irwin (Chair)	Rhonda McCarthy	Sue Jettner	Malcolm Twartz
Ann Woolford	Mark Dale	Fred Carrangis	Adrian Pederick
Leah Feuerherdt - Sec	Ben Brazzalotto	Mike O'Reilly	

DEPARTMENT OF STATE DEVELOPMENT (DSD) (PREVIOUSLY DMITRE):

Antonia Scrase Hans Bailiht (in gallery)

TERRAMIN:

Matt Daniel Joe Ranford

EPA:

Nil.

APOLOGIES:

Karen Rogerson	Mike Farrier	Peter Reilly (EPA)
Greg Marshall	Julia Currie	Erin and Katie (Terramin)

Gallery – 4 people

1. WELCOME, INTRODUCTIONS AND APOLOGIES

Charles Irwin opened the meeting at 7:10 pm

Apologies recorded

Welcomed Antonia who is replacing the now retired Hans on the Committee, DMITRE has changed its name to Department of State Development (DSD)

Meeting is being recorded as per Terms of Reference

2. REVIEW OF MINUTES OF LAST MEETING

- The previous minutes have been circulated; need to change *Andrew Pederick* to *Adrian*.
- **All Action items from the previous minutes remain outstanding.** Chair raised issue that the outstanding actions, and lack of information as promised are making any progress difficult for the group.
- Minutes were accepted as is by consensus
- Chair noticed the SCCC website is missing several reports, e.g. 2012 PEPR, and 2013 compliance reports. Need to ensure all information is available for the public.

3. DSD: COMPLIANCE OVERVIEW - Compliance and Inspections report

Antonia Scrase

Antonia given the job of SCCC representative 5 days ago, and is still getting up to speed on requirements.

Site

- Visited site on Tuesday 19 August, all seems to be in order. No dust, water level diminishing on tailings.

Reports

- Has received first part of phytocap document and reviewed it, there has been workshop between Terramin and DSD, waiting on finalised review.
- Progress is being made on reports, but reviewer has had a family emergency in their team so no response on report. Once DSD can respond, report will go back to URS who will finalise report on technical phytocap design.

- Will check progress of all other reports, and why certain reports aren't available on the website.

Question/Comment -

Joe - *when Terramin get data from URS, that will feed into their modelling. Then Terramin can finish document and assess suitability for phytocap for this climate.*

4. TERRAMIN: UPDATE AND REVIEW (presentation available on website)

Joe Ranford

Site Program

- QER- busy this quarter planting trees
- Currently in Care & Maintenance phase
 - Maintaining on site infrastructure
 - Sold all redundant equipment as was generally beyond repair date
 - Monitoring ground conditions and water underground
 - Ongoing environmental monitoring and management
- Care and Maintenance Plan resubmitted, approved in principle but few small changes. Finished for inclusion in PEPR
- PEPR- name may change with new department, PEPR has been submitted, should be available soon on website. Need DSD (O'Kane) feedback on phytocap which will finish closure plan, then they can incorporate that information into 2012 PEPR , which will finalise whole PEPR.

What's happening at Angas Zinc?

- 5 Environment, Community and Water Management staff remain onsite
- Clean-up work – steel recycling
- Rubbish removed and pipe collection
- Disposal of surplus mine equipment (Garwood machinery)
- Water and environmental management/monitoring continuing
 - Water, Dust and Environmental management
 - TSF management looking good
 - Mine void Acid Mine Drainage (AMD) management

Closure Works to date

- In last quarter, submitted geotechnical stability report, which details design for filling portal and ventilation shaft.
- LMA- spoke about at last meeting. No change or further progress and can't do anything until TSF capping system is known.
- Lots of work has been done to feed into closure option. FMEA going forward- went through risk assessment process- phytocap was best option to ensure tailings covered and closed with best possible success.

Questions/Comments -

Chair - *there was good discussion at the last meeting, and thought there was an understanding that phytocap wasn't approved or only option. Has anything changed?*

Joe - no, getting feedback about engineering of soil and reaction of moisture- need feedback from O'Kane to do final test work to ensure model predicts accurately.

