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Date : 9 April 2018

Our Ref. : MCL/ED/0153/2018/C

The EIA Ordinance Register Office,
Environmental Protection Department
27/F., Southorn Centre,
130 Hennessy Road,
Wanchai, Hong Kong

BY HAND

Attn.: Mr. Matthew Tang

Dear Sir,

**Agreement No. CE 21/2014 (EP)
Environmental Monitoring and Audit (EM&A) for Operation of
Tai Po Sewage Treatment Works Stage V Phase 2B – Investigation
EP Condition 6.6 – Monthly EM&A Report**

Pursuant to Condition 6.6 of the Environmental Permit (EP No. EP-265/2007/A) for the captioned contract, we are pleased to submit the certified Monthly EM&A Report for September 2016 for your retention.

Should you require further information, please do not hesitate to contact our Mr. Vincent Lu at 3565 4371 or the undersigned at 3565 4114.

Assuring you of our best attention at all times.

Yours faithfully,
for and on behalf of
MATERIALAB – WASTE
& ENVIRONMENTAL TECHNOLOGIES JOINT VENTURE



Colin Yung
Environmental Team Leader

CY/vl

c.c. DSD – Ms. Suki Pun
Mott MacDonald – Ms. Dulcie Chan, Mr. Thomas Chan

Mr. WONG Sui Kan
Chief Engineer/Sewerage Projects
Drainage Services Department
Projects and Development Branch
Sewerage Projects Division
44/F, Revenue Tower,
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Wan Chai, Hong Kong

Our Reference
TC/DC/dc/377000/03/02/L
-014

Contract No. SPW 09/2016
Independent Environmental Checker for Environmental Monitoring and Audit
for Operation of Tai Po Sewage Treatment Works Stage 5 Phase 2B
EP Condition 6.6 – Monthly EM&A Report

6 April 2018

20/F AIA Kowloon Tower
Landmark East
100 How Ming Street
Kwun Tong
Kowloon
Hong Kong

Dear Sir,

With reference to the ET's letter ref: MCL/ED/0146/2018/C dated 4 April 2018 associated with the Monthly EM&A Report for September 2016 (submitted on 29 March 2018), we have no further comment.

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This letter serves as verification of the captioned submission in line with the requirements as set out in the EM&A Manual.

Should you have any queries, please feel free to contact the undersigned at 2828 5970.

Yours faithfully
FOR MOTT MACDONALD HONG KONG LIMITED



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Independent Environmental Checker
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Date : 4 April 2018

Our Ref. : MCL/ED/0146/2018/C

Mott MacDonald Hong Kong Limited
20/F, AIA Kowloon Tower
Landmark East
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Kwun Tong, Kowloon
Hong Kong

BY HAND

Attn.: Ms. Dulcie Chan, IEC

Dear Madam,

**Agreement No. CE 21/2014 (EP)
Environmental Monitoring and Audit (EM&A) for Operation of
Tai Po Sewage Treatment Works Stage V Phase 2B – Investigation
EP Condition 6.6 – Monthly EM&A Report**

Pursuant to Condition 6.6 of the Environmental Permit (EP No. EP-265/2007/A) for the captioned contract, we are pleased to submit the certified Monthly EM&A Report for September 2016 for your on-ward submission.

Should you require further information, please do not hesitate to contact our Mr. Vincent Lu at 3565 4371 or the undersigned at 3565 4114.

Assuring you of our best attention at all times.

Yours faithfully,
for and on behalf of
MATERIALAB – WASTE
& ENVIRONMENTAL TECHNOLOGIES JOINT VENTURE



Colin Yung
Environmental Team Leader

CY/vl

Encl.

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MaterialLab

Report No.: 0151/15/ED/0973

**MONTHLY ENVIRONMENTAL MONITORING & AUDIT
REPORT**

September 2016

Client : Drainage Services Department

Project : Agreement No. CE 21/2014(EP)
Environmental Monitoring and Audit
(EM&A) for Operation of Tai Po Sewage
Treatment Works Stage V Phase 2B –
Investigation

Report No. : 0151/15/ED/0973

Prepared by: Vincent Lu

Certified by:



Colin Yung
Environmental Team Leader

Report No.: 0151/15/ED/0973

CONTENTS

EXECUTIVE SUMMARY	1
1. INTRODUCTION	2
2. AIR QUALITY MONITORING	3
3. MARINE WATER QUALITY MONITORING	6
4. ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS	10
5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES	11
6. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS	12
7. CONCLUSION AND RECOMMENDATIONS	13

