

BARWON DOWNS BOREFIELD GROUNDWATER LICENCE RENEWAL

COMMUNITY AND STAKEHOLDER WORKSHOP THREE
FEEDBACK REPORT

December 2017

Limitations of use

This report has been prepared by MosaicLab on behalf of and for the exclusive use of Barwon Water (BW).

The sole purpose of this report is to provide an accurate record of the feedback and suggestions from the community workshop on the 5th December 2017. Where possible all efforts have been made to accurately re-write the feedback.

This report has been prepared in accordance with the scope of services set out by Barwon Water.

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MosaicLab is a Victorian-based consultancy that specialises in community & stakeholder engagement, facilitation, negotiation, strategic planning and coaching.

INTRODUCTION

On Tuesday 5th December the third of a series of community workshops was undertaken at the Colac Bowling Club (on the Lake).

The purpose of this workshop was to:

- 1 Review the Barwon Water responses to the community outcomes as defined at workshop 2
- 2 Review the Community Reference Group responses to the Barwon Water actions as they relate to the 9 community outcomes (from workshop 2)
- 3 Provide further feedback against the 5 proposed Barwon Water actions

The agenda for the evening was as follows:

Time	Activity
6:00pm	Welcome, introductions and overview of aims and agenda
	Overview of Barwon Water's response
6:30pm	Exploring Barwon Waters 5 proposed actions in detail (ask lots of questions)
7:40pm	Provide feedback on the proposed actions
8:15pm	Provide overall feedback and close the evening
8:30pm	Finish

A booklet was provided to all participants outlining the overall principles and the detail of each proposed action. It is Barwon Water's intention to include the final proposed actions into their licence application to Southern Rural Water. Please refer to Barwon Water's website for the full booklet provided on the night .

The feedback provided in this workshop report and previous community workshop reports will be appended to Barwon Water's application to ensure complete transparency.

The following tables provide the verbatim feedback from the workshop. No analysis or rewording of the feedback has been undertaken. At times there were words that were difficult to read - these have been checked a number of times for accuracy. The best attempts have been made to accurately record all feedback.

COMMUNITY FEEDBACK



Barwon Water Proposed Action:

INTERACTIVE ENGAGEMENT WITH THE COMMUNITY AND KEY STAKEHOLDERS

Proposed actions as shared in the Workshop Booklet

What is Barwon Water committing to?	What can Barwon Water influence?	What is out of Barwon Water's control
<ul style="list-style-type: none">Establishing a Barwon Downs Borefield Working Group to meet every 3 months (or more if needed) throughout the licence renewal process and twice a year during the next licence period (2019 – 2034) to tap into local knowledge and expertise.The proposed purpose of the Working Group will be to provide guidance on what data needs to be collected to monitor remediation and ongoing management of Boundary Creek, the Yeodene Swamp and the broader catchment.Undertaking an independent review, with the Barwon Downs Working Group of performance against the licence conditions at five year intervals during the next licence period.Hosting an information session in Colac once a year to update the broader community on performance against the licence during the next licence period (2019 – 2034).Informing the community before an event occurs and engaging with the community before any change in licence conditions as a result of recommendations from the adaptive monitoring program during the next licence period (2019 - 2034).	<ul style="list-style-type: none">Work in partnership with the CCMA for the overall management of the Upper Barwon including flows and water quality.Actively participate in the Upper Barwon Surface Water Advisory Group run by the CCMA to deliver environmental flows to the Barwon River.	

Feedback

What I like about this action is....	What would improve this action would be....
<ul style="list-style-type: none">• A basis for real traction• Independent review every 5 years• Mandatory informing of the community	<ul style="list-style-type: none">• Working group to include very affected groups• For information sessions being proposed, work with the reference group to develop the details of information to be provided• Include SRW in influence• Educate young people – turnover management• Needs to include southern rural water• Publish importance leading to expressions of interest• Research ongoing and certainly all ‘independent reviews’ based on new research group (not SKM/ Jacobs). Lots of excellent research groups (e.g. Flinders University) in Australia• These Barwon Water actions are interlinked i.e. Restoring trust part of interactive community engagement• Think widely about ‘community’ – how to inform urban community of the values of water ecosystems perceived/understood by people who live in/near them• Need to find some young people• Need to provide training• How to establish the WG?