Chair- *what increased understanding can Terramin pass on to the SCCC?*

Joe - Main issues in workshop were based on modelling with climatic conditions. Detail on humidity not sufficient for modelling to predict statistical spread to identify how soil cover will react over 100 -200 years. Starting point for modelling re moisture content of soil is another issue, long term data is not available. URS liaising directly with DSD consultant, but O'Kane had family tragedy, so work hasn't progressed. Once report is released, will be designing cover system based on the report.

Sue - *are you not going to do a trial to test cover system first?*

Joe- from discussions, expectations are to do a trial, but not sure if on or off tailings dam at moment. That's the next stage once design work is complete.

Sue - *So what you're trying to address is the net percolation issue?*

Joe- Yes, and exactly how to start or where it finishes

Chair- *So is there any new information?*

Joe- Principles are the same but no new detail.

Chair- *well let's not proceed if nothing new, Chair is reticent to call group of volunteers here if there's been no progress.*

Joe - update on surface erosion modelling on dam and in box cut area has also happened.

Groundwater is responding better than modelling predicted.

Lease agreement- need understanding of what we can and can't do. Can only agree on this once modelling completed as to what activities are appropriate.

Chair- *the lease agreement was to be put to the lawyers of Terramin and DSD- have we got feedback?*

Antonia - no feedback yet from DSD

Joe - Terramin lawyers put it together, thinks lease agreement best option outside caveat to ensure development doesn't degrade final design.

Chair- *there were specific questions raised at last meeting re the lease agreement- is there feedback from lawyers on these?*

Joe- yes there is but can only add detail once cover system finalised.

Mining and Underground Management (Quarter 2, 2014)

- A total 12,000m³ of water placed underground during the quarter – storm water runoff and bore water injection
- Coming up well, above 120 in the decline
- UG Water 8.05pH on 29 April 2014
- There was a wild cat seen underground last time
- All pretty stable

Bird In Hand site

Joe gave update on work happening at Bird in Hand

- Plan to utilise Angus facility for processing, but to do that need to change lease conditions
- Want to give this group an understanding of what Terramin are trying to do over there, concern about groundwater and irrigation users.
- First focus- understanding of managing mining without impacting local water users
- Constructed 5 test bores and done pump tests to work out what pull down is on water in region.
- Monitoring bores since November and seen how water use impacts on the ore body. Going to set up water model at this site.
- Received PEPR approval for exploration drilling
- One benefit of ore body is that it is limestone based, and having that product on top of Angus sulphide tailings is best option for covering as it has a neutralising effect.
- Next step is geological drilling, than can do metallurgical testing to work out what they can pull out re gold concentrate, no use of cyanide. Will look at application of using new tailings as limestone cover on top of current sulphide tails
- Want to share information from Woodside with this group so they have as much information as possible. Do have pamphlets available.

Question

Sue - *limestone being a neutraliser- what depth will that be or will it just mask acid forming product?*

Joe- tailings dam at moment is not full, could fill with limestone tailings and then cover system on top- this is an inert tailing, which is a more complete system than if they put cover system straight on top.

Quarterly Environment Report #29 – Key Issues

Matt Daniel

- QER is slightly different because we're in care and maintenance phase.
- Some monitoring has been based on compliance requirements from the 2012 approved PEPR, while other sections have adopted monitoring in compliance with the Mine Care and Maintenance Plan.

Environmental Activities

- Tailings acidity monitoring- put cores down by hand and measured pH at surface and at depth
- Weed spraying and erosion management- put hay on slope for cosmetic erosion to protect from winter rainfall
- Dust management- high winds earlier this year
- Technical workshop on phytocap monitoring with URS and O'Kane
- Detected water levels on bore DH2, which has a depth of 180m, detected water in April. At moment water is at 93 m, just offset from mine void.
- Took water sample from bore, pH of 7.55, not too bad. Analysed for metals, data is in QER. Consultant done statistical analyses, confident that very limited in amount of AMD, less than URS modelling predictions.
- Compared model prediction for closure and baseline numbers, with actual numbers for June, sulphates- 1670 in June, model predicted maximum of 5500, before mine it was between 1640 and 2600, so it's in the ballpark. pH is an easy indicator. Metal numbers quite good. Only one sample taken, so have more samples to do.

