



LAMMA POWER STATION EXTENSION

Supply and Installation of Submarine Gas Pipeline

Water Quality Monitoring During Post-Trenching Works Baseline Monitoring Report

June 2005

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Saipem Asia Sdn. Bhd

**Lamma Power Station Extension
– Supply and Installation
of Submarine Gas Pipeline**

**Water Quality Monitoring During Post-
Trenching Works
Baseline Monitoring Report (Version 1.B)**

June 2005

<p>Approved By </p> <hr/> <p align="center">(Project Director: Dr. HF Chan)</p>

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

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CINOTECH CONSULTANTS LTD

Room 1602-1610, Delta House,
3 On Yiu Street,
Shatin, NT, Hong Kong
Tel: (852) 2151 2083 Fax: (852) 3107 1388
Email: info@cinotech.com.hk

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LIST OF ABBREVIATION

DO	Dissolved Oxygen
EIA	Environmental Impact Assessment
EM&A	Environmental Monitoring and Audit
ET	Environmental Team
GPS	Global Positioning System
GRS	Gas Receiving Station
HEC	Hong Kong Electric Co. Ltd
HOKLAS	The Hong Kong Laboratory Accreditation Scheme
LNG	Liquefied Natural Gas
QA/QC	Quality Assurance / Quality Control
SS	Suspended Solids

EXECUTIVE SUMMARY

Introduction

1. This Baseline Environmental Monitoring and Audit (EM&A) Report is prepared by Cinotech Consultants Limited (ET-Cinotech) for the post-trenching works for the project “Lamma Project Station Extension – Supply and Installation of Submarine Gas Pipeline” (the Project). This report presents the baseline environmental monitoring works performed at the sensitive receivers including Ping Chau, southern Po Toi and Lamma between 31st May and 2nd June 2005.

Water Quality

2. The baseline water quality monitoring was conducted at fourteen designated monitoring stations at the three sensitive zones which are identified in the EIA Report, including Ping Chau, southern Po Toi and Lamma three days per week for a period of one week between 31st May and 2nd June 2005. Salinity, dissolved oxygen (DO), turbidity and suspended solids (SS) were monitored in accordance with the Work Procedure.
3. Data collected was reviewed and analyzed. Details of the methodology, locations and results are presented in the report. The monitoring results show that the water quality in the concerned water body is good. No major pollution sources were identified during the baseline monitoring. However, the baseline water quality data may not be representative to present the ambient conditions due to the small sample size (only three days of water samples) and limitation in tidal range selection (tidal range less than 0.5 m on one of the sampling events).
4. As a result, the EPD long-term monitoring data were used to establish the Action and Limit Levels (Table I) for the relevant parameters during impact monitoring throughout post-trenching period.

Table I Action and Limit Levels for Water Quality

Parameter (unit)	Water Depth	Action Level	Limit Level
<u>Lamma Island – L-I1 and L-I2</u>			
DO (mg/L)	Surface and Middle	4.7	4
	Bottom	4.1	2
Turbidity (NTU)	Depth average	17.2	18.4
SS (mg/L)	Depth average	10.2	10.7

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Parameter (unit)	Water Depth	Action Level	Limit Level
<u>Po Toi – PT-I1, PT-I2 and PT-I3</u>			
DO (mg/L)	Surface and Middle	5.0	4
	Bottom	3.3	2
Turbidity (NTU)	Depth average	14.0	21.9
SS (mg/L)	Depth average	6.7	7.2
<u>Ping Chau – PC-I1, PC-I2 and PC-I3</u>			
DO (mg/L)	Surface and Middle	4.8	4
	Bottom	2.9	2
Turbidity (NTU)	Depth average	11.2	13.0
SS (mg/L)	Depth average	5.7	7.6

Notes:

- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For turbidity and SS, non-compliance of water quality limits occurs when monitoring result is higher than the limits.

1 INTRODUCTION

Background

- 1.1 Hong Kong Electric Holdings Ltd. (HEC) intends to develop a 1,800 MW power station in Hong Kong Special Administrative Region (HKSAR) to meet the forecast increase in electricity demand to cope with the social and economical growth of the HKSAR. The proposed power station will be located at reclaimed land in the south of the existing Lamma Power Station at the western edge of Lamma Island, termed Lamma Power Station Extension.
- 1.2 The proposed Power Station will use natural gas as fuel to generate electricity. The natural gas will be supplied from Guandong Liquefied Natural Gas (GD LNG) Terminal located at Cheng Tou Jiao of Shenzhen PRC via a 20 inches diameter gas submarine pipeline.
- 1.3 HEC awarded Saipem Asia Sdn. Bhd. (hereafter called “the Contractor”) for the design, engineering, supply of materials, fabrication, testing at works, delivery to site, complete erection including pre-trenching, pipe laying, rock dumping, testing and pre-commissioning at site, preservation during the Defects Liability Period of Submarine Gas Pipeline under to Project titled “Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline” (hereinafter called “the Project”). Cinotech Consultants Limited was subsequently commissioned by the Contractor as the Environmental Team (ET-Cinotech) to provide environmental consultancy services and to undertake the Environmental Monitoring and Audit (EM&A) works for the Project.
- 1.4 The Project works include Pre-Trenching works, Pipe-Lay installation, Post-Lay Trenching (Jetting) and Rock Dumping works related to the installation of 92 km of 20 inches diameter Submarine Gas Pipeline between Guandong Liquefied Natural Gas Terminal (GD LNG) and the receiving point at Gas Receiving Station (GRS) at South-West of Lamma Extension on Lamma Island of Hong Kong – SAR. An Environmental Permit (EP) has been issued for the Lamma Power Station Extension project. Variations to the EP requirements have been proposed recently for the Project works and the VEP no. EP-071/2000/C was issued on 18th May 2005.
- 1.5 In accordance with the requirements of the EM&A Manual, water quality monitoring should be carried out for the *jetting operations* for the first two weeks of the construction programme. Further monitoring after the initial two weeks should be carried out if unacceptable impacts are revealed. In addition, monitoring should be carried out at Ping Chau, southern Po Toi and southern Lamma when jetting operation is conducted in the vicinity of these ecological sensitive areas identified in the EIA report. The original water quality monitoring programme stipulated in the EM&A Manual has been reviewed and updated to cater for the proposed variations of the EP requirements. The updates include a 3-day intensive water quality programme, which supersedes the original two-week programme. Baseline and impact monitoring will also be undertaken at the said three sensitive zones defined in the EIA report.

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- 1.6 A Work Procedure outlining the monitoring and audit programme to be undertaken for the post-trenching works was submitted. The baseline water quality monitoring was conducted at the three sensitive zones prior to the commencement of the post-trenching works.

Purpose of the Report

- 1.7 The purpose of this Baseline Environmental Monitoring Report is to set out baseline levels for the water quality at the sensitive receivers in accordance with the Work Procedure. These baseline levels will be used as the basis for the impact monitoring during the post-trenching stage of the Project. This report presents the monitoring locations, equipment, period, methodology, results and observations for the water quality measurements during the baseline period.

Project Organizations

- 1.8 Different parties with different levels of involvement in the project organization include:
- Project Proponent –Hong Kong Electric Holdings Ltd. (HEC)
 - Contractor – Saipem Asia Sdn. Bhd.
 - Environmental Team (ET-Cinotech) – Cinotech Consultants Limited
- 1.9 The responsibilities of respective parties are detailed in Section 3 of the EM&A Requirements Review (Review) and the project organization chart is presented in Figure 3.1 of the Review. The key contacts of the ET- Cinotech are shown in Table 1.1.

Table 1.1 Key Project Contacts

Party	Name	Role	Phone No.	Fax No.
ET-Cinotech	Dr. Priscilla Choy	Project Manager	2151 2089	3107 1388
	Ms. Winniss Kong	Coordinator	2151 2068	3107 1388
	Mr. Henry Leung	Monitoring Team Leader	2151 2087	3107 1388

2 WATER QUALITY MONITORING

Monitoring Requirements

- 2.1 Baseline conditions for water quality should be established prior to the commencement of works. The purpose of the baseline monitoring is to establish ambient conditions prior to the commencement of the works and to demonstrate the suitability of the proposed impact and control monitoring stations. The baseline conditions should be established by measuring all the water quality parameters for salinity, dissolved oxygen (DO), turbidity and suspended solids (SS) in accordance with the work procedure.

Monitoring Parameters

- 2.2 The following water quality parameters were included in the monitoring programme.

Table 2.1 Water Quality Monitoring Parameters

Phase	Water Quality Parameters
Construction	<ul style="list-style-type: none">• Salinity (ppt)• Turbidity (NTU)• Dissolved oxygen (DO) (mg/L and % of saturation)• Suspended solids (SS) (mg/L)

Monitoring Equipment

- 2.3 The water samplers used for water quality monitoring were Kahlsico Water-Bottle Model 135DW150. The samplers with associated equipment complied with the specifications stipulated in the work procedure.
- 2.4 Table 2.2 summarizes the equipment used in the water quality monitoring program. All the monitoring equipment complied with the specifications stipulated in the work procedure. Copies of the calibration certificates of are attached in Appendix A.

Table 2.2 Water Quality Monitoring Equipment

Equipment	Model and Make	Qty.
Water Sampler	Kahlsico Water-Bottle Model 135DW 150	2
Multi-parameter Water Quality System	YSI 6820	2

Monitoring Locations

- 2.5 A total of fourteen water quality monitoring locations were selected. Table 2.3 describes the locations of these monitoring stations. The locations of the control and impact monitoring stations are shown in Figures 2.1 and 2.2.

Water Quality Monitoring During Post-Trenching Works – Baseline Monitoring Report**Table 2.3 Locations of Water Quality Monitoring Stations**

ID	Location / Corresponding Sensitive Zone	Type of Monitoring Station	Co-ordinates	
			Easting	Northing
L-C1	Lamma Island	Control Station	827183.8	807646.2
L-C2		Control Station	831676.1	802177.5
L-I1		Impact Station	828810.5	806397.2
L-I2		Impact Station	828885.4	803509.1
PT-C1	Po Toi	Control Station	842723.2	803604.7
PT-C2		Control Station	847367.7	801893.2
PT-I1		Impact Station	843897.0	802669.5
PT-I2		Impact Station	843788.9	802085.1
PT-I3		Impact Station	843751.8	801793.7
PC-C1	Ping Chau	Control Station	861173.7	848150.6
PC-C2		Control Station	864446.5	842633.7
PC-I1		Impact Station	862140.0	846255.0
PC-I2		Impact Station	862126.0	845003.0
PC-I3		Impact Station	863196.0	843564.0

Monitoring Frequency and Duration

2.6 Table 2.4 summarizes the monitoring period and frequencies of water quality monitoring.

Table 2.4 Frequency and Parameters of Water Quality Monitoring

Station	Parameters	Frequency	No. of depth
L-C1, L-C2, L-I1, L-I2, PT-C1, PT- C2, PT-I1, PT-I2, PT-I3, PC-C1, PC-C2, PC-I1, PC-I2, PC-I3	SS, turbidity, DO and in-situ parameters*	3 times a week for a period of one week in both mid-ebb and mid-flood tides	3 (1m below water surface, mid-depth and 1m above channel bed.)

Notes:

* *In-situ parameters included temperature, salinity and DO saturation.*

Monitoring Methodology, Calibration Details and QA/QC Procedures

Instrumentation

- 2.7 A multi-parameter meter (Model YSI 6820 CE-C-M-Y) was used to measure DO, turbidity, salinity, and temperature. Digital Global Positioning Systems (DGPS) were used to ensure that the correction locations were arrived prior to measurement and sample collection.

Operating/Analytical Procedures

- 2.8 At each measurement, two consecutive measurements of in-situ parameters were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.
- 2.9 For SS measurement, grab samples were collected. Water samples of about 1,000 ml were collected and stored in polyethylene bottles. The sample bottles were packed into an ice-box and delivered to a HOKLAS Laboratory, WELLAB Ltd., for the analysis within 24 hours.

Maintenance and Calibration

- 2.10 Before each round of monitoring, a zero check in distilled water was performed with the turbidity probe of YSI 6820. The probe was kept in wet condition and then calibrated with a solution of known NTU.
- 2.11 Verifications of the DGPS were carried out at a known fixed reference point (survey nail obtained from the Survey and Mapping office of Lands Department). The position was monitored over a period of 5 minutes. Deviations of smaller than +/- 5 metres were demonstrated and recorded.
- 2.12 QA/QC procedures for the suspended solids analyzed in the HOKLAS-accredited

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laboratory, Wellab Limited are attached in Appendix C.

Results and Details on Influencing Factors

2.13 Baseline water quality monitoring was conducted between 31st May 2005 and 2nd June 2005 in both mid-ebb and mid-flood tides. The monitoring results and the graphical presentation are shown in Appendix B. Note that in Appendix B, the “sea condition” is given as indicative information and does not necessarily adhere to any standard sea state descriptions. In general, “calm” means small or no waves were observed; “rough” includes white-capped sea or rougher; and “moderate” means all conditions in between “calm” and “rough”.

2.14 The results are summarized in Tables 2.5 and 2.6, which show the averages and the ranges of readings recorded during mid-ebb and mid flood tides.

Table 2.5 Water Quality Baseline Monitoring Results during Mid-Ebb

Sensitive Zones	Stations	Average DO at S&M*, mg/L (Range)	Average DO at Bottom, mg/L (Range)	Average Turbidity, NTU (Range)	Average SS, mg/L (Range)
Lamma Island	L-C1	7.5 (6.3 – 9.3)	5.6 (5.0 – 6.1)	3.8 (3.5 – 4.2)	4.7 (2.8 – 5.9)
	L-C2	7.1 (6.7 – 7.9)	6.1 (6.0 – 6.1)	3.6 (2.0 – 5.1)	3.4 (2.2 – 4.1)
	L-I1	7.5 (6.4 – 9.4)	5.7 (5.7 – 5.8)	4.1 (3.1 – 5.0)	5.0 (2.5 – 7.1)
	L-I2	7.1 (6.6 – 8.1)	5.8 (5.6 – 6.0)	4.4 (3.6 – 5.3)	3.9 (2.3 – 4.8)
Po Toi	PT-C1	6.8 (6.5 – 7.2)	6.6 (5.5 – 7.3)	1.9 (1.2 – 2.4)	2.9 (2.5 – 3.6)
	PT-C2	6.7 (6.1 – 7.2)	5.9 (5.1 – 7.0)	1.4 (1.1 – 1.6)	2.8 (2.1 – 4.2)
	PT-I1	7.2 (7.1 – 7.2)	6.4 (5.1 – 7.0)	2.5 (1.3 – 3.7)	4.1 (3.5 – 4.5)
	PT-I2	6.7 (6.4 – 7.1)	5.9 (4.7 – 7.1)	2.5 (1.3 – 4.5)	2.6 (1.2 – 3.4)
	PT-I3	6.7 (6.4 – 7.1)	6.4 (6.1 – 7.1)	2.1 (1.8 – 2.6)	3.2 (2.7 – 4.0)
Ping Chau	PC-C1	7.1 (6.6 – 7.9)	6.2 (6.1 – 6.4)	2.9 (1.8 – 4.6)	3.2 (2.0 – 4.5)
	PC-C2	7.0 (6.8 – 7.3)	6.3 (6.0 – 6.5)	1.5 (1.2 – 1.7)	2.9 (1.9 – 3.6)
	PC-I1	7.6 (6.8 – 9.2)	7.2 (6.6 – 8.3)	1.7 (1.2 – 2.1)	3.0 (2.2 – 4.3)
	PC-I2	7.1 (6.7 – 7.8)	6.2 (5.8 – 6.4)	3.9 (2.6 – 5.4)	4.0 (2.0 – 6.3)
	PC-I3	6.9 (6.6 – 7.6)	6.0 (5.4 – 6.4)	3.1 (2.4 – 4.0)	4.3 (2.7 – 7.2)

* Surface and middle depths

Water Quality Monitoring During Post-Trenching Works – Baseline Monitoring Report**Table 2.6 Water Quality Baseline Monitoring Results during Mid-Flood**

Sensitive Zones	Stations	Average DO at S&M*, mg/L (Range)	Average DO at Bottom, mg/L (Range)	Average Turbidity, NTU (Range)	Average SS, mg/L (Range)
Lamma Island	L-C1	7.0 (6.1 – 7.8)	5.4 (4.7 – 5.8)	5.1 (4.6 – 6.0)	6.7 (5.5 – 7.7)
	L-C2	7.4 (6.6 – 8.0)	5.8 (5.2 – 6.1)	3.3 (2.4 – 4.3)	3.2 (3.0 – 3.5)
	L-I1	7.3 (6.5 – 8.2)	5.6 (5.2 – 5.9)	4.5 (3.4 – 5.4)	6.0 (4.8 – 7.4)
	L-I2	6.8 (6.1 – 7.3)	5.4 (4.5 – 6.0)	4.8 (4.3 – 5.1)	4.9 (3.3 – 6.6)
Po Toi	PT-C1	6.5 (6.2 – 7.2)	6.0 (5.1 – 7.2)	2.7 (1.2 – 5.0)	2.5 (1.9 – 2.9)
	PT-C2	6.7 (6.2 – 7.1)	6.2 (4.9 – 6.9)	2.0 (1.3 – 3.2)	2.5 (1.7 – 3.0)
	PT-I1	6.8 (6.4 – 7.1)	5.8 (4.7 – 7.1)	2.5 (1.6 – 3.1)	2.9 (2.3 – 3.8)
	PT-I2	6.5 (6.2 – 6.8)	5.7 (4.9 – 6.5)	2.0 (1.4 – 2.9)	2.4 (1.5 – 3.0)
	PT-I3	6.5 (5.7 – 7.2)	6.0 (5.2 – 6.6)	2.4 (1.7 – 2.8)	2.6 (1.4 – 3.6)
Ping Chau	PC-C1	6.9 (6.8 – 6.9)	6.2 (6.0 – 6.4)	2.8 (2.3 – 3.6)	3.7 (2.9 – 4.1)
	PC-C2	6.3 (5.8 – 6.8)	5.7 (4.5 – 6.6)	1.3 (1.2 – 1.5)	2.8 (1.7 – 3.4)
	PC-I1	7.5 (6.5 – 9.3)	7.0 (6.5 – 7.8)	1.2 (0.7 – 1.8)	3.2 (2.0 – 5.1)
	PC-I2	7.1 (6.7 – 7.8)	6.2 (6.0 – 6.5)	3.3 (2.0 – 4.0)	4.4 (2.3 – 7.0)
	PC-I3	7.2 (6.7 – 7.9)	6.1 (5.5 – 6.5)	2.4 (2.0 – 3.2)	3.6 (2.7 – 5.0)

* Surface and middle depths

2.15 No major pollution source and influencing factor was observed during the baseline monitoring period. However, the baseline water quality data may not be representative to present the ambient conditions due to the small sample size (only three days of water samples) and limitation in tidal range selection (tidal range less than 0.5 m on one of the sampling events).

Action and Limit Levels

2.16 Guidelines for establishment of the Action and Limit levels for the impact monitoring during the post-trenching works of the Project were provided in the work procedure, as presented in Table 2.7.

Table 2.7 Guidelines for Establishment of Action and Limit Levels proposed in the Work Procedure

Parameter (unit)	Action	Limit
Dissolved Oxygen (mg/L) (surface, middle, bottom)	<i>Surface and middle</i> 80% of upstream control station at the same tide of the same day <i>Bottom</i> 80% of upstream control station at the same tide of the same day	<i>Surface and middle</i> 4 mg/L except 5mg/L for FCZ <i>Bottom</i> 2 mg/L
SS (mg/L) (depth average)	120% of upstream control station's SS at the same tide of the same day	130% of SS readings at the upstream control station at the same tide of same day and specific sensitive receiver water quality requirements
Turbidity (NTU) (depth average)	120 % of upstream control station's turbidity at the same tide of the same day	130% of turbidity at the upstream control station at the same tide of same day

Notes:

1. "Depth-average" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limit occurs when monitoring result is lower than the limit.
3. For SS and turbidity, non-compliance of the water quality limits occur when monitoring result is higher than the limits.

2.17 For determination of Action / Limit Levels of DO, turbidity and SS, the control station approach was proposed in the work procedure. However, based on the baseline water quality monitoring results, the water quality of the control stations, especially that at the Po Toi (PT-C1 and PT-C1) and Ping Chau (PC-C1 and PC-C2) were considered good (with low turbidity and SS levels). In order to avoid false alarm of the impact of the post-trenching works, it is proposed to adopt the percentile approach of baseline water quality data at the three sensitive receivers including Ping Chau, southern Po Toi and southern Lamma for establishment of Action / Limit Levels. The proposed Action / Limit Levels for water quality are provided in Table 2.8.

2.18 Given the limitation of the baseline monitoring data as identified in Section 2.15, the EPD long-term monitoring results (DO, turbidity and SS) collected in the years from 1998 to 2003 at Stations SM5, SM19 and MM5 were adopted for the establishment of Action / Limit Levels for the stations at Lamma, Po Toi and Ping Chau respectively.

2.19 Also, the Action / Limit Levels were computed based on two categories, dry season and wet season. Since the pipeline jetting works would be carried out in the wet season only, only the Action / Limit Levels for wet season are derived. The EPD long-term monitoring results collected from May to October in the years of 1998 to 2003 are adopted for the computation for wet season.

Water Quality Monitoring During Post-Trenching Works – Baseline Monitoring Report**Table 2.8 Proposed Action and Limit Levels for Water Quality**

Parameter (unit)	Action	Limit
Dissolved Oxygen (mg/L) (surface, middle, bottom)	<i>Surface and middle</i> 5%-ile of baseline data <i>Bottom</i> 5%-ile of baseline data	<i>Surface and middle</i> 4 mg/L except 5mg/L for FCZ <i>Bottom</i> 2 mg/L
SS (mg/L) (depth average)	95%-ile of baseline data	99%-ile of baseline data
Turbidity (NTU) (depth average)	95%-ile of baseline data	99%-ile of baseline data

Notes:

1. "Depth-average" is calculated by taking the arithmetic means of reading of all three depths.
2. For DO, non-compliance of the water quality limit occurs when monitoring result is lower than the limit.
3. For SS and turbidity, non-compliance of the water quality limits occur when monitoring result is higher than the limits.

2.20 A summary of the past data of 1998-2003 at station SM5, SM19 and MM5 is provided in Table 2.9. Given that major marine works (including the HEC Navigation Channel Improvement and Lamma Power Station Extension Reclamation) were carried out in the vicinity of SM5 since April 2001 until end of 2004, the wet season data at station SM5 between 1998 and 2000 is presented for better illustration of the natural ambient levels.

Table 2.9 Past Wet Season Data at EPD's Monitoring Stations SM5, SM19 and MM5

Year		1998-2000	1998-2003		
Stations		SM5 (Lamma)	SM5 (Lamma)	SM19 (Po Toi)	MM5 (Ping Chau)
DO at S&M*, mg/L	Average	6.8	7.0	6.2	6.1
	Maximum	10.6	11.9	8.0	8.0
	Minimum	4.5	4.2	4.6	4.0
	5%-ile	4.7	4.7	5.0	4.8
	1%-ile	4.5	4.3	4.7	4.2
DO at Bottom, mg/L	Average	5.8	5.9	4.9	5.0
	Maximum	7.0	9.1	7.4	7.9
	Minimum	3.5	3.5	2.8	1.6
	5%-ile	4.1	4.2	3.3	2.9
	1%-ile	3.6	3.7	2.8	2.0

Water Quality Monitoring During Post-Trenching Works – Baseline Monitoring Report

Year		1998-2000	1998-2003		
Stations		SM5 (Lamma)	SM5 (Lamma)	SM19 (Po Toi)	MM5 (Ping Chau)
Turbidity, NTU	Average	7.8	8.3	8.4	6.3
	Maximum	18.7	18.7	23.6	13.2
	Minimum	1.2	1.2	1.1	2.6
	95%-ile	17.2	15.1	14.0	11.2
	99%-ile	18.4	18.0	21.9	13.0
SS, mg/L	Average	4.9	5.8	4.1	2.3
	Maximum	10.9	20.7	7.3	7.9
	Minimum	0.8	0.8	1.1	0.5
	95%-ile	10.2	12.2	6.7	5.7
	99%-ile	10.7	18.6	7.2	7.6

* Surface and middle depths

2.21 Following the criteria set out in Table 2.8, the Action and Limit Levels for water quality impact monitoring have been established as Table 2.10. In addition, based on the data summarized in Table 2.9, elevated SS levels at SM5 are observed between 2001 and 2003. The elevated SS levels may be related to the said marine projects. As a result, the data at SM5 between 1998 and 2000 is adopted for deriving Action and Limit Levels at sensitive receivers at Lamma. For the sensitive receivers at Po Toi and Ping Chau, the data between 1998 and 2003 are adopted.

Table 2.10 Calculated Action and Limit Levels for Water Quality (Wet Season)

Parameter (unit)	Water Depth	Action Level	Limit Level
<u>Lamma Island – L-I1 and L-I2</u>			
DO (mg/L)	Surface and Middle	4.7	4
	Bottom	4.1	2
Turbidity (NTU)	Depth average	17.2	18.4
SS (mg/L)	Depth average	10.2	10.7

Water Quality Monitoring During Post-Trenching Works – Baseline Monitoring Report

Parameter (unit)	Water Depth	Action Level	Limit Level
<u>Po Toi – PT-I1, PT-I2 and PT-I3</u>			
DO (mg/L)	Surface and Middle	5.0	4
	Bottom	3.3	2
Turbidity (NTU)	Depth average	14.0	21.9
SS (mg/L)	Depth average	6.7	7.2
<u>Ping Chau – PC-I1, PC-I2 and PC-I3</u>			
DO (mg/L)	Surface and Middle	4.8	4
	Bottom	2.9	2
Turbidity (NTU)	Depth average	11.2	13.0
SS (mg/L)	Depth average	5.7	7.6

Notes:

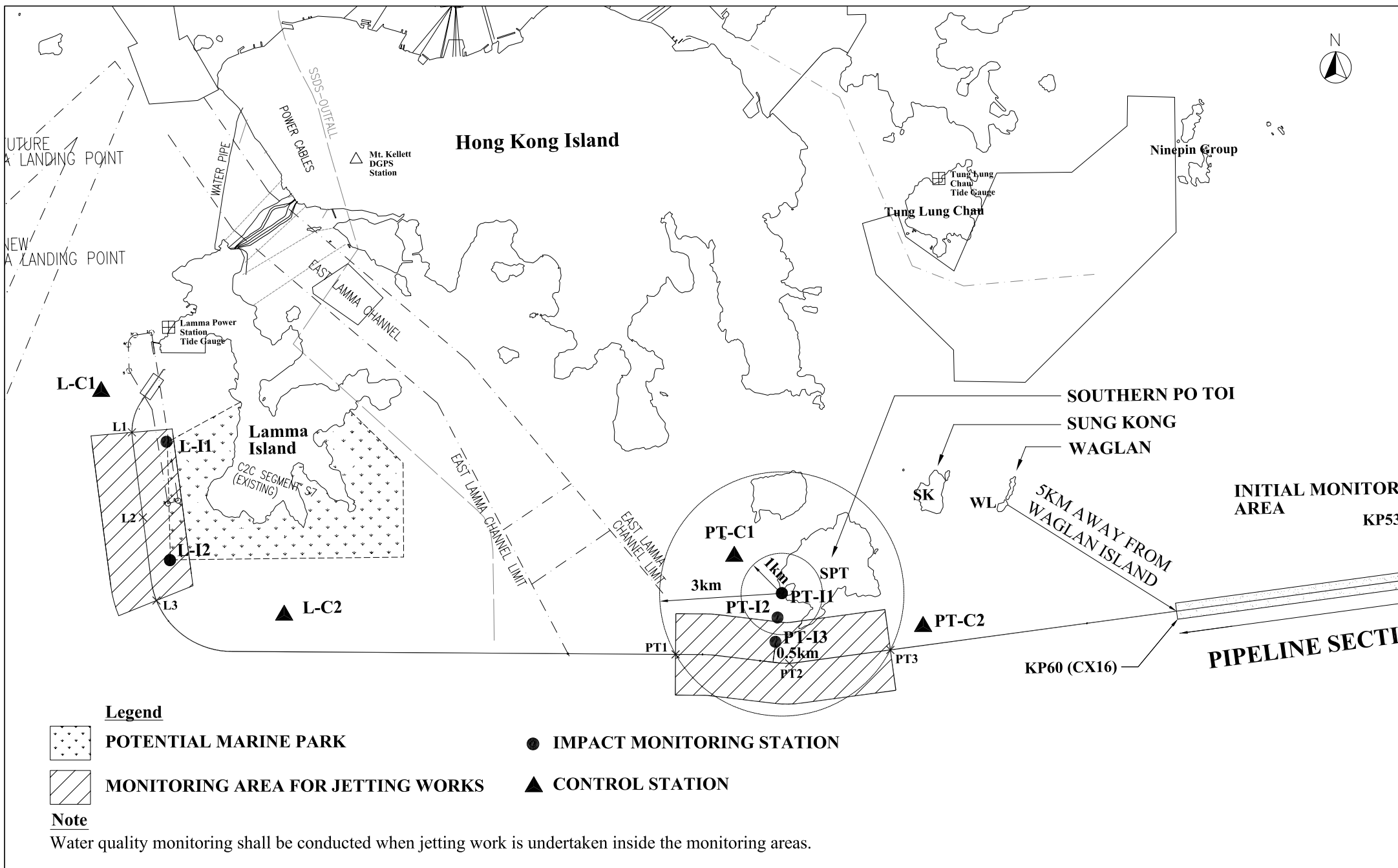
- For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
- For turbidity and SS, non-compliance of water quality limits occurs when monitoring result is higher than the limits.

3 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 3.1 Environmental monitoring works were performed on 31st May, 1st and 2nd June 2005 in accordance with the work procedure.
- 3.2 During the baseline water quality monitoring period, no observable pollution source was identified in the vicinity of the monitoring stations. However, the baseline water quality data may not be representative to present the ambient conditions due to the small sample size (only three days of water samples) and limitation in tidal range selection (tidal range less than 0.5 m on one of the sampling events).
- 3.3 The EPD long-term monitoring data were used to establish the Action and Limit Levels for the relevant parameters during impact monitoring at sensitive receivers throughout post-trenching period.

FIGURES



LAMMA POWER STATION EXTENSION
LOCATION OF MONITORING STATIONS (LAMMA SECTION)

Scale
1 : 120 000 A4
Date
JUN 05

Project
No. MA4017
Figure
No. 2.1

CINOTECH
consultants limited

GUANGDONG
LANDING POINT



Cheng Tou Jiao

Ping Chau

PC-C1

PC1

PC-I1

PC-I2

PC-I3

PC-C2

PC2

PC3

Mirs Bay

Legend



MARINE PARK



MONITORING AREA FOR JETTING WORKS



IMPACT MONITORING STATION



CONTROL STATION

Note

Water quality monitoring shall be conducted when jetting work is undertaken inside the monitoring area.

