

McLaren Vale Water Allocation Plan

Advisory Committee

Meeting 2: Friday 1 October, 9:30am-1:30pm

Location: McLaren Vale Visitor Centre

Members: Janet Klein (JK; Chair), Joch Bosworth (JB), Robert Brokenshire (RB), Chris Dundon (CD), Amanda Hirschausen (AH), Jennifer Lynch (JL), Gavin Malone (GM), Brad Moyes (BM), Chris West (CW), Jenny Woodley (JW)

Landscape Board: Tom Mowbray (TM; Executive Officer), Wendy Telfer (WT)

DEW: Steve Barnett (SB), Hugh Wilson (HW)

Agenda

1	Opening - Welcome & apologies – Martin Stokes; Robert Brokenshire (arriving late); - JK Acknowledged Country, recapped last meeting and the outline of this meeting.
2	Minutes and Actions - Endorsement of minutes – moved JL; seconded JW; - Discussion of action list: Many actions covered by content at this meeting and by future meetings. Tom still to talk to Jenny Woodley re environmental interests in the Water Security Planning process. Sitting fees to be processed soon. ACTION: TM to circulate the newsletter article that was provided to JW ACTION: TM to provide a short article after each meeting for representatives to share with their members. The next one to link with survey.
3	Timing of availability of monitoring data - Paper provided for noting. - There are time lags in DEW Water Status Reports being available of around 12-18 months after the end of water year which partly relate to the lag of 6 months for metered data to be validated and then analysed. - Raw monitoring data is available on Water Connect as soon as it's available – it is up to date. Some of this data is telemetered and some from field officers collecting data in the field from data loggers. Regional management decisions are not made on short-term data – it is the trends in resources that will trigger WAP responses. Although it takes 12-18 months for the interpretative report to be drafted and made available, if there was an unexpected trend up or down, SB reassured that this would be picked up sooner, and not sitting waiting for a response for a year. - JL - MV Grape Wine & Tourism Assoc. pilots and supports development of ag tech options. They would be keen to collaborate on how to get more live information available for growers. Are there opportunities to reduce the lags in data/analysis and provide monitoring data live with micro-status reports about what is happening within the season more frequently to support grower management decisions? Data communication with a traffic light system dashboard could be explored. - CD - Vignerons want data to help inform local decision making – important for growers and ecosystem managers. If have greater access to information, have greater ability to respond. ACTION: JL to talk with DEW about how could explore pilot trials for making data live.

	ACTION: Future meeting to provide more information about monitoring and data available.
4	Community Survey - McLaren Vale Water Allocation Plan • Draft survey provided for discussion. • Discussed the purpose of survey being a pulse check of community views on the effectiveness of WAP. The questions have been kept high level to not lead respondents to answers. The survey is trying to understand the breadth of existing concerns or known issues with the WAP from those that have engaged with it. • BM – community will need more information to have informed views on whether the WAP is being effective. • Other questions about whether we should be using the survey to understand differences in views between those licensed users, stock and domestic, etc. • JL – If want informed view of WAP effectiveness, Q1 may not be fully formed. The survey questions would need to be properly constructed (marketing science survey) if we were trying to draw specific conclusions from the results. • Committee agreed that it is better to keep the survey as a high level pulse check of broad community concerns with WAP, rather than trying to get an informed, rigorous view of how the WAP is working. • Audience for survey - licensees, broad community, and interest groups eg. Friends of Willunga Basin. ACTION: TM to start stakeholder list for area - including Friends of Willunga Basin, Biodiversity McLaren Vale ACTION: TM to amend survey with: • additional demographic questions: • links to more information for those interested. ACTION: Draft Survey to go to members with date to respond by with any further edits.
5	Overview of McLaren Vale Groundwater - presentation by Steve Barnett, DEW (attached) • Considered water planning definition of sustainability. • <u>Quaternary aquifer</u> – near surface; 6 licences taking very little water from this aquifer. Low number of licenses because it is a low yielding aquifer - commercially not worth extracting from. Most ecosystems use these quaternary aquifers where there is this limited extraction, consequently the ecosystems can take as much as they need. Water quality is good in the upper areas in this shallow layer, and saltier towards the coast. It responds to rainfall - GW levels in this aquifer follow the cumulative rainfall deviation. There has been a gradual decline in water levels reflecting the decline in rainfall. • Q: <i>How much does the water level in quaternary aquifer affect the aquifers below this aquifer?</i> • Note: improve diagram with label to axis and change "cumulative deviation" to rainfall. • Loosing areas in reeks and direct infiltration all recharge the aquifer. • Discussion about dams stopping surface water low flows. After 1975 / 1980s, no new large irrigation dams were permitted so it is not a big issue in this area. In relation to the impacts of declining GW water levels on groundwater dependent ecosystems (GDEs) in downstream areas that rely on shallow groundwater – the water levels in this aquifer relies on rainfall which the WAP can't manage. The WAP can only manage impacts of licensed use. • Q. <i>Development in Kangarilla and McLaren Flat – water retained in rainwater tanks etc, is this stopping natural run-off of water?</i> • SB response: the volumes captured by tanks etc is very small on a regional scale.