Question/comments

Mark - *How much lower is the water level than regional average?*

Matt- Depends on where you are in region, usually in limestone its about 12 m deep, in tertiary zone about 24 m, so still a way to go. Monitoring every week re rate of recharge, consultants checking rates against modelling.

Mark- *water is not just coming in bottom of pipe but seeping in all the way is it?*

Matt - Yes bottom is open, coming in from current as it goes up.

Mark - *Amazed that pH is neutral*

Matt- Tailings are mixed with cement paste, paste gets sent off for testing as solid mass. They ground it up to test, but underground it's not ground up so surface area to volume ratio completely different to what was tested. Testing is overly conservative, nevertheless still pleasing result.

Fred - *Sulphate is SO₄, so what are you really measuring, e.g. are they aluminium sulphates, are they cadmium sulphates?*

Matt- measuring the amount of sulphides dissolved in the water. Not sure which sulphides.

ACTION: Matt will ask geochemist which sulphides are dissolved.

Community Feedback & Environmental Incidents

- No environmental incidents were recorded or community complaints
- Ducks in tailing dam- permanent residents, no food, but safe solution for ducks to swim in.

Question/comments

Mark- *bar graph in report about pH from sampling, has been lots of talk about really acid sulphides but most graphs are showing neutral.*

Matt- lots of lime used in processing plant during flotation, more goes into tailing dam than expected, which gives a buffering effect. Not sure how long this will go on for

Mark- *Dam appears to be super saturated solution of gypsum*

Joe- gypsum normally falls in low pH, that's why we see it at upper levels, but not as much at lower levels. No new formation of gypsum. At the moment most of the water is rainwater.

Chair- *graph suggests difference in one side of TSF to the other in terms of acidity, is that because of the way pumping happened?*

Joe- quite possibly, but can get variation in readings, water that comes down on eastern side tends to run down in a different flow so could get more exposure than the other side.

Chair- *drain 2 is the only one showing any reading, also on that eastern side- is it coincidental or related?*

Joe- yes, think it's related, tailings are higher there and older than western side

Matt- but hard to say to be honest, pH reasonably neutral, surveying tailings, but can't survey everywhere- not safe to access in some places.

5. DMITRE / Terramin: PEPR Review/Care and Maintenance/Mine Closure Planning

Matt- Upcoming Activities

- Awaiting final feedback from O'Kane to put into modelling, then rerun models, takes 2 weeks to run models, then will update report and re-present it to DSD.
- Closure Plan updating
- Ongoing TSF monitoring and water management
- Plantings in SEB (Significant Environmental Benefit) areas last June have gone really well. Hares were pruning seedlings, but now fenced off and hares can't access. Almost finished planting 2000 locally grown seedlings.
- Ongoing weed and pest management
- Trialling erosion management on site
- Ecosystem Function Analysis (EFA) for SEB areas. Explained that had to plant 6 ha of native vegetation to compensate for the 5 significant trees that were removed.
- National pollution inventory reporting

Joe - trees were grown from seeds collected last year, gave to local nursery to grow, impressed with quality of seedlings.

Sue - *Are they all the same species?*

Matt- No, Melaleuca, Eucalypts, Callitris, Dodonea, Sheoak are some of the different species.

No questions on QER

6. SCCC MEMBERS: CLOSURE OPTIONS

Comments

Mark- *since talking to Mr O'Kane- even the best phytocap cover will leak, have Terramin any plans if there is a leak? Where can you get rid of it- can you put underground or take it away?*

Matt- If drains are accessible, can go out into a pit, and seal this up. They will continue to monitor amount of water in tails through the cap. If there is an unexplained build-up, could re-activate the drains.

Joe - there may be some periods where it will leak, but then other periods where it will have opposite effect, idea is that it is a self-regulating system. Some people at the conference were

talking about using different trees with root systems that tap into moisture. Haven't got to that stage about which trees will go on yet.

Ben - *what was the time scale on the risk assessment for phytocap?*

Joe - modelling time is 100 years, deemed to be period of time required for perpetuity. But don't have records for that time period. 100 years of what we do know goes into modelling and statistically broken down.

Ben- *so the same set of parameters are used for HDPE alternative?*

Joe- 5 different alternatives have been looked at for Failure Mode Analysis.

