



## Southern Seawater Desalination Project

# Q&A's – Community Forum 30 April 2008

### Marine Modelling and Water Quality

1. **The brine dilution discharge model was on a scale of many km's. What is the dilution of 1 km east of the diffuser?**

A Low Ecological Protection Area (LEPA) is required as a mixing zone for the brine and will extend 100 metres either side of the diffuser i.e. a rectangle zone that extends 100 metres from the diffuser(s) in all directions. At the boundary of the LEPA there is no increase in salinity (from brine) of > 1ppt 95% of the time or 1.3 ppt anytime and therefore it is unlikely to be detectable 1km away.

2. **Has the modelling taken into account the long term cumulative effects?**

Yes

3. **Page 81 - 2.7.2 – it states the Bureau of Meteorology (BoM) conducted studies for the proposed diffuser location for five years. Why wasn't this process and consultation with Binningup started then?**

The Water Corporation used existing surrounding wind stations to generate the average hourly wind for five years.

4. **The Harvey Drain appears to have some non-mixing characteristics. What is the volume of discharge of the Harvey Drain?**

Not known and not gauged.

5. **How will the Harvey Drain diversion affect the dispersion of the plume?**

It will not affect the dispersion of the plume.

6. **How will prolonged periods of no wind affect dispersion of plume?**

The plume will be slightly slower to disperse but modelling still predicts that LEPA criteria can be met.

7. **I wouldn't have thought we'd had a swell as high as 8m – I'm a surfer and regularly monitor the swell reported by the Bunbury Port Authority.**

Page 81 of the PER states, "Winter storm events significant wave heights up to 8m".

Such wave heights are the maximum that could occur in the most severe storms. Such large waves occur rarely - perhaps once in 10, 20 or even 50 years.



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#### **8. What dilution has been modelled?**

The diffuser design achieves a 28-fold dilution (lowest).

#### **9. Assuming chemicals on page 195 and anti-scalant on page 199 are not going to end up in the drinking water, where will they end up? If in the ocean, what effect will they have on the marine environment and the anti-scalant phosphinocarboxylic acid on algal growth, seeing that the Harvey Drain elevates water soluble phosphates into the ocean?**

There may be trace amounts in the brine – toxicity testing described in 8.2.9 shows that dilution of 12 is required for most vulnerable species and the Water Corporation can achieve at least 28.

### **Ecotoxicity Tests**

#### **1. Why are surface dwellers used when brine is dense and sinks?**

A range of organisms are used. The brine diffuser is designed to use the whole water column (10m).

#### **2. Was it done under normal operations or was the sample representative of all operations?**

Normal operations.

#### **3. What range of chemicals were tested for?**

The full range of chemicals currently in use at Perth Seawater Desalination Plant, as these are likely to be the same at Binningup.

#### **4. Why should the conditions at Cockburn and Binningup be the same? They are very different areas.**

The brine is likely to be the same and the organisms are representative of both areas.

#### **5. If there is a 10% reduction in fish stocks – over what area?**

This is not the case. EC10 represents the concentration at which **10%** of the sample experiences a 5% reduction in some parameter (eg. growth, number of zoospores etc). The Water Corporation found that a 12-fold dilution is required and that it can actually achieve a 28-fold dilution.

### **Marine Mammals - (Cetaceans)**

#### **1. How do you shoo the whales away?**

We don't, we wait till they move on at their own accord.

#### **2. Whales – nursing ground and stopover, rest place, if it's not available? Why hasn't a study been done?**

A survey has now been commissioned. However, regardless of the study management will be conservative and in accordance with advice from the cetacean expert.

#### **3. Impacts of stopping blasting etc on project costs (due to presence of cetaceans)?**

Shut down/delays may increase cost marginally.



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**4. Has the Water Corporation made a commitment to whale monitoring as suggested? This is not in the PER.**

Not initially, however we have now commissioned a survey.

**5. Given whale sightings in the Dunsborough region, how many whales would be expected to be currently passing Binningup within 1 km of the coast?**

This is unfortunately not known but we expect to have a better understanding following the survey.

**6. Can the Water Corporation get the local community involved in whale/dolphin spotting? If so who to contact with sighting?**

Yes, the survey scope will encourage locals to be involved and will provide information on who to contact.

**7. Cetaceans – will the whales and dolphins permanently move away?**

At this stage it is not know but unlikely.

**8. Has the Dolphin Discovery Centre in Koombana Bay been asked for their input into the impact the desal plant could have on the dolphin breeding and population problems possible? They have a research boat in the area.**

Yes they have been consulted.

**9. What is the affect of vibration on whales? The pumps at the desal plant will cause vibrations. Once in place it will be too late to stop the vibrations. Please comment.**

The pumps will only cause vibrations if they are not working properly and of course these pumps would be fixed immediately.

**10. Who do we report sightings of dolphins and whales to?**

The scope of future survey will provide this information.

**Fish Larval Studies Literature Review**

**1. The impact of desalination on the Leeuwin current which is a known conduit for distributing juvenile larvae up the coast line especially for dhufish, pink snapper, breaksea and groper?**

The desalination plant is not going to impact on Leeuwin current.

**2. What is the LEPA reef, seagrass, sand? What species of Larvae?**

The LEPA is 100m rectangular zone in which there is no reef or seagrass. Therefore, there is unlikely to be any impact on larvae.

**3. As a fish person for over 20 years, I found the juvenile fish very prevalent at Harvey Beach. Will this affect the stocks?**

The location of diffuser/intake is in sand rather than reef/seagrass meaning larvae is unlikely to be present.



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### Other

- 1. Desal 1 has been scaled right back in production due to it chocking the water. How long will it take for that to happen to Desal 2?**

The production at the Perth Seawater Desalination Plant slowed because of low dissolved oxygen levels. Research shows that this occurs naturally in the Cockburn Sound. This doesn't happen at Binningup meaning the proposed Southern Seawater Desalination Plant will not impact on dissolved oxygen levels.

- 2. What caused the recent problem in Cockburn Sound and how can this be prevented from happening here near Binningup?**

See answer above, question 1.

- 3. I came to the meeting expecting to hear about the results and impacts on the local environment. I overwhelmingly heard methodology not results and impacts.**

Likely impacts and predictions were discussed and can be found in the Public Environmental Review and related reports.

- 4. The use of large piping requires large amounts of rockwork to stabilise them. Will this rockwork cause possible sand movement issues on the ocean floor?**

Not likely.

- 5. When will the Peer Reviewers be released?**

Mid May. Most are already posted on the website – [www.watercorporation.com.au](http://www.watercorporation.com.au)

- 6. Concern is the types of chemicals used in maintaining/cleaning desal plant being discharged into the ocean. Apparently different products are used. Are you aware of all products used?**

Similar chemicals will be used to those that are currently being used at the Perth Seawater Desalination Plant.

- 7. What does get sucked in?**

Organisms, sand, seaweed. The low velocity of the intake and large openings means anything that swims in can get away.

- 8. Closure to commercial fishers during construction for 18 months. What compensation do you propose?**

The advice from the Department of Fisheries was that no Commercial Fisheries operated in the area. However, we will be happy to discuss with any affected parties.

For further information please call 1800 810 075 or email [desalination@watercorporation.com.au](mailto:desalination@watercorporation.com.au)