KP19

KP20

IM1

LAMMA POWER STATION EXTENSION

LOCATION OF MONITORING STATIONS (PING CHAU SECTION)

Scale

1 : 120 000 A4

Project
No.

MA4017

Date

JUN 05

Figure
No.

2.2

CINOTECH
consultants limited

**APPENDIX A
COPY OF CALIBRATION CERTIFICATE
OF MONITORING EQUIPMENT**

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Test Report No.:	C/W/50514-1
Date of Issue:	2005-05-14
Date Received:	2005-05-13
Date Tested:	2005-05-13
Date Completed:	2005-05-14

ATTN: Mr. Henry Leung

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 02D0126AA
Equipment No.	: W.03.01
Project No.	: C013

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 71%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, S/N: 02C0465

1. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution

Dissolved Oxygen Sensor, Model: 6562, S/N: 02C1269-1

1. Performance check against Winkler titration

Turbidity Sensor, Model: 6026, S/N: 5389

1. Calibration check with Formazin standard solution

pH Meter, Model: 6561, S/N: 01J

1. Calibration check with standard pH buffer

Depth Meter

1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Patrick

PATRICK TSE

Operation Manager

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WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

TEST REPORT

Test Report No.:	C/W/50514-1
Date of Issue:	2005-05-14
Date Received:	2005-05-13
Date Tested:	2005-05-13
Date Completed:	2005-05-14

Page: 2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, $\mu\text{S}/\text{cm}$		Correction, $\mu\text{S}/\text{cm}$	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	$D = C1 - C2$	
1419	1418	1	1418 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.2	30.0	0.2	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.0	0.1	± 0.1
Half-saturated	5.5	5.6	0.1	± 0.1
Zero	0.0	0.0	0.0	± 0.1

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.02	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.00	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

*****END OF REPORT*****

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Test Report No.:	C/W/50514-2
Date of Issue:	2005-05-14
Date Received:	2005-05-13
Date Tested:	2005-05-13
Date Completed:	2005-05-14

ATTN: Mr. Henry Leung

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6820-C-M
Serial No.	: 02D0293AA
Equipment No.	: W.03.02
Project No.	: C013

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 71%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, S/N: 02C0886
1. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution
Dissolved Oxygen Sensor, Model: 6562, S/N: 02C1269-2
1. Performance check against Winkler titration
Turbidity Sensor, Model: 6026, S/N: 5390
1. Calibration check with Formazin standard solution
pH Meter, Model: 6561, S/N: 02A
1. Calibration check with standard pH buffer
Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Patrick

PATRICK TSE

Operation Manager

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WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

TEST REPORT

Test Report No.:	C/W/50514-2
Date of Issue:	2005-05-14
Date Received:	2005-05-13
Date Tested:	2005-05-13
Date Completed:	2005-05-14

Page: 2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, $\mu\text{S}/\text{cm}$		Correction, $\mu\text{S}/\text{cm}$	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	$D = C1 - C2$	
1420	1418	5	1418 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.1	30.0	0.1	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O_2/L		Correction, mg O_2/L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.1	9.1	0.0	± 0.1
Half-saturated	5.7	5.7	0.1	± 0.1
Zero	0.0	0.0	0.0	± 0.1

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5

5. pH Meter check

Test Parameters	Performance characteristic	Acceptable range
Liquid junction error ΔpH_j , pH unit	0.02	Less than 0.05
Shift on stirring ΔpH_s , pH unit	0.01	Less than 0.02
Noise ΔpH_n , pH unit	0.02	Less than 0.02

6. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

*****END OF REPORT*****

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

TEST REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Test Report No.:	C/W/50514-3
Date of Issue:	2005-05-14
Date Received:	2005-05-13
Date Tested:	2005-05-13
Date Completed:	2005-05-14

ATTN: Mr. Henry Leung

Page: 1 of 2

Certificate of Calibration

Item for calibration:

Description	: Sonde Environmental Monitoring System
Manufacturer	: YSI
Model No.	: 6920-M
Serial No.	: 03H1764AA
Equipment No.	: W.03.03
Project No.	: C013

Test conditions:

Room Temperature	: 22 degree Celsius
Relative Humidity	: 71%

Test Specifications:

Conductivity & Salinity Sensor, Model: 6560, S/N: 03H1461
2. Conductivity performance check with Potassium Chloride standard solution
2. Salinity performance check with Sodium Chloride standard solution
Dissolved Oxygen Sensor, Model: 6562, S/N: 03H1723
1. Performance check against Winkler titration
Turbidity Sensor, Model: 6136, S/N: 03H1750
1. Calibration check with Formazin standard solution
Depth Meter
1. Calibration check at 1m water level depth

Methodologies:

1. YSI 6-Series Sonde Environmental Monitoring System Instruction Manual
2. In-house method with reference to APHA and ISO standards

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**


PATRICK TSE
Operation Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

TEST REPORT

Test Report No.:	C/W/50514-3
Date of Issue:	2005-05-14
Date Received:	2005-05-13
Date Tested:	2005-05-13
Date Completed:	2005-05-14

Page: 2 of 2

Results:

1. Conductivity performance check

Specific Conductivity, $\mu\text{S}/\text{cm}$		Correction, $\mu\text{S}/\text{cm}$	Acceptable range
Salinity Meter (C1)	Theoretical Value (C2)	$D = C1 - C2$	
1420	1418	2	1418 ± 20

2. Salinity Performance check

Salinity, ppt		Correction, ppt	Acceptable range
Instrument Reading	Theoretical Value		
30.1	30.0	0.1	30.0 ± 3

3. Dissolved Oxygen check

Oxygen level in water at 20°C	Dissolved Oxygen, mg O ₂ /L		Correction, mg O ₂ /L	Acceptable range
	D.O. Meter	Winkler Titration		
Saturated	9.0	9.1	0.1	± 0.1
Half-saturated	5.5	5.6	0.1	± 0.1
Zero	0.0	0.0	0.0	± 0.1

4. Turbidity check

Turbidity value in solution, NTU	Calibration Value, NTU	Correction, NTU	Acceptable range
0.00	0.00	0.00	0.00 ± 0.05
100	100	0	100 ± 5

5. Depth Meter check

Instrument Reading, m	Calibration Value, m	Correction, m	Acceptable range
1.0	1.00	0.00	1.00 ± 0.05

*****END OF REPORT*****

**APPENDIX B
BASELINE WATER QUALITY
MONITORING RESULTS AND THE
GRAPHICAL PRESENTATION**

Water Quality Monitoring Results at L-C1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	20:25	Surface	1	27.8 27.7	27.8	28.0 28.0	28.0	108.7 108.6	108.7	7.3 7.3	7.3	6.9	2.4 2.4	2.4	3.5	4.6	5.4
				Middle	5.5	26.3 26.3	26.3	30.3 30.4	30.4	94.2 93.7	94.0	6.4 6.4	6.4		2.5 2.6	2.6		4.3	
				Bottom	10	26.3 26.3	26.3	30.4 30.4	30.4	89.2 88.7	89.0	6.1 6.0	6.1		5.3 5.7	5.5		7.4	
06/01/05	Sunny	Moderate	07:56	Surface	1	26.6 26.7	26.7	27.8 27.8	27.8	94.3 94.1	94.2	6.5 6.5	6.5	6.3	2.2 2.2	2.2	4.2	3.3	5.9
				Middle	5.5	26.4 26.4	26.4	29.9 29.9	29.9	88.7 87.8	88.3	6.0 6.0	6.0		2.5 2.6	2.6		5.7	
				Bottom	10	26.3 26.3	26.3	30.6 30.6	30.6	82.8 82.5	82.7	5.6 5.6	5.6		7.6 7.7	7.7		8.8	
06/02/05	Cloudy	Moderate	09:09	Surface	1	27.7 27.7	27.7	26.7 26.7	26.7	147.5 147.7	147.6	10.0 10.0	10.0	9.3	1.5 1.3	1.4	3.7	2.8	2.8
				Middle	5.5	27.6 27.6	27.6	26.8 26.8	26.8	126.5 125.5	126.0	8.6 8.5	8.6		1.4 1.4	1.4		3.0	
				Bottom	10	26.3 26.3	26.3	30.5 30.5	30.5	73.6 72.9	73.3	5.0 5.0	5.0		8.1 8.2	8.2		2.5	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-C1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	10:50	Surface	1	26.1	26.1	27.4	27.5	91.0	90.6	6.3	6.3	6.1	2.9	2.9	4.6	4.2	6.8
						26.1		27.5		90.2		6.3			2.8				
				Middle	5.5	26.2	26.2	29.5	29.5	84.8	84.9	5.8	5.8		3.5	3.4		7.4	
						26.1		29.5		85.0		5.8			3.3				
				Bottom	10	26.2	26.2	30.4	30.4	85.5	85.4	5.8	5.8	7.3	7.5	8.9			
						26.2		30.4		85.2		5.8		7.7					
06/01/05	Sunny	Moderate	16:09	Surface	1	27.2	27.2	27.8	27.8	108.7	108.4	7.4	7.4	7.0	2.4	2.5	4.8	4.9	7.7
						27.2		27.7		108.1		7.4			2.6				
				Middle	6	26.3	26.3	30.3	30.3	97.5	97.0	6.6	6.6		2.9	2.9		4.1	
						26.3		30.3		96.5		6.6			2.8				
				Bottom	11	26.2	26.2	30.9	30.9	84.7	84.5	5.8	5.8	9.0	9.0	14.0			
						26.2		30.9		84.3		5.7		8.9					
06/02/05	Cloudy	Moderate	17:23	Surface	1	28.0	28.0	22.6	23.3	127.3	126.7	8.8	8.7	7.8	5.3	5.2	6.0	2.7	5.5
						28.0		24.0		126.0		8.6			5.1				
				Middle	5.5	27.2	27.2	28.4	28.5	99.7	100.0	6.8	6.8		1.5	1.5		2.3	
						27.1		28.6		100.3		6.8			1.4				
				Bottom	10	26.3	26.3	30.8	30.8	69.3	69.3	4.7	4.7	11.5	11.3	11.6			
						26.3		30.8		69.2		4.7		11.1					

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-C2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	19:25	Surface	1	26.8 26.8	26.8	30.5 30.5	30.5	104.3 103.6	104.0	7.0 7.0	7.0	6.7	2.6 2.6	2.6	3.6	4.0	3.9
				Middle	11.5	26.4 26.4	26.4	30.9 30.9	30.9	94.2 93.9	94.1	6.4 6.4	6.4		1.4 1.4	1.4		3.7	
				Bottom	22	26.2 26.2	26.2	31.5 31.5	31.5	89.4 89.0	89.2	6.1 6.0	6.1		6.8 6.8	6.8		3.9	
06/01/05	Sunny	Moderate	08:43	Surface	1	26.8 26.8	26.8	30.0 30.0	30.0	102.9 102.6	102.8	7.0 6.9	7.0	6.7	3.1 3.4	3.3	5.1	2.2	4.1
				Middle	12	26.4 26.4	26.4	30.5 30.5	30.5	92.4 91.9	92.2	6.3 6.2	6.3		2.1 2.3	2.2		5.3	
				Bottom	23	26.4 26.4	26.4	31.5 31.5	31.5	90.2 90.0	90.1	6.1 6.1	6.1		9.6 10.1	9.9		4.8	
06/02/05	Cloudy	Moderate	10:08	Surface	1	28.1 28.1	28.1	24.2 24.2	24.2	144.3 144.5	144.4	9.9 9.9	9.9	7.9	1.4 1.4	1.4	2.0	2.4	2.2
				Middle	11.5	26.4 26.4	26.4	31.2 31.2	31.2	86.2 86.6	86.4	5.8 5.9	5.9		2.0 2.1	2.1		1.6	
				Bottom	22	26.5 26.5	26.5	31.4 31.3	31.4	88.8 88.4	88.6	6.0 6.0	6.0		2.6 2.4	2.5		2.5	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-C2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*	
05/31/05	Sunny	Calm	11:46	Surface	1	26.5	26.5	30.4	30.4	99.3	99.3	6.7	6.7	6.6	2.5	2.5	4.3	3.3	3.5	
						26.5		30.4		99.2		6.7			2.4					
				Middle	11.5	26.3	26.3	30.7	30.7	94.3	93.9	6.4	6.4		2.5			2.5		4.3
						26.3		30.7		93.5		6.3			2.4					
				Bottom	22	26.2	26.2	31.5	31.5	89.2	89.0	6.0	6.0	6.0	7.7	7.8		3.0		
						26.2		31.5		88.8		6.0		7.9						
06/01/05	Sunny	Moderate	15:16	Surface	1	27.5	27.5	29.2	29.2	135.5	135.3	9.1	9.1	7.7	1.9	1.9	3.3	3.2	3.1	
						27.5		29.2		135.1		9.1			1.8					
				Middle	12	26.3	26.3	31.1	31.1	91.6	91.4	6.2	6.2		1.7			1.7		2.7
						26.3		31.1		91.2		6.2			1.6					
				Bottom	23	26.4	26.4	31.5	31.5	89.7	89.6	6.1	6.1	6.1	5.7	6.2		3.3		
						26.4		31.5		89.4		6.0		6.6						
06/02/05	Cloudy	Moderate	16:19	Surface	1	28.1	28.2	23.2	23.1	152.6	152.5	10.5	10.5	8.0	1.8	1.9	2.4	3.2	3.0	
						28.2		22.9		152.4		10.5			1.9					
				Middle	11.5	26.6	26.6	31.4	31.4	81.7	81.5	5.5	5.5		2.5			2.5		3.0
						26.6		31.4		81.2		5.5			2.5					
				Bottom	22	26.5	26.5	31.7	31.7	77.6	77.3	5.2	5.2	5.2	2.8	2.8		2.7		
						26.5		31.7		76.9		5.2								

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-11 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	20:10	Surface	1	27.7 27.7	27.7	29.6 29.6	29.6	104.9 104.6	104.8	7.0 7.0	7.0	6.6	2.1 2.1	2.1	5.0	3.1	5.4
				Middle	8.5	26.2 26.2	26.2	30.5 30.5	30.5	88.9 88.7	88.8	6.1 6.0	6.1		5.3 5.1	5.2		4.2	
				Bottom	16	26.3 26.3	26.3	31.1 31.1	31.1	84.9 84.8	84.9	5.8 5.8	5.8	5.8	7.5 7.8	7.7		8.9	
06/01/05	Sunny	Moderate	08:10	Surface	1	26.8 26.7	26.8	28.4 28.7	28.6	97.8 97.3	97.6	6.7 6.6	6.7	6.4	2.0 2.1	2.1	4.2	3.8	7.1
				Middle	8.5	26.4 26.4	26.4	30.5 30.5	30.5	90.6 90.4	90.5	6.1 6.1	6.1		2.6 2.6	2.6		5.6	
				Bottom	16	26.2 26.2	26.2	31.2 31.2	31.2	84.2 83.4	83.8	5.7 5.7	5.7	5.7	8.0 8.0	8.0		11.9	
06/02/05	Cloudy	Moderate	09:25	Surface	1	27.7 27.7	27.7	26.5 26.5	26.5	149.7 149.6	149.7	10.2 10.2	10.2	9.4	1.4 1.3	1.4	3.1	2.7	2.5
				Middle	8.5	27.6 27.6	27.6	27.1 27.1	27.1	126.9 125.3	126.1	8.6 8.5	8.6		1.3 1.3	1.3		2.6	
				Bottom	16	26.6 26.5	26.6	30.5 30.8	30.7	83.6 83.0	83.3	5.7 5.6	5.7	5.7	6.2 7.2	6.7		2.2	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-11 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)									
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*							
05/31/05	Sunny	Calm	11:06	Surface	1	26.8	26.8	28.7	28.8	97.2	96.9	6.6	6.6	6.5	2.6	2.6	3.4	4.5	4.8							
				Middle	8	26.3		30.2		93.5		6.4			2.9			3.0								
				Bottom	15	26.2	26.2	30.4	30.5	87.1	87.2	5.9	5.9		4.5	4.4		4.5		5.3						
						26.2		30.5		87.2		5.9			4.4											
				06/01/05	Sunny	Moderate	15:54	Surface	1	28.0	28.0	28.4	28.5		113.3	113.2		7.6		7.6	7.1	2.2	2.2	4.6	6.0	7.4
								Middle	8.5	26.4		30.5			96.6			6.6				1.9			1.9	
Bottom	16	26.2	26.2					31.2	31.2	83.7	83.6	5.7	5.7	9.3	9.8	9.6	11.2									
		26.2						31.2		83.4		5.7		9.8												
06/02/05	Cloudy	Moderate	17:05					Surface	1	28.0	28.0	26.3	26.3	164.7	164.3	11.1	11.1	8.2	1.7	1.7		5.4	2.9		5.7	
								Middle	8.5	26.3		31.0		76.8		5.2			4.1				4.1			
				Bottom	16	26.4	26.4	31.4	31.4	77.7	77.7	5.2	5.2	10.0	10.8	10.4	9.7									
						26.4		31.4		77.7		5.2		10.8												

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-12 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	19:49	Surface	1	27.3 27.3	27.3	29.8 29.8	29.8	104.1 104.0	104.1	7.0 7.0	7.0	6.6	2.0 2.1	2.1	4.3	5.3	4.5
				Middle	11.5	26.3 26.3	26.3	30.6 30.6	30.6	90.5 89.4	90.0	6.2 6.1	6.2		3.5 3.6	3.6		3.7	
				Bottom	22	26.2 26.2	26.2	31.3 31.3	31.3	85.4 85.0	85.2	5.8 5.8	5.8		7.3 7.2	7.3		4.5	
06/01/05	Sunny	Moderate	08:23	Surface	1	26.8 26.7	26.8	27.3 27.3	27.3	103.3 103.2	103.3	7.1 7.1	7.1	6.7	2.5 2.3	2.4	5.3	5.7	4.8
				Middle	11	26.3 26.3	26.3	30.9 30.9	30.9	92.2 92.0	92.1	6.3 6.2	6.3		1.9 2.0	2.0		5.0	
				Bottom	21	26.4 26.4	26.4	31.4 31.4	31.4	89.2 89.0	89.1	6.0 6.0	6.0		11.2 11.5	11.4		3.7	
06/02/05	Cloudy	Moderate	09:48	Surface	1	27.9 27.9	27.9	25.6 25.5	25.6	147.8 148.5	148.2	10.1 10.1	10.1	8.1	1.2 1.3	1.3	3.6	2.4	2.3
				Middle	11	26.3 26.3	26.3	30.3 30.3	30.3	88.2 87.5	87.9	6.0 6.0	6.0		1.3 1.2	1.3		2.2	
				Bottom	21	26.4 26.3	26.4	31.3 31.2	31.3	83.4 82.9	83.2	5.6 5.6	5.6		8.3 8.2	8.3		2.4	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at L-I2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	11:27	Surface	1	26.5 26.5	26.5	30.3 30.3	30.3	93.7 92.2	93.0	6.4 6.3	6.4	6.1	2.5 2.5	2.5	5.0	5.0	6.6
				Middle	11	26.3 26.3	26.3	30.6 30.6	30.6	85.9 85.1	85.5	5.8 5.8	5.8		3.3 3.7	3.5		6.9	
				Bottom	21	26.3 26.3	26.3	30.9 31.0	31.0	82.8 82.5	82.7	5.6 5.6	5.6		8.5 9.5	9.0		7.9	
06/01/05	Sunny	Moderate	15:36	Surface	1	27.9 27.9	27.9	28.1 28.0	28.1	121.6 121.8	121.7	8.2 8.2	8.2	7.3	4.1 4.4	4.3	5.1	4.8	4.8
				Middle	11	26.3 26.3	26.3	30.7 30.7	30.7	93.2 92.1	92.7	6.3 6.3	6.3		2.5 2.4	2.5		4.5	
				Bottom	21	26.4 26.4	26.4	31.4 31.4	31.4	88.3 88.2	88.3	6.0 6.0	6.0		8.5 8.4	8.5		5.0	
06/02/05	Cloudy	Moderate	16:45	Surface	1	28.3 28.3	28.3	22.6 22.7	22.7	133.1 131.9	132.5	9.2 9.1	9.2	7.1	2.8 2.9	2.9	4.3	3.0	3.3
				Middle	11.5	26.6 26.6	26.6	31.3 31.3	31.3	73.4 71.1	72.3	4.9 4.8	4.9		2.0 2.3	2.2		3.9	
				Bottom	22	26.6 26.6	26.6	31.5 31.5	31.5	66.1 65.8	66.0	4.5 4.4	4.5		7.8 7.6	7.7		2.9	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-C1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	18:02	Surface	1	27.8 27.8	27.8	29.5 29.6	29.6	98.7 96.8	97.8	5.6 5.5	5.6	6.6	0.8 0.7	0.8	1.2	0.5	2.5
				Middle	8	26.8 26.8	26.8	29.9 29.9	29.9	110.2 108.8	109.5	7.5 7.4	7.5		1.1 1.1	1.1		2.5	
				Bottom	15	26.6 26.5	26.6	30.8 30.9	30.9	107.4 107.4	107.4	7.3 7.3	7.3	7.3	1.6 1.7	1.7		4.6	
06/01/05	Sunny	Moderate	13:06	Surface	1	27.6 27.6	27.6	29.7 29.7	29.7	103.1 103.1	103.1	7.2 7.1	7.2	7.2	2.0 1.9	2.0	2.4	3.6	2.6
				Middle	8	27.1 27.0	27.1	29.9 30.0	30.0	102.0 102.0	102.0	7.1 7.1	7.1		2.6 2.3	2.5		2.1	
				Bottom	15	26.4 26.3	26.4	31.0 31.1	31.1	101.9 101.7	101.8	7.1 7.0	7.1	7.1	2.5 2.7	2.6		2.1	
06/02/05	Cloudy	Moderate	14:27	Surface	1	27.5 27.5	27.5	28.9 28.9	28.9	98.1 98.1	98.1	6.6 6.6	6.6	6.5	1.5 1.5	1.5	2.0	5.1	3.6
				Middle	7.5	26.9 26.7	26.8	29.6 29.8	29.7	94.1 94.1	94.1	6.4 6.4	6.4		1.8 1.9	1.9		1.9	
				Bottom	14	26.1 26.0	26.1	30.3 30.3	30.3	80.5 80.5	80.5	5.5 5.5	5.5	5.5	2.6 2.5	2.6		3.9	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-C1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	13:28	Surface	1	27.4 27.8	27.6	30.0 29.8	29.9	98.8 95.0	96.9	6.6 6.3	6.5	6.2	0.7 0.8	0.8	5.0	2.4	2.8
				Middle	8.5	26.7 26.8	26.8	30.1 30.1	30.1	83.4 87.0	85.2	5.6 5.9	5.8		1.1 1.0	1.1		2.1	
				Bottom	16	26.1 26.1	26.1	31.2 31.2	31.2	74.4 75.3	74.9	5.1 5.1	5.1	5.1	12.1 14.3	13.2		3.8	
06/01/05	Sunny	Moderate	09:16	Surface	1	27.7 27.7	27.7	29.8 29.9	29.9	101.9 101.7	101.8	7.1 7.0	7.1	7.2	1.3 1.2	1.3	1.2	3.5	2.9
				Middle	8	26.8 26.8	26.8	30.4 30.4	30.4	103.5 103.4	103.5	7.2 7.2	7.2		1.1 1.1	1.1		3.1	
				Bottom	15	26.1 26.1	26.1	31.3 31.3	31.3	103.4 103.4	103.4	7.2 7.2	7.2	7.2	1.3 1.1	1.2		2.1	
06/02/05	Cloudy	Moderate	10:19	Surface	1	27.6 27.6	27.6	28.8 28.9	28.9	91.0 91.0	91.0	6.1 6.1	6.1	6.2	1.0 1.1	1.1	1.8	2.9	1.9
				Middle	8	27.3 27.1	27.2	29.1 29.2	29.2	93.9 93.7	93.8	6.3 6.3	6.3		1.1 1.1	1.1		1.9	
				Bottom	15	26.2 26.1	26.2	30.1 30.2	30.2	83.9 83.9	83.9	5.7 5.7	5.7	5.7	3.3 3.1	3.2		1.0	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-C2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	19:02	Surface	1	27.2 27.2	27.2	30.1 30.1	30.1	96.3 97.9	97.1	6.5 6.6	6.6	6.7	1.1 1.1	1.1	1.1	1.7	2.1
				Middle	8.5	26.8 26.7	26.8	30.6 30.6	30.6	100.8 99.7	100.3	6.8 6.7	6.8		1.4 1.4	1.4		2.8	
				Bottom	16	26.2 26.1	26.2	31.3 31.4	31.4	81.4 85.6	83.5	5.5 5.8	5.7		5.7	0.7 0.6		0.7	
06/01/05	Sunny	Moderate	13:55	Surface	1	27.5 27.5	27.5	29.9 29.9	29.9	103.5 103.4	103.5	7.2 7.2	7.2	7.2	1.7 1.5	1.6	1.6	2.7	4.2
				Middle	8.5	26.5 26.5	26.5	30.6 30.6	30.6	103.4 103.4	103.4	7.2 7.2	7.2		1.3 1.4	1.4		3.0	
				Bottom	16	26.3 26.2	26.3	31.4 31.5	31.5	99.8 97.5	98.7	6.9 7.0	7.0		7.0	1.8 2.0		1.9	
06/02/05	Cloudy	Moderate	15:09	Surface	1	27.1 27.4	27.3	29.0 28.9	29.0	90.0 93.1	91.6	6.1 6.3	6.2	6.1	1.1 1.2	1.2	1.5	1.3	2.1
				Middle	8.5	26.4 26.3	26.4	30.1 30.1	30.1	89.1 85.9	87.5	6.1 5.9	6.0		1.4 1.4	1.4		2.2	
				Bottom	16	26.2 26.2	26.2	30.7 30.7	30.7	75.0 74.4	74.7	5.1 5.1	5.1		5.1	2.1 1.9		2.0	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-C2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	12:28	Surface	1	27.5 27.4	27.5	30.1 30.1	30.1	104.7 114.4	109.6	7.0 7.7	7.4	7.1	0.9 0.9	0.9	1.3	1.6	3.0
				Middle	7.5	26.5 26.4	26.5	30.8 30.9	30.9	99.8 99.8	99.8	6.8 6.8	6.8		1.2 1.3	1.3		5.2	
				Bottom	14	26.2 26.2	26.2	31.2 31.3	31.3	99.0 97.0	98.0	6.7 6.6	6.7	6.7	1.5 1.6	1.6		2.3	
06/01/05	Sunny	Moderate	08:28	Surface	1	27.2 27.2	27.2	30.0 30.0	30.0	102.3 102.3	102.3	6.9 6.9	6.9	6.9	1.3 1.1	1.2	1.6	2.2	2.7
				Middle	8.5	26.5 26.4	26.5	30.9 31.0	31.0	102.0 102.0	102.0	6.9 6.9	6.9		1.3 1.4	1.4		2.0	
				Bottom	16	27.1 27.1	27.1	30.1 30.1	30.1	101.1 101.1	101.1	6.9 6.9	6.9	6.9	2.1 2.0	2.1		3.8	
06/02/05	Cloudy	Moderate	09:37	Surface	1	27.6 27.7	27.7	29.0 29.0	29.0	91.5 92.9	92.2	6.1 6.2	6.2	6.2	1.5 1.5	1.5	3.2	1.5	1.7
				Middle	8.5	26.7 26.7	26.7	29.7 29.7	29.7	90.8 89.6	90.2	6.2 6.1	6.2		2.4 2.2	2.3		2.4	
				Bottom	16	26.1 26.1	26.1	30.6 30.6	30.6	71.9 70.4	71.2	4.9 4.8	4.9	4.9	5.8 5.9	5.9		1.2	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-11 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	18:17	Surface	1	27.9 27.9	27.9	29.7 29.7	29.7	103.9 103.4	103.7	6.9 6.9	6.9	7.2	1.1 1.2	1.2	1.3	3.3	4.5
				Middle	7.5	26.9 26.8	26.9	30.0 30.0	30.0	111.6 110.8	111.2	7.5 7.5	7.5		1.6 1.7	1.7		2.7	
				Bottom	14	26.6 26.5	26.6	30.7 30.9	30.8	105.3 100.6	103.0	7.1 6.8	7.0	7.0	1.1 1.1	1.1		7.5	
06/01/05	Sunny	Moderate	13:18	Surface	1	27.4 27.4	27.4	29.7 29.7	29.7	105.8 107.7	106.8	7.1 7.2	7.2	7.2	2.1 2.1	2.1	2.4	2.0	3.5
				Middle	7.5	26.9 26.8	26.9	30.0 30.0	30.0	101.9 101.9	101.9	7.1 7.1	7.1		2.1 2.2	2.2		4.3	
				Bottom	14	26.5 26.4	26.5	30.8 31.0	30.9	101.9 101.9	101.9	7.0 7.0	7.0	7.0	2.8 2.9	2.9		4.1	
06/02/05	Cloudy	Moderate	14:14	Surface	1	27.5 27.5	27.5	29.0 29.0	29.0	105.0 105.5	105.3	7.1 7.1	7.1	7.1	2.1 1.8	2.0	3.7	2.2	4.2
				Middle	7.5	27.2 27.2	27.2	29.2 29.2	29.2	105.4 104.2	104.8	7.1 7.0	7.1		1.7 1.6	1.7		5.4	
				Bottom	14	26.0 26.0	26.0	30.5 30.5	30.5	75.0 75.0	75.0	5.1 5.1	5.1	5.1	7.4 7.1	7.3		5.1	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-I1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	13:01	Surface	1	27.4 27.5	27.5	30.1 30.0	30.1	92.8 94.3	93.6	6.2 6.3	6.3	6.9	1.1 1.2	1.2	3.1	3.3	3.8
				Middle	8	26.7 26.7	26.7	30.1 30.2	30.2	111.3 106.1	108.7	7.5 7.2	7.4		1.3 1.3	1.3		3.1	
				Bottom	15	26.4 26.4	26.4	31.2 31.2	31.2	68.1 68.7	68.4	4.6 4.7	4.7		4.7	6.8 6.8		6.8	
				Surface	1	27.6 27.6	27.6	29.6 29.7	29.7	105.4 103.9	104.7	7.1 7.0	7.1	7.1	1.0 1.0	1.0	1.6	1.8	2.5
				Middle	7.5	27.2 27.0	27.1	29.8 29.8	29.8	104.6 102.0	103.3	7.1 6.9	7.0		1.2 1.3	1.3		1.7	
				Bottom	14	26.5 26.4	26.5	30.9 31.0	31.0	104.3 103.3	103.8	7.1 7.0	7.1		7.1	2.6 2.5		2.6	
06/02/05	Cloudy	Moderate	10:07	Surface	1	27.5 27.5	27.5	29.0 29.0	29.0	91.8 93.3	92.6	6.2 6.3	6.3	6.4	1.1 1.3	1.2	2.8	1.7	2.3
				Middle	7.5	27.2 27.1	27.2	29.2 29.2	29.2	94.3 93.1	93.7	6.4 6.3	6.4		2.5 2.3	2.4		2.8	
				Bottom	14	26.1 26.0	26.1	30.3 30.4	30.4	82.9 82.9	82.9	5.7 5.7	5.7		5.7	4.5 4.8		4.7	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-I2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	18:33	Surface	1	27.5 27.8	27.7	30.1 30.0	30.1	101.9 101.9	101.9	6.8 6.8	6.8	6.6	0.8 0.9	0.9	1.3	2.8	3.2
				Middle	9	26.6 26.6	26.6	30.4 30.4	30.4	91.3 92.4	91.9	6.2 6.3	6.3		1.3 1.3	1.3		2.1	
				Bottom	17	26.1 26.1	26.1	31.3 31.3	31.3	68.2 70.0	69.1	4.6 4.8	4.7	4.7	1.7 1.7	1.7		4.6	
06/01/05	Sunny	Moderate	13:30	Surface	1	27.3 27.3	27.3	30.0 30.0	30.0	102.4 102.4	102.4	7.1 7.1	7.1	7.1	0.9 0.9	0.9	1.7	2.8	3.4
				Middle	8	26.9 26.9	26.9	30.1 30.2	30.2	102.6 102.6	102.6	7.1 7.1	7.1		1.5 1.7	1.6		0.6	
				Bottom	15	26.2 26.1	26.2	31.3 31.4	31.4	100.0 101.0	100.5	6.9 7.0	7.0	7.0	2.5 2.5	2.5		6.9	
06/02/05	Cloudy	Moderate	14:44	Surface	1	27.4 27.5	27.5	28.9 28.9	28.9	92.2 95.0	93.6	6.2 6.4	6.3	6.4	1.5 1.7	1.6	4.5	1.3	1.2
				Middle	8.5	27.1 27.1	27.1	29.3 29.2	29.3	95.6 95.1	95.4	6.5 6.4	6.5		1.8 1.7	1.8		1.1	
				Bottom	16	26.2 26.1	26.2	30.3 30.4	30.4	86.5 86.5	86.5	5.9 5.9	5.9	5.9	10.0 10.2	10.1		1.1	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-I2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	12:46	Surface	1	27.8 27.8	27.8	30.0 30.0	30.0	101.9 99.2	100.6	6.8 6.6	6.7	6.5	1.2 1.3	1.3	1.4	3.1	3.0
				Middle	9	26.6 26.6	26.6	30.4 30.4	30.4	91.3 92.4	91.9	6.2 6.3	6.3		1.3 1.3	1.3		3.3	
				Bottom	17	26.1 26.1	26.1	31.3 31.3	31.3	73.4 71.3	72.4	5.0 4.8	4.9		1.8 1.6	1.7		2.7	
06/01/05	Sunny	Moderate	08:51	Surface	1	27.1 27.1	27.1	30.1 30.1	30.1	101.1 104.6	102.9	6.9 7.1	7.0	6.8	2.2 2.2	2.2	2.9	1.8	2.8
				Middle	7.5	26.9 26.9	26.9	30.1 30.2	30.2	95.8 96.3	96.1	6.5 6.5	6.5		2.9 3.3	3.1		2.6	
				Bottom	14	26.2 26.2	26.2	31.3 31.3	31.3	97.6 95.1	96.4	6.6 6.4	6.5		3.7 3.2	3.5		4.0	
06/02/05	Cloudy	Moderate	09:54	Surface	1	27.5 27.5	27.5	28.9 29.0	29.0	91.5 92.9	92.2	6.1 6.2	6.2	6.2	1.5 1.5	1.5	1.8	1.3	1.5
				Middle	8.5	26.4 26.4	26.4	30.1 30.1	30.1	89.1 89.1	89.1	6.1 6.1	6.1		1.8 1.7	1.8		1.9	
				Bottom	16	26.0 26.0	26.0	30.5 30.5	30.5	82.8 82.8	82.8	5.6 5.6	5.6		2.0 1.9	2.0		1.3	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-I3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	18:51	Surface	1	27.6 27.7	27.7	30.1 30.1	30.1	94.9 95.9	95.4	6.3 6.4	6.4	6.4	1.1 1.2	1.2	1.8	3.3	2.9
				Middle	6.5	26.7 26.7	26.7	30.5 30.5	30.5	93.5 93.6	93.6	6.3 6.3	6.3		1.5 1.5	1.5		2.6	
				Bottom	12	26.6 26.6	26.6	31.0 31.0	31.0	89.7 89.7	89.7	6.1 6.1	6.1		2.7 2.5	2.6		2.9	
06/01/05	Sunny	Moderate	13:45	Surface	1	27.3 27.3	27.3	30.1 30.1	30.1	103.1 103.0	103.1	7.1 7.1	7.1	7.1	1.7 1.6	1.7	2.0	1.9	4.0
				Middle	6	27.2 27.1	27.2	30.0 30.1	30.1	102.8 102.9	102.9	7.1 7.1	7.1		1.4 1.4	1.4		4.4	
				Bottom	11	26.7 26.6	26.7	30.7 30.8	30.8	102.7 102.6	102.7	7.1 7.1	7.1		2.7 3.1	2.9		5.6	
06/02/05	Cloudy	Moderate	14:59	Surface	1	27.5 27.5	27.5	28.9 28.9	28.9	98.8 99.4	99.1	6.6 6.7	6.7	6.7	1.0 1.2	1.1	2.6	3.5	2.7
				Middle	6.5	27.2 27.2	27.2	29.1 29.1	29.1	98.7 98.2	98.5	6.7 6.6	6.7		1.5 1.6	1.6		1.6	
				Bottom	12	26.5 26.3	26.4	30.0 30.2	30.1	89.1 89.1	89.1	6.1 6.1	6.1		4.9 5.0	5.0		3.0	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PC-I3 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	12:06	Surface	1	27.5 27.5	27.5	30.1 30.0	30.1	104.4 104.2	104.3	7.0 7.0	7.0	7.2	1.3 1.3	1.3	1.7	3.3	3.6
				Middle	6	26.8 26.8	26.8	30.3 30.3	30.3	107.6 108.1	107.9	7.3 7.3	7.3		2.1 2.1	2.1		4.8	
				Bottom	11	26.6 26.4	26.5	30.9 31.1	31.0	99.6 94.0	96.8	6.7 6.4	6.6		1.9 1.6	1.8		2.7	
				Surface	1	27.0 27.0	27.0	30.0 30.0	30.0	104.3 103.3	103.8	7.1 7.0	7.1	6.6	2.4 2.8	2.6		2.7	
Middle	6	26.6 26.8	26.7	30.4 30.3	30.4	90.3 89.1	89.7	6.1 6.1	6.1	3.2 3.4	3.3	0.7							
Bottom	11	26.1 26.0	26.1	31.3 31.4	31.4	90.4 89.8	90.1	6.1 6.1	6.1	2.2 2.1	2.2	1.7							
06/02/05	Cloudy	Moderate	09:27	Surface	1	27.5 27.7	27.6	29.0 29.0	29.0	87.2 87.8	87.5	5.9 5.9	5.9	5.7	1.1 1.2	1.2	2.8		1.7
				Middle	6	27.2 27.3	27.3	29.1 29.1	29.1	81.6 81.6	81.6	5.5 5.5	5.5		1.8 1.7	1.8		3.4	
				Bottom	11	26.2 26.1	26.2	30.4 30.5	30.5	76.4 76.4	76.4	5.2 5.2	5.2		5.3 5.2	5.3		3.7	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-C1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	18:31	Surface	1	26.9 26.9	26.9	30.7 30.7	30.7	102.9 102.7	102.8	6.9 6.9	6.9	6.7	0.7 0.6	0.7	1.8	2.9	4.5
				Middle	16	26.4 26.4	26.4	31.7 31.7	31.7	95.6 95.3	95.5	6.4 6.4	6.4		2.0 1.9	2.0		2.8	
				Bottom	31	26.4 26.4	26.4	31.8 31.7	31.8	94.8 94.4	94.6	6.4 6.4	6.4		2.6 2.5	2.6		7.9	
06/01/05	Sunny	Moderate	09:34	Surface	1	27.1 27.1	27.1	30.9 30.9	30.9	101.8 101.6	101.7	6.8 6.8	6.8	6.6	0.6 0.6	0.6	2.3	1.1	3.2
				Middle	16	26.4 26.4	26.4	31.7 31.7	31.7	94.6 94.5	94.6	6.4 6.4	6.4		1.9 2.0	2.0		3.0	
				Bottom	31	26.4 26.4	26.4	31.8 31.8	31.8	92.4 91.6	92.0	6.2 6.2	6.2		4.6 4.0	4.3		5.4	
06/02/05	Cloudy	Moderate	10:54	Surface	1	27.6 27.6	27.6	29.1 29.1	29.1	138.1 138.0	138.1	9.3 9.3	9.3	7.9	0.7 0.8	0.8	4.6	1.9	2.0
				Middle	16.5	26.5 26.5	26.5	30.9 30.9	30.9	95.1 94.5	94.8	6.4 6.4	6.4		0.9 0.9	0.9		2.0	
				Bottom	32	26.6 26.6	26.6	30.7 30.8	30.8	90.6 90.6	90.6	6.1 6.1	6.1		11.9 12.0	12.0		2.2	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-C1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	12:51	Surface	1	26.7 26.7	26.7	30.8 30.8	30.8	102.9 102.3	102.6	6.9 6.9	6.9	6.8	2.5 2.4	2.5	2.6	2.1	4.1
				Middle	16.5	26.4 26.4	26.4	31.6 31.6	31.6	97.2 96.9	97.1	6.6 6.5	6.6		2.1 2.1	2.1		4.5	
				Bottom	32	26.4 26.4	26.4	31.8 31.8	31.8	95.0 94.9	95.0	6.4 6.4	6.4	3.0 3.1	3.1	5.8			
06/01/05	Sunny	Moderate	14:22	Surface	1	26.8 26.8	26.8	30.9 30.9	30.9	104.7 104.5	104.6	7.0 7.0	7.0	6.9	0.8 0.9	0.9	2.3	2.7	4.0
				Middle	16.5	26.4 26.4	26.4	31.8 31.8	31.8	99.2 97.6	98.4	6.7 6.6	6.7		3.0 2.9	3.0		4.3	
				Bottom	32	26.4 26.4	26.4	31.8 31.8	31.8	91.0 90.2	90.6	6.1 6.1	6.1	2.8 3.1	3.0	5.1			
06/02/05	Cloudy	Moderate	15:12	Surface	1	27.4 27.4	27.4	28.8 28.8	28.8	114.1 114.0	114.1	7.7 7.7	7.7	6.9	4.4 4.2	4.3	3.6	2.2	2.9
				Middle	15.5	26.5 26.5	26.5	31.5 31.5	31.5	90.8 90.6	90.7	6.1 6.1	6.1		2.4 2.5	2.5		2.7	
				Bottom	30	26.4 26.4	26.4	31.8 31.8	31.8	89.0 89.0	89.0	6.0 6.0	6.0	4.0 3.9	4.0	3.9			