COMMUNITY FEEDBACK



Barwon Water Proposed Action:

DEVELOPING AND IMPLEMENTING A REMEDIATION PLAN FOR BOUNDARY CREEK

Proposed actions as shared in the Workshop Booklet

What is Barwon Water committing to?	What can Barwon Water influence?	What is out of Barwon Water's control
<ul style="list-style-type: none"> At a concept level, this includes: <ul style="list-style-type: none"> Increasing the supplementary flow initially from 2 ML/day to 3 ML/day upstream of the swamp by the end of 2018, An automated flow release at McDonalds Dam to ensure that the supplementary flow is passed by the end of 2018, Infilling the fire trenches and agricultural drains at the eastern end of the swamp, and Building a hydraulic barrier to with the intent to keep the swamp wet at all times. Improving the ecological condition in sections of Boundary Creek that are rated as 'low ecological value' by releasing additional flows. Engaging an independent expert to undertake a platypus study of the upper Barwon. Providing continuous access to stock and domestic water for farmers in the lower reach of Boundary Creek of quality suitable for stock watering in 2020. 	<ul style="list-style-type: none"> Involve any other relevant agencies during the remediation of Big Swamp such as CCMA and DELWP. Work with community groups like Landcare Networks to revegetate in the Boundary Creek catchment. 	<ul style="list-style-type: none"> A commitment to improve water quality cannot be solely controlled by Barwon Water's actions. There are many other factors that could influence pH levels over time including landowners' practices, environmental factors, severe drought, etc. Increasing flows and remediating the swamp are important aspects of returning the creek back to a healthy environment. Barwon Water needs support from the whole community to implement a whole of catchment approach to see a return of flora and aquatic life in Boundary Creek.

Feedback

What I like about this action is....	What would improve this action would be....
<ul style="list-style-type: none"> Both strategies should be trialled How much water to flow out into Barwon River for the bulk entitlement planning for flows planning (CCMA project) 	<ul style="list-style-type: none"> Proposing solutions again without adequate studies re: groundwater contamination, topography of area Need study to determine costs of contamination of groundwater Need a definition of remediation over time Flow in needs to be adaptive. If more needed to ensure flow more flow should be given Needs to include aquifer recharge Recharge aquifer artificially through alternate means. Could even use recycled water if recycled to acceptable level as to have no environmental impact Given the Yeodene study showing a loss of 2.9-9ML then 3 ML is too low To ensure water gets through to the Barwon there should be monitoring at Colac Forrest Road 3 ML/day average is achieved. Initial in second gauge at Junction with Barwon River to measure flow and quality. There should be chemical monitoring both sites. Remediation needs to extend for whole catchment Work out a way to 'encourage' landowners to prevent stock access pollution of waterways It is essential that the EPA take responsibility for monitoring acid sulphate soils Commitment for piped water supply to affected landholders Remediation must include 'recovery of the peat' and 'recovery of the aquifer' Re 'landowners' factors that impact on remediation of Boundary Creek – need enhanced community education re: whole eco-system values Stormwater pit 5m x 5m from Damplands to Yeodene Swamp

COMMUNITY FEEDBACK



Barwon Water Proposed Action:

ESTABLISHING AN ADAPTIVE MONITORING PROGRAM

Proposed actions as shared in the Workshop Booklet

What is Barwon Water committing to?	What can Barwon Water influence?	What is out of Barwon Water's control
<ul style="list-style-type: none">• Proposing a structure for the next licence that is flexible to respond to what is being observed and measured on the ground.• Proposing inclusion of triggers for the next licence period to enable effective management of risks associated with borefield operation.• Working in partnership with the community and stakeholders to monitor the condition of key environmental indicators in the zone of pumping influence including for example:<ul style="list-style-type: none">o 14 vegetation sites,o 5 acid sulphate soils sites (including Big Swamp),o aquatic ecology (fish, macroinvertebrates, platypus, and frogs, etc.),o 15 land subsidence sites,o surface water flows in rivers and tributaries, ando groundwater levels in 37 monitoring bores.• Continuing to collect surface water flow and groundwater level data and making it publicly available through the Water Management Information System.• Monitoring and adjusting the supplementary flow release to ensure a continuous flow is achieved downstream of Big Swamp.		<ul style="list-style-type: none">• The final wording and structure of the new licence.

