

PERTH SEAWATER DESALINATION PLANT

REPORTING IN ACCORDANCE WITH THE PERTH SEAWATER DESALINATION PLANT MARINE MONITORING AND MANAGEMENT PLAN

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Prepared by:

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INTRODUCTION

In accordance with the Perth Seawater Desalination Plant's (PSDP) Marine Monitoring and Management Plan (MMMP), the Water Corporation submits this report to the Office of Environmental Protection Authority (OEPA) as per Section 7.

Near Sea Bed Loggers were deployed on the 29th April 2011 at two sites – North and South. At each site, dissolved oxygen sensors were placed at 0.2m and 0.5m above the seabed (ASB) in order to establish whether any empirical relationships exist between dissolved oxygen saturation at the two depths.

The coordinates and plotted locations of the sites are provided in Figure 2 and Attachment 8 of the MMMP. Data has been collected at fortnightly intervals since deployment, with the exception of several instances coinciding with storm events. On 15 August 2011, OEPA consented to monthly download intervals, which will commence from hereon until the program is reviewed after 6 months in accordance with the MMMP.

Dissolved oxygen saturation data was collected at continuous 30 minute intervals between 26/7/11 to 11/8/11 and is provided in this report. Data was unable to be collected at North site 0.5m ASB due to issues with equipment on location, however will be included in the next report.

RESULTS

Dissolved oxygen saturation measured at 0.2m above the seabed at North, and 0.2m and 0.5m at South NSDO sites are graphed in Appendix A and Appendix B respectively.

In summary, the difference in dissolved oxygen saturation recorded between the two depths at South NSDO site is presented below:

Table 1: Summary of NSDO Data 26/7/11 – 11/8/11

	Average Difference 0.5m – 0.2m	Maximum Difference	Time of Maximum Difference
South	1.8%	14.5%	27/07/2011 11:30am

*Negative values represent DO% saturation being greater at 0.2m than 0.5m above seabed

A comparison between the two depths at North site will be provided in the next report when the data at 0.5m is downloaded.

DISCUSSION

At North NSDO site, the dissolved oxygen saturation at 0.2m followed a similar trend to that recorded at South, typically within 1% difference of both depths for a large proportion of the time (Figure 1(a)).

At South NSDO site, the dissolved oxygen saturation at 0.5m was up to 3% higher than at 0.2m ASB for the majority of the time, with an average difference between the two depths of 1.8% (Figure 2(b)). Dissolved oxygen saturation at both depths followed the same trend, increasing and decreasing at similar times. Note the dip, then increase in dissolved oxygen saturation on 27/7/11 recorded at both depths.

CONCLUSION

Over the period 26/7/2011 to 11/8/2011, dissolved oxygen saturation at South NSDO site was measured consistently higher at 0.5m ASB than at 0.2m ASB, with an average difference of 1.8%.