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-C2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	17:30	Surface	1	27.1 27.1	27.1	30.6 30.6	30.6	100.9 100.6	100.8	6.8 6.8	6.8	6.8	0.3 0.3	0.3	1.7	2.2	3.6
				Middle	17.5	26.5 26.5	26.5	31.8 31.8	31.8	100.2 100.1	100.2	6.7 6.7	6.7		0.6 0.6	0.6		3.2	
				Bottom	34	26.4 26.4	26.4	32.0 32.0	32.0	96.5 96.4	96.5	6.5 6.5	6.5		4.1 4.1	4.1		5.4	
06/01/05	Sunny	Moderate	10:34	Surface	1	27.0 26.9	27.0	30.9 31.0	31.0	102.5 102.4	102.5	6.9 6.9	6.9	6.8	0.5 0.4	0.5	1.2	2.1	3.2
				Middle	17.5	26.5 26.5	26.5	31.9 31.9	31.9	100.3 100.0	100.2	6.7 6.7	6.7		0.3 0.3	0.3		2.8	
				Bottom	34	26.3 26.3	26.3	32.0 32.0	32.0	94.0 93.8	93.9	6.3 6.3	6.3		2.6 2.7	2.7		4.7	
06/02/05	Cloudy	Moderate	11:53	Surface	1	27.3 27.4	27.4	29.6 29.6	29.6	126.6 127.1	126.9	8.5 8.5	8.5	7.3	0.8 0.8	0.8	1.5	1.6	1.9
				Middle	17.5	26.4 26.4	26.4	31.9 31.9	31.9	90.6 90.5	90.6	6.1 6.1	6.1		1.6 1.7	1.7		2.0	
				Bottom	34	26.4 26.4	26.4	32.1 32.0	32.1	89.9 89.0	89.5	6.0 6.0	6.0		1.9 1.8	1.9		2.1	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-C2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	14:04	Surface	1	26.8 26.9	26.9	30.9 30.8	30.9	100.7 100.7	100.7	6.8 6.8	6.8	6.8	0.5 0.5	0.5	1.5	2.0	3.4
				Middle	17.5	26.5 26.5	26.5	31.8 31.8	31.8	100.5 100.5	100.5	6.8 6.8	6.8		0.7 0.8	0.8		3.1	
				Bottom	34	26.4 26.4	26.4	32.0 32.0	32.0	97.5 97.4	97.5	6.6 6.6	6.6		3.2 3.3	3.3		5.1	
06/01/05	Sunny	Moderate	12:45	Surface	1	27.1 27.2	27.2	30.9 30.8	30.9	95.7 95.4	95.6	6.4 6.4	6.4	6.3	0.3 0.3	0.3	1.2	2.4	3.2
				Middle	17.5	26.4 26.4	26.4	31.9 31.9	31.9	92.5 92.3	92.4	6.2 6.2	6.2		0.5 0.6	0.6		2.6	
				Bottom	34	26.3 26.3	26.3	32.0 32.0	32.0	86.9 86.1	86.5	5.9 5.8	5.9		2.7 2.9	2.8		4.5	
06/02/05	Cloudy	Moderate	14:00	Surface	1	27.3 27.3	27.3	29.6 29.6	29.6	102.5 101.0	101.8	6.9 6.8	6.9	5.8	0.8 0.8	0.8	1.2	1.8	1.7
				Middle	17.5	26.4 26.4	26.4	31.9 31.9	31.9	68.5 67.9	68.2	4.6 4.6	4.6		1.3 1.4	1.4		1.4	
				Bottom	34	26.4 26.4	26.4	32.1 32.0	32.1	67.1 67.1	67.1	4.5 4.5	4.5		1.5 1.5	1.5		1.8	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-I1 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity(NTU)			Suspended Solids (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	18:16	Surface	1	26.9	26.9	31.3	31.3	101.3	101.1	6.8	6.8	6.9	2.1	2.1	2.1	3.4	4.3
				Middle	4	26.5		31.4		101.5		6.8			2.1				
				Bottom	7	26.5	31.5	101.7	6.9	2.1	4.3								
						26.4	26.4	31.7	31.7	100.0		99.8	6.7		6.7				
06/01/05	Sunny	Moderate	09:48	Surface	1	27.0	27.0	31.1	31.1	100.9	100.7	6.8	6.8	6.8	1.7	1.7	1.7	2.2	2.5
				Middle	4	26.8		31.2		99.8		99.5			6.7				
				Bottom	7	26.9	31.2	99.2	6.7	0.8	0.9	1.0	3.0						
						26.7	26.7	31.3	31.3						98.3				
06/02/05	Cloudy	Moderate	11:09	Surface	1	27.6	27.6	29.0	29.0	137.0	137.0	9.2	9.2	9.2	2.6	2.6	2.6	2.1	2.2
				Middle	4	27.6		29.1		135.3		9.1			9.1				
				Bottom	7	27.6	29.1	134.5	9.0	1.1	1.2	2.6							
						27.7	27.7	29.4	29.4	124.7	124.4		8.3		8.3				

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-I1 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	13:09	Surface	1	27.2 27.2	27.2	31.3 31.3	31.3	96.1 95.9	96.0	6.4 6.4	6.4	6.5	1.9 1.9	1.9	1.8	4.4	5.1
				Middle	4.5	26.5 26.5	26.5	31.4 31.4	31.4	97.5 97.7	97.6	6.6 6.6	6.6		1.5 1.5	1.5		4.4	
				Bottom	8	26.5 26.5	26.5	31.4 31.4	31.4	96.9 96.7	96.8	6.5 6.5	6.5		1.9 1.8	1.9		6.6	
06/01/05	Sunny	Moderate	14:09	Surface	1	27.6 27.5	27.6	31.0 31.0	31.0	100.9 100.8	100.9	6.7 6.7	6.7	6.7	0.5 0.5	0.5	0.7	3.0	2.5
				Middle	4	27.1 27.1	27.1	31.1 31.1	31.1	100.5 100.3	100.4	6.7 6.7	6.7		0.7 0.6	0.7		2.5	
				Bottom	7	27.0 27.0	27.0	31.1 31.1	31.1	99.4 99.2	99.3	6.7 6.6	6.7		0.8 0.8	0.8		2.1	
06/02/05	Cloudy	Moderate	14:58	Surface	1	27.6 27.6	27.6	29.0 29.0	29.0	142.3 142.6	142.5	9.5 9.6	9.6	9.3	0.9 0.9	0.9	1.0	2.0	2.0
				Middle	4	27.4 27.4	27.4	29.2 29.2	29.2	133.7 133.3	133.5	9.0 9.0	9.0		0.8 0.9	0.9		2.0	
				Bottom	7	27.3 27.3	27.3	29.5 29.4	29.5	115.8 115.5	115.7	7.8 7.8	7.8		1.0 1.1	1.1		2.0	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-I2 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)			
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*	
05/31/05	Sunny	Calm	18:05	Surface	1	26.6 26.6	26.6	31.5 31.5	31.5	99.0 98.8	98.9	6.7 6.6	6.7	6.7	1.7 1.7	3.7	3.3	6.3		
				Middle	13	26.5 26.5	26.5	31.8 31.8	31.8	97.6 97.2	97.4	6.6 6.5	6.6		1.9 2.2				2.1	8.1
				Bottom	25	26.4 26.4	26.4	31.9 31.9	31.9	95.5 95.4	95.5	6.4 6.4	6.4		6.8 7.8				7.3	7.6
06/01/05	Sunny	Moderate	09:59	Surface	1	26.9 26.9	26.9	31.1 31.1	31.1	100.8 100.6	100.7	6.8 6.8	6.8	6.7	0.9 0.9	5.4	2.8	3.8		
				Middle	12.5	26.4 26.4	26.4	31.8 31.8	31.8	96.4 95.8	96.1	6.5 6.5	6.5		2.4 2.6				2.5	3.4
				Bottom	24	26.4 26.4	26.4	31.9 31.9	31.9	92.9 92.7	92.8	6.3 6.2	6.3		12.8 13.0				12.9	5.1
06/02/05	Cloudy	Moderate	11:20	Surface	1	27.5 27.5	27.5	28.9 28.9	28.9	137.4 137.5	137.5	9.2 9.2	9.2	7.8	1.7 1.7	2.6	2.0	2.0		
				Middle	13	26.6 26.6	26.6	31.0 31.0	31.0	92.9 92.3	92.6	6.3 6.2	6.3		1.2 1.2				1.2	2.1
				Bottom	25	26.4 26.4	26.4	31.9 31.9	31.9	86.8 86.4	86.6	5.8 5.8	5.8		5.0 4.8				4.9	2.0

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-I2 - Mid-Flood Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)								
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*						
05/31/05	Sunny	Calm	13:25	Surface	1	26.7	26.7	31.5	31.5	101.0	100.7	6.8	6.8	6.7	1.4	1.4	4.0	3.2	7.0						
				Middle	13	26.4		31.8		97.3		6.6			2.5			5.2							
				Bottom	25	26.4	26.4	31.9	31.9	95.7	95.7	6.5	6.5		7.7	8.0		12.6							
						26.4		31.9		95.7		6.4			8.2										
				06/01/05	Sunny	Moderate	13:58	Surface	1	27.1	27.2	31.1	31.1	103.8	103.5	6.9		6.9		6.7	5.0	5.5	4.0	2.9	3.9
								Middle	13	26.5		31.8		96.5		6.5					3.1			3.1	
Bottom	25	26.4	26.4					32.0	32.0	91.6	91.5	6.2	6.2	3.4	3.5	5.8									
		26.4						32.0		91.3		6.2		3.5											
06/02/05	Cloudy	Moderate	14:48					Surface	1	27.5	27.5	29.1	29.1	139.5	139.4	9.4	9.4	7.8	0.9	0.9	2.0	1.4		2.3	
								Middle	13	26.4		31.7		91.9		6.2			1.3			1.5			
				Bottom	25	26.4	26.4	32.0	32.0	88.8	88.7	6.0	6.0	3.4	3.7	4.1									
						26.4		32.0		88.6		6.0		4.0											

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-I3 - Mid-Ebb Tide

Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	17:57	Surface	1	26.7 26.7	26.7	31.4 31.4	31.4	99.0 98.9	99.0	6.7 6.6	6.7	6.6	1.6 1.4	1.5	4.0	3.0	7.2
				Middle	15	26.5 26.5	26.5	31.8 31.8	31.8	96.1 95.7	95.9	6.5 6.4	6.5		2.2 2.2	2.2		3.9	
				Bottom	29	26.4 26.4	26.4	31.9 31.9	31.9	94.9 94.0	94.5	6.4 6.3	6.4	6.4	7.7 8.9	8.3		14.8	
06/01/05	Sunny	Moderate	10:10	Surface	1	27.1 27.1	27.1	31.0 31.0	31.0	101.8 101.9	101.9	6.8 6.8	6.8	6.6	1.0 1.0	1.0	2.4	2.8	3.1
				Middle	13.5	26.5 26.5	26.5	31.8 31.8	31.8	93.3 93.0	93.2	6.3 6.3	6.3		1.1 1.2	1.2		2.4	
				Bottom	26	26.4 26.4	26.4	32.0 32.0	32.0	89.8 89.1	89.5	6.1 6.0	6.1	6.1	4.8 5.1	5.0		4.2	
06/02/05	Cloudy	Moderate	11:31	Surface	1	27.5 27.5	27.5	28.8 28.8	28.8	137.6 136.8	137.2	9.3 9.2	9.3	7.6	1.0 1.1	1.1	2.8	2.2	2.7
				Middle	14	26.5 26.5	26.5	31.7 31.7	31.7	85.5 84.8	85.2	5.8 5.7	5.8		1.3 1.2	1.3		2.5	
				Bottom	27	26.4 26.4	26.4	31.9 31.9	31.9	80.7 80.4	80.6	5.4 5.4	5.4	5.4	5.7 6.0	5.9		3.4	

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

*** Cancelled due to Thunderstorm Warning

Water Quality Monitoring Results at PT-I3 - Mid-Flood Tide

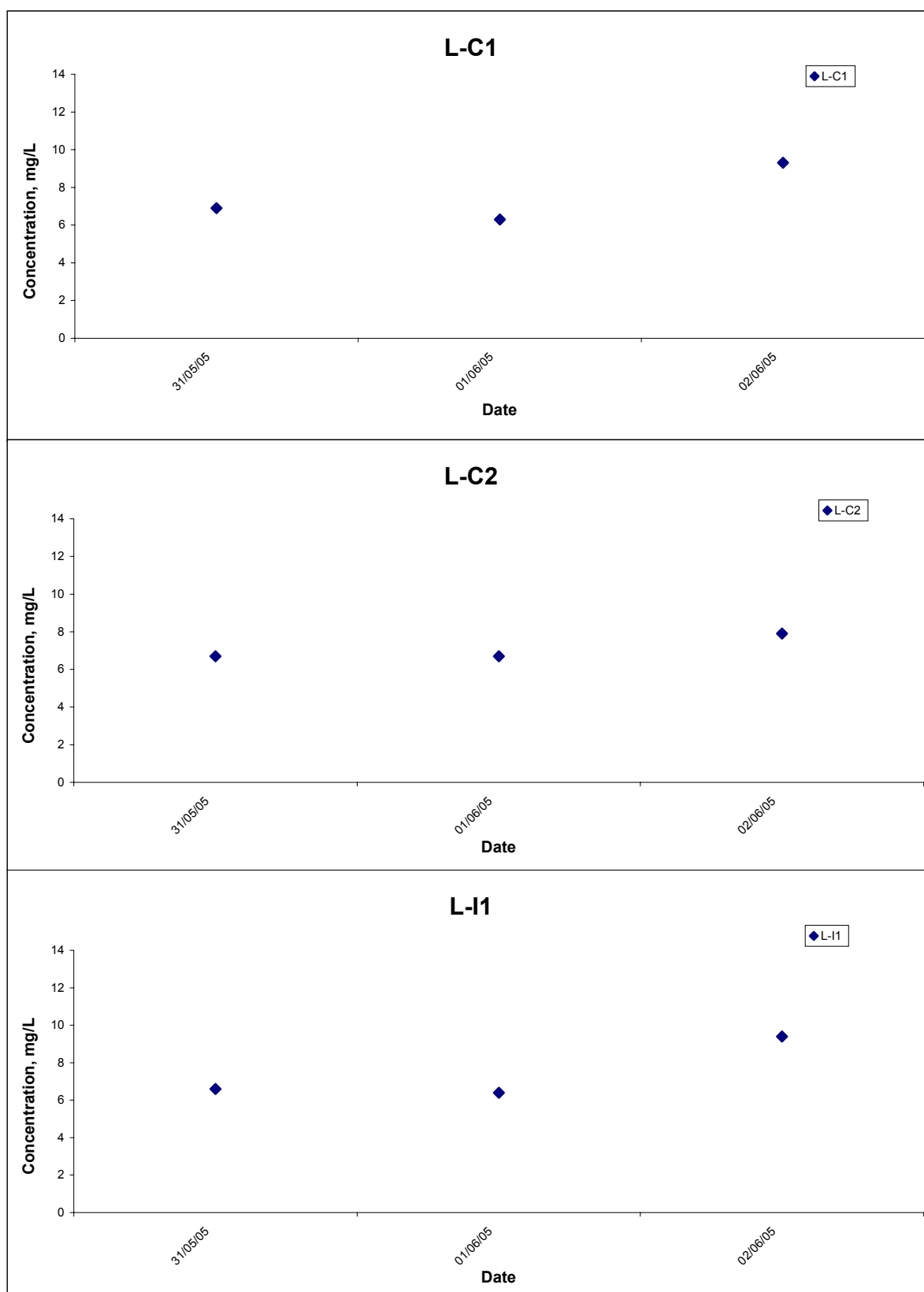
Date	Weather Condition	Sea Condition**	Sampling Time	Depth (m)		Temperature (°C)		Salinity ppt		DO Saturation (%)		Dissolved Oxygen (mg/L)		Turbidity(NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Value	Average	Value	Average	DA*	Value	Average	DA*	Average	DA*
05/31/05	Sunny	Calm	13:32	Surface	1	26.7	26.7	31.6	31.6	100.2	100.0	6.7	6.7	6.7	1.7	1.7	3.2	3.3	5.0
						26.7		31.6		99.7		6.7			1.6				
				Middle	15	26.4	26.4	31.8	31.9	99.8	99.2	6.7	6.7	2.5	2.5	2.5	4.6		
						26.4		31.9		98.6		6.6		2.5					
				Bottom	29	26.4	26.4	31.9	31.9	96.0	95.8	6.5	6.5	5.2	5.3	5.3	7.1		
						26.4		31.9		95.5		6.4		5.3					
06/01/05	Sunny	Moderate	13:50	Surface	1	27.0	27.0	31.0	31.0	104.2	104.2	7.0	7.0	7.1	0.7	0.7	2.0	2.4	3.0
						26.9		31.0		104.1		7.0			0.7				
				Middle	13.5	26.5	26.5	31.7	31.7	106.4	105.8	7.2	7.2	1.0	1.0	1.0	2.8		
						26.5		31.7		105.2		7.1		1.0					
				Bottom	26	26.4	26.4	32.0	32.0	94.7	94.3	6.4	6.4	4.3	4.2	4.2	3.9		
						26.4		32.0		93.8		6.3		4.0					
06/02/05	Cloudy	Moderate	14:24	Surface	1	27.5	27.5	28.3	28.3	145.5	145.4	9.8	9.8	7.9	1.0	1.0	2.0	2.7	2.7
						27.5		28.3		145.3		9.8			1.0				
				Middle	14	26.4	26.4	31.8	31.8	89.8	89.4	6.0	6.0	2.1	2.1	2.1	2.0		
						26.4		31.8		89.0		6.0		2.0					
				Bottom	27	26.4	26.4	31.9	31.9	81.4	80.9	5.5	5.5	2.9	3.0	3.0	3.4		
						26.4		31.9		80.3		5.4		3.0					