- Port Willunga Formation Aquifer – consists of limestone; licensed bores are concentrated in this aquifer. The aquifer is salty and of limited use near the coast. Salinity trends are generally stable. The overlying layer has leakage from Quaternary into Port Willunga aquifer and this can reduce salinity in the Port Willunga aquifer. No seawater incursion.
- Water levels – gradual long term pressure decline in response to reduced rainfall. Not of concern at present. Gradual decline in the head of pressure of 3-4 m over 30 years, which is following the rainfall pattern. Wet years less pumping, and where pumping has been stable, levels showing decline – so the water levels are not following the pumping pattern.
- The current pressure level is 10-15m above top of aquifer. 350,000ML in storage, currently using ~2800 ML/year; The aquifer is still pressurised, and no decline in the volume of water in storage.
- There are no ecosystems using this naturally confined aquifer.
- Sustainability – assuming we have a few wet years, with the current rate of decline, the pressure level in the aquifer would not reach the top of aquifer for 50 years, at which point you may have to lower your pumps.
- Pirramimma Sand Aquifer – unconfined, sand not limestone. Licensed wells – gradual decline 0.07 to 0.15 m/year since 1993 in response to below average rainfall. The aquifer is 50-80m thick. Extraction hasn't increased by that much. Rainfall is the main driver of GW levels in this aquifer. At the moment – water levels okay - keep monitoring.
- Salinity – significant increases (hotspots) in salinity in some areas. High extraction has led to these increases in salinity; since extraction has been reduced, salinity has flattened off. Irrigators have self-managed this risk.
- Where is the salinity coming from? Underlying layers – upward leakage. To the east of McLaren Flat, pumping is still increasing and salinity is still increasing as a result. If the WAP doesn't restrict usage, this may again be self-managed by irrigators. Or if this continues to be used at a greater level then the WAP may need to manage this issue.
- The aquifer is thin in the northern areas – 10-20m thick; Blanche Point 1500mg/L salinity. Both areas haven't had the opportunity to use recycled water. Area B – extraction increasing but all within the limits. Now using more water. Vineyard development east of McLaren Flat towards the escarpment. WAP review to have close look at risks, and management interventions may be required in this area where salinity is increasing. The issue is difficult with current WAP because the WAP does not have management zones. Management zones would allow specific rules in this area.
- There is a need for information about where there is access to recycled water in Area A and B in the Pirramimma Sands Aquifer.

ACTION: JL to investigate whether they can share information about where recycled water is used - pipeline map overlay.

Maslin Sands Aquifer

- Gradual decline in response to rainfall. Aquifer is 50m thick.
- The salinity hot spots overlay a basement aquifer. The underlying source water for salinity incursion is much more salty than in the Pirramimma hotspots, so salinities are still increasing. In this area a WAP amendment would need to consider management intervention to prevent further salinity increase in the hotspots. Scientific evidence and growers understand that salinity increasing. People are informed about the issue.

Fractured Rock Aquifer

- There is a fractured rock aquifer around edge of basin – the middle of basin is confined, while around the edges it is unconfined and rainfall can penetrate. There is a gradual decline in response to rainfall. Since 2002 it has been reasonably stable.
- Q. *Why is the deeper water table declining the most?* - It has the slowest response to rainfall.

- Salinity is patchy, the aquifer has some areas with good quality and some with poorer quality. Long term trends – higher salinity due to millennium drought.