Feedback

What I like about this action is....	What would improve this action would be....
<ul style="list-style-type: none"> • It's adaptive! • Triggers annual reviews and adjustments • This unsurprising/uninspiring [hard to determine] principle is included in this licence 	<ul style="list-style-type: none"> • Need to do an independent broad study into the real damage that has been done, to give an exact base starting position prior to remediation commencing • Triggers need to include WHOLE catchment, not just boundary creek • Need to redefine the risks – need further studies to establish a better baseline to build the monitoring from • Monitoring needs to be broad and not focussed on Boundary Creek • Needs a new starting point • Inadequate sites – broader monitoring of groundwater and surface water interaction • Needs overall approach • Licence should reflect community decisions on signing off on phases • Trigger points, monitoring and the precautionary principles must be included in the licence, otherwise change in Barwon Water management (Board) can result in the discarding of the above • Monitoring to include pre-pumping data – concern about the notion of 'no impact from future pumping' – what are the baselines? i.e. must be pre-pumping (i.e. 30-40 year old data) • Broader monitoring than just stream monitor groundwater levels – monitor at confluence • Barwon Water recommending an independent reviewer • How to ensure that community science becomes publicly available (via WMIS or alternative?) • Impacts can take a long time to come to sight. Need to also be adaptive in the sense of what is happening in the climate (rain etc) to prevent a response in the first place that can take years before the impact is noticed

COMMUNITY FEEDBACK



Barwon Water Proposed Action:

A PRECAUTIONARY APPROACH TO MANAGING THE BOREFIELD

Proposed actions as shared in the Workshop Booklet

What is Barwon Water committing to?	What can Barwon Water influence?	What is out of Barwon Water's control
<ul style="list-style-type: none"> Reducing the reliance on the borefield during the first two phases by shifting the borefield from the first to the last alternate water source called on after surface water. Proposing the following licence conditions in the application for the next licence period: <ul style="list-style-type: none"> Removing the maximum volume of water that may be taken in any period of 100 years Extending the maximum volume of water that may be taken in any period of 10 years to 15 years to match the licence period An overall reduction in volumetric entitlements The management plan for the next licence period (15 years) to include: <ol style="list-style-type: none"> Phase 1 – Remediation: to have water flowing all year in Boundary Creek and to improve water quality downstream of Big Swamp (ongoing monitoring with review after 5 years) Phase 2 – Adaptive yield assessment: to begin pumping at conservative levels and stage increases to extraction volumes incrementally to observe the resilience of environmental indicators (ongoing monitoring with review after 5 years) Phase 3 – Long term sustainable operation: extraction regime based on the best available science. 	<ul style="list-style-type: none"> Work in partnership with the CCMA and other stakeholders during all phases of the management plan, particularly the Phase 1 – Remediation. 	<ul style="list-style-type: none"> Unforeseen climate and imminent threats to water supply in the region. This means that if after exhaustion of other standby sources, supplies continue to drop to the point where restrictions would need to be introduced, then the borefield could be operated on an “emergency” basis set at the licence’s volumetric extraction conditions. A commitment to improve water quality cannot be solely controlled by Barwon Water’s actions. There are many other factors that could influence pH levels over time including landowners’ practices, environmental factors, severe drought, etc.

Feedback

What I like about this action is....	What would improve this action would be....
<ul style="list-style-type: none"> • No extraction until remediation is 'successful' • Overall reduction to what? • Some consideration has been given to stream flow volumes • It is a major improvement over the past • No set length of phases • Concept nice needs quality of execution 	<ul style="list-style-type: none"> • Precautionary needs to include aquifer recharge • Should be an ethic of only improving the aquifer levels • No pumping until groundwater levels have properly recovered • Define 'success' of remediation of Big Swamp in terms of a specific range of pH in Boundary Creek • Southern Rural Water needs ensure licence limits and agreement is being adhered to. Needs to ensure Barwon Water does not break agreement. • Pumping to keep pump active during phase 1 will hamper efforts • Pumping because you can (assuming Boundary Creek is 'remediated') is not ok. What about other impacts that may not be obvious for years to come. • Precautionary approach includes: needs community education in urban areas whereby 'restrictions' do not trigger pumping – but are normalised water-sensitive behaviour • The proposed approach allows the contained drawdown of the aquifer over time provided there are no adverse surface impacts. The Precautionary Principle should apply to both surface and ground water levels • The consultation with community and environment groups • Review after 2.5 years not 5 • Release data when event happens • Define 'success' of remediation as minimum flow in Boundary Creek equal to the minimum environmental flow volume (see CCMA report) • Given the losses of 2.9-0 ML per day indicated in the Yeodene Swamp study 3 ML would appear to be too low • Pumping will occur to keep pumps viable for future use – how much pumped? This could hamper all efforts • Include principle in licence agreement • Precautionary but in dire need will be used. Need to really look at alternatives such as recycling and promoting water tanks in homes • Contamination of groundwater not included • Some scepticism re: effectiveness of 3ML supplementary flow • More definition re: max water volume