Remarks: * DA: Depth-Averaged

** Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

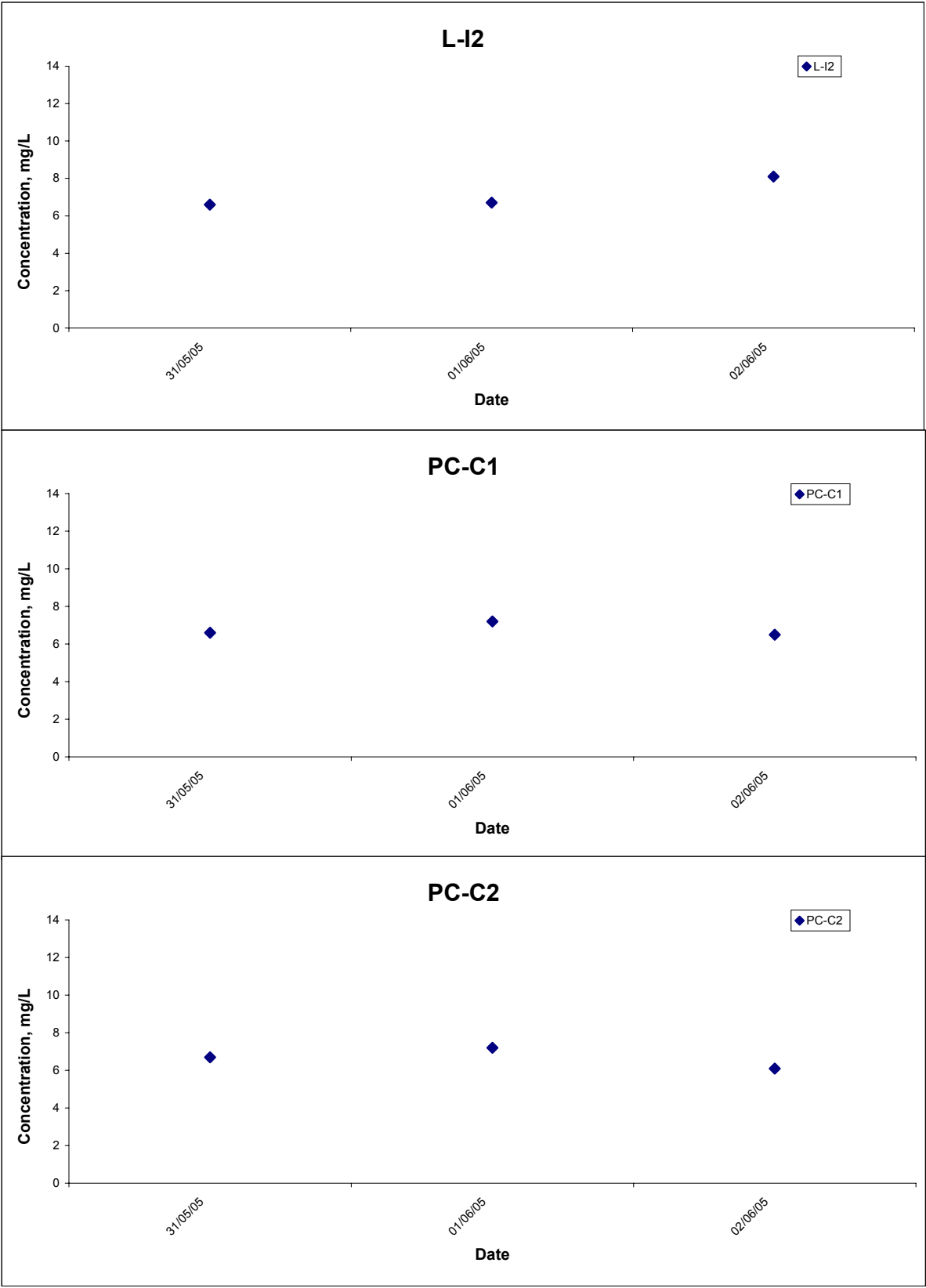
*** Cancelled due to Thunderstorm Warning

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



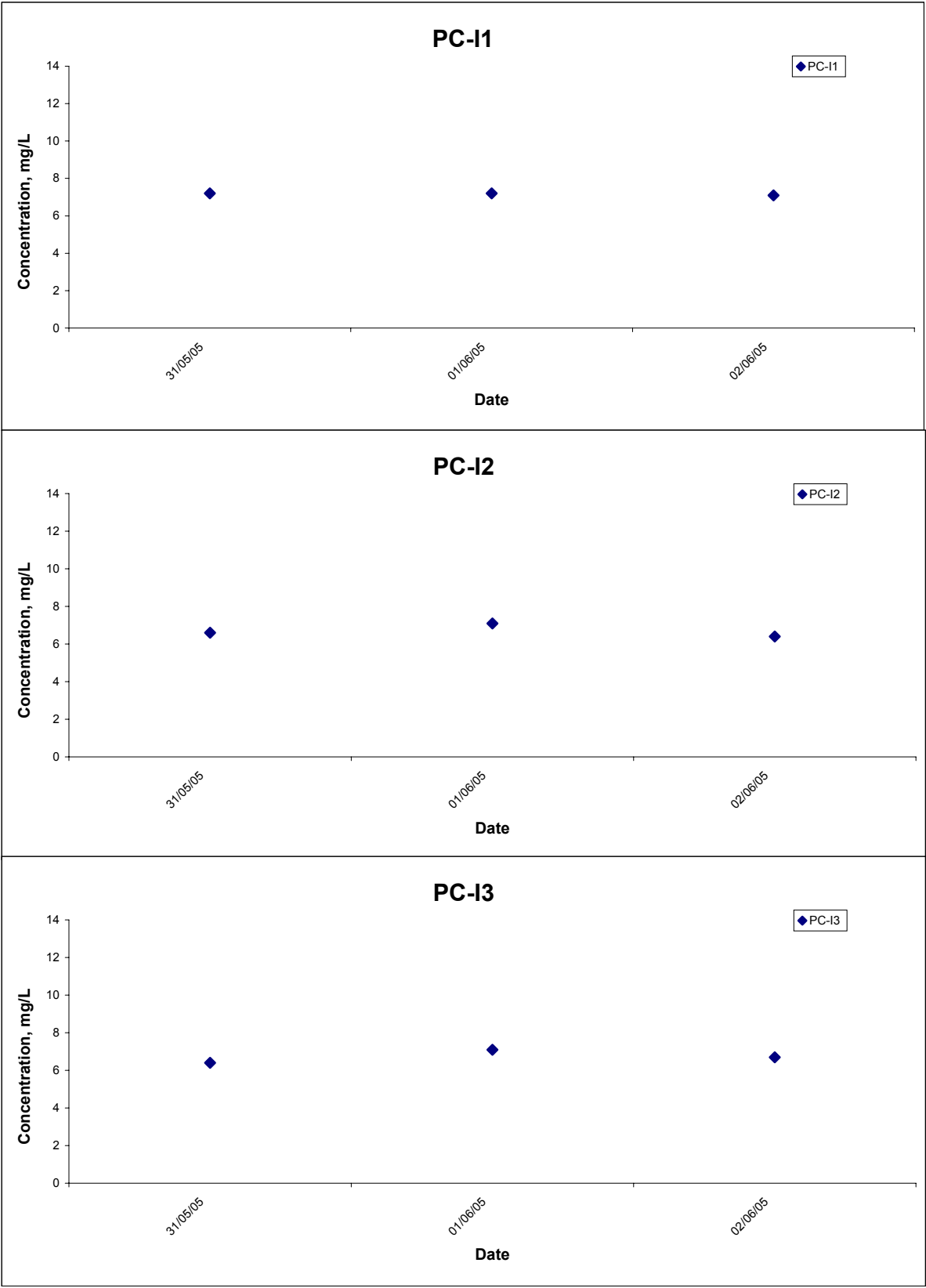
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



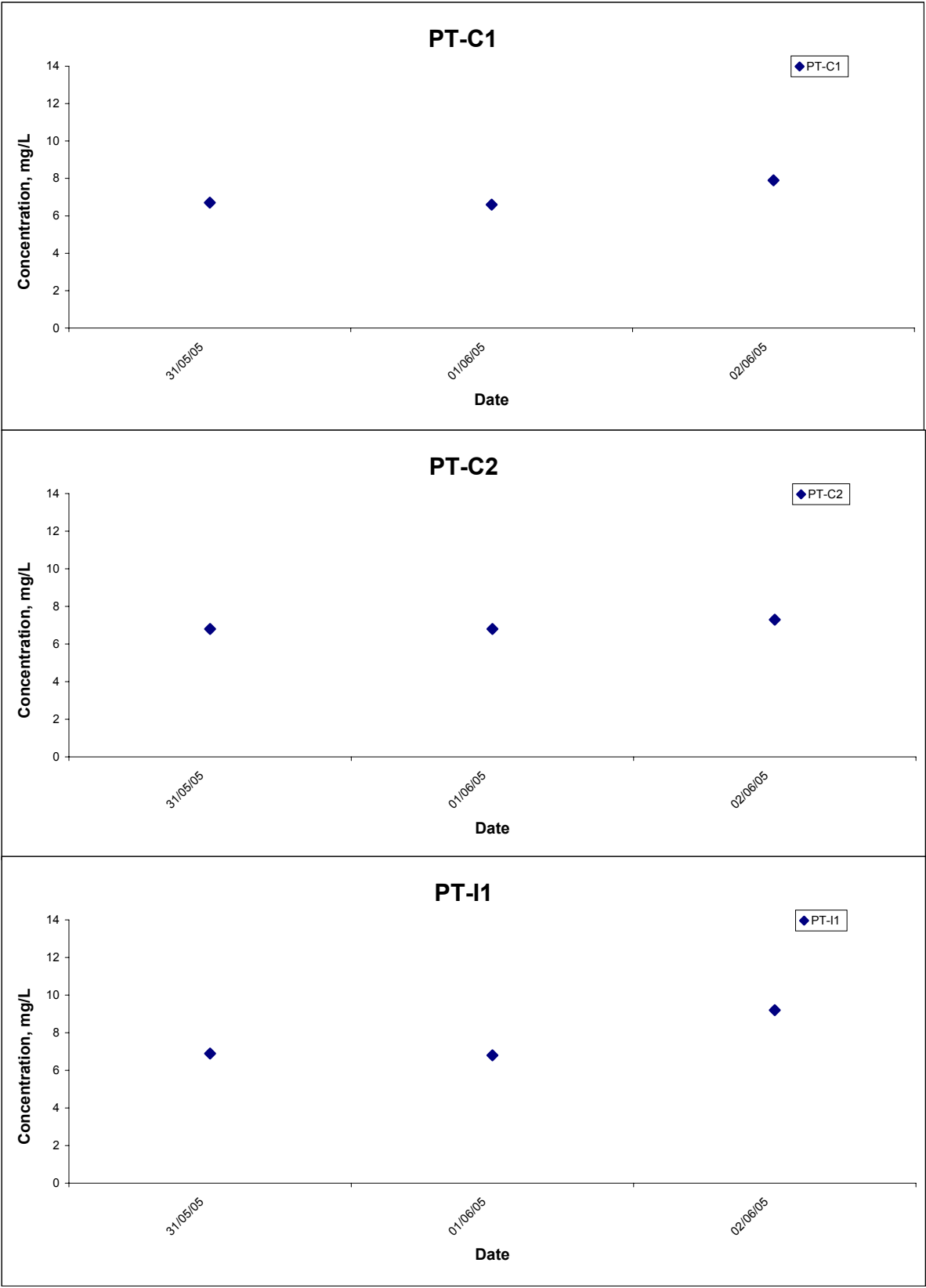
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		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



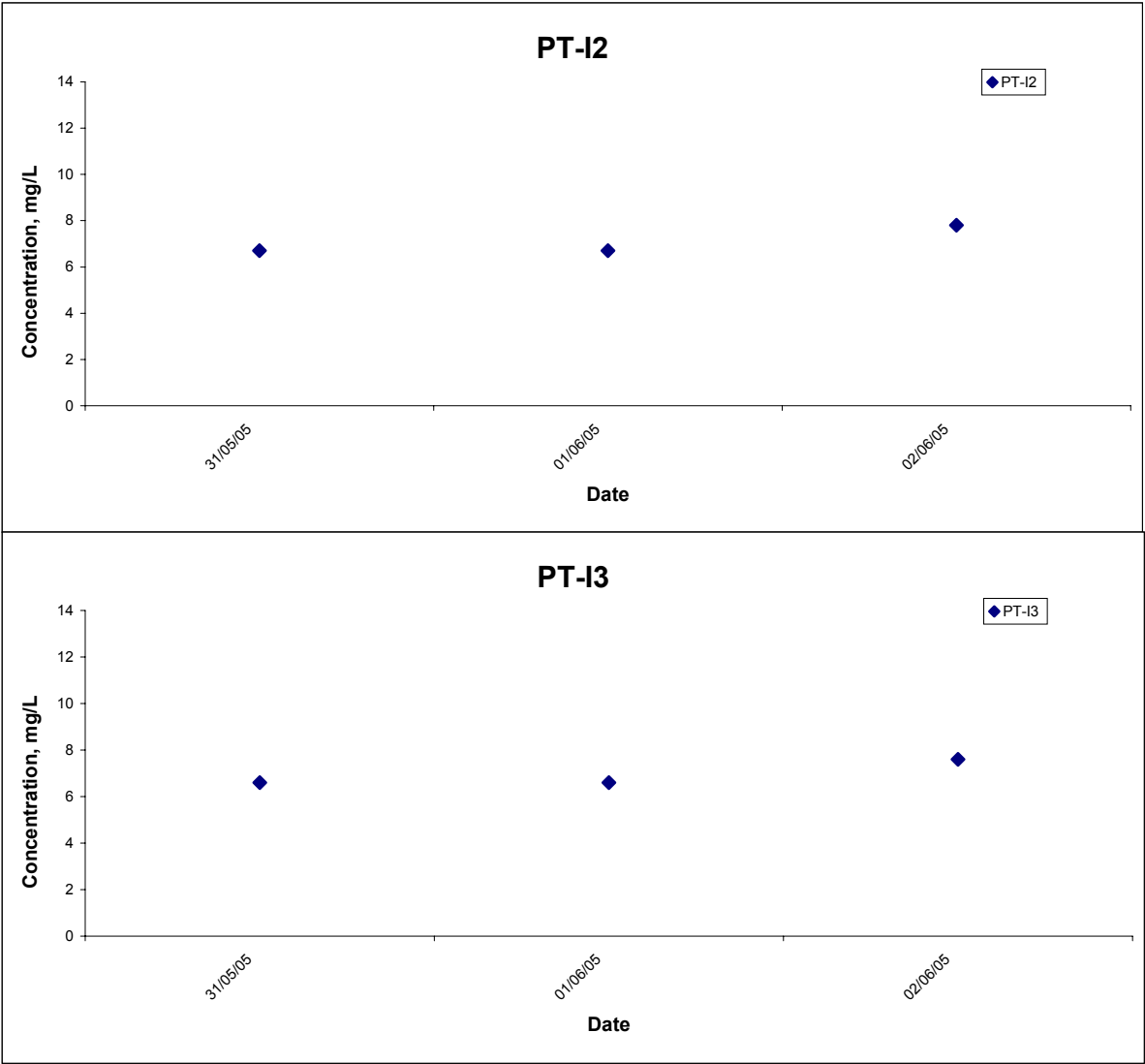
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline Graphical Presentation of Baseline Water Quality Monitoring Results	Scale	N.T.S	Project No.	MA4017	CINOTECH
		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



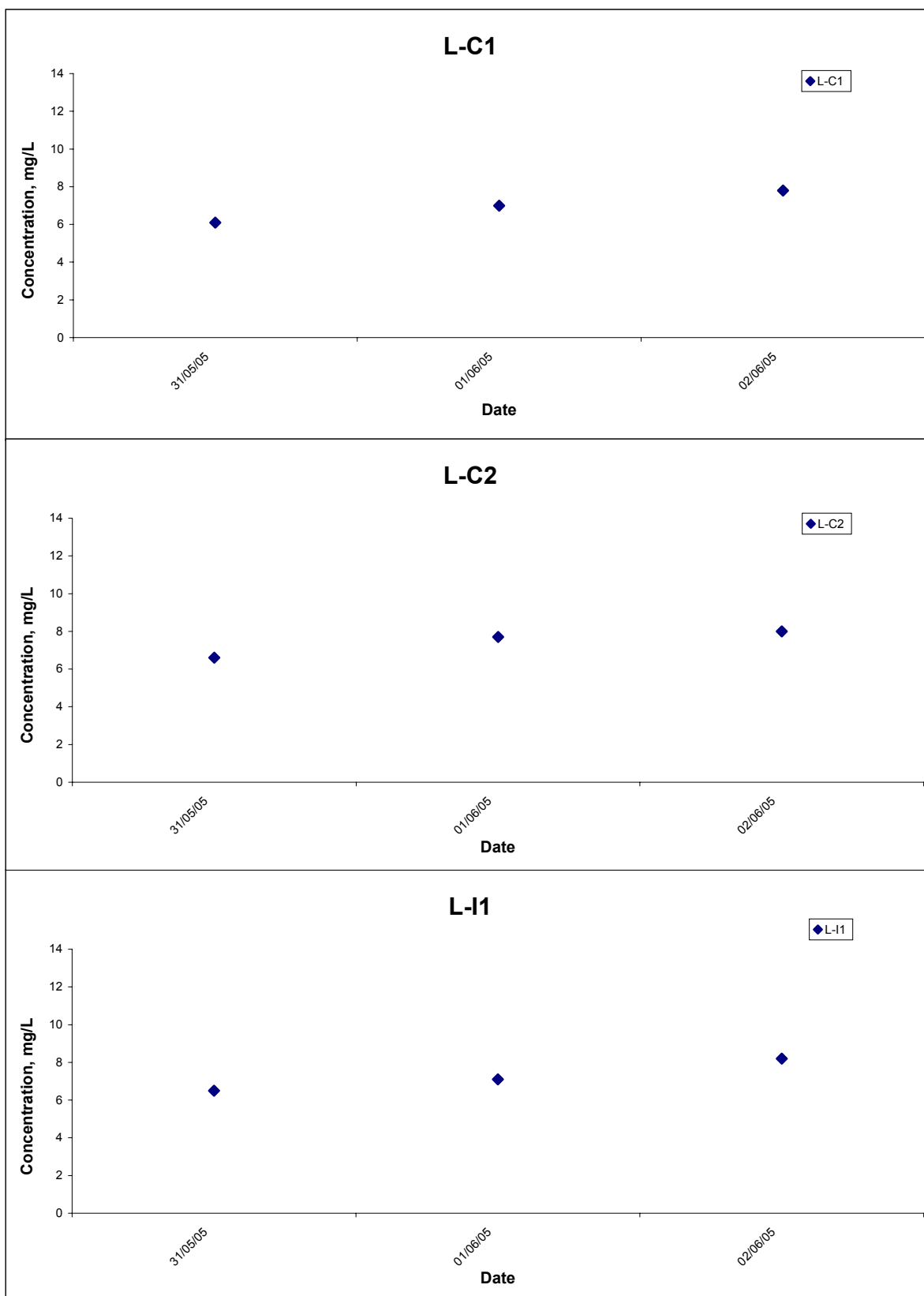
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		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



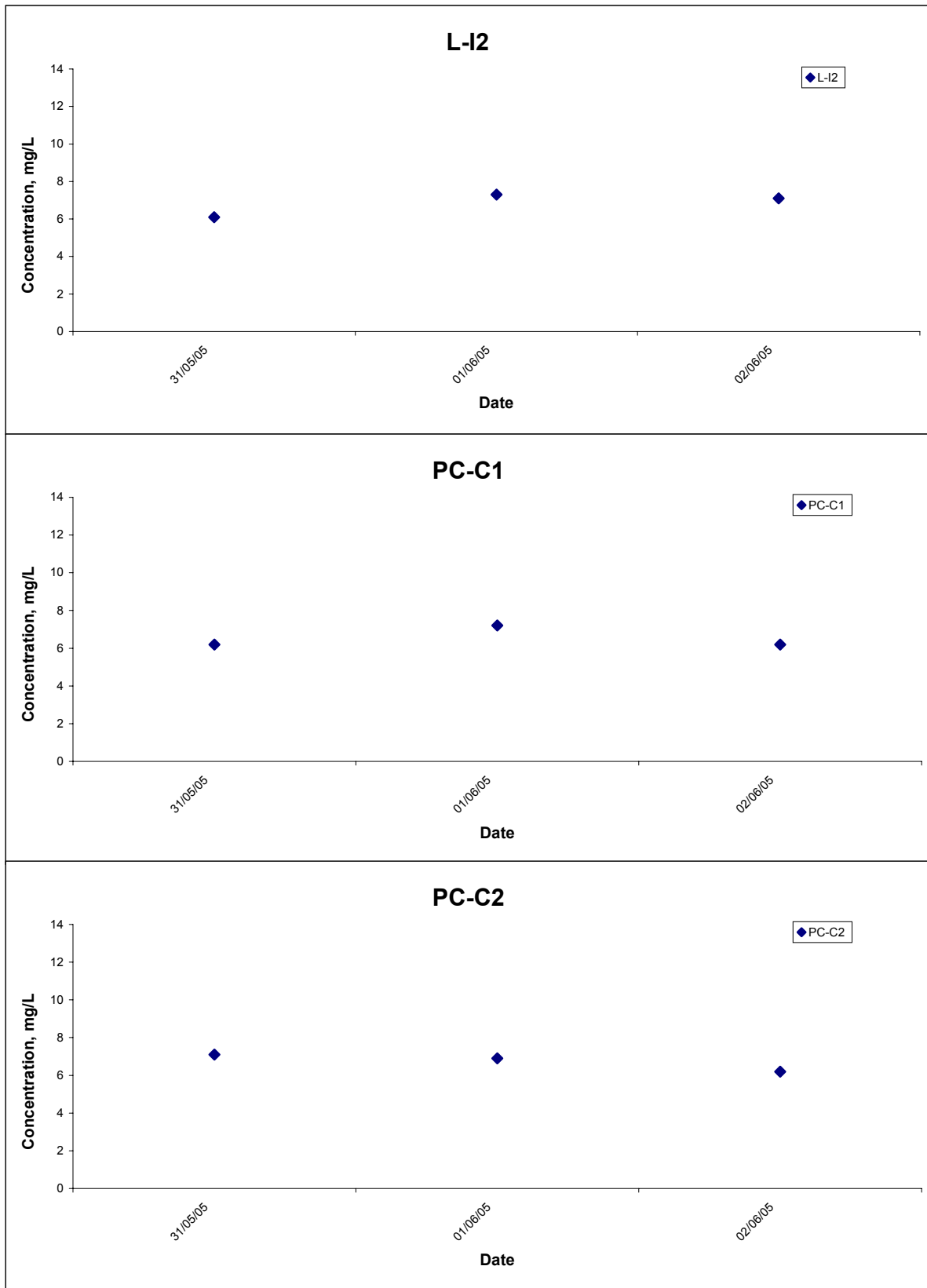
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline	Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results	Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



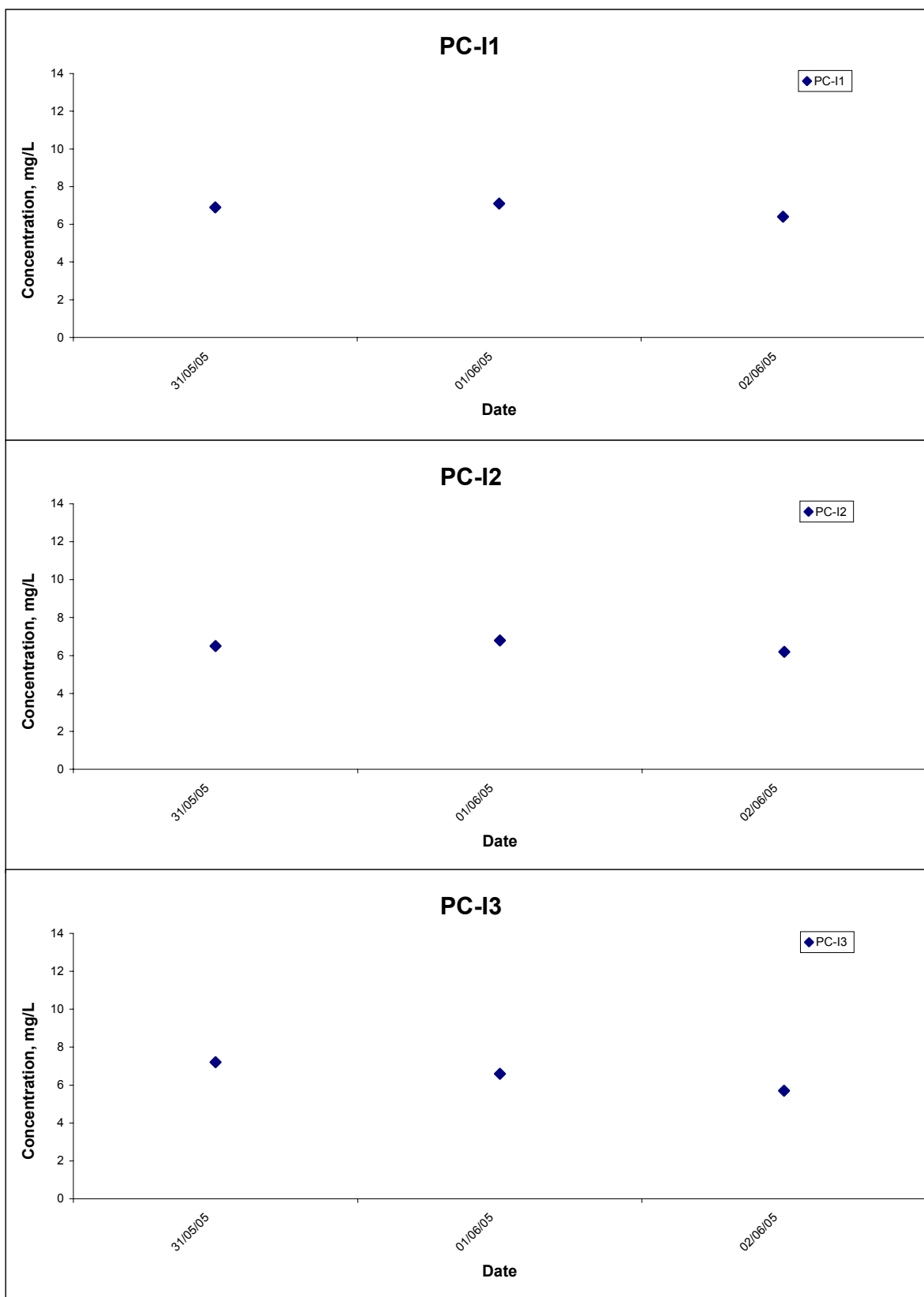
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



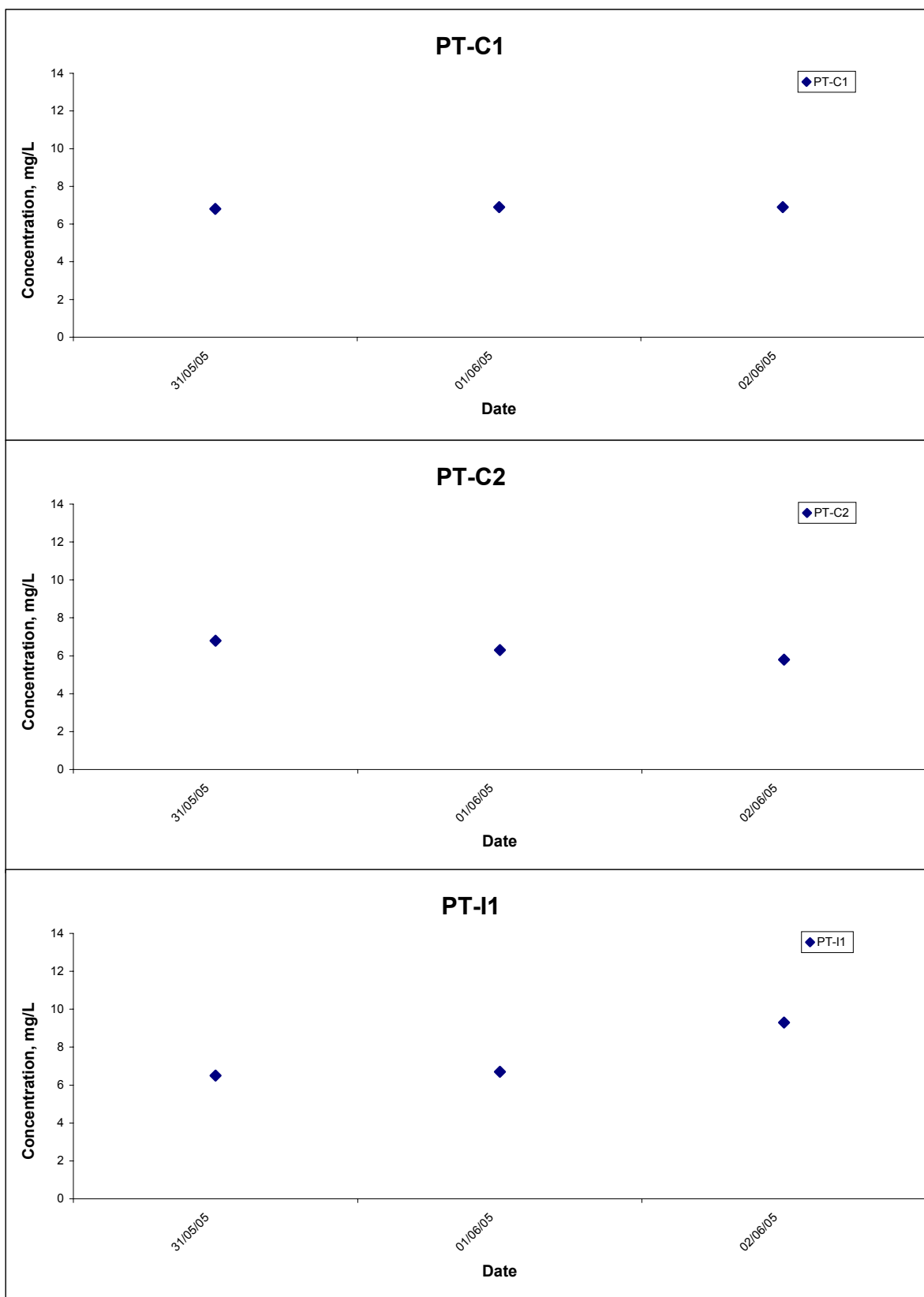
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