Summary

- Current extraction sustainable for foreseeable future from a volumetric perspective.
- Salinity hotspots need management intervention.
- Long term climate change impacts likely to place pressure on capacity of GW resource in some areas.
- 2019-20 one third of allocations unused due to quality and/or aquifer yield issues. Use of full allocation unrealistic due to quality issues and business decisions.

Use of allocations

- 56 licenses not used at all, but this region is unique in SA – in high water use years, this region is using full allocation. By comparison in the WMLR prescribed resource there is much lower use of allocations.

Stock and Domestic wells

- We know where the wells are but not the current status of use of wells – how many are being used and how much using.
- Stock and Domestic rules – for garden use up to 0.4ha (1 acre) if using more than that then need a licence.
- Any water use associated with a winery (or cellar door) (i.e. not associated with a dwelling) is classed as licensable use and requires a licence. This is primarily a compliance issue, rather than a resource issue. Could use remote sensing to check whether use is licensed and appropriate areas are being watered from S&D bores.
- *What proportion of the resource do you estimate S&D take?*
- Do we need to license S&D in this area? Difference between licensing and metering. Don't think there will be a political appetite for licensing. Large cost of metering and administrative process to license S&D bores.
- May need more community awareness that water license is required for water lawns around cellar doors.
- It would be good to find out whether bores are unused and/or leaking.

ACTION: Discussion paper on S&D bores

ACTION: Develop an information sheet for GW users about what is permitted as stock and domestic use.

Managed Aquifer Recharge (MAR, sometimes also referred to as aquifer storage and recovery, ASR)

- Injection of water into aquifer in winter; and extraction out in summer. Water treated before injection. In SA there are 24 operational schemes - most use stormwater and some use treated effluent. Permits are required for injection and a water licence license for extraction.
- There is a risk of free flowing wells if a lot of water is injected – the bores in these areas that have become artesian need to hold pressure in.
- There are 2 schemes in McLaren Vale Prescribed Wells Area – SA Water for effluent at Aldinga Wastewater Treatment Plan; Onkaparinga Council – stormwater at proposed site at Hart Lane.
- One winery looked to do MAR, and difficult with UV requirements, these requirements should be revisited.
- There could be opportunities to put low salinity water down bores in high salinity areas and shandy water.

Sea Water Intrusion

- There is a difference between sea water intrusion (salt water moves inland due to extraction) and salt water interface (naturally occurring interface between sea water and groundwater in an aquifer).

	No evidence of active intrusion in Willunga basin – risk considered low. It will be important to have a resource condition limit in the amended WAP in order to maintain a pressure gradient out to sea. ACTION- TM to circulate the presentation PowerPoint.
6	McLaren Vale Groundwater Dependent Ecosystems - Presentation by Hugh Wilson, DEW - Groundwater Dependent Ecosystems (GDEs) - ecosystems which are wholly or partially dependent on groundwater. - There is a map of 12 priority GDEs in the MV WAP. 3 broad types: - Phreatophytic – roots access groundwater – eg. red gums; - Wetlands – damp saturated soil; groundwater affects how long water is available to the wetland; - Watercourses – groundwater can affect the timing and duration of flows in the watercourse. - Marine environment – can receive groundwater. - Only some aquifers support GDEs – the fractured rock aquifers support springs and soaks; - The typical policies to control the risks to GDEs would include buffer zones around GDEs which would apply to applications for new wells around known GDEs. - The Shallow Maslin Sands Aquifer in the Blewitt Springs/Kangarilla area supports phreatophytic vegetation; - The shallow Quaternary aquifer on the Willunga Basin plain supports river red gums, floodplains and wetlands. - As above, the typical policies to control the risks to GDEs would include buffer zones around GDEs which would apply to applications for new wells around known GDEs. - The development pressure risk to these ecosystems is low. - Coastal perched aquifers support Aldinga Scrub and Washpool. - The watertable close to surface. - No development pressure due to salinity, if thought at risk, use buffer zones. - Climate change – there is an observable long-term trend of declining aquifers due to decreased recharge. - Small changes in groundwater level can have significant impacts on GDEs. The shallow aquifers are responsive to recent rainfall. The risk is not controllable through the WAP. - Other risks to GDEs - impacts of surface water development / use – reduces recharge to aquifer and restricts water available for GDEs. - Questions for WAPAC: <i>Is the list of priority GDEs from 2007 MVWAP still valid? Is there other context that affects the risk assessment for GDEs (e.g. native fish might change attitude to risk)? To what extent are the principles of the existing WAP supporting GDEs?</i> - GM – our understanding of wetlands has improved. The California Road wetland one small part of larger swamp. Maslin Creek connects to Wirra Creek and this is a misnaming of Maslin Creek. ACTION: TM to work with GM on correct naming of 12 GDE listed in the WAP. <u>Discussion</u> - Active stormwater harvesting for MAR – should only be from these sources. Is this something the WAP could control because the salinity – springs in different area to the extraction? We need a closer look at the vicinity of GDEs to where there are pressures for extraction. - The behaviour of salinity once brought to the surface – could be slow lateral movement? - Drip irrigation – little surface expression of the salt. Localised where the water goes – as bringing salt to surface – don't think quantities would have effects on the surface.

