

Charts of standing water level and salinity in unconfined and confined aquifers

Figures (s) 23 a + b (Pg 21-22): These and the following charts were produced by the Department of Environment, Water and Natural Resources. These two charts are contour maps of the Quaternary (Q) unconfined aquifer. The first a) is from the 2012-2013 water use year (Winter 2013), the second b) from 2011-2012 (Winter 2012). The reading taken in the June monitoring round has been mapped in both charts. The data for each map came from the State Government's Angas Bremer groundwater observation network. This data is available to the public on the Groundwater Data application of the WaterConnect website (www.waterconnect.sa.gov.au). The numbers on the maps are metres below ground level of the standing water table. Winter was selected as it is the time of greatest risk of shallow watertables. When compared with last year the picture was fairly similar, however, the water level was slightly shallower at 8m depth around Langhorne Creek in 2013 than it was in Winter 2012 (9-10m). (It was between 2 – 4 m depth in Winter 2011.)

Figure 24 a + b (Pg 23-24): The next charts show the potentiometric surface and salinity contours of the Tertiary (T) confined aquifer in a) March 2013 and b) March 2012. The salinity is displayed in mg/litre (equivalent to ppm). The data for these charts came from the State Government's Angas Bremer groundwater observation network. The March data (post irrigation season) was selected as it shows the greatest level of impact due to extraction from the aquifer. The water level pressure and salinity contours are fairly similar for both years, however, the water level was slightly shallower around Langhorne Creek at 6–7 m AHD in 2013 than it was in 2012 (7–8 m AHD).

Figure 25 (Pg 25): This chart documents the salinity of the confined aquifer using 2013 data from the State Government's Angas Bremer groundwater observation network and the samples supplied by the irrigators to the NRM Board at the end of the irrigation season in 2013. When compared with Chart 24a, the extent of low-salinity water is much greater, demonstrating the impact of recharging the confined aquifer with better quality water from the Murray, Angas and Bremer Rivers. Many of the irrigators who supplied water samples recharged into the same extraction bore or one close by. It should be noted that the extent of the fresher water may be more localised that it appears on this chart.

