

Eder/Morriss oral submission to PC7 hearing panel – 16 Nov 2020

With ref to PC7-201.1 & 201.2

Saltwater creek is a small meandering spring fed system that discharges into the Ashley River estuary. It is noteworthy both for the extensive areas of salt marsh vegetation and the extent to which tidal effects and saltwater intrusions at high tide dominate flows in the lower reaches – hence it's name. The riparian margins of the creek are bordered by rushes and introduced grasses tolerant to episodes of flooding with saline and brackish water. Saltwater will kill willows, so we do not see willows start to appear until 300m below our irrigation take point. So from where the willows start, Saltwater creek can be considered to be freshwater, on the surface at least. However depending on the discharge and stage in the tidal cycle, saline intrusions may penetrate further upstream, flowing beneath the less dense surface freshwater layer. It is above the upstream end of these intrusions where our surface takes are sited. Tidal effects can still be measured at Factory road when there are spring tides, so the water takes can be considered to lie within the tidal freshwater zone of the estuary.

We were first granted consent to take water from Saltwater creek in the early 1980's. As I described above, our takes are sited in the tidal freshwater zone and at our site, the incoming tide holds up the freshwater that results in significant upstream flows.

The advent of irrigation on our farms has enabled our families to continue to farm and make a living from the land. We have a close and dependant relationship to the Saltwater creek that runs through our properties. At times the creek and it's tributaries can be our biggest curse and floodwaters can inundate up to 90% of our farms, being the main conduit for floodwaters from a large catchment area extending up to the Ashley downs and including the land where the Ashley forest is now.

We, along with the wider community, have appreciated the amenity values that the creek provides for recreational boating, trout and whitebait fishing. We provide unfettered access for fisherman to cross our paddocks to access the creek directly from the road, bypassing the need for them to access the creek by walking the long way up or down the Queens chain. We took the initiative in the 1980's to fence off the banks of the creek to provide habitat that:

- allows plant species that are more tolerant of the saline habitats to be competitive helping to stabilise the creek banks .
- eliminates stock entering the creek eliminating downstream pollution
- reduces sediment runoff and
- assists whitebait spawning on the spring tides by providing cover for the inanga eggs that spend 3 or more weeks developing on the creek banks before being picked up on the next spring tide and taken out to sea.

Incidentally several freshwater biologists who have studied the creek have commented to me that a lack of suitable spawning vegetation is unlikely to limit spawning production and studies indicate that heavy fishing pressure is more likely to have a significant impact on population size.

In recent times we have been working with Ecan on further riparian planting including an Immediate Steps funding project. We are taking seeds from a number of native specialised plants that have adapted to the tidal zone and the more challenging saline habitats further downstream,

to provide for more successful establishment and effectiveness of the riparian margins . We are founding members of the Saltwater creek catchment group which will engage a far wider spectrum of people in the community other than just economic scale farmers farming along its margins. Our aim with this group is to start to minimise transfer of nutrients and sediment at source on individual's properties, and to share the responsibility and blame being placed for environmental outcomes rather than just those farmers adjoining the creek.

In the very dry summer of 1998, our 2 water surface takes from Saltwater creek were rendered unusable because the Toppings road measurement point had fallen to 44 l/s. It meant that we had to stop irrigating completely and yet further downstream of Toppings Rd but above our take, the flow at the Factory Rd bridge was 222 l/s an extra 178 l/s . We were able to show that the flow closer to our take has more relevance for setting the minimum flow and for monitoring our consents. Given our maximum combined take of 44l/s and the 100l/s minimum flow downstream of our take, we gained approval for a minimum flow of 150l/s at Factory Rd before we have to cease our take.

There is a significant additional influx of water from springs that enter the creek between the gauging point at Toppings Rd and our take site. There have been 4 gaugings carried out concurrently at the 2 sites by Ecan since and the differences in flow were consistently higher downstream at Factory Rd with the difference ranging from 46 l/s to 244 l/s more.

Table of Concurrent flow readings taken at Toppings Rd & Factory Rd:

Date	Measured by	Toppings Rd L/sec	Factory Rd L/sec	Difference L/sec	Below take site L/sec
26 January 1999	Ecan*	117	332	215	
5 April 2001	Ecan*	91	137	46	
9 October 2020	Ecan*	282	526	244	
21 January 2020	Ecan*	204	296	92	
28 January 2020	Boraman	137	236	99	249(+42 pumped)
12 March 2020	Boraman	76	183	107	238

*Ecan data supplied by Ecan to Boraman

There are also additional springs entering the creek between Factory Rd and our intake, resulting in more water being measured below our takes **even with our pumps operating** than a concurrent reading at Factory Rd, as evidenced on 28 January 2020.