Ben- *has kept up with the reading, but is hearing tonight that the only proposal at this time is phytocap.*

Joe- the process looked at 5 options; EPA, DEWNR, Consultants all did an FMEA together, which is a risk assessment that strips away all control measures, and determines the best option to apply to situation like this. Risk assessment never guarantees option, just the least risk of failure. Best option if designed right to close off dam.

Ben- *so use of the Bird in Hand limestone tailings, if approved, wasn't part of the submission to DSD? This is new information tonight?*

Joe- design that they are putting together is for full tailings dam whether full of lead zinc sulphide or carbonate gold tails, design itself is to protect the underlying mass, and allow ecosystem to grow and ensure sulphide tails don't cause any detrimental effect.

Mark- *Whatever oozes out bottom of TSF dam, plants are not going to use it*

Joe- common problem, bathtub effect- work is to ensure bathtub doesn't fill up. Can't answer exactly the details, but no design we can put in place will allow bathtub to fill up because of detrimental impact. Can do bit more to get a better answer and next time can get URS out to explain.

Mark- *need plan to get rid of what oozes out.*

Ben- might be the case no matter what capping solution is across 100 year trajectory.

Difference seems to be 2 options- either allow the tap to be turned on over the bath, and put in management in form of a cap to allow evapotranspiration and self-drying water cycling, or put glad wrap over top and prevent tap from entering bathtub, which was the first proposal. In one-allowing tailings to undergo hydration, in the other seems to be a fully enveloped and sealed system, which would be dry and then capped.

Joe- would have been dewatered, but reality is that it wouldn't be totally dry. There are other mechanisms involved, that over time soil cover can degrade if 600 cm or 1m deep and expose tailings, if relying only on that plastic liner and the liner fails then the system has failed. Instead, if there is an engineered soil cover that can have trees grow on it and fall over, water might get in, but can manage these fluctuations within the system. If we have plastic liner with soil cover on top and say that no trees can grow there ever, will have a dust bowl. Having an ecosystem on top that is self-healing that's what we're aiming for.

Ben- *do find it remarkable what's been said; thinking back to land tenure post closure and making sure some land practices don't happen to breach system, find it interesting we have to know what the system is. The fact that we know the tailings are there, and going to be there for a very long time no matter what the capping system is- that should be sufficient to say you can't do certain practices. Can we advance the future land management agreement?*

Joe- we have advanced it, the LMA is to stop certain amount of development, e.g. no swimming pools. But we want to know for the things you can put on there how this will influence drainage. For example could put a shelter up or a large shed which could catch rain- how will this influence drainage? Original LMA was meant to say you can never have a tree on this land, besides being impractical, prevents regrowth, and having an area that the public can use.

Matt– take home message from O’Kane- comparing HDPE to phytocap in terms of leakage, plastic leaks as well. Goal with phytocap is to make leakage rates same or less than HDPE.

Chair– still waiting for information to be drawn together, group is not in a position to get involved in analysing what’s been presented. Group will need time to digest report and make meaningful comment. When will SCCC members be in a position to comment?

Joe- To be determined, post DSD review.

Chair- *picked up in QER that there has been a renewed licence for quarrying for extra 7 years. Is that right?*

Matt- yes that’s right, the extracted mineral lease, mentioned at last meeting. Mid last year rewrote PEPR for that, PEPR waiting for review with DSD.

Chair- *so the report is still waiting for approval? Can’t find upgraded licence on website*

Matt- haven’t heard back on that

Sue- *did they have to submit licence to neighbours?*

Matt- no, it’s an existing one, not a renewal, and within existing mining lease

Chair- *licence would allow sand quarrying- any plans for that on this site?*

Matt – no

Chair- *Joe- you sent around an email saying you would be storing lime*

Joe- Yes, Kanmantoo acquired some lime from Penrice, asked Terramin to store lime in concentrate shed. It’s quick lime so there are exposure risks but do have licence to hold material. Three more weeks of lime delivery to Terramin site are planned, 4000 tonnes. Thereafter we will take away 1 truck load per week for next two years. Same conditions, trucks have to wash down. Did have an issue with dust- at Penrice the top section has been exposed to rain, with moisture and drying it becomes hydrated lime, Penrice have to remove hydrated lime as a condition. Don’t want it in dust form across site, have been hard on Penrice to ensure managed correctly.