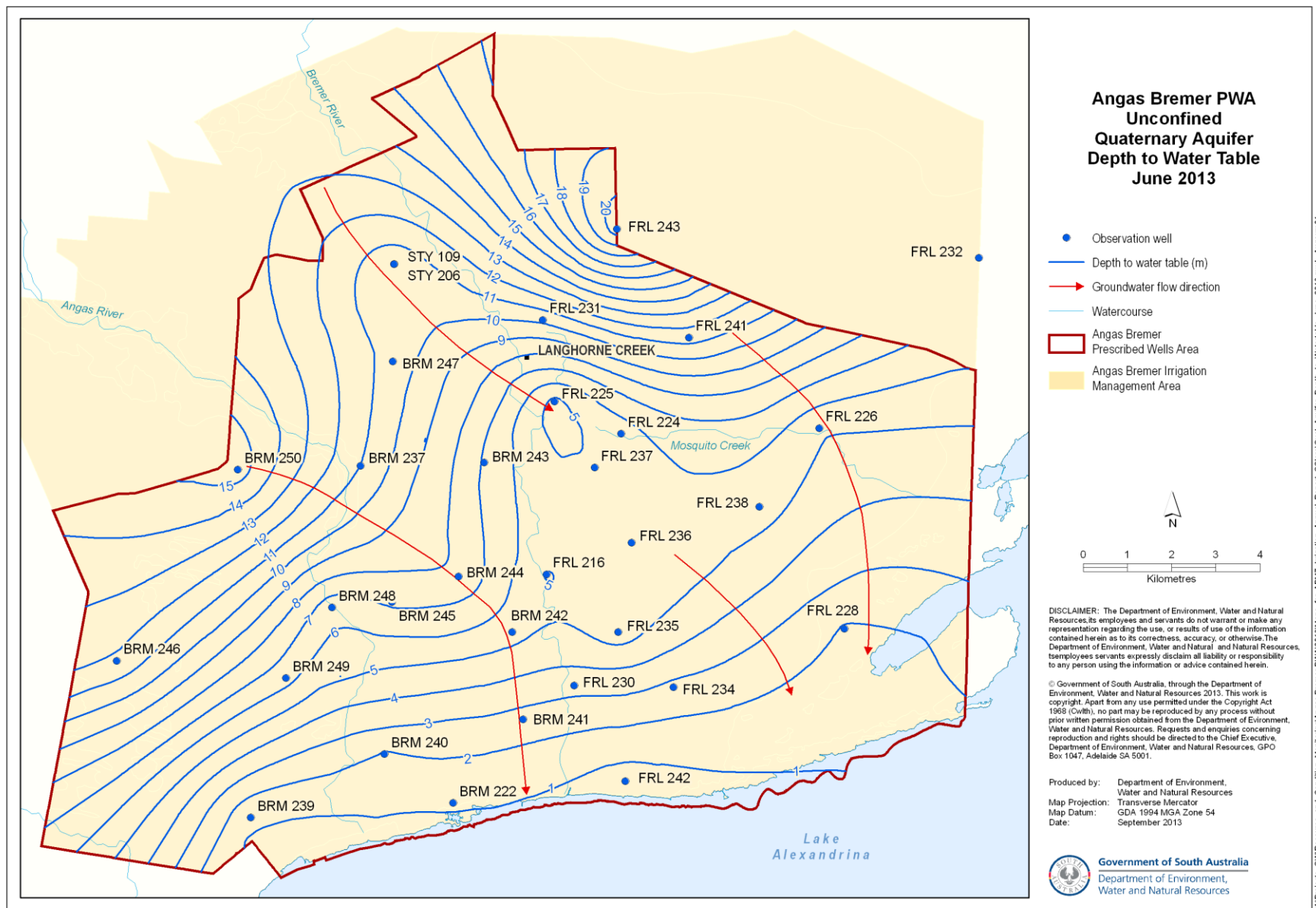


Figure 23a Standing Water Level in Quaternary Unconfined Aquifer Winter 2013

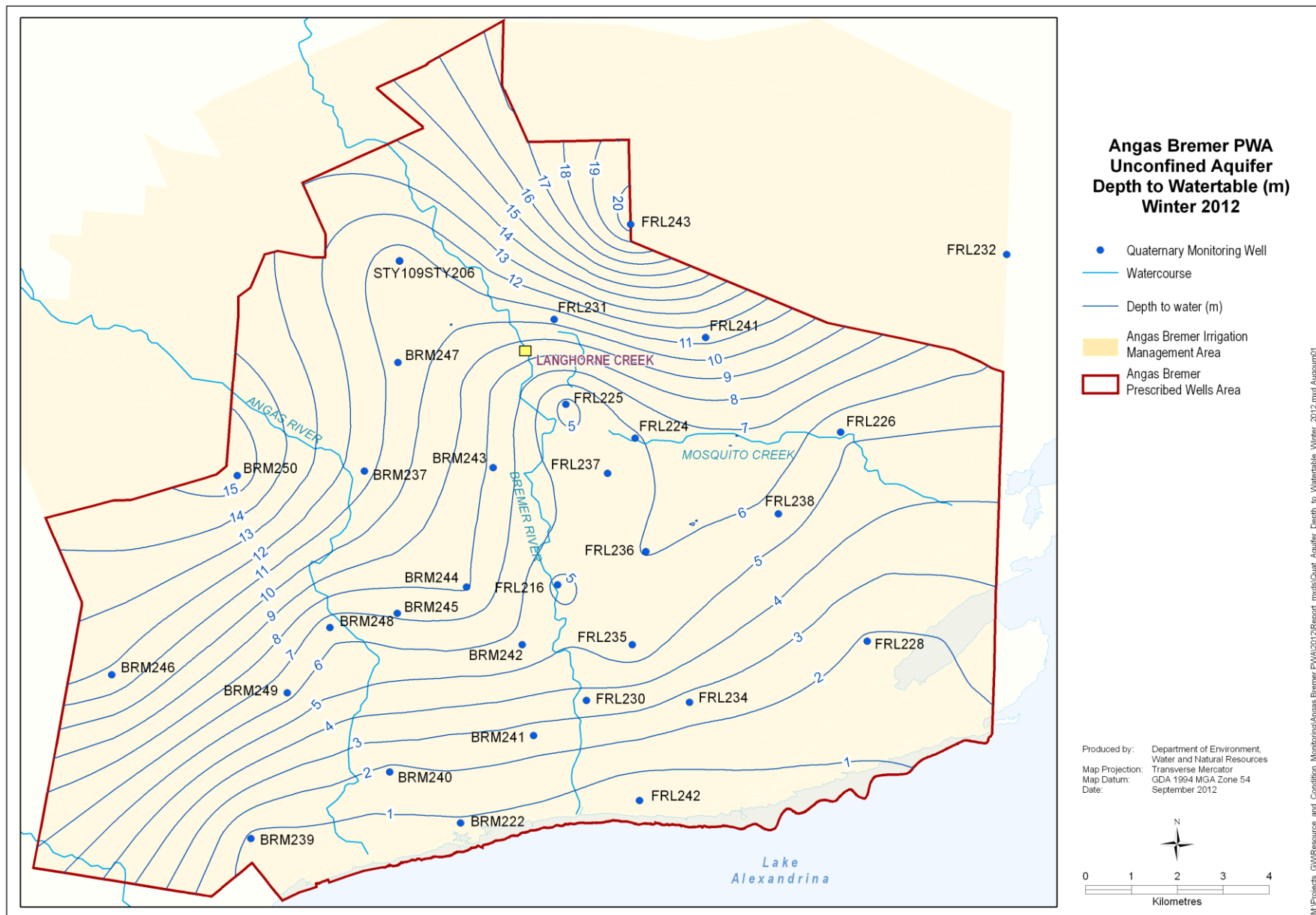