COMMUNITY FEEDBACK



Barwon Water Proposed Action:

BUILDING KNOWLEDGE AND TRUST IN THE SCIENCE WITH THE COMMUNITY

Proposed actions as shared in the Workshop Booklet

What is Barwon Water committing to?	What can Barwon Water influence?	What is out of Barwon Water's control
<ul style="list-style-type: none">• Submitting all technical studies prepared to support the licence application (Southern Rural Water will co-ordinate an independent review of these studies).• Establishing a citizen science program to involve the community in collecting data and samples during the next licence period.• Publishing all data and technical studies generated during the licence renewal process and ongoing monitoring on our website.• Undertaking an independent review, with the Barwon Downs Working Group of performance against the licence conditions at five year intervals during the next licence period.	<ul style="list-style-type: none">• Work in partnership with the CCMA for the overall management of the Upper Barwon including flows and water quality.• Actively participate in the Upper Barwon Surface Water Advisory Group run by the CCMA to deliver environmental flows to the Barwon River.	<ul style="list-style-type: none">• As part of the licence application process it is Southern Rural Water's decision on to appoint to conduct the independent review.

Feedback

What I like about this action is....	What would improve this action would be....
<ul style="list-style-type: none">• Consult LAWROC – a very successful ‘citizen science’ group over 10+ years (well established)• Scientific studies need to be outside Jacobs hands• Citizen science – great idea – needs training and quality assurance• Citizen science is a great idea eg. Platypus DNA testing	<ul style="list-style-type: none">• Need EPA involvement in monitoring acid sulphate soils• What is the funding commitment to the citizen science program? Train the citizen scientists• Technical assessment panel please – ‘Boredown’ website• Consider funding support for citizen science program that already exists and collaborate with them• Needs to include science already collected from the community• Needs community involved in design of the citizen science program• Citizen science program skill levels need to be assessed and increasing over time and publicised• Trust will be greatly enhanced through competent, independent research. Not only independent review to draw a line under past poor engineering and water-as-resource SKM/Jacobs approaches

COMMUNITY FEEDBACK



OTHER COMMENTS

Any other comments that would help improve future management of the Borefield

- Focus on reducing demand – also reducing wastage in Barwon Water reticulation storage and delivery
- Anglesea as a priority? This will all happen again. Anglesea already has issue with river etc. This would have serious impacts to that catchment including salt water intrusion
- Aquifer needs to be recharged
- Subsidence – within the LTA, How is this managed? And monitored? Slide Lake – East Barwon Landslides
- Apart from management plan phase 1, 2 and 3 a most disappointing result after 3 sessions
- What environmental impacts are there with Anglesea borefield or Melbourne pipeline? Its not ok to just shift impacts from Boundary Creek to somewhere else
- What extra water saving measures are Barwon Water planning e.g. Water restrictions, grey water/tank water, community education
- Community education
- Dividing Creek site – new ASS site. Boomerang swamp ASS/PASS; drainage lines in Kewarren Acidic
- Close it down
- Sell recycled water and tanks. Not groundwater/surface water
- Don't forget the health of the WHOLE Barwon River system
- Contamination by saltwater, acid, heavy metals not studied or included



OVERALL FEEDBACK

Participants were asked to consider the proposed actions by Barwon Water for the next Licence Application and rate their level of comfort overall. Alongside this rating people were asked to offer what would need to change for them to feel more comfortable. The following table provides the overall results for this section of the workshop. A total of 29 participants completed this feedback (please note one participant marked both 'love it' and 'like it' and hence is counted twice).