APPENDIX A: NSDO North

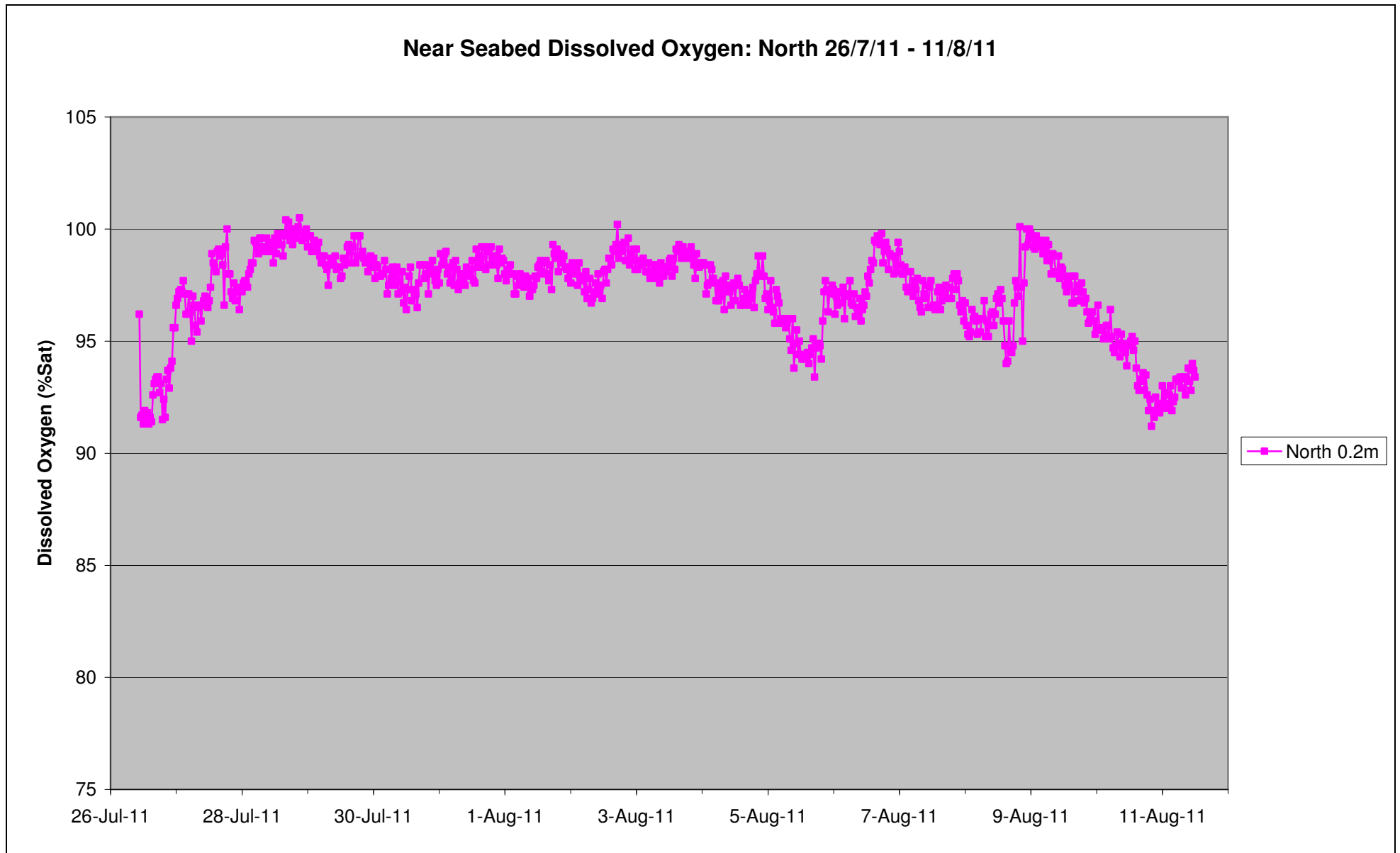


Figure 1(a): Near Seabed Dissolved Oxygen: North 26/7/11 – 11/8/11

APPENDIX B: NSDO South

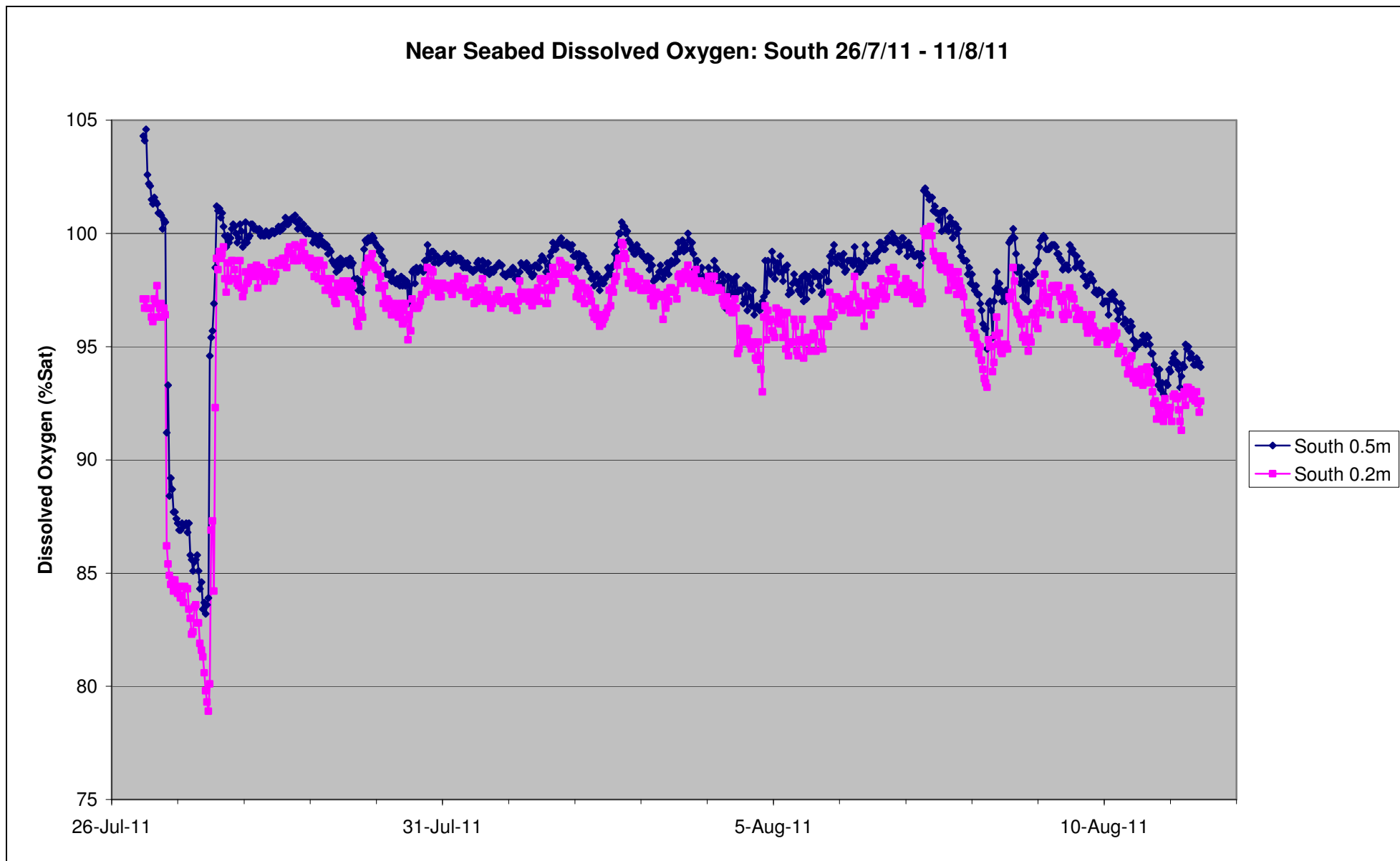


Figure 2(a): Near Seabed Dissolved Oxygen: South 26/7/11 – 11/8/11

