

PERTH SEAWATER DESALINATION PLANT

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

3rd NOVEMBER 2011



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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 29 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 was collected fortnightly for 6 months. On the 8th of August the Water Corporation formally requested that the NSDO data collection frequency be reduced to monthly intervals and this request was granted.

This report covers the time period from 5 October 2011 to 1 November 2011

RESULTS

Dissolved oxygen saturation measured at 0.2m and 0.5m above the seabed at North and 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 is presented below:

	Average Difference 0.5m – 0.2m	Standard Deviation	Maximum Difference
North	2.90%	1.102%	8.60%
South	2.70%	2.416%	20.6%

Table 1: Summary of NSDO Data 5/10/11 – 1/11/11

SUMMARY

Over the period 5 October to 1 November, dissolved oxygen measured at 0.2m and 0.5m above the seabed at North NSDO had an average difference of 2.90% with a standard deviation of 1.102%. At South NSDO the average difference between dissolved oxygen measured at 0.2m and 0.5m ASB was 2.70% with a standard deviation of 2.416%. Please refer appendix A and B for graphical representation. The maximum difference in readings for North NSDO occurred during single sample events throughout the month, with the maximum difference occurring on the day the NSDO logger was retrieved for data collection. The maximum difference in readings for South NSDO occurred mostly during the first fortnight of the reporting period and very distinct peaks in differences are observed during this period.

From the time that the NSDO loggers were installed, manual calibration samples have been collected each time the data has been collected from the loggers. Previously there has been good agreement between the calibration samples and the NSDO sample with the difference being below 2%. On this occasion however the South NSDO were reading between 4 and 5% lower than the calibration sample. There was no evidence of marine growth on the NSDO sensors which may cause this drop in DO but the difference will continue to be monitored in subsequent months.

Overall the data shows that there is still very little difference between the dissolved oxygen readings at 0.2 and 0.5 m above the sea bed.