Level of Comfort	Percentage
Love it	6.9
Like It	24.1
Live with it	20.7
Lament it	34.5
Loathe it	13.8

The following are the comments people provided by way of improving their level of comfort with the proposed actions.

WHAT WOULD NEED TO CHANGE FOR YOU TO FEEL MORE COMFORTABLE?



I think that BW is committed to listening and responding to community concerns about the environment. I think that BW is committed to the sustainable management of the aquifer for win-win for its customers and the environment.

More consultation sessions. PowerPoint presentations of past, present and future.
Commitment and transparency.



Clearer messaging around sustainability of the Borefield. Managing existing impact - fill in channels and dam wall. Manage ongoing extraction impact - release water in Boundary Creek. Adaptively manage future extraction - no impact in other areas.

Emphasis on reduced consumption demand, aimed at consumer community. Reassurance that Southern Rural Water will cooperate with an 'adaptive licence system'

Look to be moving in right direction. But need to be more concrete in actions (no maybes). Take responsibility for Boundary Creek problems (not contributed - we caused).

A step in the right direction.

Be more specific about policy steps e.g. defining remediation. Include policies in licence application.



At least retain existing LTD water levels within a reasonable timeframe. No long term moving of the aquifer.

Like the adaptive part in the plan.

The ability to trust BW. "Independent" review provisions. A change in Barwon Water recommending Jacobs/SKM

To have Barwon Water work as responsible citizens and that management plan and phases be strongly adhered to.

...continued overleaf



1. Set trigger levels for the recovery of the aquifer - the 4 critical observation bores before pumping recommences.
2. Ensure that 3ML/day gets through monitoring station. on Boundary Creek - Colac - Forrest Rd
3. Establish water monitoring station at junction of Boundary Creek and Barwon river.
4. Chemical regular monitoring of both stations to measure low pH and other chemicals for fish kills

I'm not comfortable with the idea that pumping can happen if Boundary Creek is ok - what about other environmental impacts? Just because Boundary Creek is ok what is sustainable? Pumping? Are we just shifting environmental impacts by using Anglesea borefield or Melbourne pipeline? What can be done to ensure BW customers really value the resource e.g. tougher water restrictions, grey water



Aquifer needs to recharge. Pumping cannot occur before recharge, even if artificially at first. Pumping even to keep bores active should NOT occur during phase 1. Areas of monitoring AND remediation need to include the entire catchment. Anglesea is NOT a back-up option. There is already a struggling river and salt water intrusion (not confirmed but highly likely) occurring in the area and it cannot afford pumping either. Recharge the aquifer, remediate the entire catchment and use other water sources (recycling etc)

Review other sources of water supply.

Like the changes to approach. Missing is basic statement of facts. Like Groundwater extractions on its own caused significant damages - environment is critical

For BW to advise us that phase 1 will start 2018 and no licence will be applied for re borefield.

Comprehensive list of things to be remediated. Written explanation of what each phase represents.

Pleased to see phase 1 before phase 2 but I think more monitoring is needed and more protection of streams is essential too. If using water from Melbourne do we need to use aquifer as a last resource?

I would need to see a commitment to repairing the aquifer even if it was to take decades. This would not preclude BW pumping water from it but at a rate that saw bore levels increasing over time. Sustainable use should not include further level reductions even if surface ameliorations are successful.

...continued overleaf



LAMENT IT

BW's precautionary approach should embed community education which maximises population willingness to be careful with precious, costly (to the environment) water - as community have shown willingness to do in Millennium Drought. Community education to include enhanced urban understanding of water cycle and the cultural connection people have, and need for water to be valued into the future. Not only Aboriginal but including and principally - renewed research team conducting tests/research (post Jacobs/SKM research regime). Ask the community for ideas - include:

What is baseline really for 'no impact from future pumping' - baseline CANNOT BE 2017 - needs to go back in time - 1980's pre-pumping. Thanks for hearing our voices, I hope.

Not my area of expertise but it would appear that the millions of dollars to be spent on remediation will be wasted. The problem is much broader than Boundary Creek and the swamp. Work with people in the workshop who have the local knowledge and skills in this field.