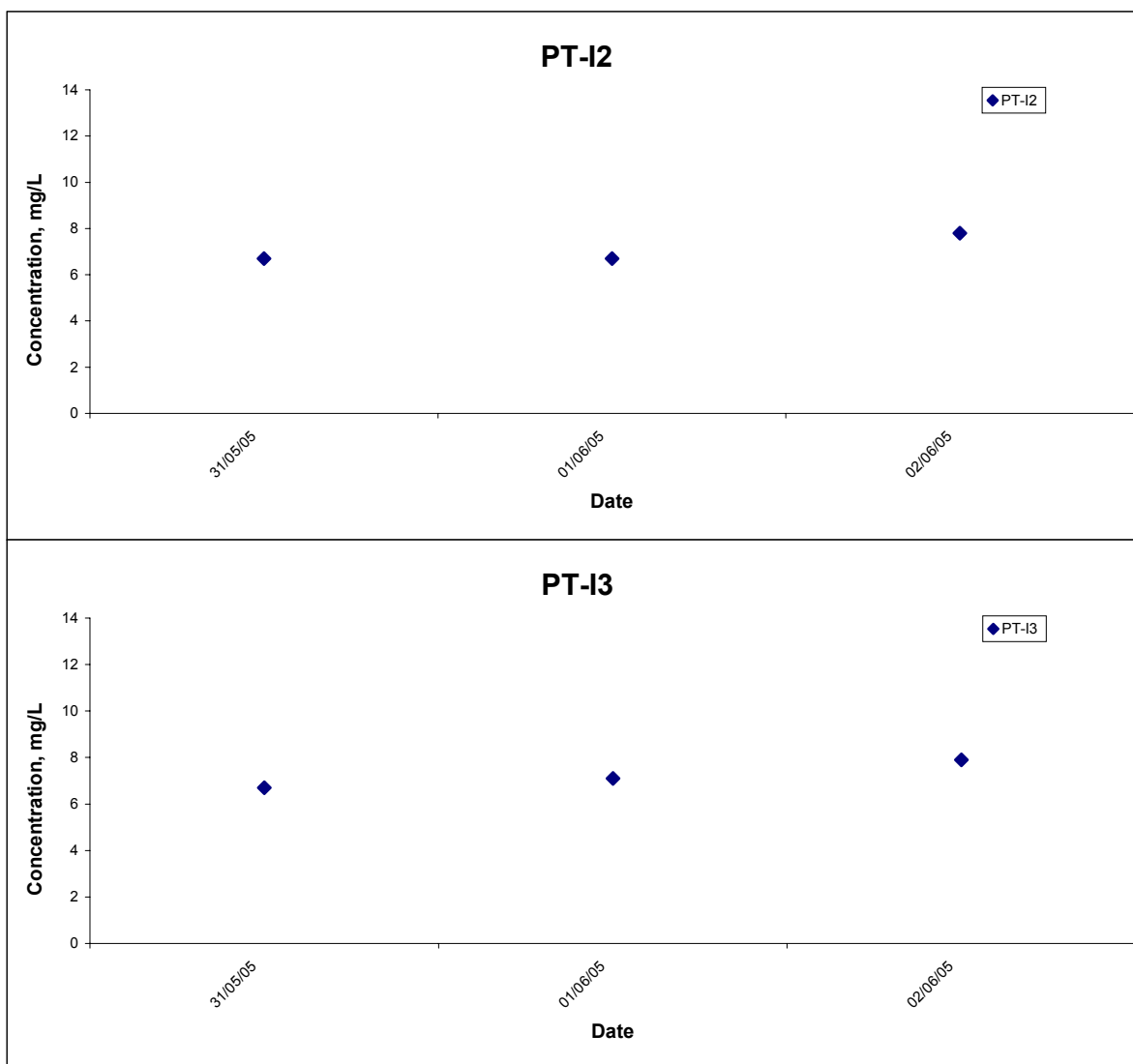
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



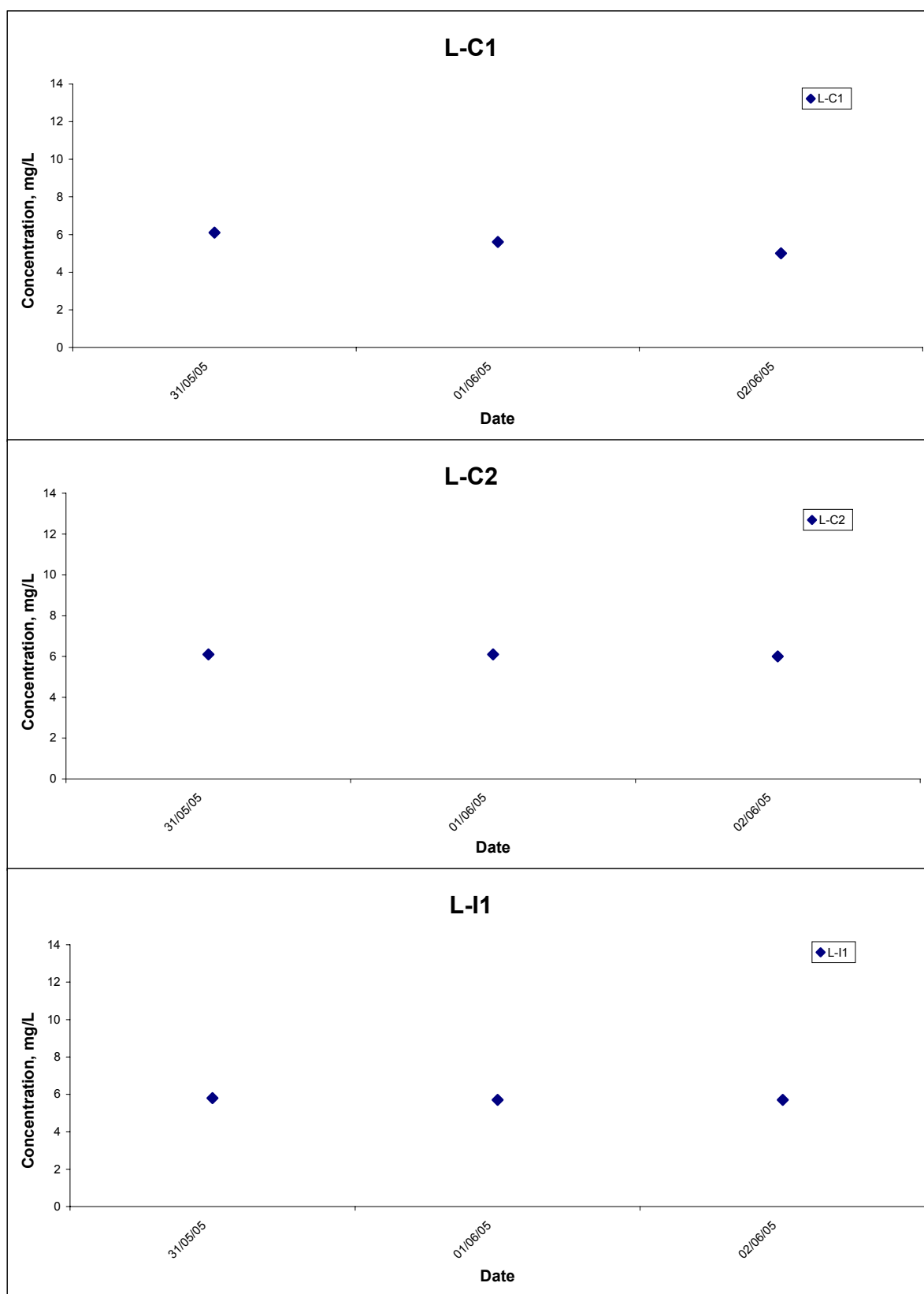
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



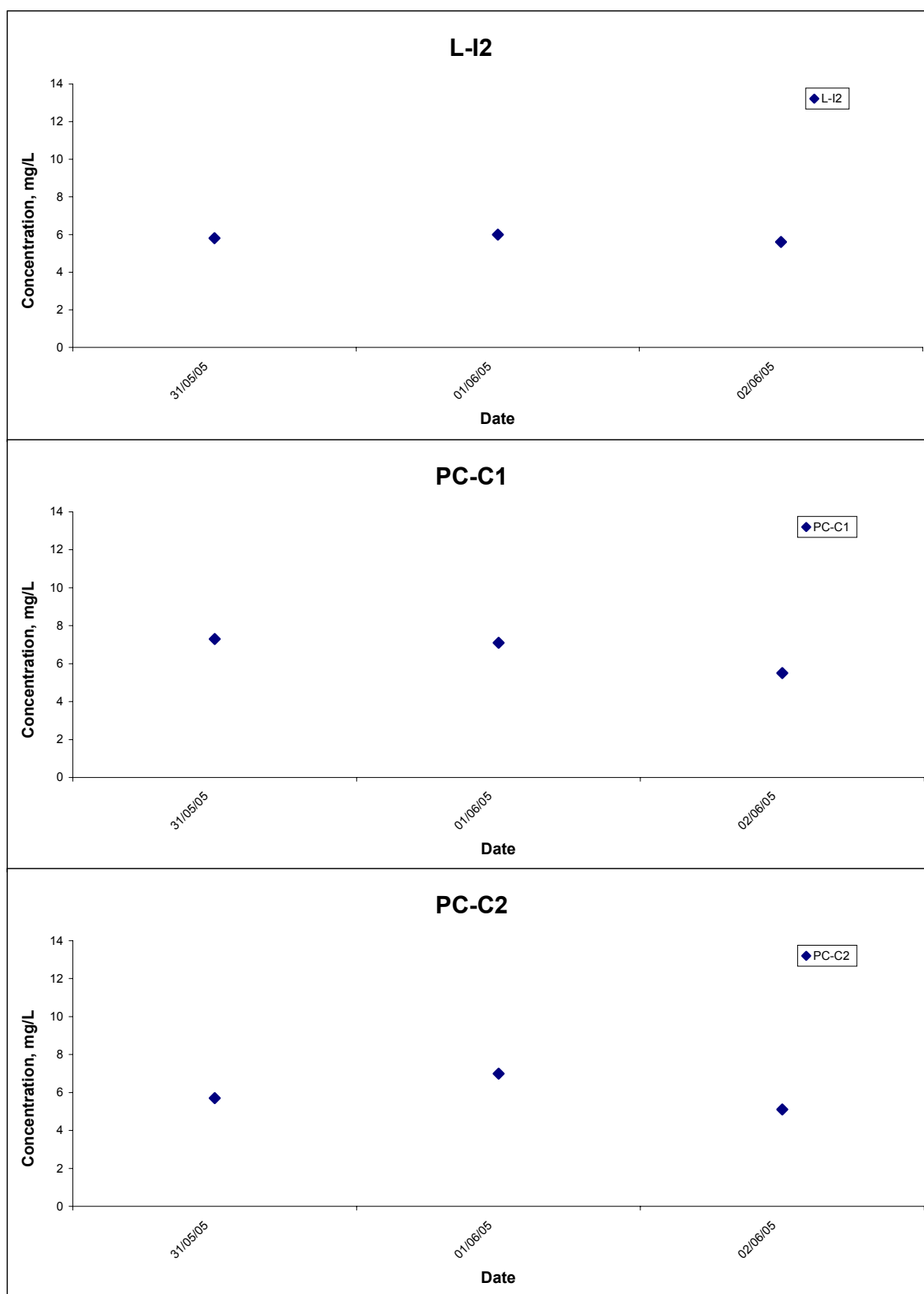
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		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



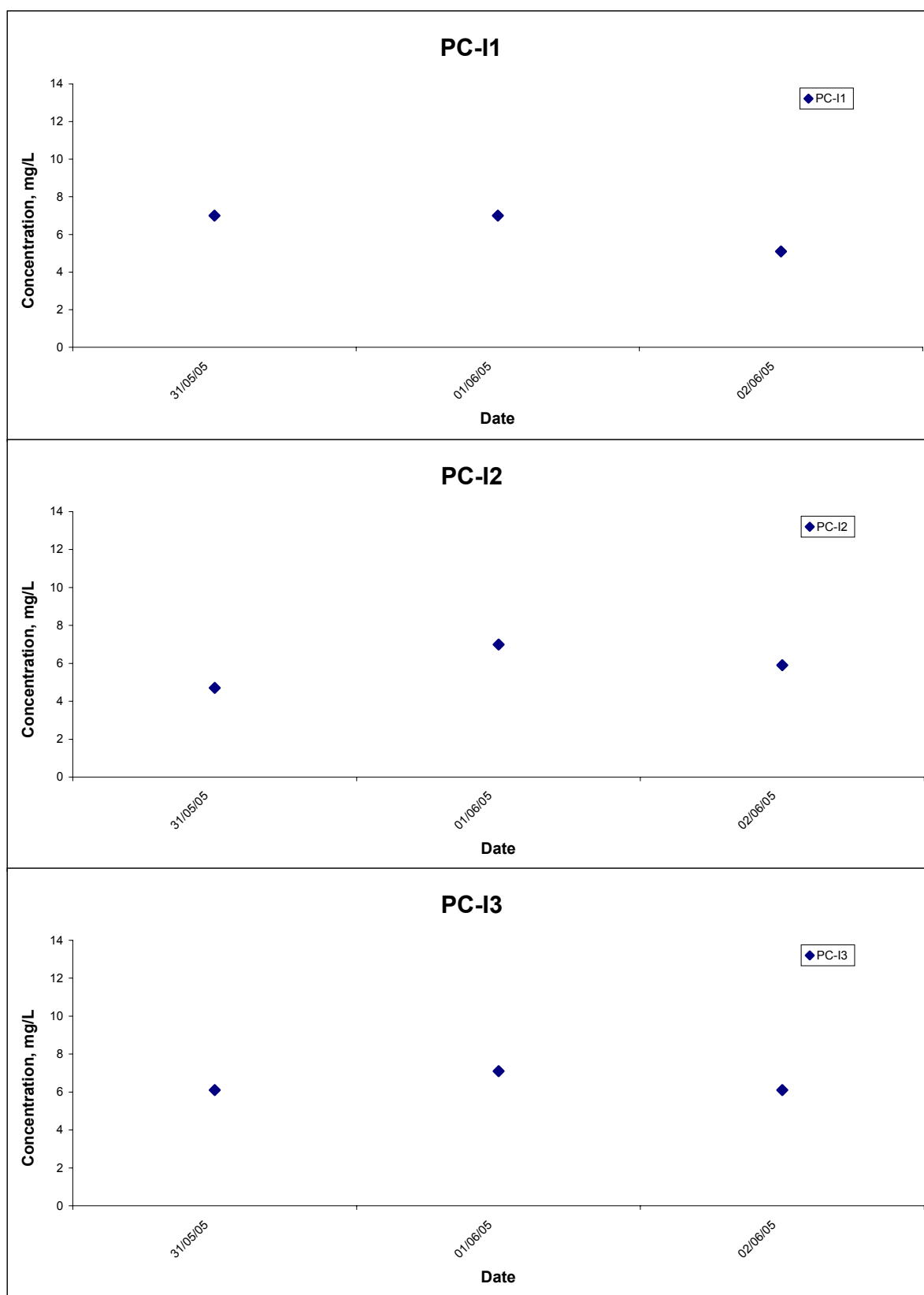
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



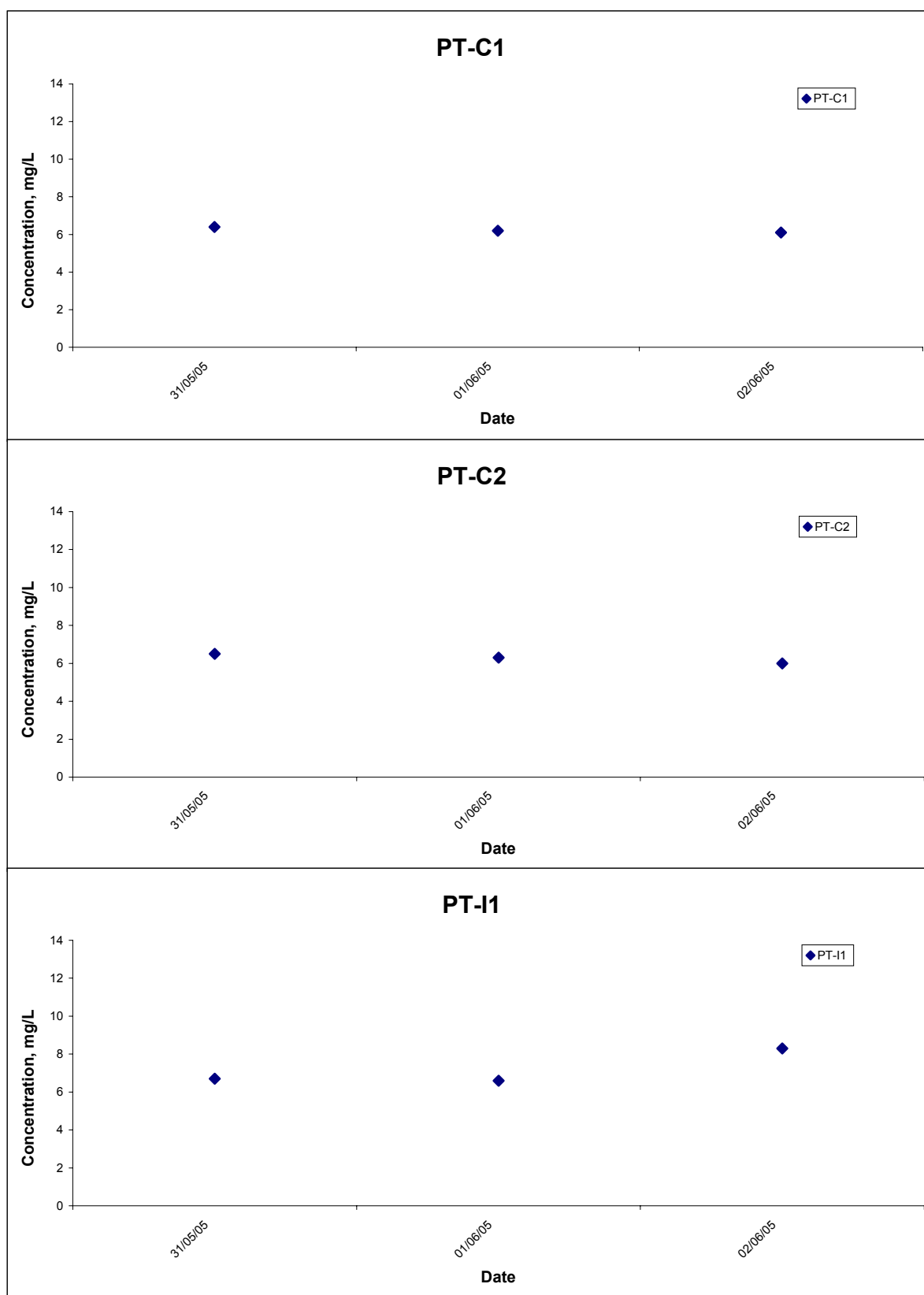
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



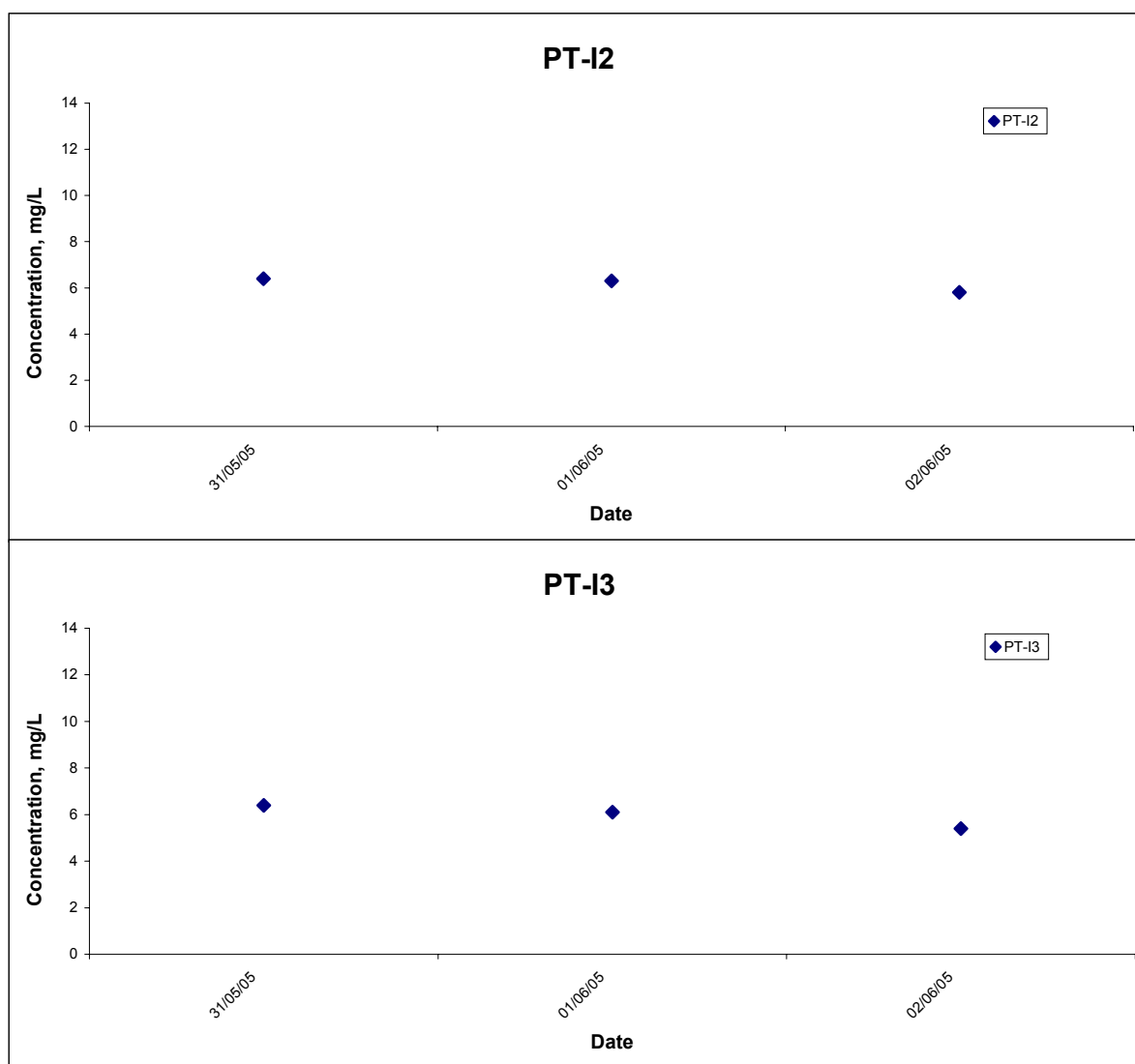
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



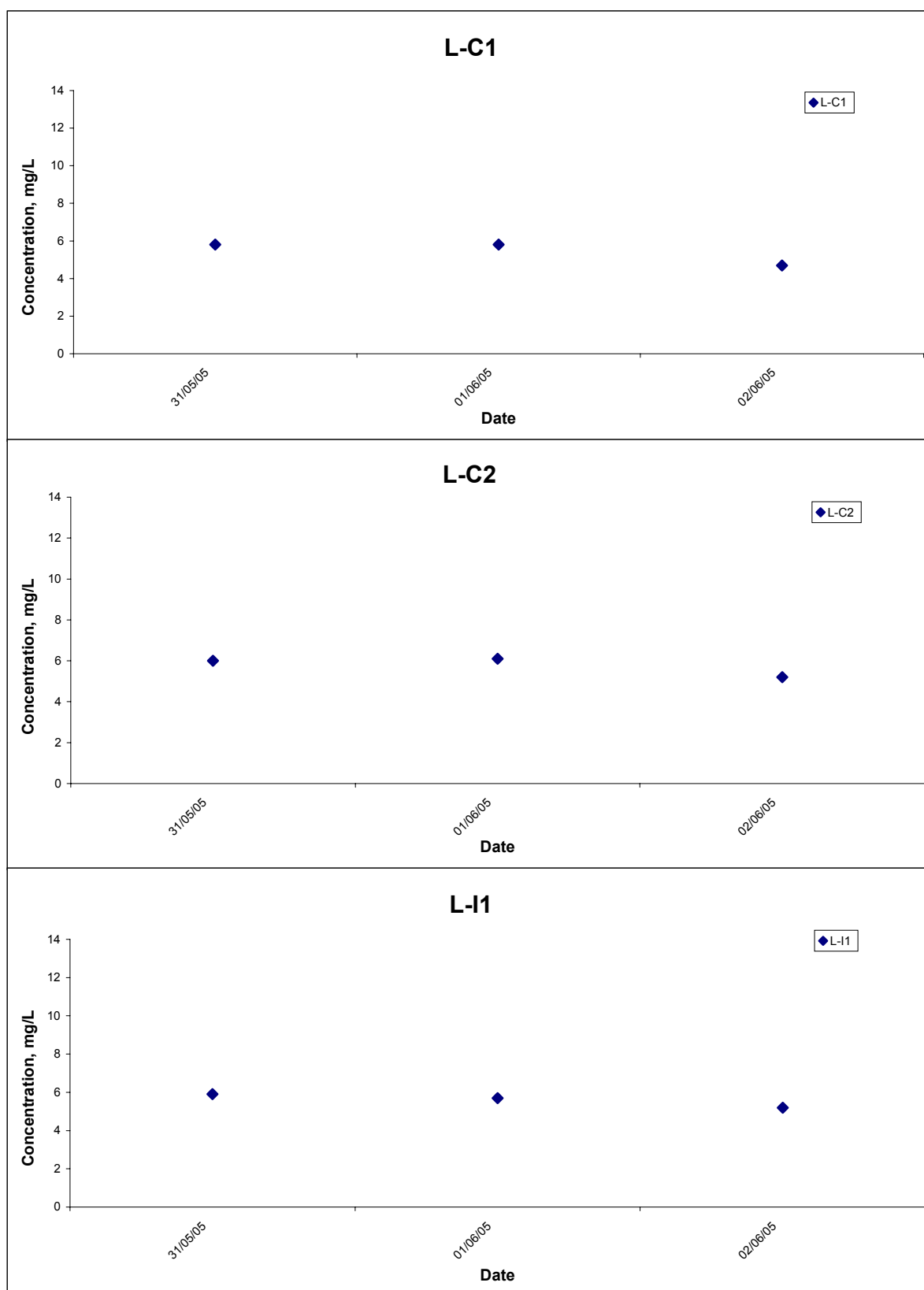
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Ebb Tide



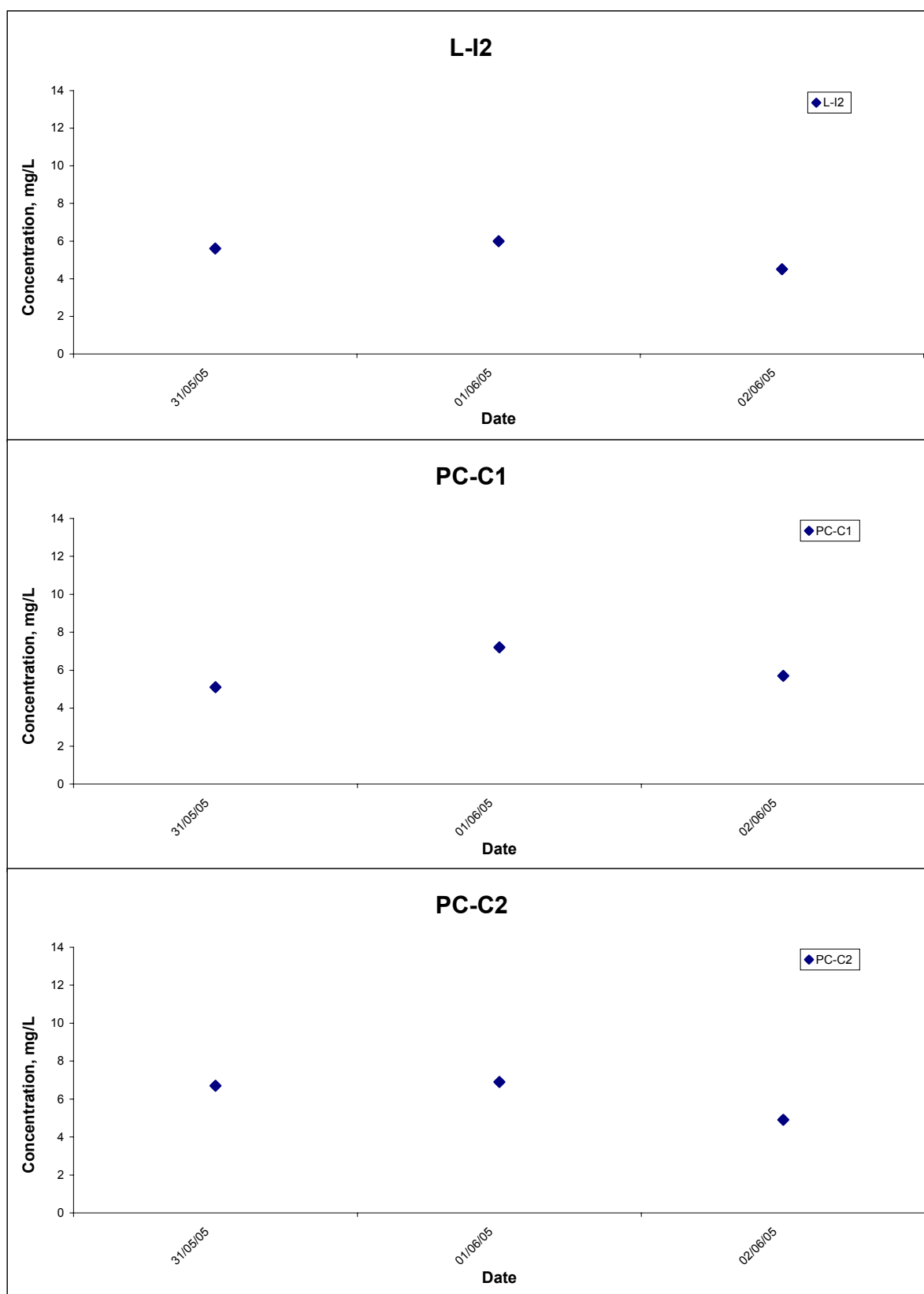
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline Graphical Presentation of Baseline Water Quality Monitoring Results	Scale	N.T.S	Project No.	MA4017	CINOTECH
		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



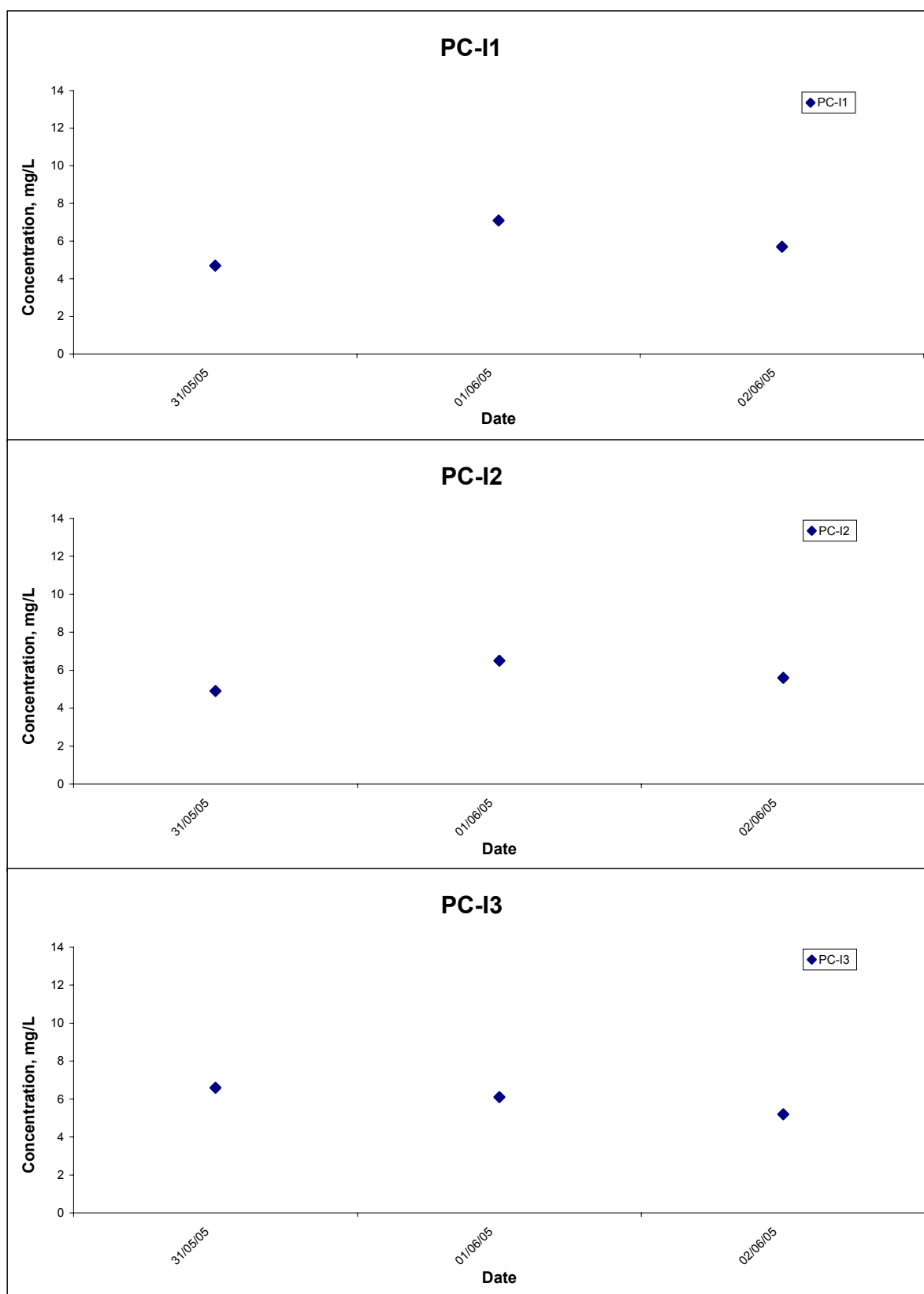
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