Figure 23b Standing Water Level in Quaternary Unconfined Aquifer Winter 2012

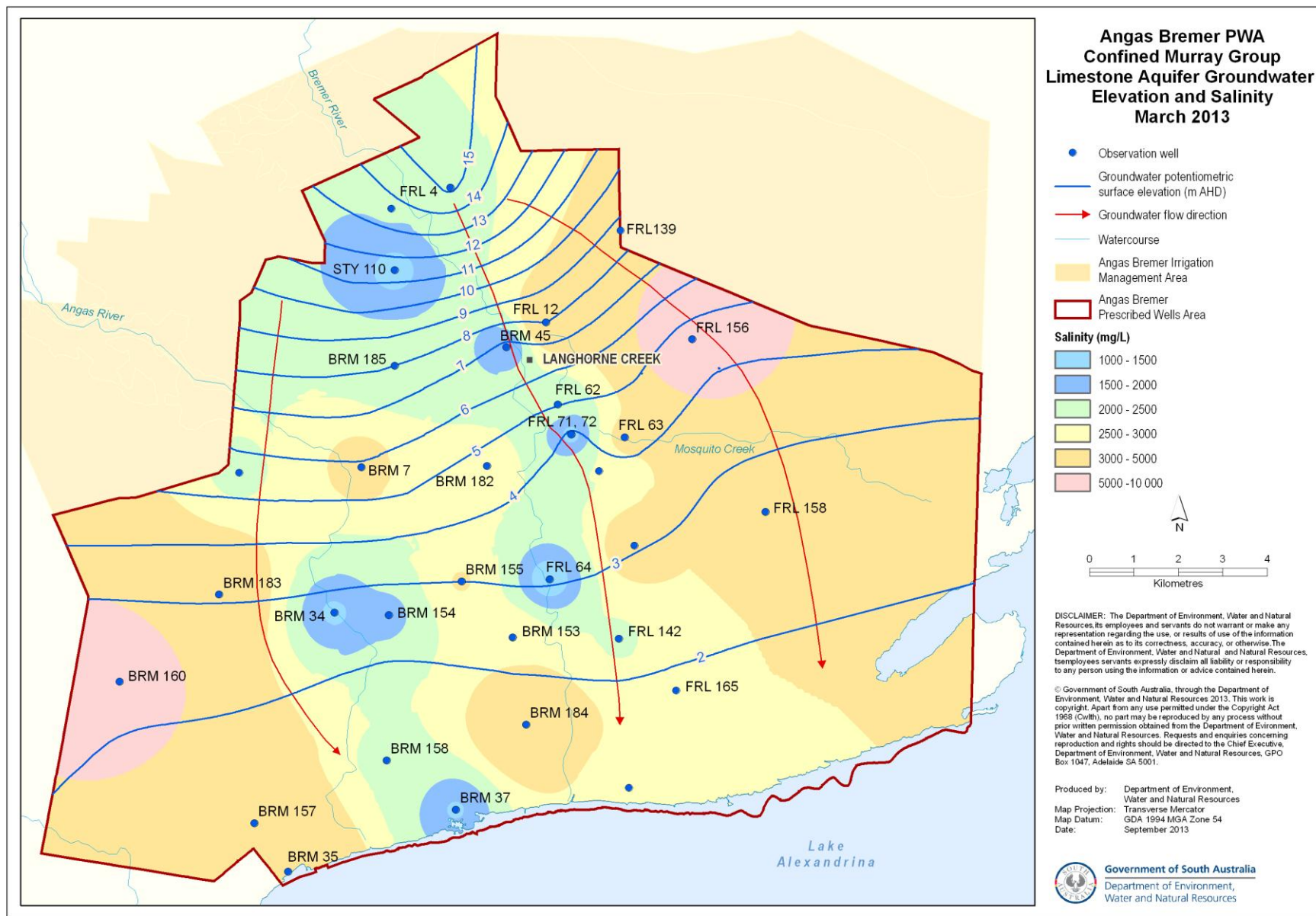


Figure 24a Water Level Elevation (m AHD) and salinity in Tertiary Confined Aquifer