Ben- *doors are working on the shed aren’t they?*

Joe - yes

Fred- *is truck washing facility working?*

Joe- using hose to wash them down at the moment.

7. TERRAMIN: COMMUNITY ENGAGEMENT PROGRAM UPDATE

Newsletter, Website and any other publicity

Chair - talked about website already- quite a number of things to be added to that. *Are there any newsletter plans?*

Joe- nothing of interest to share at the moment, can put newsletter out about Bird In Hand if SCCC would like. Does have copies of some of the information they’ve already put out.

Ben- *does it emphasise that it’s subject to different licencing requirements and approvals?* If yes, people might like to know, big issues with start of Terramin was truck movement. This could spark community concern if people think there will be lots of trucks coming up Callington Road, so would be good if information explains it is subject to different approvals.

Joe- have a lot of work to do before we can be confident to progress. Work draws attention, groups are asking questions, there is a lot of regulation Terramin needs to get through, the lease conditions are set with the community in mind. Understand they have to go through process if they want to change conditions. There will be benefits, jobs into area, and has support from businesses in region. Truck movements are big thing, but in past people haven’t

seen issues with truck movements. Terramin are ensuring that people have got information on work being planned, need to get it to a stage before going to ASX.

Chair- understand on corporate website that it will be 2015/16 before Terramin are at that stage. Question the need to involve community until that stage- will generate lots of questions that Terramin won't be able to answer. Prudent to hold back from this Strathalbyn community's point of view. When it gets to point of having regulators on side then get involved, if it involves this community.

Joe- wants to make sure that group feels it can contact Joe directly to get access to information if there are questions from community, articles in paper about work that Terramin are doing.

Chair- thinks it's useful that group can talk to Joe but suggest it's a bit premature to take information further.

Chair- had phone call from ABC journalist asking about closure plans, but journalist had wrong date.

Mark- *in past meetings, tried to get answer out of council about the site- is it an asset or a millstone?* Doesn't feel Alexandrina Council have really considered this place, or there has been much response.

Ann- Council have considered it, and agreed its private property, responsibility of the owners to manage it.

Mark- thinks that is a negative point of view- it's there and opportunity to do something with it, or not.

Ben- might also be that the Council don't know what post closure will look like, information hasn't been pulled together.

Mark- the mine will have to regrade box cut. If someone was proactive they could regrade it to some requirements, but if there are no suggestions it will be too late coming in at the end.

Ann- have had presentations on suggestions for use.

Chair- at time of presentations, were informed by Terramin that the suggested cost of holding site would warrant it closed within 6 months. Now well past that time and in never-never land about making a decision. Sees there is a hope in Terramin mind that could still use the site for Bird in Hand tailings. As a result Terramin are keeping the operation alive. Group should expect site in current state until 2016; might have plan attached to it by then for use, or not. So post closure options have taken a big step back.

Mark- which is why he raised the issue because the group now has breathing space.

Joe- more recently also approached by quad bike rally association to use site, said they had support from council, Terramin said not within plans to do anything with site just yet.

8. Review of Terms of Reference

Update and Progress

Chair- *in February Group had presentations, some people made comments after the meeting, and promised circulation of revised draft. Told in May would have TOR, but still haven't seen anything. Also promised a stakeholder and community management plan, haven't seen that either, DSD what is happening?*

Antonia- no idea but will find out.

Chair- been working on this for 3 years! Would like it recorded that he is dissatisfied with the process. If a mine justifies this sort of CCC then it is important that the group has decent TOR with

which to work. Needs to be finalised, and up to the group to accept, reject or modify to their specific situation. This has now gone on for 3 -4 years and DSD is being slack.

ACTION: DSD to finalise standard TORs, circulate as soon as possible and report back to next meeting.

9. Other Business/Round Table Discussion

Questions/Comments -

Ann- *the letter from Premier about all committees being disbanded- will it affect this group?*

Chair- I have checked with Ted Tyne and no it doesn't; this group is still in existence. First condition on lease is that this group exists.

Sue- As a result of recent conference, asked for more information about acid mine drainage research. Has had email conversation with Carlene Reid about mine management, industry practices, legislation and closure plans for the site, and provided an overview on this conversation at the meeting. In August (17 and 18) next year, there will be a conference in Adelaide about mine rehabilitation. Wondered if group could get involved with part D (regulator and stakeholder considerations in rehabilitation), by submitting an abstract? Or Terramin to put one in?

