



7 May 2008
Project No.: 618_001/07.386

Suzanne Brown
Water Corporation
629 Newcastle Street
Perth 6007

Dear Suzanne,

PEER REVIEW OF SOUTHERN SEAWATER DESALINATION PROJECT DRAFT PUBLIC ENVIRONMENTAL REVIEW (PER)

In 2007, the Water Corporation embarked on a rapid assessment process for the Southern Seawater Desalination Project following a State Government decision to proceed with this option to augment WA's metropolitan water supply.

The stated delivery schedule for the project means that the environmental impact assessment timeframe is very tight. Community and regulator support is crucial if the project is to proceed within this short timeframe. The Water Corporation therefore appointed a panel of independent expert reviewers early in the assessment process to provide further confidence to the community and regulators. This letter provides the joint response of the reviewers assigned to examine the Public Environmental Review (PER), while other reviewers will provide comment on the key technical documents supporting the PER under separate cover.

This review has been undertaken by:

- Ms Karen Lane, Principal of ENV Australia – Karen examined the PER performance on issues relating to terrestrial impacts and sustainability.
- Mr Mark Bailey, Director of Oceanica Consulting – Mark examined the PER performance on issues relating to marine and coastal impacts.

This joint response provides an overview of the more detailed comments on the PER made directly to the Water Corporation. It provides the reviewers' professional opinions of the broad environmental risks that the project poses and a summary of areas where the assessment would benefit from further work. It is anticipated that this response will be made publicly available.

Effect of Time Constraints

The time in that the assessment was undertaken was short for a major greenfields development. As a result, key studies and the draft PER were not presented to the reviewers for comment until the completion of the draft PER in February 2008. This meant that the reviewers were given days rather than weeks, as anticipated, to respond to a large volume of technical documents and also that the Water Corporation did not have time to address the peer reviewer's comments prior to public release. However, the Water Corporation has committed to respond to the Peer Reviews during the public review period and include the responses in their "Response to Submissions". It is recognised that the timing issues are not solely the making of the Water Corporation, but it should be acknowledged that they have affected the review and assessment process.

Another important timing constraint is that the design of the entire proposed infrastructure (plant, pipeline, beach crossing, ocean outfall, power supply etc.) has not been done prior to assessing impacts. The tender process for an alliance contractor is still progressing in parallel to this process and has not yet been awarded. It has therefore been difficult for Water Corporation to describe the details of the project and its impacts. The technical assessments have all therefore been based on a 'conceptual design'. However, as this is the second desalination plant in WA the impacts of the 'concept design' are better understood than they would otherwise have been at this stage.

Key Environmental and Social Issues

The peer reviewers concur with the PER's overall perspective that the environmental and social issues of greatest concern for this project are:

- Site selection and justification for why the site selection presented is 'best' for the WA community;
- Marine infrastructure construction and operations and their impact on the ocean ecology;
- Plant site clearing and associated flora, fauna and biodiversity impacts;
- Social impacts of noise, visibility and beach access; and
- Energy use and renewable sources.

The factors designated as 'key', as agreed by the EPA through the earlier scoping process, are well-aligned to the issues of greatest concern. While the reviewers have some comments about the manner in which each of these issues have been investigated and reported, they don't feel that there are any major issues that have been completely ignored by the PER. This is an important conclusion.

General Comments

Based on experience with similar scale projects and the approach of the Water Corporation to environmental management, it is the reviewers' opinion that the project should not result in long-term, acute environmental harm outside of its immediate footprint and that, subject to further detailed assessment and appropriate condition setting, it is most likely that the Water Corporation will be able to demonstrate that the EPA's objectives can be met.

The reviewers believe that the potential impacts of operations on the marine environment are significantly mitigated by the fact that the brine will discharge into an energetic open ocean environment and that the intake/outlet corridor appears to be devoid of potentially sensitive habitat. With the power generation aspect excluded from the project, the terrestrial impacts will be greatest for the plant site and there are ample opportunities for local offsets via habitat protection and revegetation.

Key social risks that require further consideration include noise, visual amenity and beach access during the construction period and these cannot be fully assessed without the design detail in the opinion of the reviewers. It is understood that the Water Corporation's approach is to deal with these risks by imposing criteria that must be met by the design.

The reviewers are strongly of the view that the main area of risk from a broad sustainability perspective lies in the lack of detail in the renewable energy commitment because of exclusion of energy generation from the project. However, it is recognised that the energy supply component will be a separate assessment with a different proponent. The Water Corporation may wish to look at stronger promotion of the commitments made with regard to renewable energy supply in the PER.

The reviewers found that, based on their experience of the EPA's approach to assessments, the assessment strategy has resulted in the production of a PER which is unlikely to contain enough detail in some sections for the Environmental Protection Authority (EPA) to assess whether the project will meet its objectives unless the EPA is prepared to consider a risk-based approach for these elements. This also means that, in some areas, the community will be required to wait for the details of the impacts and the controls that will be put in place to protect their amenity and the environment.