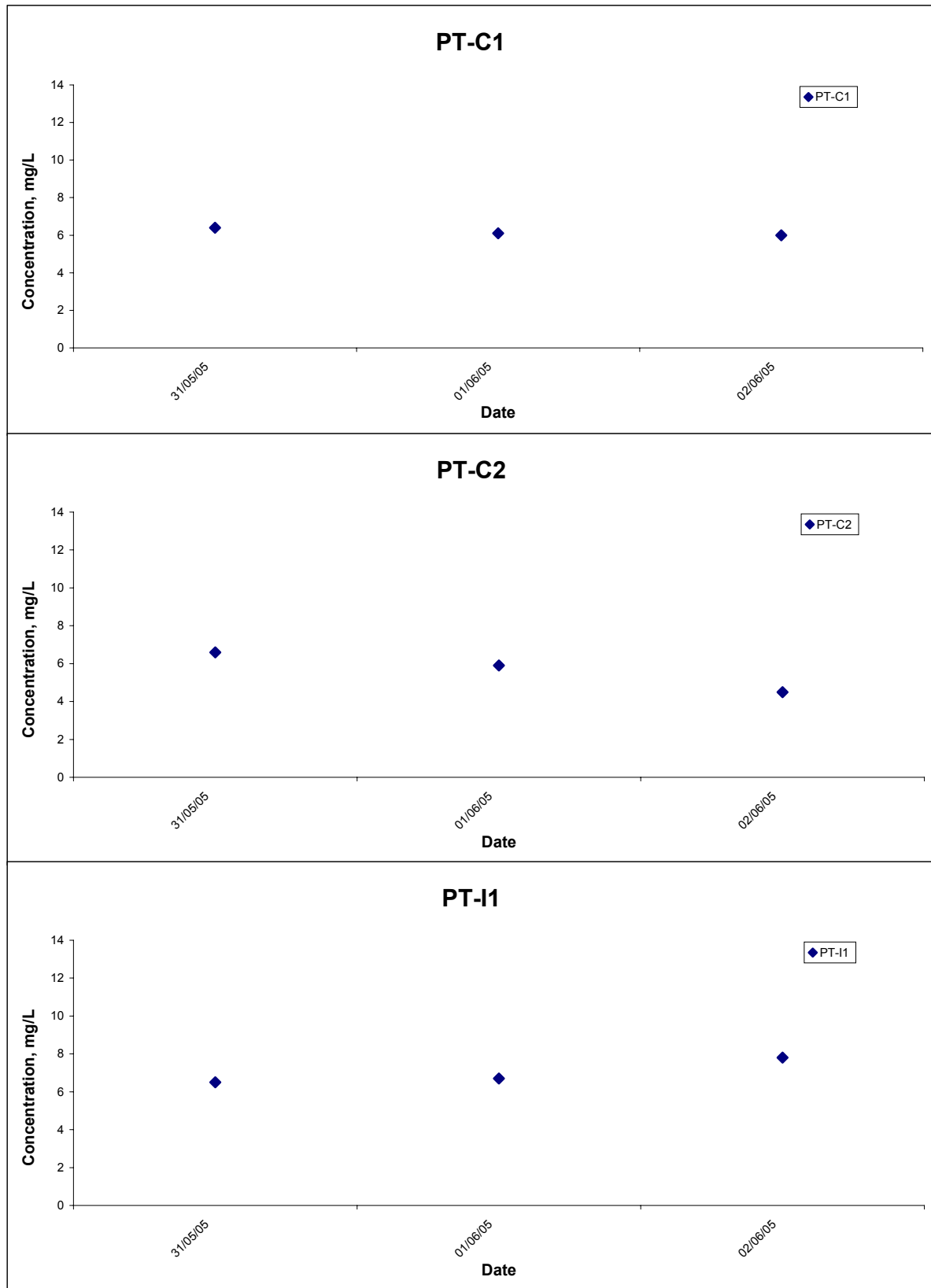
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



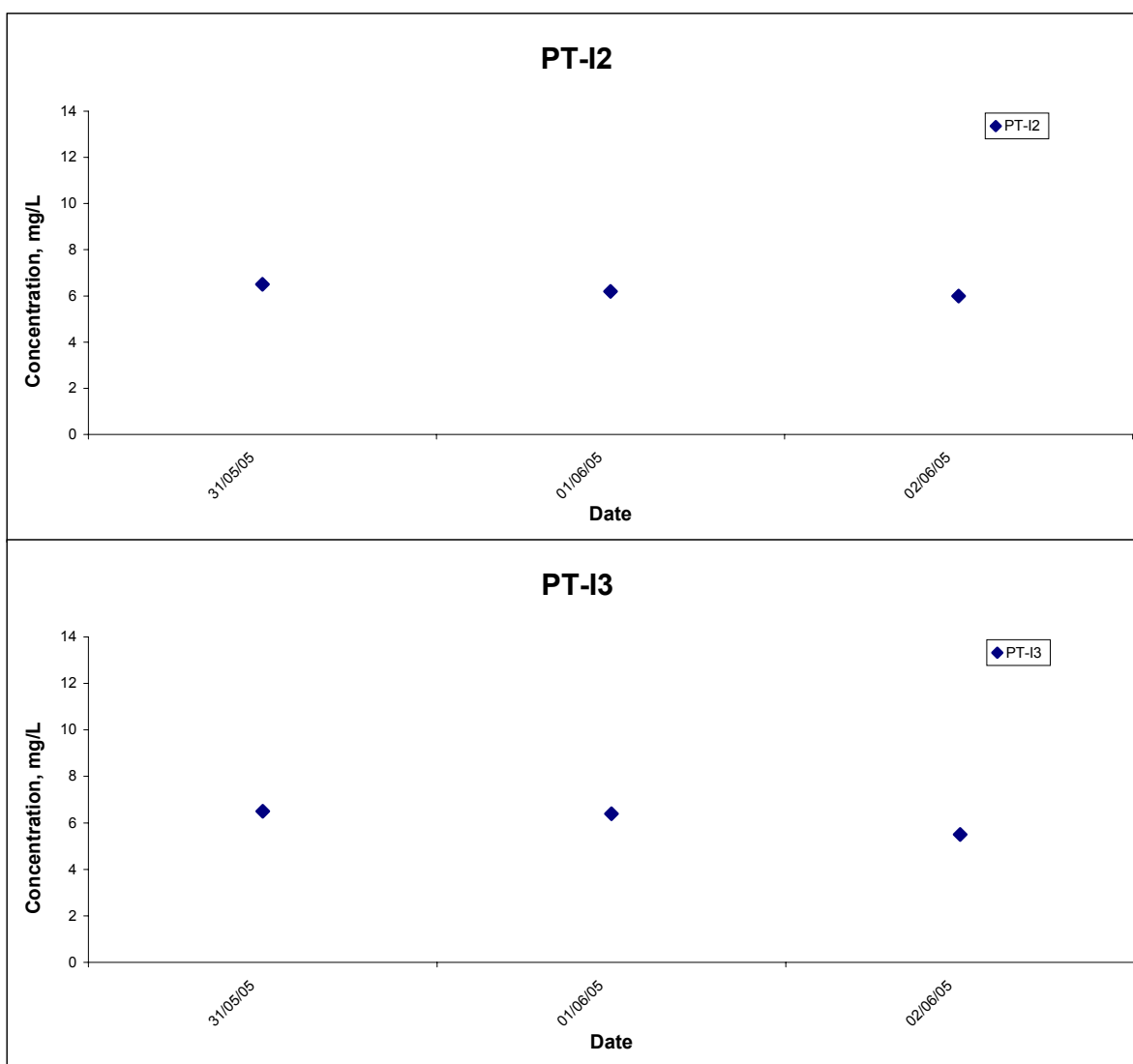
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



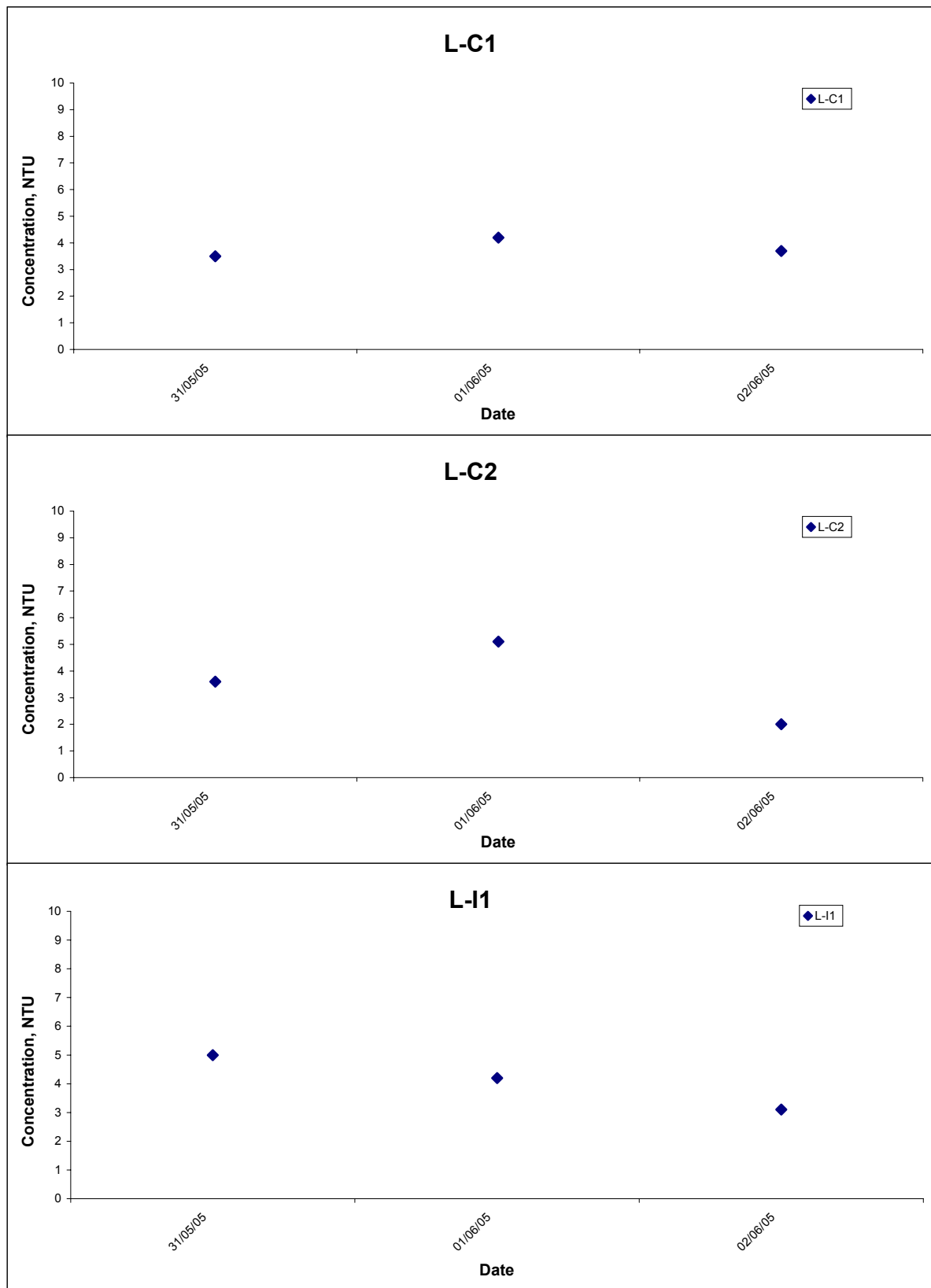
Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline Graphical Presentation of Baseline Water Quality Monitoring Results	Scale	N.T.S	Project No.	MA4017	CINOTECH
		Date	Jun 05	Appendix	B	

Dissolved Oxygen (Bottom) at Mid-Flood Tide



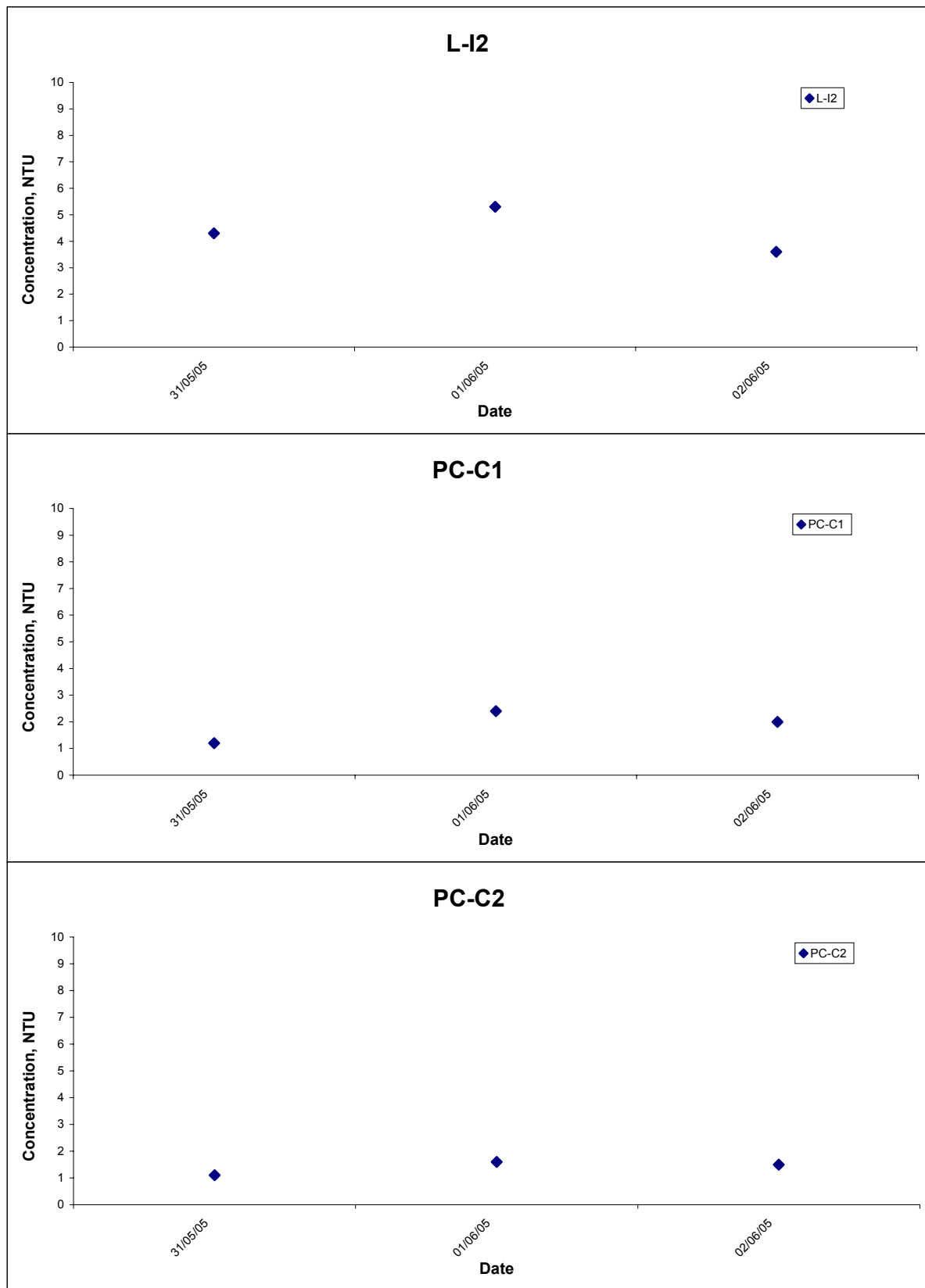
Title Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline Graphical Presentation of Baseline Water Quality Monitoring Results	Scale N.T.S	Project No. MA4017	CINOTECH
	Date Jun 05	Appendix B	

Turbidity at Mid-Ebb Tide



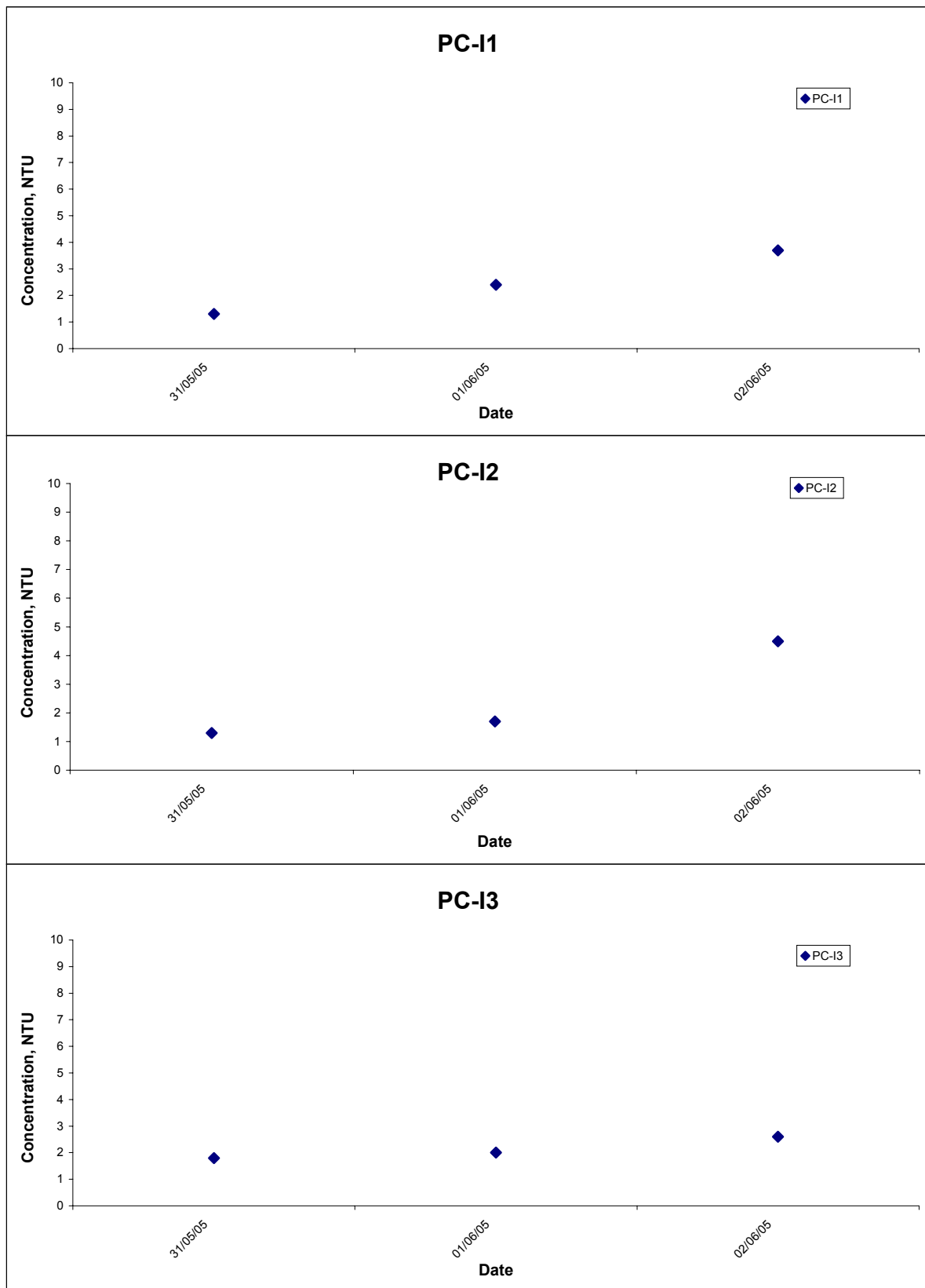
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Turbidity at Mid-Ebb Tide



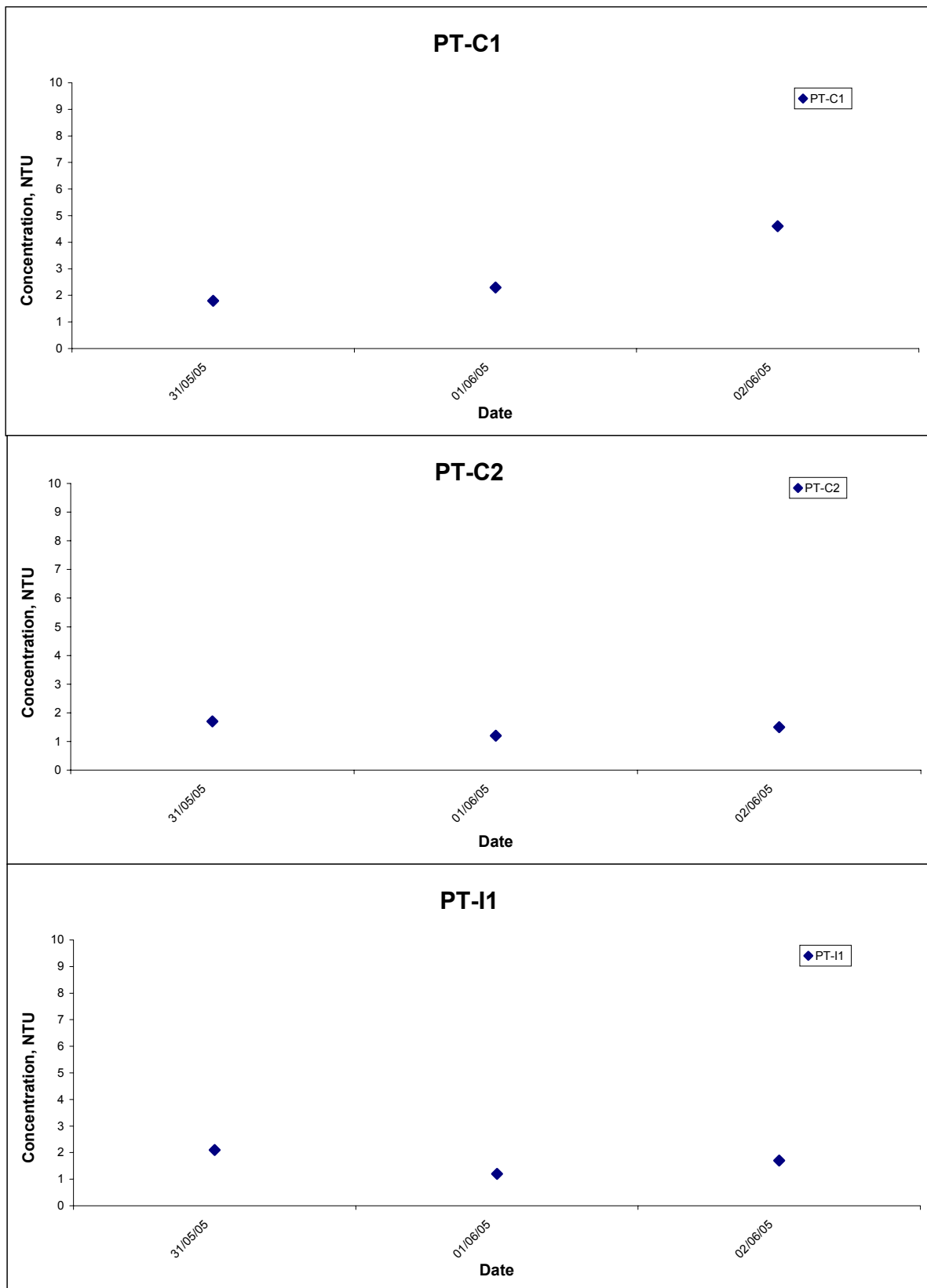
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Turbidity at Mid-Ebb Tide



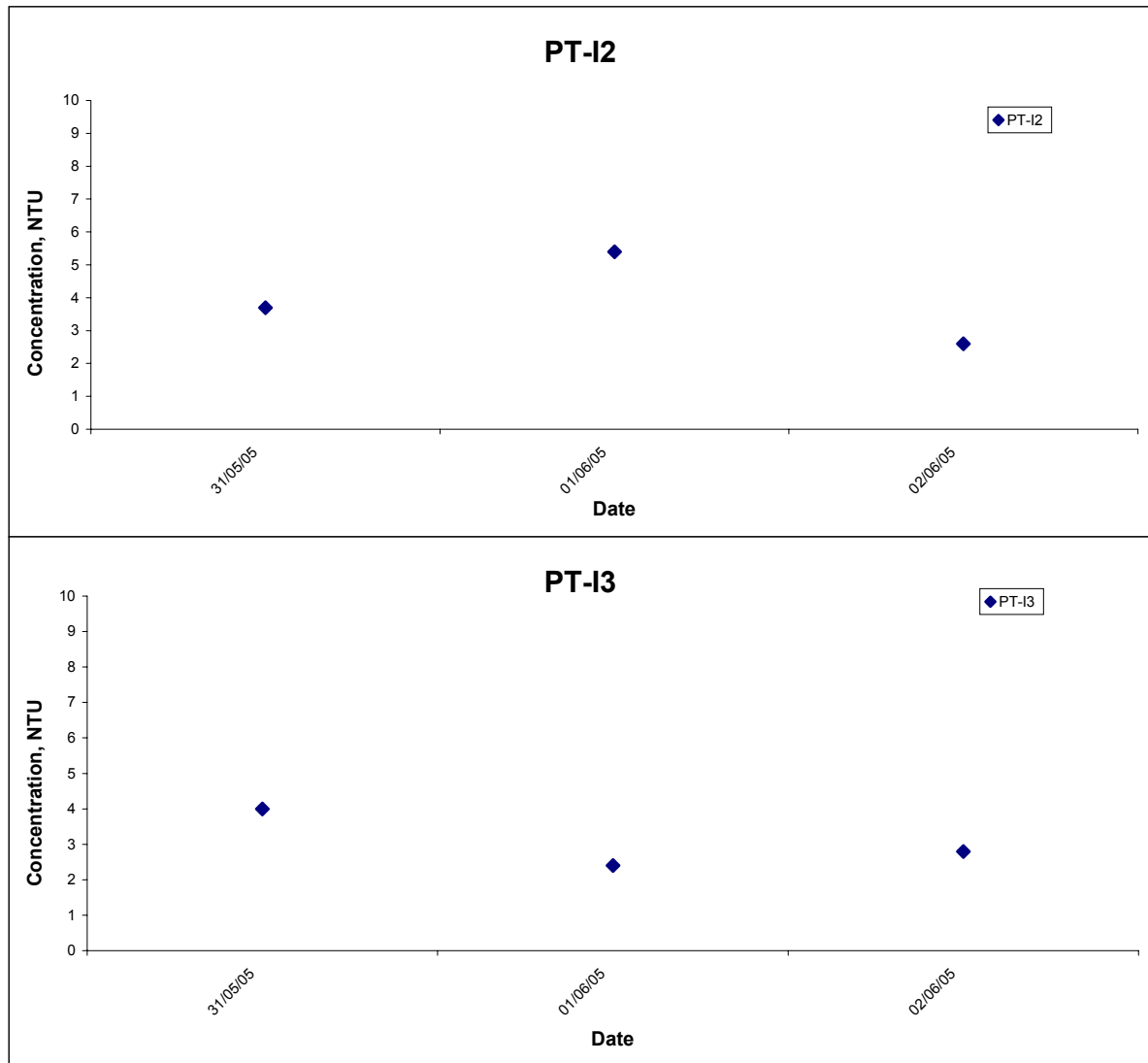
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Turbidity at Mid-Ebb Tide