Chair- As this group is advisory, it can't propose solutions; it is not within its TOR. As for Terramin- will leave them to decide for themselves. Will presume that DSD will take interest, Antonia is on organising committee.

Group should be aware that their efforts over last 9 years have not gone unnoticed, and thanked individuals for their effort.

Rhonda- *do we want to go out again as a group and view underground before next meeting?*

Joe- happy to go underground if group would like to, but not a lot to see since last time.

Chair- if individuals would like to go on their own, that's fine, but agreed as a group not necessary.

Joe- thanked group for coming tonight and bearing with Terramin through phytocap process. Thanked Hans for his contributions over the years.

Fred- *is the HDPE liner 100% non-biodegradable?*

Matt- it will break down but not sure of timeline, can't get straight answer from manufacturers, but probably not more than 20 years.

Joe- the product currently used on tailings dam- even in full sunshine has not broken down. It is as good as you can get in the market for a liner.

Fred- *Will we get updated SCCC contact sheet?*

Chair- yes can organise that.

ACTION: Secretary to distribute updated SCCC Contact Details prior to next meeting.

Fred thanked Hans for his contributions over the years.

Ben- thanked group for tolerating his absences.

Chair- *asked Terramin CEO (in gallery) about recent company changes of ownership, would he like to comment?*

Terramin CEO (from gallery)- Last few years, company has not been in great financial shape, high \$AUD and low zinc price, haven't repaid a lot of debt, but enough cash to close mine in safe and orderly manner. A Melbourne based group - AziPac have purchased some of the debt, and a recent new investor added \$5 million. Terramin also has a number of assets, including a zinc lead deposit in Algeria, awaiting on agreement with Algeria by next year. This asset is attracting a lot of interest. Zinc price is also increasing now. Terramin is now financially stable after restructuring and

rebuilding company. Had to shrink company quite dramatically, to core staff of 14 in SA, but hopeful to rebuild this. Also bought Bird in Hand deposit last year and exploring minerals around Truro.

Chair- *after current issue and convertible notes, if they were converted, would you be 50% or more owned?*

CEO- AziPac would be >50% share ownership, but won't change way Terramin operates. There are other parties holding converting notes, and these tend to neutralise each other.

Chair- the last and most important item of the night is to thank Hans. He has been long standing member of group and integral to the success of the consultative process. It was not an easy job being the regulator at the start, and Hans has helped the Chairmen greatly over the last 7 years. It has been close to a decade of Hans's effort and commitment; he has been a good advocate for this community, especially amongst the various government agencies. Both the Strathalbyn Community and Terramin owe Hans a great debt. The SCCC sincerely thank Hans for his very considerable efforts on their behalf over so many years.

Hans- thank you very much. It has been an interesting time; I've been involved for 11 years. Thinks the process has been good for community, and positive for both the company and the community. Encouraged group and council to work together for a solution re closure.

10. FUTURE MEETINGS AND CLOSE.

Charles – *Thank you everyone for attending, Leah for taking the minutes and Don and Ruth for the refreshments.*

Meeting closed at 8:50 pm

Next Meeting November 20, 2014, at 7:00pm, Parker Ave. Hall. Possible site tour for individuals prior to the meeting if desired (individuals to contact Terramin).

Future Meetings: February 19, 2015

Action List

Terramin	Carried over from previous meeting Terramin to provide Executive Summary of cover options, consultant reports and expert opinions and an example Land Management Agreement framework prior to further discussion at the next meeting (November 2014)
Terramin	Carried over from previous meeting Terramin to distribute agreed PEPR including agreed Care and Maintenance plan to the SCCC.
Terramin	Check with geochemist what sulphates are being measured in underground water.
DSD	Antonia will check status of reports missing from website or incomplete, and progress of TOR and stakeholder management plan
DSD	Finalise standard TORs, circulate as soon as possible and report back to next meeting.
SCCC	Provide a new contact sheet to all members of the SCCC
Secretary	Change Andrew to Adrian on minutes from May 2014.
Secretary	Distribute updated SCCC Contact Details prior to next meeting.