A summary of the reviewers' issue-specific comments (which have been supplied in more detail as separate correspondence) are:

1. **Project description:** The detail of the infrastructure is yet to be established and the potential social and environmental impacts cannot be accurately determined. This applies particularly to the beach crossing and noise and visual issues associated with the plant, as detailed below. An "approval of concept" may lead to a requirement for secondary approvals of management plans when details are known.
2. **Constraints:** The PER does not establish the specific environmental and social management constraints that will be placed on the ultimately successful alliance team.
3. **Sustainability:** The sustainability assessment work has not been well integrated into the PER assessment. It was felt that the sustainability assessment should have provided more detail on power generation and issues with regard to co-location of green power generation versus the merits of adding green power at other areas of need in the grid as an offset. However, it is recognised that the constraints of *Environmental Protection Act 1986* mean that the PER is essentially an environmental document. It requires limited coverage on sustainability issues and that the Water Corporation has the opportunity to address sustainability in its broader context in a separate document.
4. **Additional detailed comments on the following areas have been supplied:**
 - a. Benthic mapping quality is not to the standard needed for assessment in terms of Guidance Statement 29.
 - b. The proposed maximum salinity criterion (1.3 ppt) for operations is not considered to be workable. Although the maximum criteria appears to be very protective, it has not been derived in accordance with the ANZECC/ARMCANZ (2000) or EPA approach to guideline setting as it requires that the guideline is met all of the time. As such it is likely to be impractical to demonstrate, in a statistically robust manner, true compliance against this guideline.
 - c. The PER needs to address the issue of avoiding impacts on marine mammals in greater detail, especially in light of the community's expressed concerns on this matter.
 - d. The social assessment of impacts on the beach use needs strengthening, with particular regard to the effects of the proposed 18 month beach closure.
 - e. The issue of planning and design for sea level rise has not been addressed. It is acknowledged that increased sea level could reduce the risks associated with the outfall and have favourable impacts in this case. On the converse side, increased sea level needs to be taken in account in respect to potential adverse impacts on the shoreline stability and onshore infrastructure.
 - f. Further clarity is needed on the offsets for vegetation clearing in terms of revegetation of the areas immediately around the plant site and in the pipeline areas. There is capacity for a 1:1 revegetation to clearing ratio, or greater, on the plant site and while this may be achieved, it is not adequately demonstrated by the PER. There are also some conflicting references to the condition of some of the vegetation that will be cleared.
 - g. The aboriginal heritage surveys have not been undertaken and this is an important issue that could constrain the plant location in particular.
 - h. There is limited information presented on the hydrological function of the portion of the conservation category wetland on the Water Corporation's portion of Lot 8. Its value has been discounted on flora issues alone and the reviewers consider that the hydrological function needs assessment.
 - i. The noise modelling report does not sufficiently describe the assumptions used to generate the predictive contours and does not prove that these assumptions are applicable to the proposal. It seems that the detailed design of the plant and the amount of solid housing will significantly affect the noise levels and no conclusion can be made about the noise impacts at

- present. However, the noise levels could be constrained by specific noise conditions at particular points that must be met for the plant to operate.
- j. The visual modelling is also strongly influenced by the plant design, which is not yet available. While the scope of the tender may have constrained the height of infrastructure and the visual impacts from various points, the tender scoping documents were not sighted by the reviewers.
 - k. The lack of design detail means that commitments made on dewatering durations may not be achievable, especially with regard to the beach crossing. In addition, there has been limited investigation of the water quality impacts of large-scale excavation downstream of the Binningup wastewater treatment plant.

Some limitations to the professional work by ENV and Oceanica are presented below.

Please do not hesitate to contact the reviewers via the Water Corporation Project Officer, Suzanne Brown, if you wish to discuss these comments further.

Yours faithfully,



Karen Lane
Principal ENV



Mark Bailey
Director, Oceanica Consulting

STATEMENT OF LIMITATIONS

Scope of Services

This review document ("the report") has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client (Water Corporation) and ENV.Australia (ENV) and Oceanica ("scope of services"). The scope of services was limited by a range of factors, primarily time constraints imposed by Water Corporation.

Reliance on Data

In preparing the report, ENV and Oceanica have relied upon data, surveys, analyses, designs, plans and other information provided by the Client. ENV and Oceanica has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ("conclusions") are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. ENV and Oceanica will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to ENV and Oceanica.

Environmental Conclusions

On all sites, varying degrees of non-uniformity of the vertical and horizontal soil, groundwater or marine conditions are encountered. Hence no field program can eliminate the possibility that monitoring or testing results/samples are not totally representative of the environmental conditions encountered.

The conclusions are based upon the data supplied and are therefore merely indicative of the environmental conditions of the site at the time of preparing the report. Also it should be recognised that site conditions, can change with time.

In accordance with the scope of services, ENV and Oceanica have relied upon the data and their professional judgement based on experience from many other technical projects over many years. Within the limitations imposed by the scope of services, this report has been undertaken in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for Benefit of Client

The report has been prepared for the benefit of the Client, Water Corporation, for public release on their website and for release to the Environmental Protection Agency (EPA).

Other Limitations

The scope of services did not include any assessment of the title to or ownership of the land referred to in the report nor the application or interpretation of laws in the jurisdiction in which the proposed structures are located.