APPENDIX A: NSDO North

Near Seabed Dissolved Oxygen: North 05/10/11 - 01/11/11

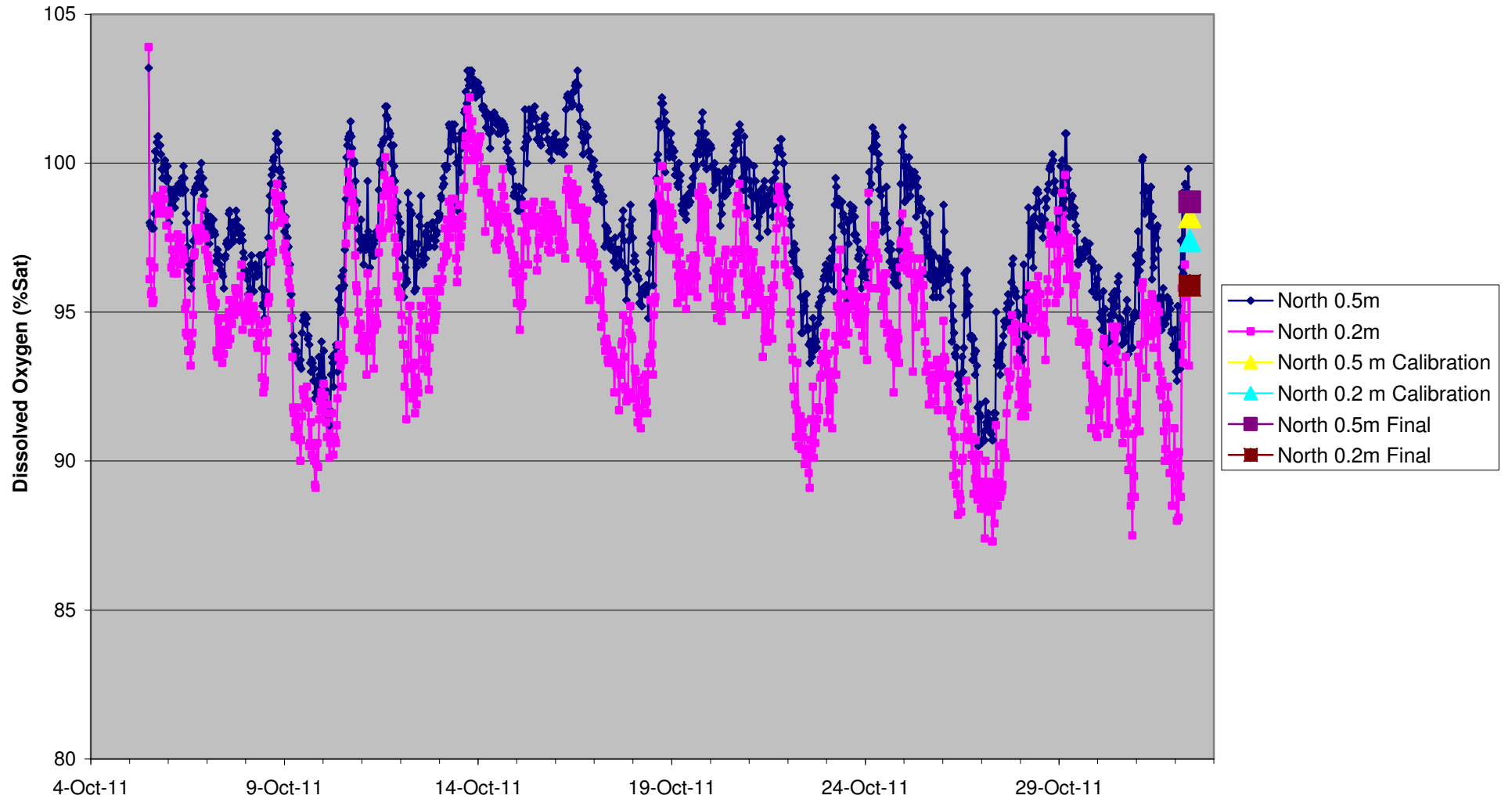
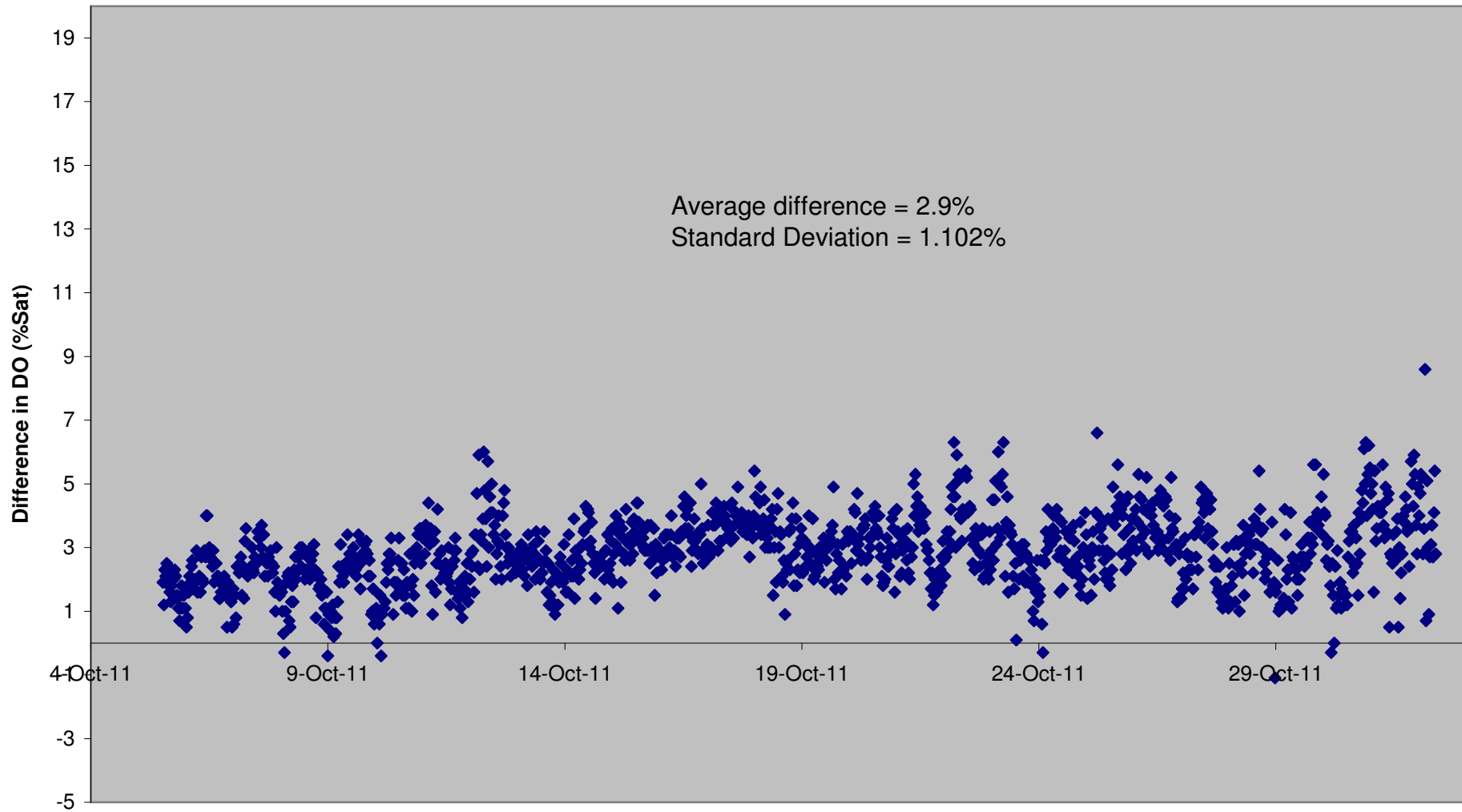