Remediation can only be possible once the aquifer is recharged (and thus a critical criteria to allow any level of pumping).



LOATHE IT

Artificially recharge the aquifer now!! Don't wait for natural recharge. Abandon Boundary Creek remediation - waste of money. Put funds into artificial recharge.

An acid sulphate soil management plan mandated by the environment protection agency is absolutely essential to ensure that big swamp pollution is dealt with credibly and transparently.

Recharge aquifer. No fund to remediate other areas outside Boundary Creek. No confidence SRW will do the right thing.

Fix the mess.

NEXT STEPS

This was the final workshop in this series. All community feedback collected throughout the three workshops will be appended to the Barwon Water Licence Application to ensure transparency.

The next steps in this process as shared at the workshop are:

- Provide your feedback to the Barwon Water Board
- Meet with Community Reference Group
- Barwon Water to draft licence application
- Take draft application to Barwon Water Board
- Inform the community
- Submit licence application to Southern Rural Water

It is anticipated that these actions will proceed over the next 3-6 months into 2018.

APPENDIX - RAW FEEDBACK

INTERACTIVE ENGAGEMENT WITH THE COMMUNITY AND KEY STAKEHOLDERS

What I **like** about this strategy is...

What would **improve** this strategy would be...

Handwritten feedback on the 'like' side:

- Red sticky note: "Good to have a plan to provide"
- Red sticky note: "Good to have a plan to provide"
- Yellow sticky note: "Good to have a plan to provide"

Handwritten feedback on the 'improve' side:

- Red sticky note: "Need to have a plan to provide"
- Red sticky note: "Need to have a plan to provide"
- Red sticky note: "Need to have a plan to provide"
- Red sticky note: "Need to have a plan to provide"
- Red sticky note: "Need to have a plan to provide"
- Red sticky note: "Need to have a plan to provide"
- Yellow sticky note: "Need to have a plan to provide"
- Teal sticky note: "Need to have a plan to provide"
- Teal sticky note: "Need to have a plan to provide"
- Teal sticky note: "Need to have a plan to provide"



DEVELOPING AND IMPLEMENTING A REMEDIATION PLAN FOR BOUNDARY CREEK

What I **like** about this
strategy is....

Both strategies
should be
included.

How much water
is being used... in the
area. This is a
key factor in the
remediation plan.

What would **improve** this
strategy would be....

Proposing
Solutions
for water
without
Adoptive
Contamination
• Topology
of Area

Need a
Decision of
Remediation
over time

Remediation water gets
through the area. This
is a key factor in the
remediation plan. This
is a key factor in the
remediation plan. This
is a key factor in the
remediation plan.

Need study to
determine costs
if contamination
is high

Flow is needed to
be adaptive.
If more flow
more flow would
be given

Given the topography
of the area, this
is a key factor in the
remediation plan.

Needs to include
recharge

recharge water
artificially through
all means. Could
also use a well to
recharge water

Remediation
needs to extend
for whole
catchment.

With out a way
to encourage
landowners to
prevent water
pollution of
waterways

IT IS ESSENTIAL
THAT THE EPA
TAKE RESPONSIBILITY
FOR MONITORING
AND REMEDIATION

With out a way
to encourage
landowners to
prevent water
pollution of
waterways

COMMITMENT
TO BE
MADE
TO IMPROVE
LANDOWNERS

With out a way
to encourage
landowners to
prevent water
pollution of
waterways

With out a way
to encourage
landowners to
prevent water
pollution of
waterways



ESTABLISHING AN ADAPTIVE MONITORING PROGRAM

What I **like** about this strategy is....

No adaptation!

Trainers
Also provided
600
4000000

Trainers
Also provided
600
4000000

What would **improve** this strategy would be....

Need to do an audit
don't study it, do not
change it, but do it
do, you can find the
study, just do it
re-evaluate strategy

Trainers need to
include, while
excellent, not
just boundary
check

Need to
re-define the Rinks
Need further
to establish a
better baseline to
build the monitoring
front

Monitoring needs
to be protected and
not allowed on
Boundary Ch.