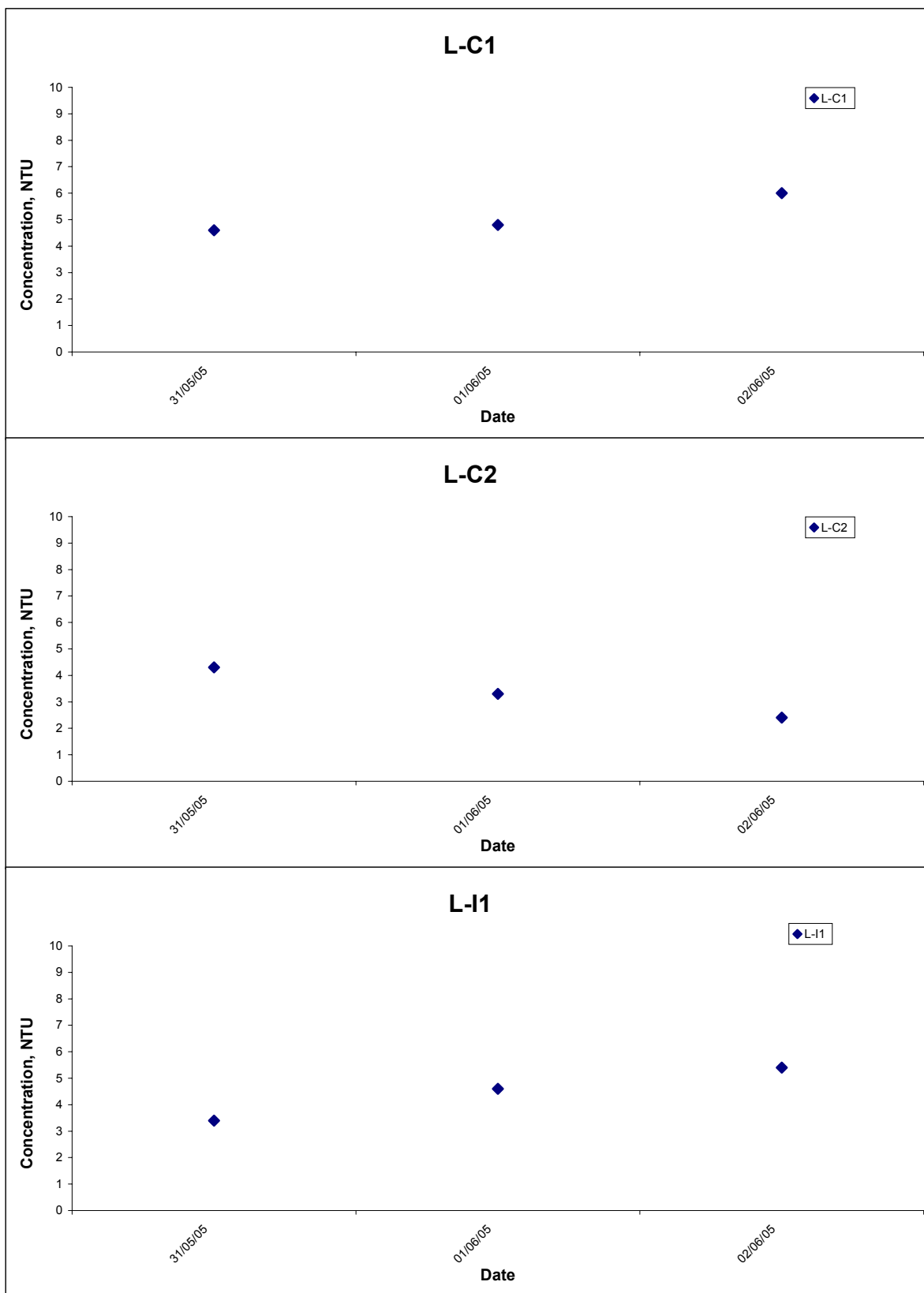
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Turbidity at Mid-Ebb Tide



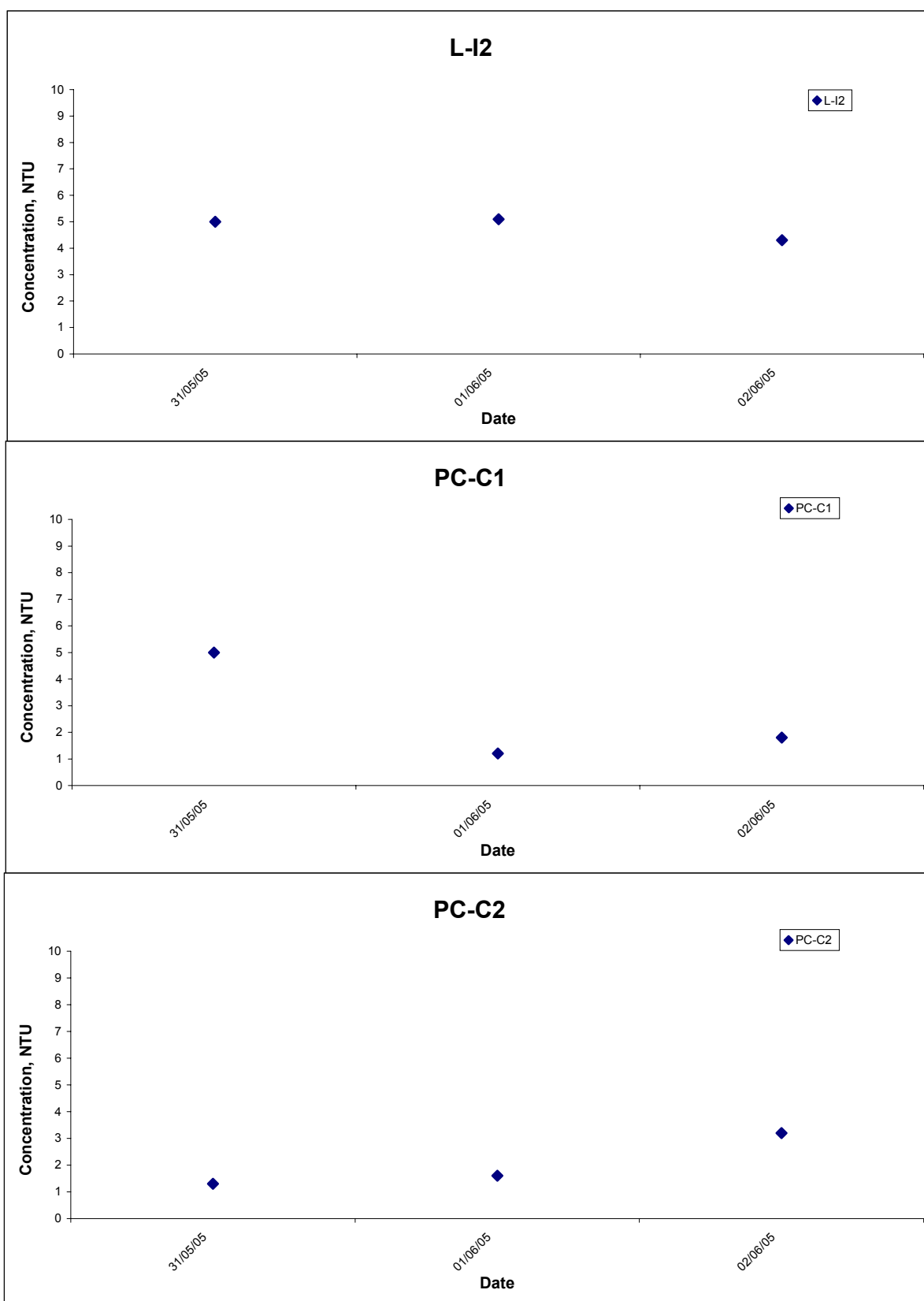
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	Date Jun 05	Appendix B	

Turbidity at Mid-Flood Tide



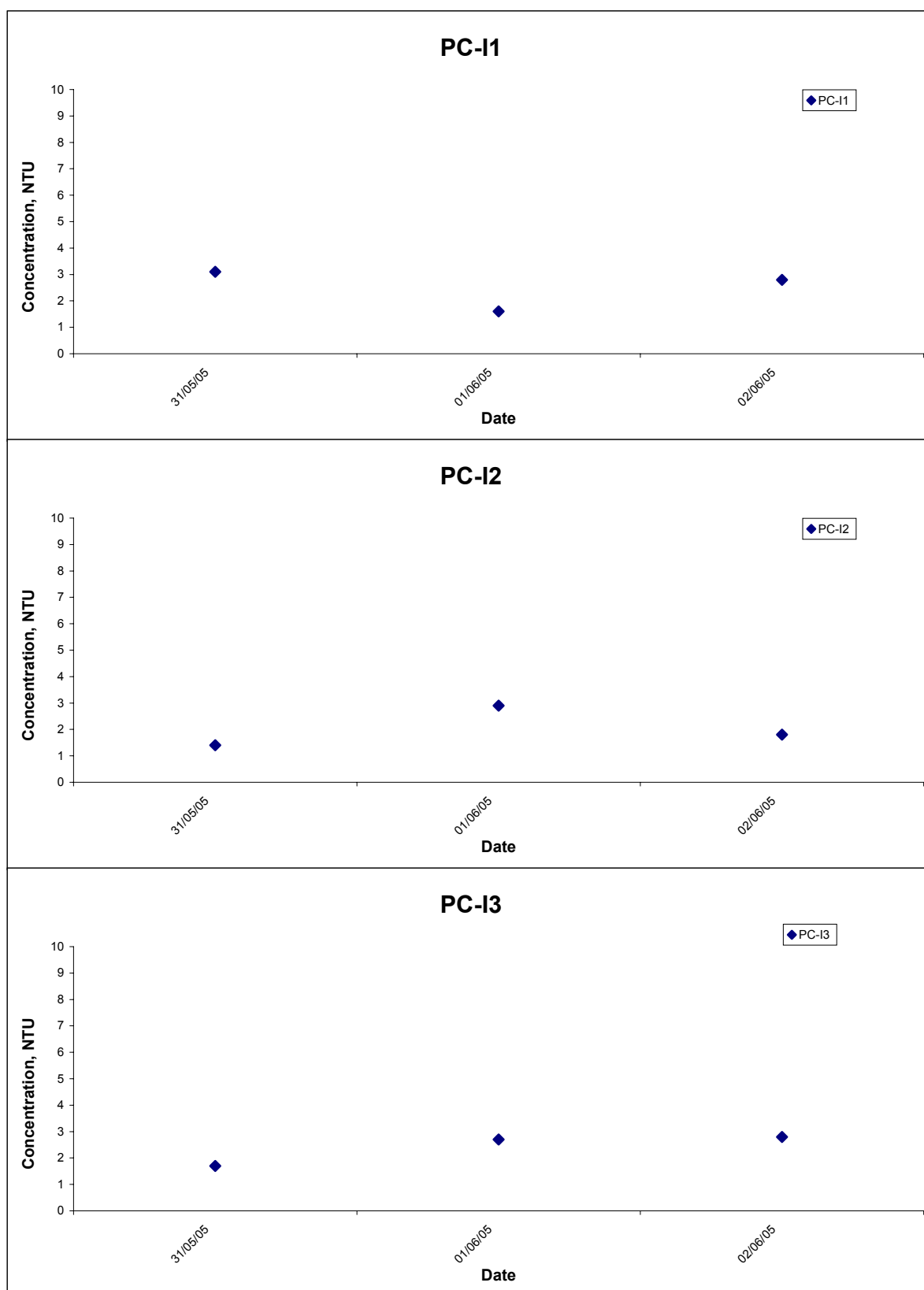
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Turbidity at Mid-Flood Tide



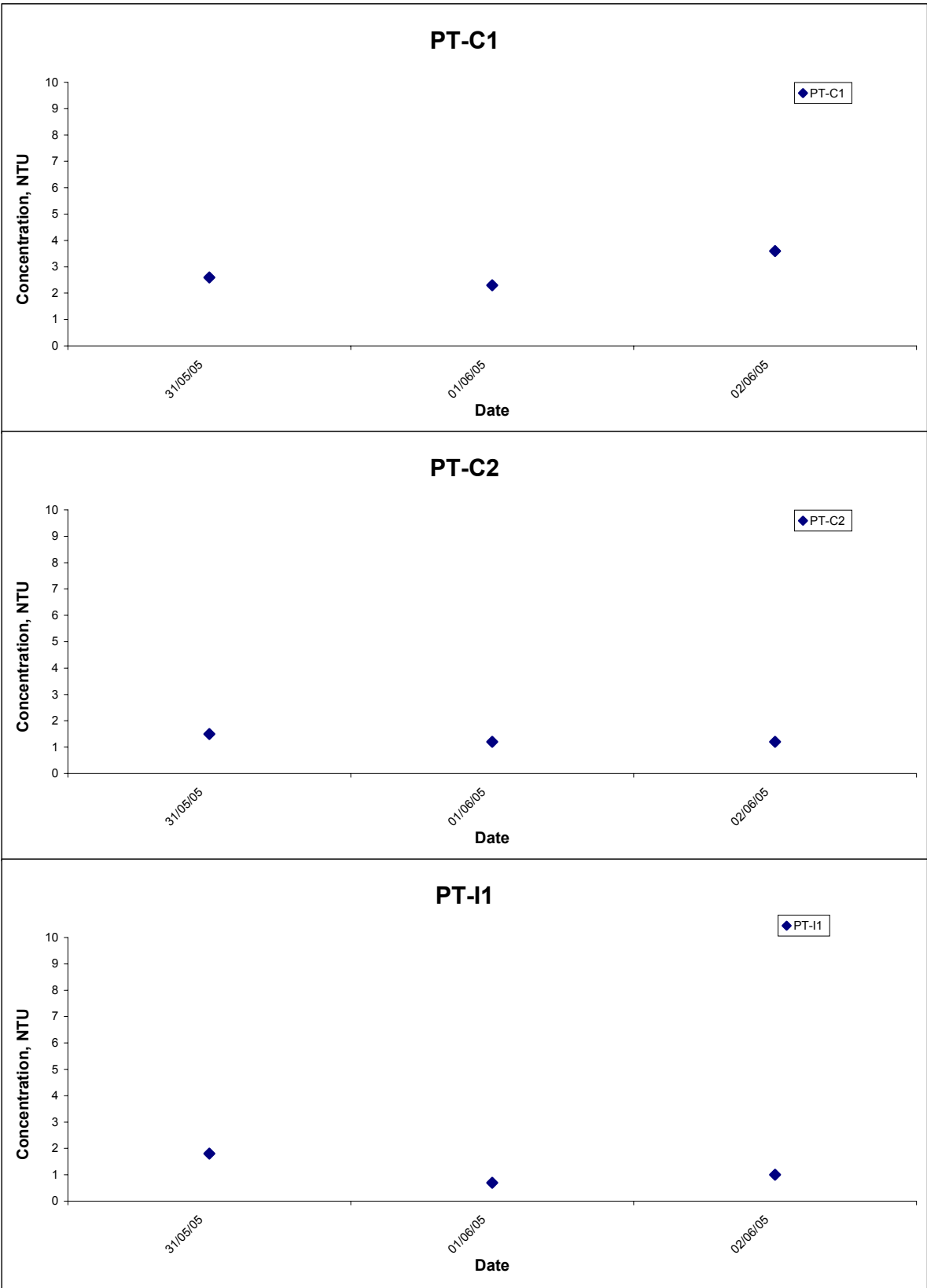
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	Date Jun 05	Appendix B	

Turbidity at Mid-Flood Tide



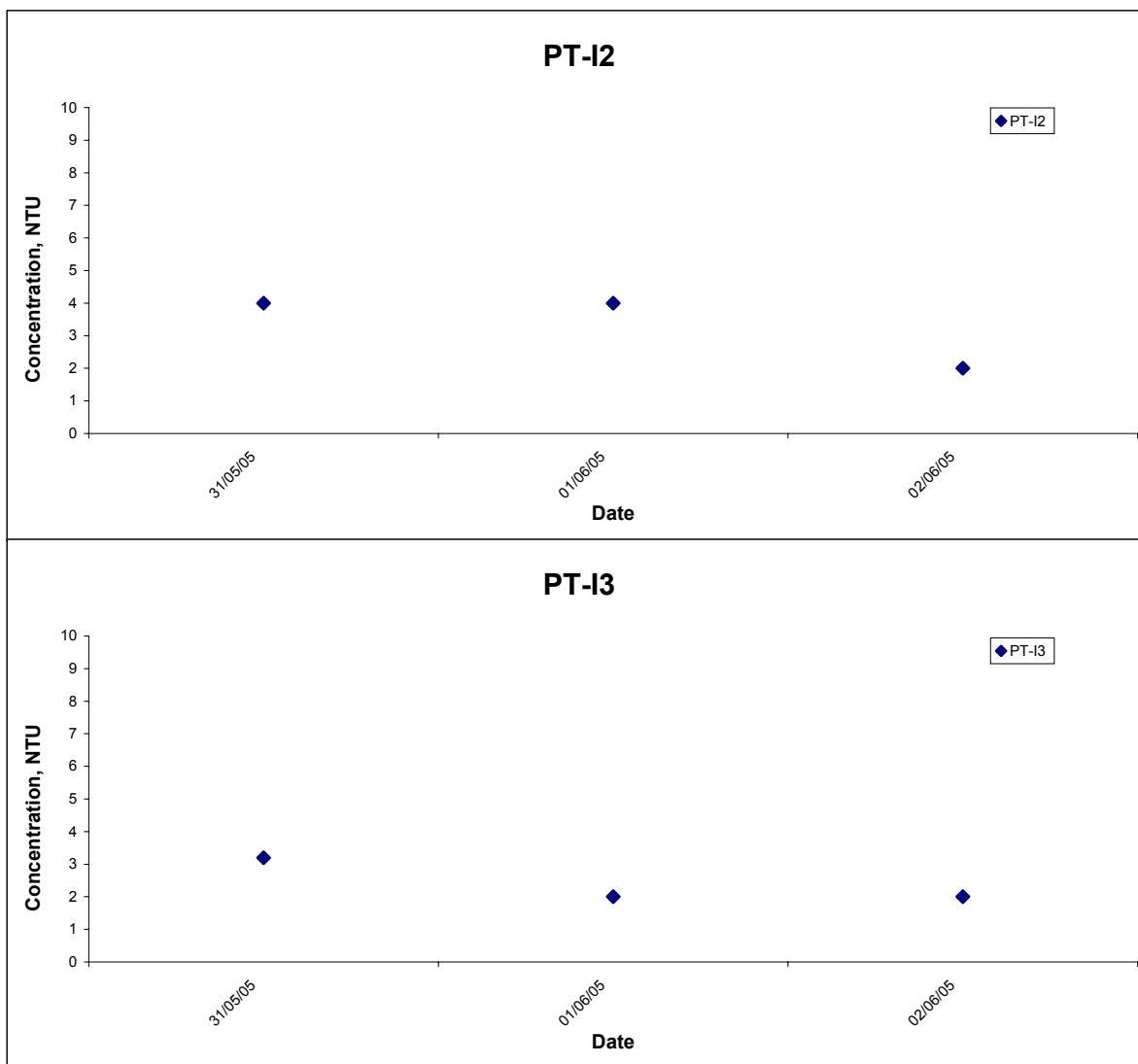
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		Date	Jun 05	Appendix	B	

Turbidity at Mid-Flood Tide



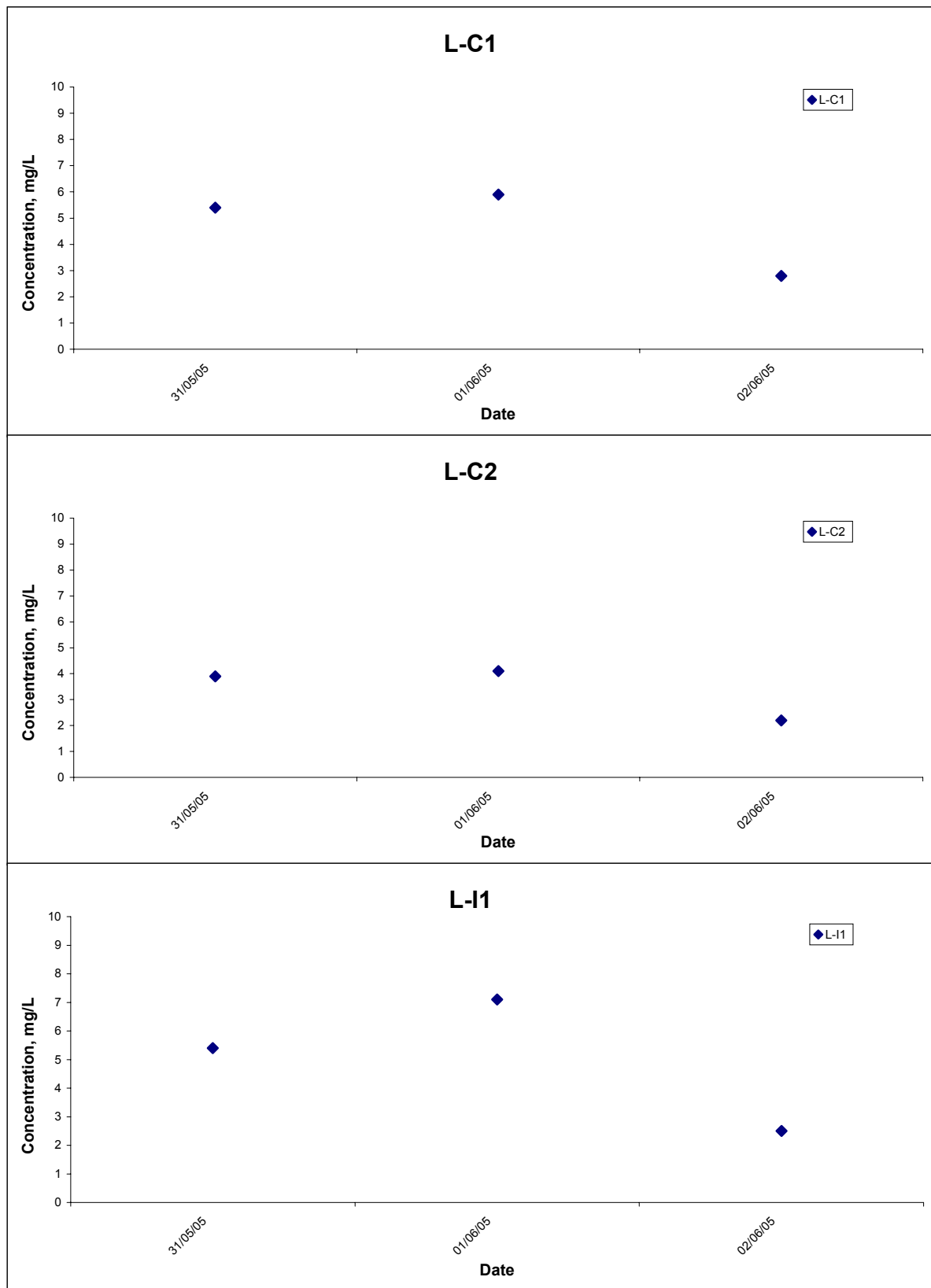
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		Date	Jun 05	Appendix	B	

Turbidity at Mid-Flood Tide



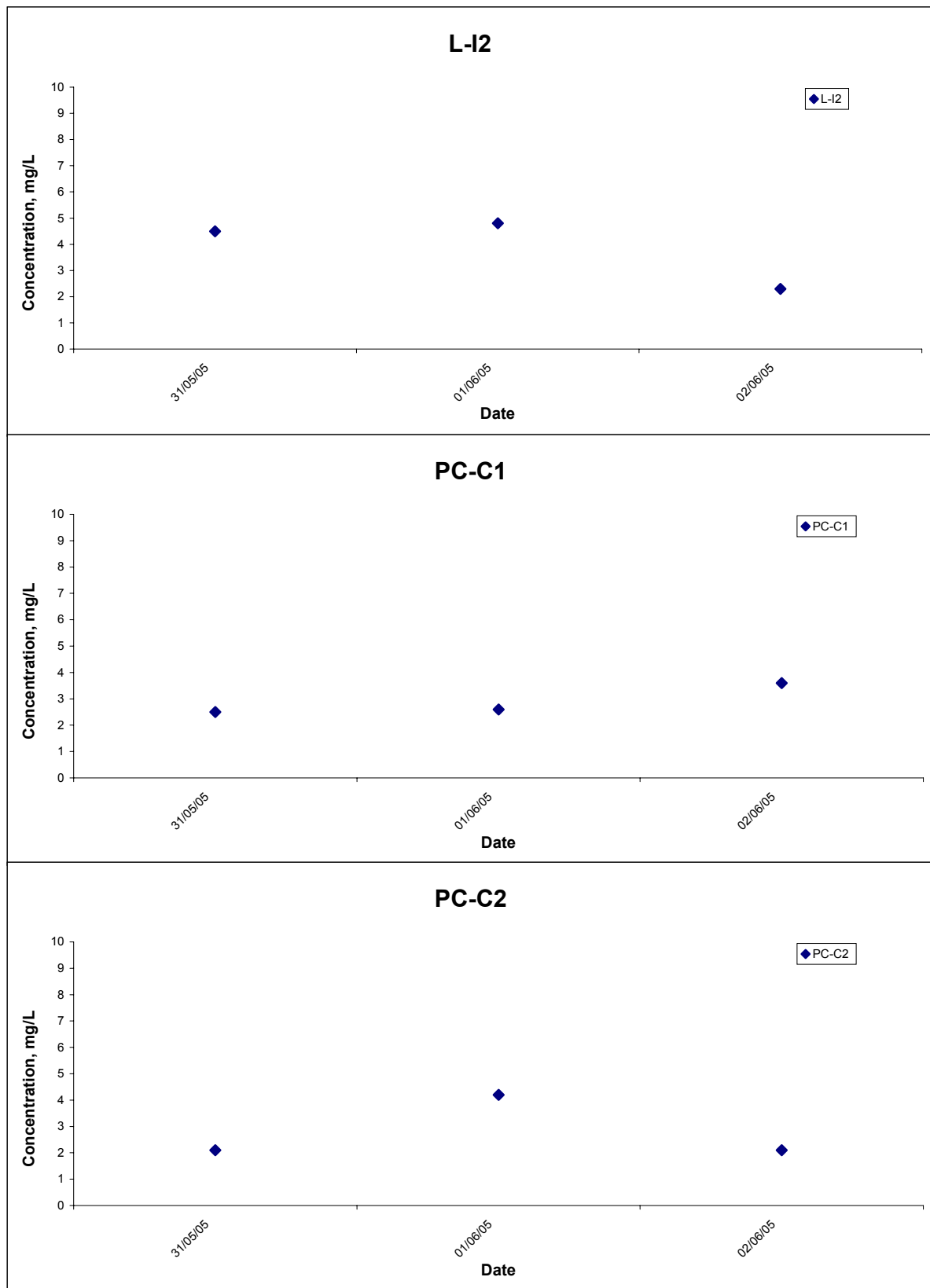
Title Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline Graphical Presentation of Baseline Water Quality Monitoring Results	Scale N.T.S	Project No. MA4017	CINOTECH
	Date Jun 05	Appendix B	

Suspended Solids at Mid-Ebb Tide



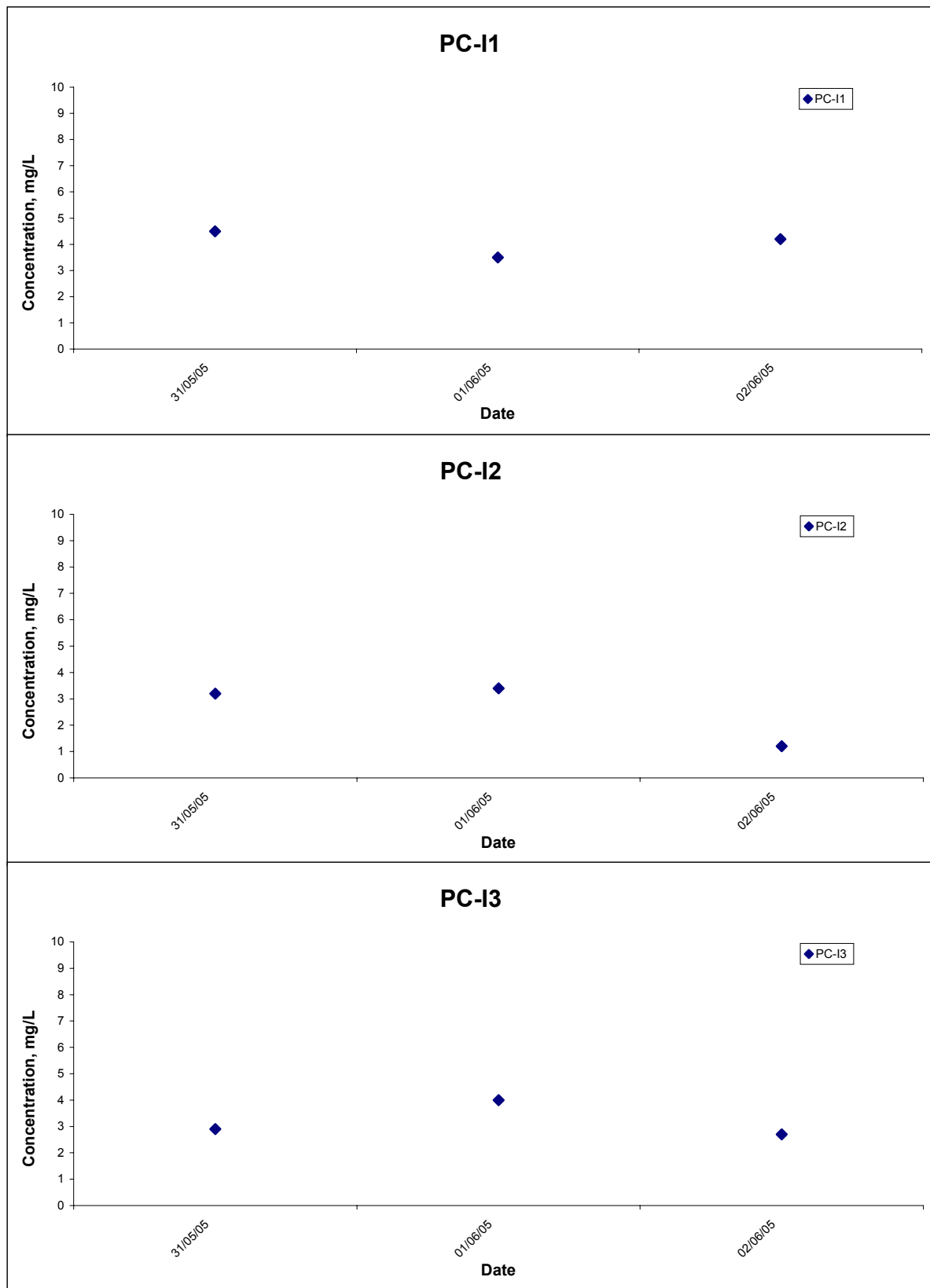
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Suspended Solids at Mid-Ebb Tide