FIGURES

Figure 2.1 Air Quality (H₂S) Monitoring Stations

Figure 3.1 Water Quality Monitoring Stations at Seawater Intakes

APPENDICES

Appendix A	Project Organization Chart
Appendix B	Monitoring Schedule
Appendix C	Event / Action Plan for Air Quality Monitoring (Operation Phase)
Appendix D	Calibration Certificates
Appendix E	Air Quality (H ₂ S) Monitoring Data and Graphical Plots
Appendix F	Site Record
Appendix G	Implementation Schedule of Environmental Mitigation Measures (EMIS) for operation phase
Appendix H	QA/QC Results
Appendix I	Water Quality Monitoring Results
Appendix J	Graphical Presentation of Water Quality Monitoring Results
Appendix K	Chemical Waste Producer Registration License

EXECUTIVE SUMMARY

This Monthly Environmental Monitoring and Audit (EM&A) Report is prepared for Agreement No. CE 21/2014 (EP) – “Environmental Monitoring and Audit for Operation of Tai Po Sewage Treatment Works Stage V Phase 2B – Investigation” (hereafter referred to as “the Assignment”) for the Drainage Services Department (DSD) of Hong Kong Special Administrative Region. MaterialLab – Waste & Environmental Technologies Joint Venture (hereafter referred to as “MLAB”) was appointed as the Environmental Team by DSD.

The Assignment is part of the Tai Po Sewage Treatment Works (TPSTW) Stage V extension (hereinafter referred to as “the Project”) which is a Designated Project under Schedule 2 of the Environmental Impact Assessment (EIA) Ordinance (Cap. 499) and for which an EIA Report (Register No. AEIAR-145/2009) was prepared and approved. The Environmental Permit (EP) for TPSTW Stage V, namely No. EP-265/2007 was issued in March 2007. A Variation Environmental Permit (VEP) EP-265/2007/A was issued on 30 April 2014. These documents are available through the EIA Ordinance Register.

Commencement of the Assignment took place on 9 June 2015 while the operation phase of EM&A programme commenced on 1 March 2016.

This is the seventh Monthly EM&A Report for the Assignment which summaries the progress of the EM&A programme during the reporting period from 01 September 2016 to 30 September 2016 (the “reporting period”). The monthly EM&A programme was undertaken in accordance with the EM&A Manual for TPSTW Stage V. According to the EM&A Manual, air quality and marine water quality are the key environmental concerns from the Project.

Breaches of Action and Limit Levels

Air quality monitoring was carried out from 23 September 2016 to 24 September 2016. Exceedances of Action/Limit levels at three ASRs (AS1, AS12 and AS4) were recorded.

There was no marine water quality impact monitoring conducted during this reporting period and therefore, no marine water quality monitoring result is reported.

In accordance with Section 4.52 of the EM&A Manual, a water quality monitoring programme shall be conducted at the WSD Seawater Intakes at Tai Po and Sha Tin during the first wet season after commissioning of the Project, namely June 2016, July 2016 and August 2016. Based on the monitoring results, the overall water quality at seawater intakes was considered acceptable during the monitoring period. The results did not reveal any evidence showing that the operation of TPSTW has caused any adverse water quality impact to the water body at seawater intakes.

Complaint Log

There were no complaints received in relation to the environmental impact during the reporting period.

Notifications of Summons and Successful Prosecutions

There were no notifications of summons or prosecutions received during this reporting period.

Reporting Changes

There was no reporting change during the reporting period.

Future key issues

There were no construction activities and no future key issue is reported during this reporting period.

Report No.: 0151/15/ED/0973

1. INTRODUCTION

1.1 Background

1.1.1 Tai Po Sewage Treatment Works (TPSTW) is located within the Tai Po Industrial Estate. It currently comprises four Stages: I, II, IVA and IVB works. The TPSTW Stage V aims to upgrade the existing TPSTW to provide additional sewage treatment capacity from the present design flow of 88,000 m³/day to 130,000 m³/day to meet the demands of both existing and future developments and to meet the revised discharge license requirements. The TPSTW Stage V will be implemented in two phases, i.e. Phase 1 and Phase 2. The design capacity of Phase 1 is 100,000 m³/day and Phase 2 is 130,000 m³/day.

1.1.2 The TPSTW Stage V is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). A study of Environmental Impact Assessment has been carried out to evaluate the environmental impacts associated with the project. An EIA Report and Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department on 28 October 2004. An Environmental Permit (EP) No. EP-202/2007 and a Variation Environmental Permit (VEP) No. EP-202/2007A were issued on 22 March 2007 and 30 April 2014 for TPSTW Stage V Phase 2B (hereafter referred to as “the Project”) to DSD as the Permit Holder. The EP stipulates that an EM&A programme is required to ensure the mitigation measures recommended in the EIA Report and the EM&A Manual, are implemented during the construction and operation of the Project.

1.2 Project Description

1.2.1 MaterialLab – Waste and Environmental Technologies Joint Venture (MLAB) was commissioned by DSD to undertake the EM&A services of the Project including Odour Monitoring, Odour Complaint Register and Marine Water Quality Monitoring during the operation phase, under the Agreement No. CE 21/2014 (EP) Environmental Monitoring and Audit for Tai Po Sewage Treatment Works Stage V Phase 2B – Investigation (hereafter referred to as “the Assignment”).