Needs a new study
Point

Modest site
Boundary monitoring
of groundwater &
surface water
interaction

Needs overall
approach

Learning should
be a key element
do, you can find the
study, just do it
re-evaluate strategy

Trainers need to
include, while
excellent, not
just boundary
check

Monitoring to
include the
pump-out
in design about the
nature of the
pump-out
pump-out - include

The location to
pump-out
the 20-40 year
old study

Monitor monitoring
from rest of
pump-out
pump-out
pump-out

Trainers need to
include, while
excellent, not
just boundary
check

Barwon
Water
Recommendation
An International
Recommendation

Impacts can be a lot
to come to what. Need to also
be adaptive in the sense
of what is happening in
the climate (rain etc) do
prevent a response in the
first place that can take
effect before the impact
is noticed



A PRECAUTIONARY APPROACH TO MANAGING THE BOREFIELD

What I **like** about this strategy is....

No expectation until remediation is "successful"

So far CONSIDERATION HAS BEEN GIVEN TO STRONG FLOW VOLUMES

Consideration to what?

It's a major improvement on the plan

CONCEPT NICE NEEDS QUALITY of EXECUTION

No Set LENGTH OF PHASES

What would **improve** this strategy would be....

Precautionary NEEDS to include remediation recharge

Should be an effort to bring remediation to the surface locally

Define "success" of remediation in terms of a specific target at PH in Bowditch Creek

NO PUMPING UNTIL GROUND WATER LEVEL HAS POSITIVELY RECOVERED

Southern bank water table is about 10m below ground level. It is not clear if this is being achieved or if it is necessary to bring it up to the surface level. It does not seem to be a priority.

pumping because the risk (assuming boundaries are remediated) is not ok. what about other impacts that may not be obvious for years to come.

pumping to keep pump active during phase 1 will help pump effect

proposed approach on the comparison of the water table level. The water table level is not being monitored. The water table level is not being monitored. The water table level is not being monitored.

To consult with community & other groups

Need to consider the water table level. The water table level is not being monitored. The water table level is not being monitored. The water table level is not being monitored.

Review after 2-3 years. Review after 2-3 years. Review after 2-3 years.

More information on "Maximum Success"

Define "success" of remediation as minimum level in boundary grade in Bowditch Creek, plus equal to the flow volume (see CEMA report)

in the future 2.5 - 3 m per day indicated in the Bowditch Creek. This would appear to be a good level.

Pumping will need to keep pump stable. How much pumping? This could hamper all efforts

Include Principal In Location Agreement

Precautionary but a dire need will be used. Need to really look at alternatives such as remediation & promote water table in house

CONTAMINATION of GW NOT INCLUDED

Need to consider the water table level. The water table level is not being monitored. The water table level is not being monitored. The water table level is not being monitored.



BUILDING KNOWLEDGE AND TRUST IN THE SCIENCE WITH THE COMMUNITY

What I **like** about this strategy is....

It's a great idea.

Scientific studies need to be published in a way that is accessible to the public.

CITIZEN SCI.
GREAT IDEA
NEEDS
TRAINING
& QUALITY
ASSURANCE

Citizen science is a great idea. It's a great idea.

What would **improve** this strategy would be....

NEED EPA INVOLVEMENT IN MONITORING ACID SULPHATE SOILS

Technical Agreement
Borehole Plans
Borehole data
Good feedback
The strategy needs to be more
transparent to the community

It needs to be more transparent to the community. It needs to be more transparent to the community.

Needs to include science already shared with the community

NEEDS COMMUNITY INVOLVED IN DESIGN CITIZEN SCI. PROG

It needs to be more transparent to the community. It needs to be more transparent to the community.

It's not just a great idea, it's a great idea. It's not just a great idea, it's a great idea.

?

OTHER

Any other comments that would help improve future management of the Borefield

Focus on reducing demand

also reducing water use in the Borefield

Community education

Agree as a priority to reduce water use in the Borefield

Need to reduce water use

Subsidies

- reduce the VAT
- How is this managed?
- make sure it's not a loss

What for? Borefield

- not a priority
- not a priority
- not a priority

What for? Borefield

- not a priority
- not a priority
- not a priority

What for? Borefield

- not a priority
- not a priority
- not a priority

Drinking water

- not a priority
- not a priority
- not a priority

Close it down

CONTAMINATION

- SALT WATER
- ACID METALS
- NOT STUDIED
- OR INCLUDED

Don't force people to use the Borefield

Get rid of water in the Borefield



REPORT PREPARED BY:

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