7	Discussion paper on amalgamation of water allocation plans • The Committee discussed the paper and believes that the option of having groundwater and surface water together makes sense as they are interconnected resources. • The administrative burden of changes to prescription would be high but not relative to the economic value of the resource. • BM - Don't like the idea of accepting a finite life for the aquifer. Would like us to recover some of these aquifers. • We need to better understand the how surface water is used in McLaren Vale – how much licensed surface water use is there? If no one is licensed to use SW, there may not be large gains by combining the WAPs. • There could also be unlicensed surface water use. • Some landowners would like to know what to do with existing structures on properties. A lot of people are detaining surface water and it is not going to good use. • Many farm dams were built before understanding the importance of low flows. How many large dams are there in the area? • The Returning Low Flows program in Western Mt Lofty Ranges involves retrofitting low flow devices to dams >5ML, but has had limited uptake by landholders and expensive to implement. A similar program in EMLR ('Flows for the Future') but because it is in the (Murray-Darling) Basin Plan area there has been substantial funding available. There is scepticism and animosity from some producers in EMLR about the program. Removal of dams may be more effective than low flows devices. • For healthy ecosystems, they need to have certain flows. When dams have to fill and spill, this shortens the length of flow season in watercourses and has dire consequences on ecosystem health. Greater allocations allowed were allowed because it was assumed that low flows policies would be implemented. The EMLR and WMLR WAP reviews will need to look at how to balance allocations with the low level of low flow device implementation. There are declines in fish populations with current levels of actual use, which are generally lower than allocations. • The risk assessment will help consider the risks to groundwater associated with surface water and this will help inform discussions about whether amalgamation of the WAPs is worth pursuing. ACTION: Request for more information about how water gets into aquifers, and what interventions impact on groundwater recharge. ACTION: TM to come back with more surface water information including many dams over 5ML in this prescribed area.
8	Overview of the Risk Assessment Process – Tom Mowbray • Kaurna keen to have a workshop to discuss cultural values and what their interests are in the review. Q. <i>Who of Kaurna invited to workshop?</i> Going through the Prescribed Body Corporate and through Wapuli Kumangka (the Kaurna committee that manages environmental issues). • There is a requirement of the Act to review the principles in the WAP. Work is underway with a technical working group with DEW to evaluate the current principles of the WAP – this work will be brought to WAPAC. • The risk assessment provides a structure method for assessing whether the controls in the WAP are sufficient to manage the risks to the resource. • If high risks are identified, then we need to consider whether high risks can be treated by changing the policies in the WAP? Consider what the treatments could be and whether amendment of the WAP is required. • We need to decide if surface water is included in the risk assessment – should be included as a risk to recharge.

	The review process should also consider opportunities as well as risks. The review is not confined to only considering issues identified by the risk assessment process.
9	Risk Assessment Process: Risk Identification Held over to next meeting
10	Confirm next meeting ACTION: Tom to send out doodle poll for all future meeting.

Tentative meeting schedule

Meeting 3 – Tuesday October 26

- Climate change presentation
- Risk Assessment – Risk Identification (including review of consequence tables)

Meeting 4 – Friday December 3

- Outcomes of workshop with Kaurua on cultural value of water
- Report on assessment of how well the objectives of the current Plan have been met, from Technical Advisory Group
- Risk Assessment – Risk Analysis, Risk Evaluation, Risk Treatment
- Overview of review outcomes

Meeting 5 – Friday February 4

- Discussion of Draft Review