Figure 1(a): Near Seabed Dissolved Oxygen: North 5/10/11 – 1/11/11

Difference in DO % Saturation between 0.5m & 0.2m: North



APPENDIX B: NSDO South

Near Seabed Dissolved Oxygen: South 05/10/11 - 01/11/11

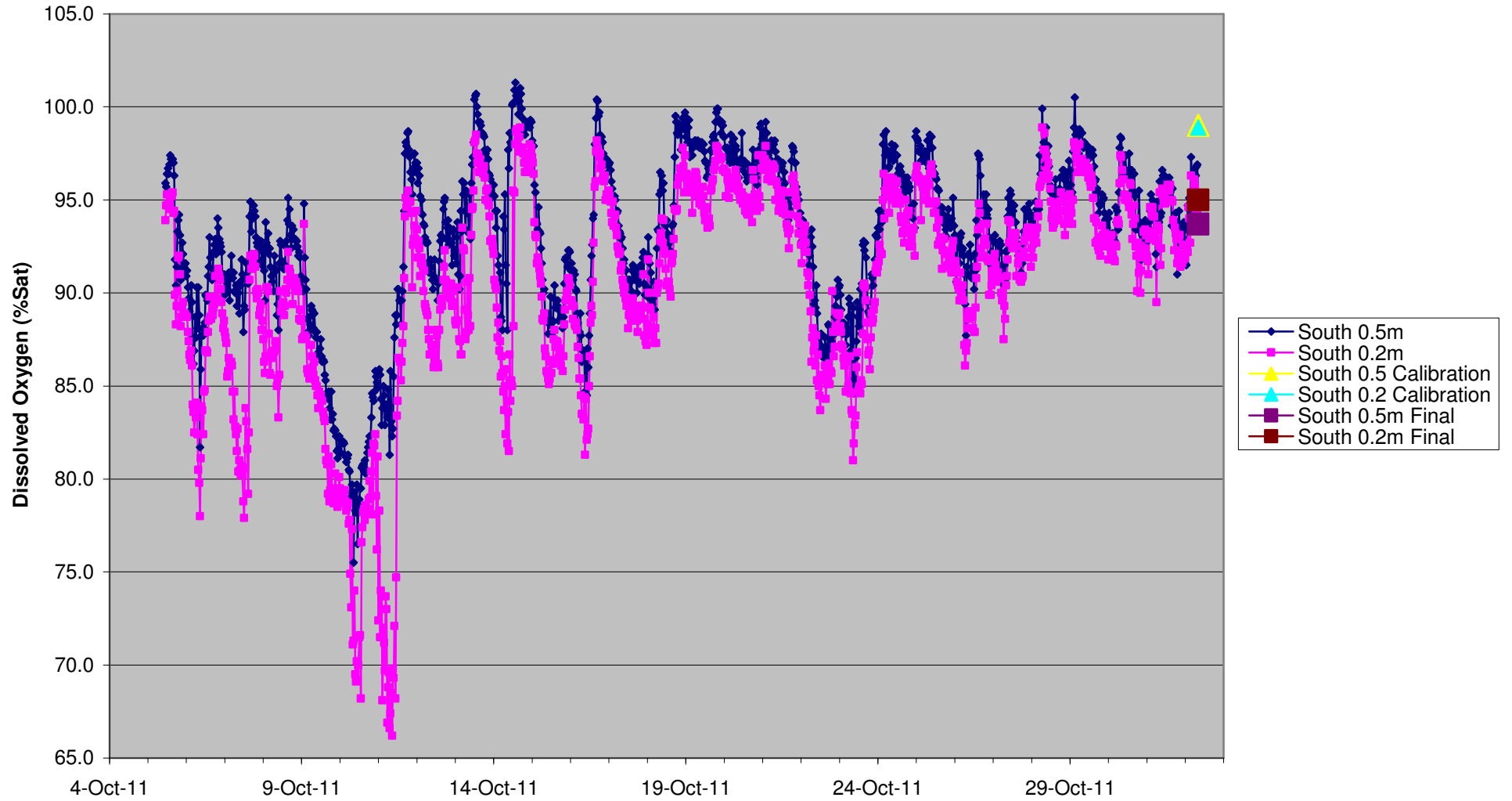