March 2013 Post Irrigation

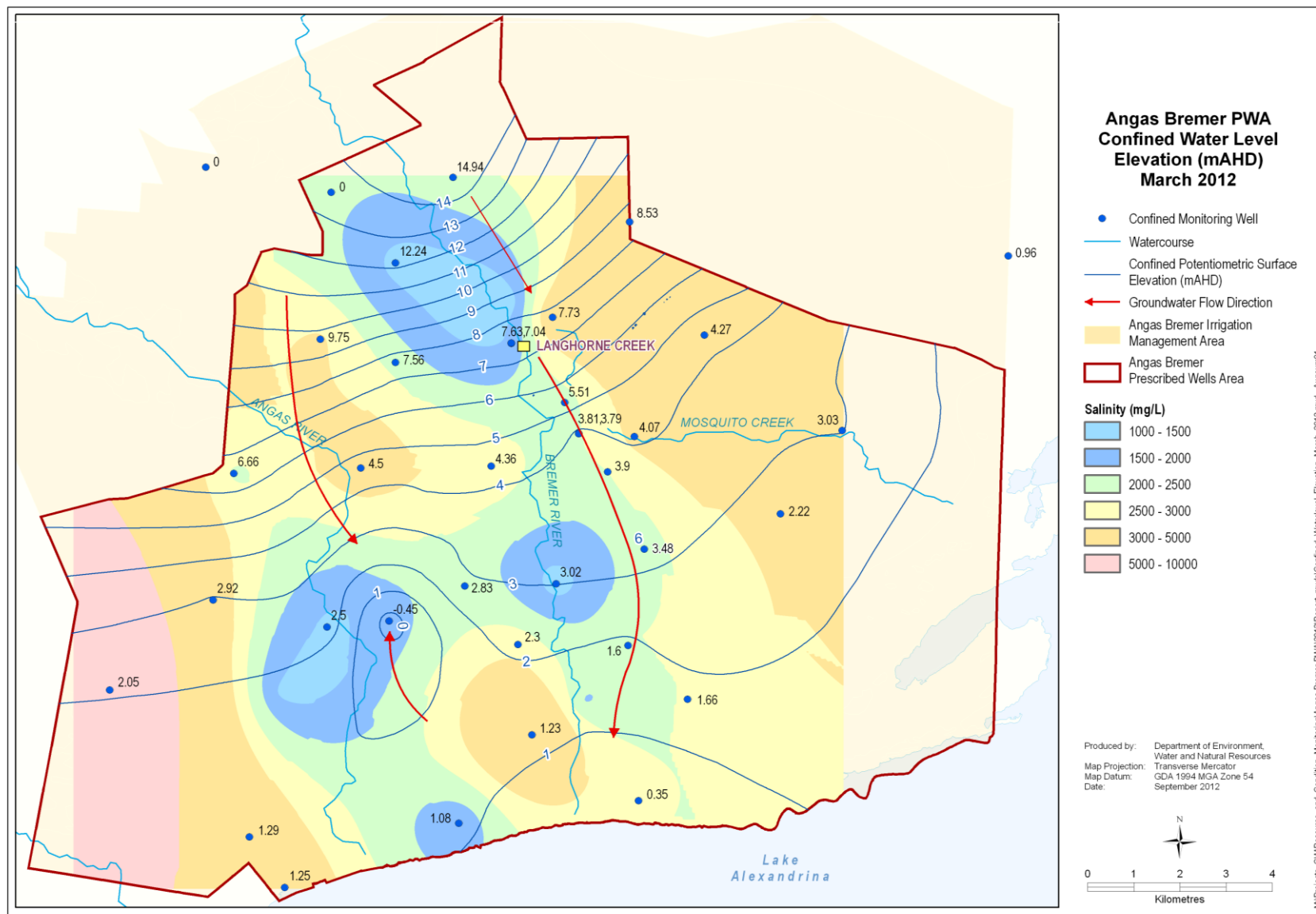


Figure 24b Water Level Elevation (m AHD) and salinity in Tertiary Confined Aquifer March 2012 Post Irrigation