We commissioned Boraman Consultants to undertake flow measurements through last summer at three sites: Toppings Rd, Factory Rd & downstream of our takes. Unfortunately the third of the gauging events scheduled for April could not take place due to the Covid lockdown. The two gaugings in January & March this year, showed an additional 55 l/s entering the creek between Factory Rd and downstream of our takes.

We currently have a consent condition that requires a minimum flow of greater than 100l/s below our takes, however the tidal nature of the creek means that this realistically only applies for a few

hours around low tide. Creek flows are reversed on the incoming tide and always much greater than 100l/s for most of the outgoing tide. We submit that we have a fairly unique set of circumstances that require a little more thought and accommodation than the blanket approach to the whole allocation zone that Ecan is proposing and we have suggested what we believe to be a workable solution.

We recognise there are benefits to the wider community and that we all should share in the pain of improving the minimum water flows in the creek. We note the economic assessments written for this plan change (reports published March 18 and July 19,) and I quote:

The increase to a minimum flow from 100l/s to 148l/s “regime has a very low reliability with below 40% of water available on average. Irrigation is unlikely to be a viable proposition under these levels of reliability. When costs associated with debt, depreciation and ,management are taken into account, the irrigators from this resource would experience substantial losses.”

On a more personal level, in addition to the significant money we are spending on riparian planting, we **were** planning to invest heavily in converting our irrigation system from less water efficient high pressure guns to centre pivots and small sprinklers. The reality is that we do not envisage being confident enough to make this long term investment without the certainty that water constraints will not significantly limit production and cause financial hardship. Providing Factory Rd can be incorporated into the Saltwater creek line of table 8.1 with an increase in the minimum flow from 150l/s to our suggestion of 200 l/s, and without further changes to minimum flows, we would have the confidence to invest in infrastructure that is designed for a forty year lifespan and would require payback over that period.

We note in the Sect42a report that the Ecan officers have recommended rejecting our submission.

I quote point 6.91 of their report:

“The toppings Rd site is a good place to collect robust gaugings whereas the Factory Rd site is far more challenging hence there are issues with making this the minimum flow site for the whole of the Saltwater creek allocation zone. In addition Saltwater creek is a particularly challenging zone to manage. It includes a large number of sub catchments and the abstractions are distributed widely. We note that whilst there may be some technical merit in moving the minimum flow site relating to the submitter’s water takes, this needs to be balanced with the requirement to manage all takes in the Saltwater Creek allocation zone. In this regard, we consider that the Toppings Rd site is the better management site. As such we recommend rejecting the relief sought by these submitters.”

In response to this:

Firstly, while we acknowledge the Toppings Rd site is slightly easier to gauge, gaugings have been conducted at Factory Rd: Four by Ecan, and last summer 2 commissioned by us by Boraman Consultants so it has been demonstrated that it can be done. It would seem as far as Ecan is concerned, convenience over rules accuracy and fairness of measurement of actual water present in the creek. In the past, Toppings Rd has been used as the first trigger point in determining the flow in Saltwater creek. Once the minimum flow is detected there, measurements have been conducted at Factory Rd to ensure our consents are complying. There has never been a flow recorded at Factory Rd that is below the Toppings Rd minimum flow of 100l/s plus 50% ie 150l/s.

We are not asking for the gauging site to be changed to Factory Rd for the **WHOLE** of the allocation zone but that it is included in the table **IN ADDITION TO** the Toppings Rd value for the consent holders taking surface water and connected groundwater from those sites downstream of Factory Rd. **And** that we suggest Factory Rd has a higher minimum flow in line with the cultural and ecological minimum flows that Fish & Game and Ngai Tuahuriri Runanga have submitted on and as recommended by the Waimakariri zone committee.

We wish to emphasise once again that your decision on this particular matter will impact greatly on our future viability and hopefully we have demonstrated that the additional gauging point **is** workable and enhances the minimum flows for the wider community's benefit.

We would encourage a far more collaborative approach from Ecan when it comes to fact gathering on aspects of the creek. Many reports have been prepared on the creek, many for this Plan change and not one of these people preparing the reports have sought out any information from us farming along and very familiar with the creek.

We would welcome any further discussions with the commissioners and/or Ecan officers to ensure our suggestions are incorporated and are workable and compliant within the legalities of the plan.

Allocation limit:

We do agree however that given current use of allocation is about 67%, there is room to bring the allocation limit down to the proposed 75% over time. And support this figure of 417 l/s in table 8.1

Re our submission opposing Rule 8.517.1 regarding transfer of consents

We notice in the Sect. 42A report that the officers comment that no specific reasoning is provided for our submission to delete this rule in its entirety. For clarification, we are concerned that if a property changes hands that the consent transferred is subject to these proposed provisions, thereby severely impacting on the viability and productivity of the land involved in a change of ownership.

Mike Eder
Greg Morriss