Figure 2(a): Near Seabed Dissolved Oxygen: South 5/10/11 – 1/11/11

Difference in DO % Saturation between 0.5m & 0.2m: South

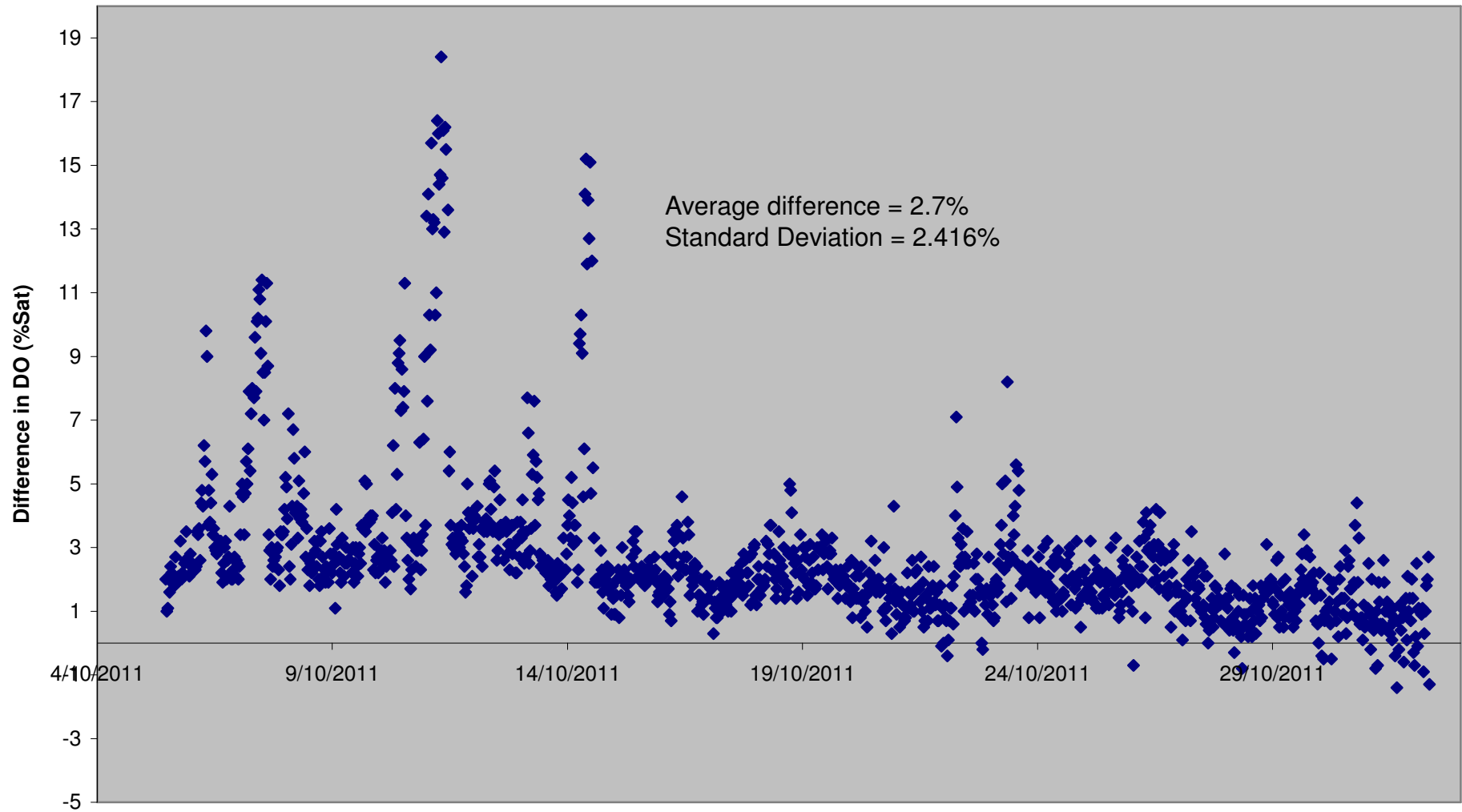


Figure 2(b): Difference in Near Seabed Dissolved Oxygen at South Site (0.5m – 0.2m)