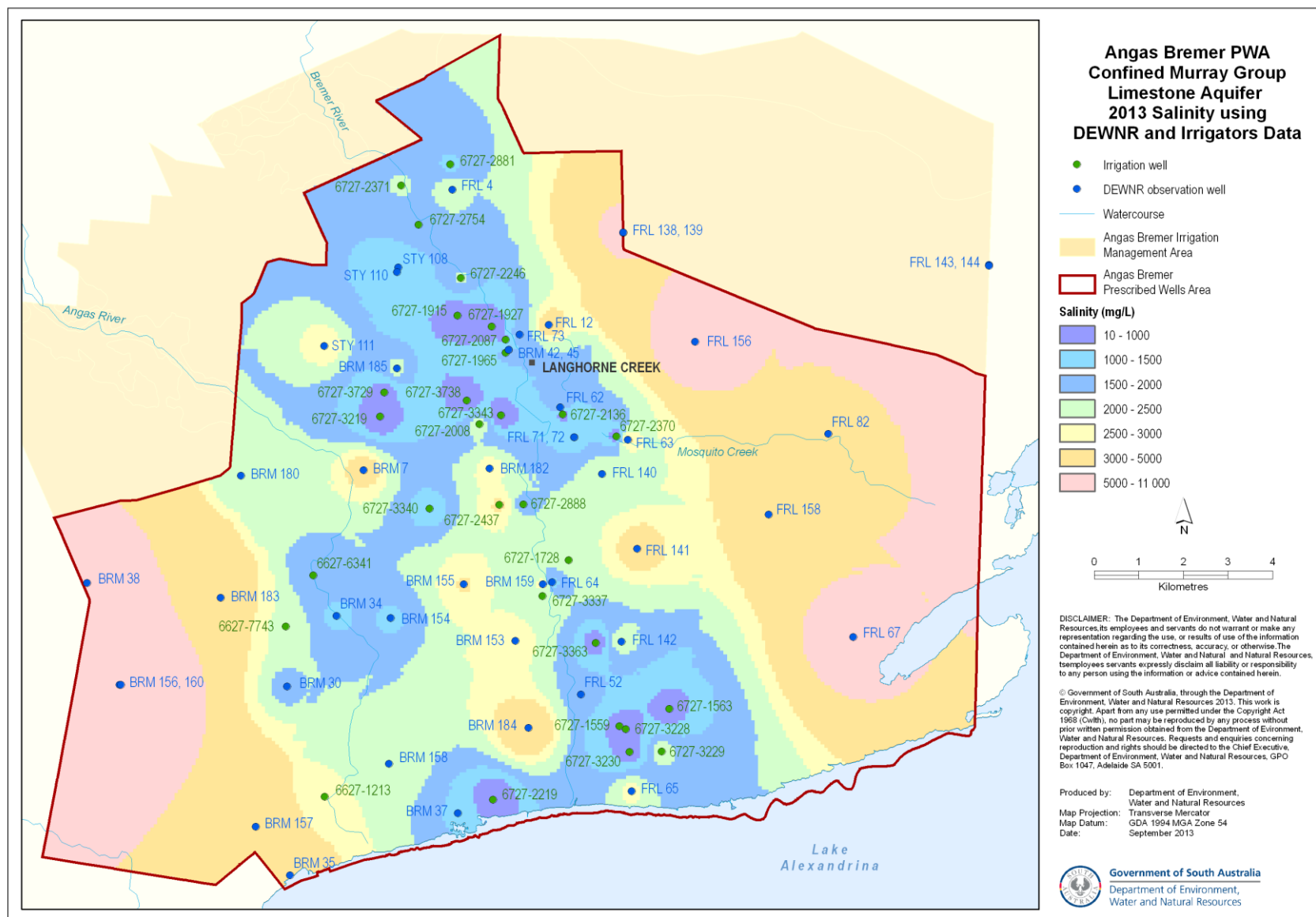


Figure 25 Salinity in Confined Aquifer samples from Govt Observation Wells and Irrigator's Water Samples Winter 2013