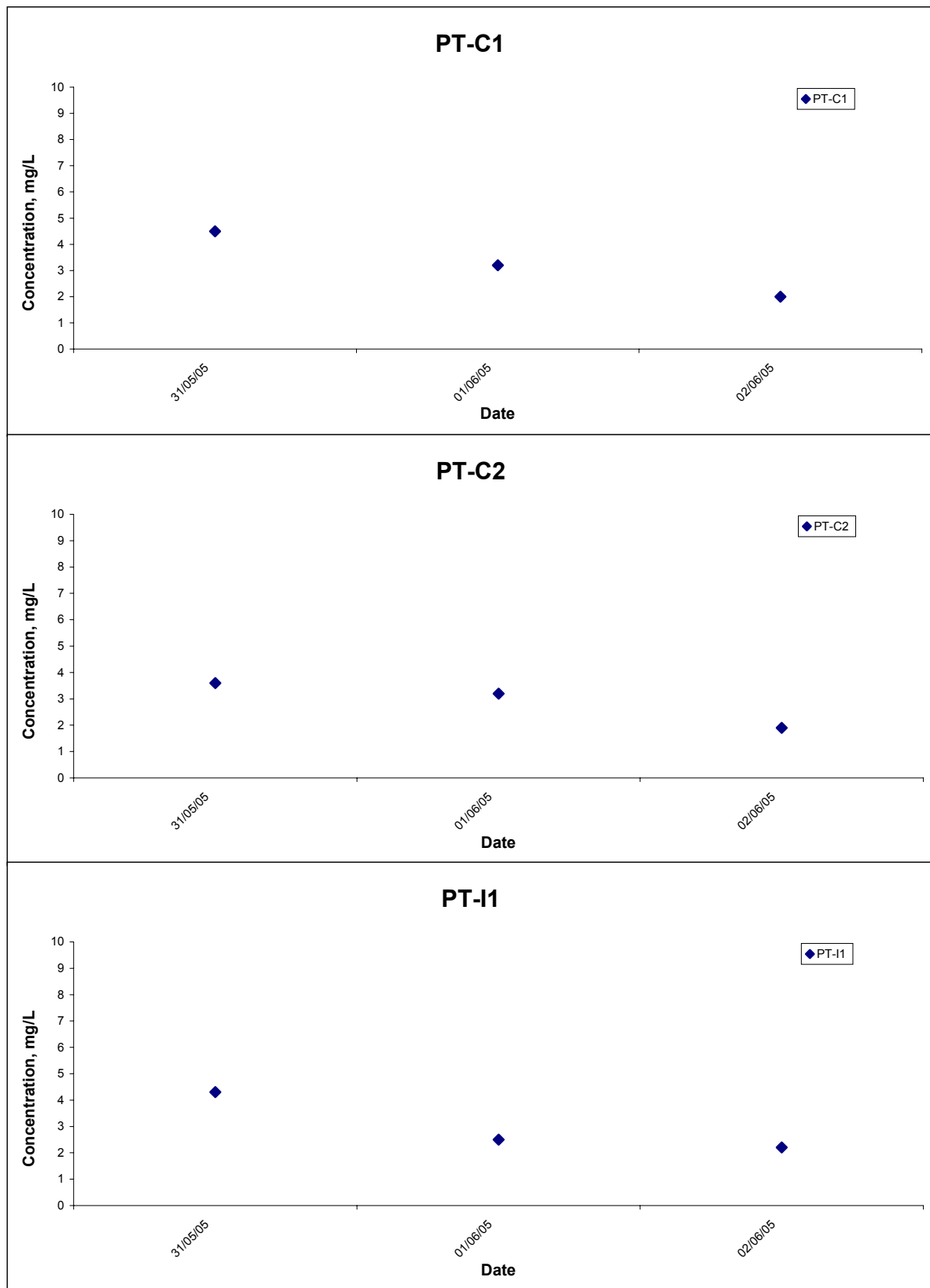
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Suspended Solids at Mid-Ebb Tide



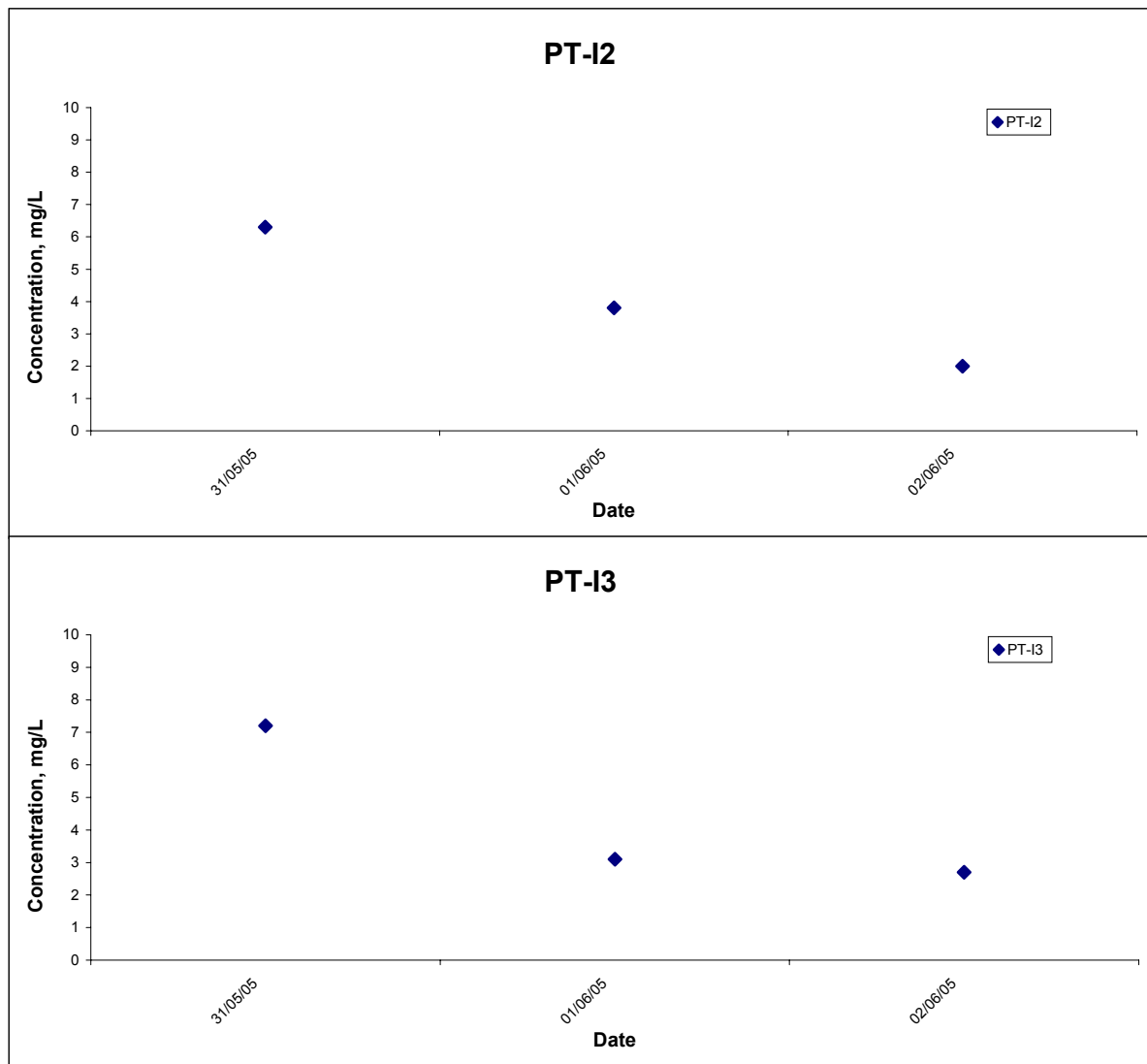
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	Date Jun 05	Appendix B	

Suspended Solids at Mid-Ebb Tide



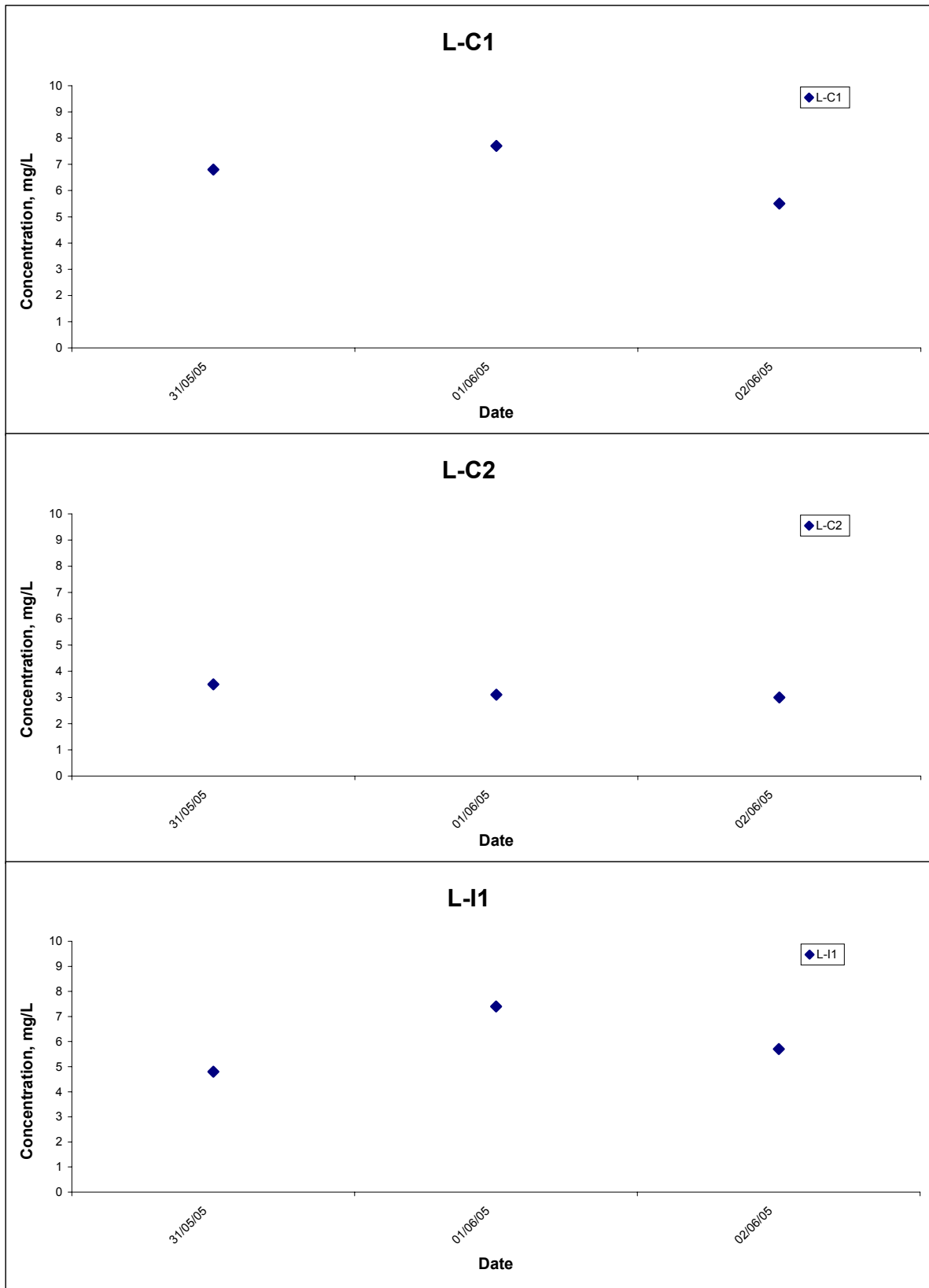
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Suspended Solids at Mid-Ebb Tide



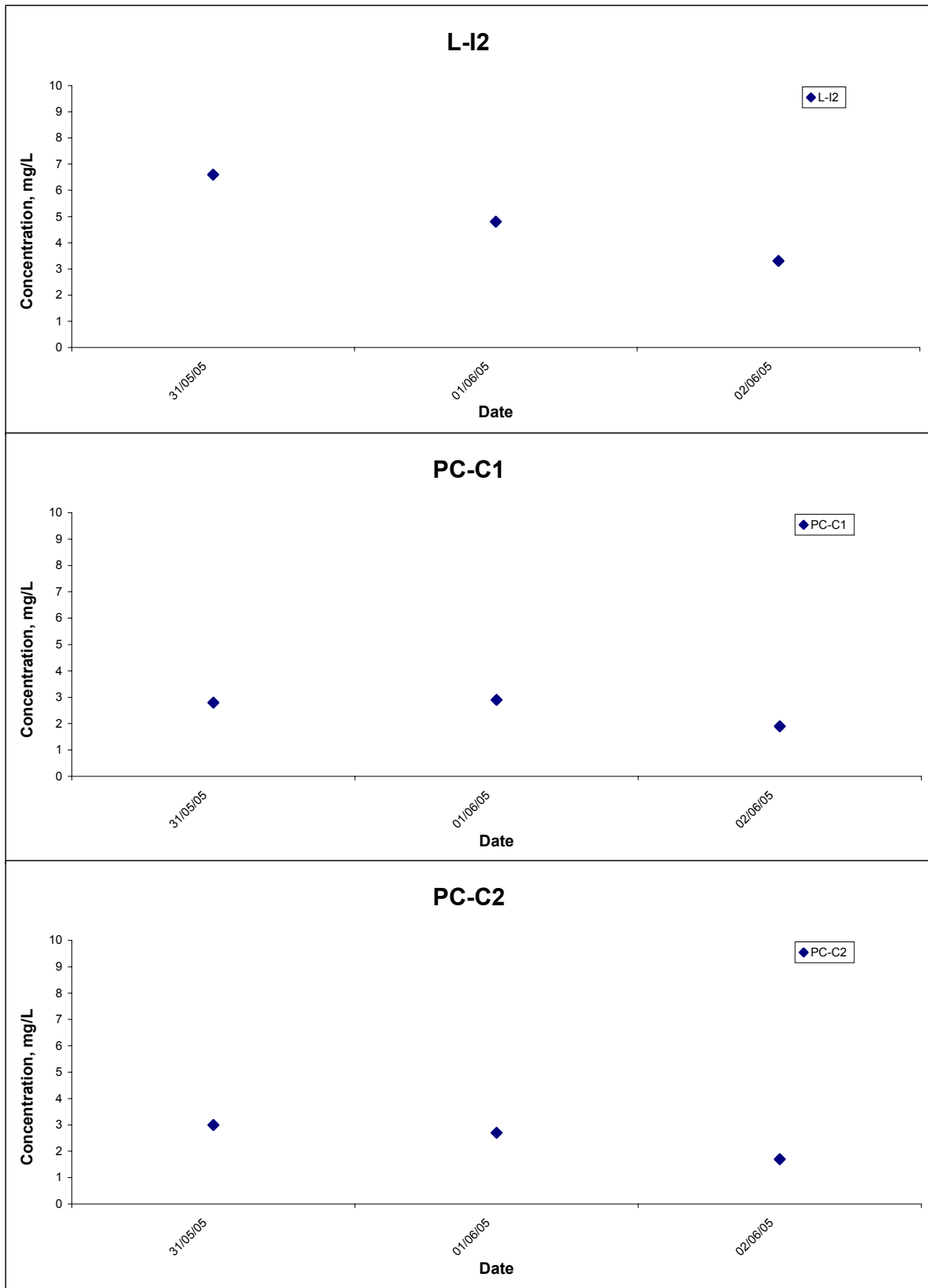
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	Date Jun 05	Appendix B	

Suspended Solids at Mid-Flood Tide



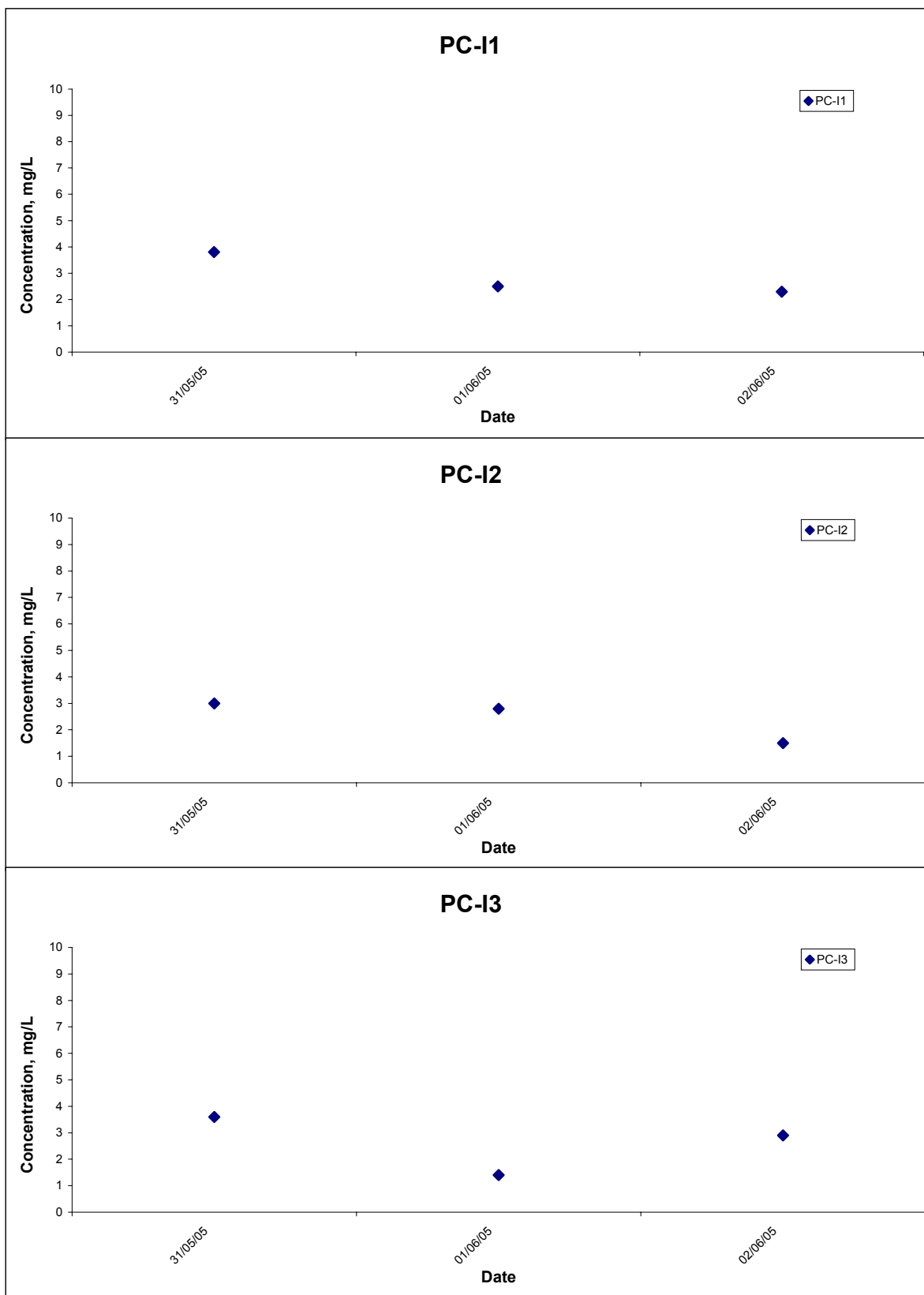
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Suspended Solids at Mid-Flood Tide



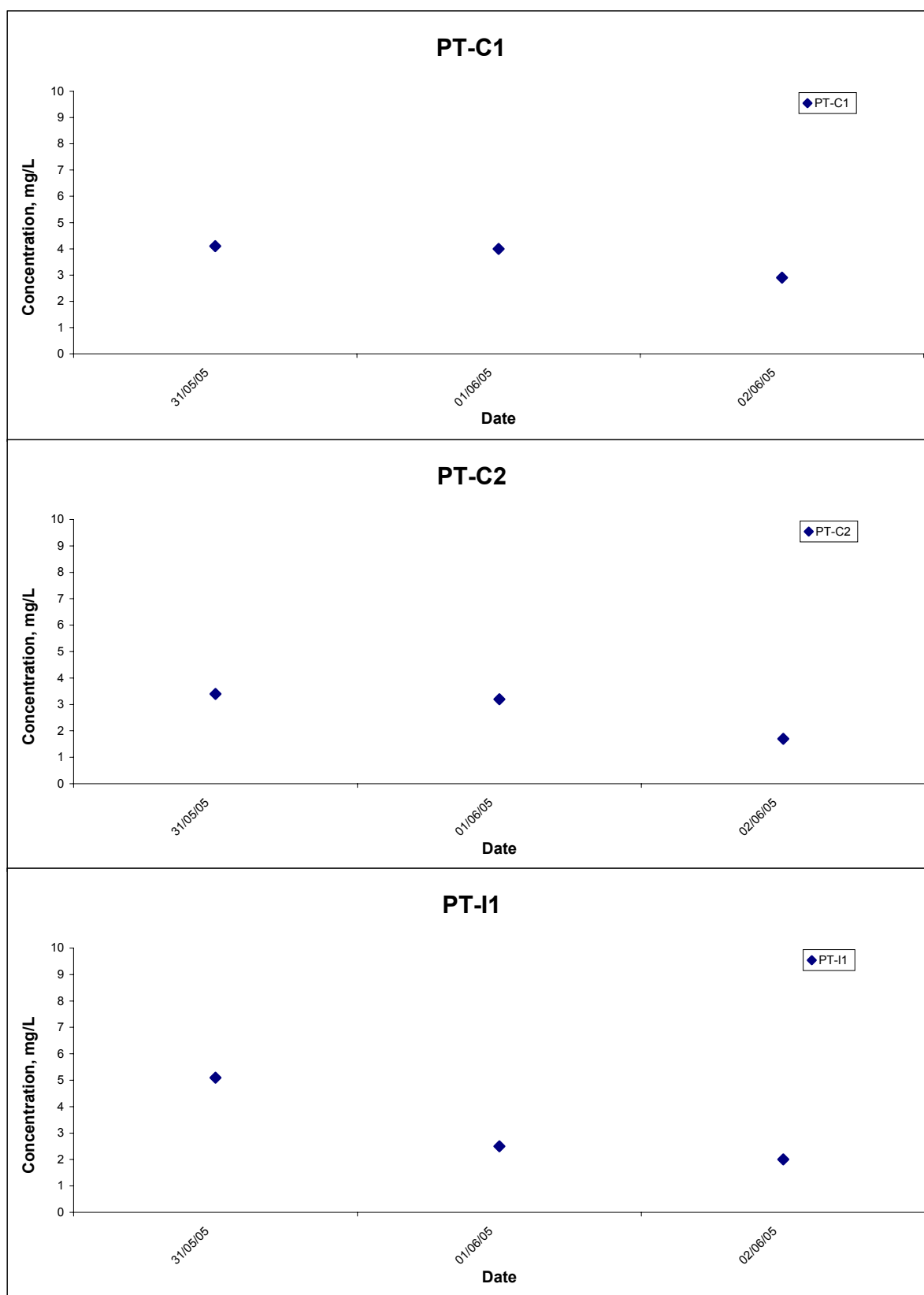
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	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Suspended Solids at Mid-Flood Tide



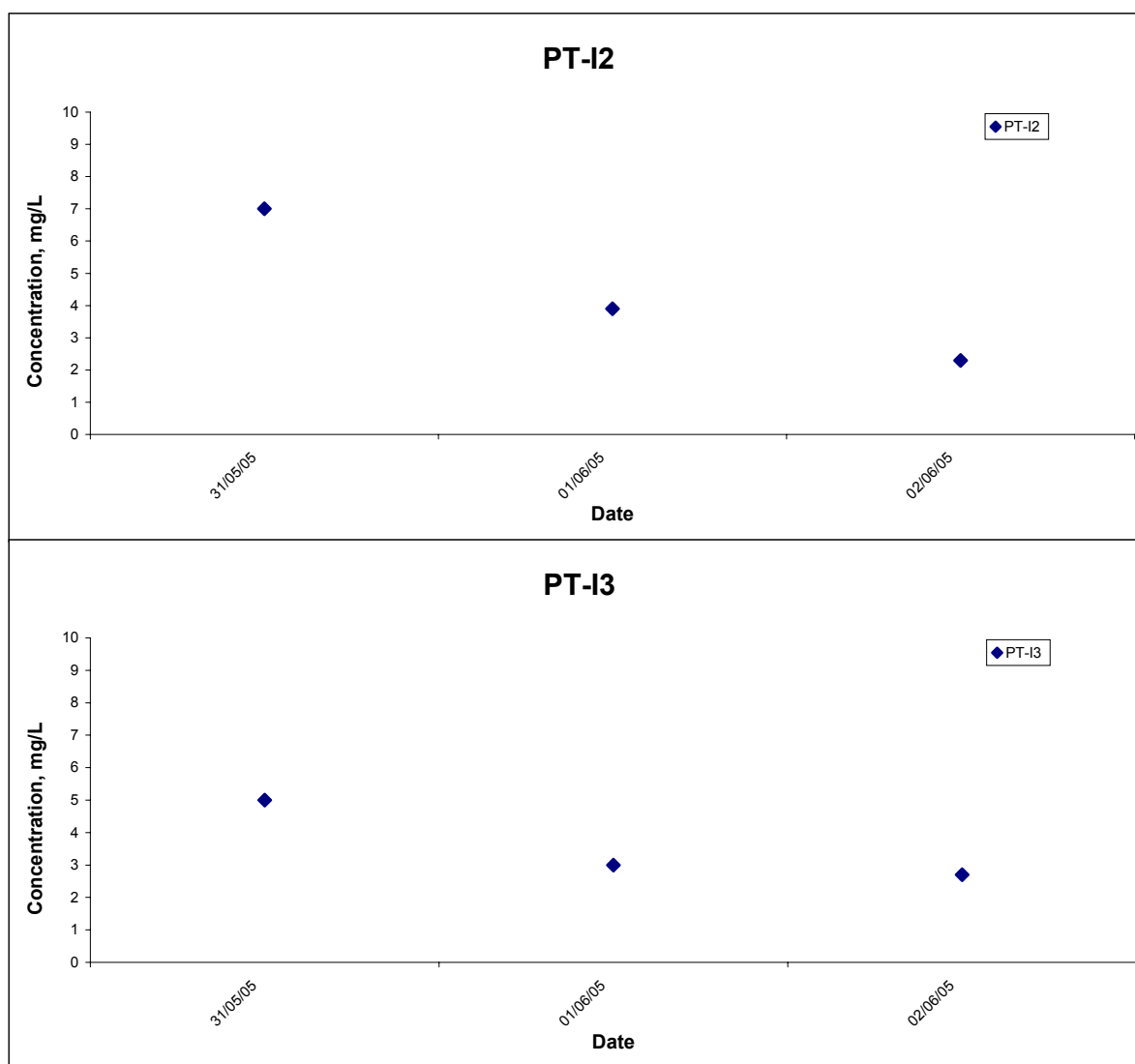
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	Date Jun 05	Appendix B	

Suspended Solids at Mid-Flood Tide



Title	Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline		Scale	N.T.S	Project No.	MA4017	CINOTECH
	Graphical Presentation of Baseline Water Quality Monitoring Results		Date	Jun 05	Appendix	B	

Suspended Solids at Mid-Flood Tide



Title Lamma Power Station Extension – Supply and Installation of Submarine Gas Pipeline Graphical Presentation of Baseline Water Quality Monitoring Results	Scale N.T.S	Project No. MA4017	CINOTECH
	Date Jun 05	Appendix B	

**APPENDIX C
QUALITY CONTROL REPORTS FOR
LABORATORY ANALYSIS**

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

QC REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Laboratory No.:	01749
Date of Issue:	2005/06/01
Date Received:	2005/05/31
Date Tested:	2005/06/01
Date Completed:	2005/06/01

Page: 1 of 1

ATTN: Mr. Henry Leung

Sampling Site: Ting Ping Chau
Project No.: MA4017
Sampling Date: 2005/05/31
Number of Sample: 54
Custody No.: 50531-2

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
PT-I1-Me	5	5	6	87
PT-C1-Sf	2	2	6	88

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Operation Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

QC REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Laboratory No.:	01750
Date of Issue:	2005/06/01
Date Received:	2005/05/31
Date Tested:	2005/06/01
Date Completed:	2005/06/01

Page: 1 of 1

ATTN: Mr. Henry Leung

Sampling Site: Ting Ping Chau
Project No.: MA4017
Sampling Date: 2005/05/31
Number of Sample: 30
Custody No.: 50531-1

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
PC-I2-Se	3	3	4	83
PC-C2-Mf	5	5	2	92

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Patrick.

PATRICK TSE

Operation Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

QC REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Laboratory No.:	01757
Date of Issue:	2005/06/02
Date Received:	2005/06/01
Date Tested:	2005/06/01
Date Completed:	2005/06/02

Page: 1 of 1

ATTN: Mr. Henry Leung

Sampling Site: Ting Ping Chau
Project No.: MA4017
Sampling Date: 2005/06/01
Number of Sample: 54
Custody No.: 50601-2

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
PT-I1-Me	2	2	0	86
PT-C1-Sf	3	3	4	89

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Operation Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

QC REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Laboratory No.:	01753
Date of Issue:	2005/06/02
Date Received:	2005/06/01
Date Tested:	2005/06/01
Date Completed:	2005/06/02

Page: 1 of 1

ATTN: Mr. Henry Leung

Sampling Site: Ting Ping Chau
Project No.: MA4017
Sampling Date: 2005/06/01
Number of Sample: 30
Custody No.: 50601-1

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
PC-I2-Se	3	3	7	82
PC-C2-Mf	2	2	0	86

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Patrick .

PATRICK TSE

Operation Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

QC REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Laboratory No.:	01763
Date of Issue:	2005/06/03
Date Received:	2005/06/02
Date Tested:	2005/06/02
Date Completed:	2005/06/03

Page: 1 of 1

ATTN: Mr. Henry Leung

Sampling Site: Ting Ping Chau
Project No.: MA4017
Sampling Date: 2005/06/02
Number of Sample: 54
Custody No.: 50602-2

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
PT-I1-Me	5	5	2	84
PT-C1-Sf	5	5	6	83

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**

Patrick .

PATRICK TSE

Operation Manager

WELLAB LTD.

Unit C, 1/F, Goldlion Holdings Center
13-15 Yuen Shun Circuit,
Shatin, Hong Kong.
Tel: (852) 2898 7388
Fax: (852) 2898 7076

QC REPORT

APPLICANT: Cinotech Consultants Limited
1601-1610 Delta House,
3 On Yiu Street,
Shatin, N.T.

Laboratory No.:	01759
Date of Issue:	2005/06/03
Date Received:	2005/06/02
Date Tested:	2005/06/02
Date Completed:	2005/06/03

Page: 1 of 1

ATTN: Mr. Henry Leung

Sampling Site: Ting Ping Chau
Project No.: MA4017
Sampling Date: 2005/06/02
Number of Sample: 30
Custody No.: 50602-1

Total Suspended Solids	Duplicate Analysis			QC Recovery, %
Sampling Point	Trial 1, mg/L	Trial 2, mg/L	Difference, %	
PC-I2-Se	1	1	0	81
PC-C2-Mf	2	2	0	83

*****END OF REPORT*****

PREPARED AND CHECKED BY:

For and On Behalf of **WELLAB Ltd.**



PATRICK TSE

Operation Manager

**APPENDIX D
BASELINE WATER QUALITY
MONITORING SCHEDULE**

Lamma Power Station Extension - Supply and Installation of Submarine Gas Pipeline
Baseline Water Quality Monitoring Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		31-May	1-Jun	2-Jun	3-Jun	4-Jun
		<u>Baseline WQM</u> <u>Lamma/Po Toi/Ping Chau</u> Mid-Flood 12:07 Mid-Ebb 19:07	<u>Baseline WQM</u> <u>Lamma/Po Toi/Ping Chau</u> Mid-Ebb 8:18 Mid-Flood 13:44	<u>Baseline WQM</u> <u>Lamma/Po Toi/Ping Chau</u> Mid-Ebb 9:16 Mid-Flood 15:04		
5-Jun	6-Jun	7-Jun	8-Jun	9-Jun	10-Jun	11-Jun
12-Jun	13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun
19-Jun	20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun
26-Jun	27-Jun	28-Jun	29-Jun	30-Jun		