1.3 Project Organisation

1.3.1 The Project Organisation for Environmental Works is shown in **Appendix A**. The contact person and telephone numbers of key personnel for the captioned project are shown in **Table 1.1**.

Table 1.1 Contact Persons and Telephone Numbers of Key Personnel

Party	Role	Position	Contact Person	Telephone No.	Fax No.
DSD	SP Division	Engineer	Ms. Suki Pun	2594 7472	2519 3615
Mott MacDonald	IEC	IEC	Ms. Dulcie Chan	2828 5970	2827 1823
MLAB	Environmental Team	Environmental Team Leader	Mr. Colin Yung	3565 4114	2450 8032

Report No.: 0151/15/ED/0973

2. AIR QUALITY MONITORING

2.1 Methodology

2.1.1 The H₂S analyzer, type Jerome 631-X, was used for the air quality monitoring. The analyzer is capable of measuring H₂S concentration in the range of 1 ppb to 50 ppm, with a resolution of 1 ppb. The analyzer operates within a temperature range of 0°C to 40°C, at an air flow rate of 0.15 L/min. Grab air sample is drawn by built-in suction pump of the analyzer and passes through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample. **Table 2.1** summaries the equipment used in air quality (H₂S) monitoring.

Table 2.1 Equipment for Air Quality (H₂S) Monitoring

Equipment	Manufacturer / Model	Serial Number	Sensor Number	Calibration Date	Next Calibration Date
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2966	14-11-23-R2D	24 June 2016	23 June 2017
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2967	16-4-13-V2DS	23 June 2016	22 June 2017

2.2 Monitoring Locations

2.2.1 Five monitoring stations were set up inside and outside of TPSTW. **Table 2.2** and **Figure 2.1** show the description and location of the H₂S monitoring stations. The level for odour monitoring agreed with the DSD and EPD is 1.5m from the ground.

Table 2.2 Air Quality (H₂S) Monitoring Stations

ID No.	EM&A Ref.	Monitoring Location	Description
PRI 203 ¹	OSM1	Stage I/II Primary Sedimentation Tank	Source
PRI 401 ¹	OSM2	Stage IV Primary Sedimentation Tank	Source
AS 12 ^{1,2}	OAM1	Government Staff Quarter (Inside)	ASR
AS 4 ^{1,2}	OAM2	Interpac Containers Ltd (Outside)	ASR
AS 1 ^{1,2}	OAM3	Watson's Water Centre (Outside)	ASR

¹EIA Reference No.

²Air Sensitive Receiver

2.3 Monitoring Frequency and Duration

2.3.1 The sampling duration and frequency of air quality (H₂S) monitoring is summarised in **Table 2.3**.

Table 2.3 Air Quality (H₂S) Monitoring Programme

Sampling Duration	Frequency
24 hour	Year 1 Once every three months after operation of Stage V Phase 2B works; frequency would increase to monthly interval if exceedances are recorded.
	Year 2 and Year 3 Once every six months after operation of Stage V Phase 2B works; frequency would increase to monthly interval if exceedances are recorded.

Report No.: 0151/15/ED/0973

2.3.2 A 15-min integrated gaseous H₂S sample was collected every 3 hours for a period of 24 hours at the monitoring locations. Maximum and minimum H₂S levels for each monitoring station were recorded.

2.3.3 The monitoring schedule for the present and next reporting period is provided in **Appendix B**.

2.4 Action / Limit Level

2.4.1 **Table 2.4** shows the Action and Limit Levels for air quality (H₂S) monitoring at ASRs.

Table 2.4 Action and Limit Levels for Air Quality Monitoring at ASRs

Monitoring Stations	Action Level	Limit Level*
AS12: Government Staff Quarter	2.5 ppb	2.5 ppb
AS4: Interpac Containers Limited		
AS1: Watson’s Water Centre		

*Limit Level at ASRs only.

2.4.2 The event and action plan for air quality monitoring is provided in **Appendix C**.

2.5 Quality Assurance / Quality Control

2.5.1 In order to ensure the analyzer is functioning properly, manual sensor regeneration and zero adjustment were performed before each set of odour monitoring.

2.5.2 Calibration of the analyzer is conducted every year at the laboratory of the manufacturer. The calibration certificates for the analyzers are shown in **Appendix D**.

2.5.3 To obtain accurate results from the H₂S monitoring at Stage IV Primary Sedimentation Tanks, sulphide formation at the bottom shall be cleaned and minimised.

2.6 Monitoring Results and Observations

2.6.1 The fourth odour impact monitoring was carried out from 23 September 2016 to 24 September 2016 after the commissioning of the Project.

2.6.2 The meteorological data including temperature, wind speed and direction of the monitoring period obtained from the HKO’s Tai Mei Tuk weather station is summarised in **Table 2.5**.

Table 2.5 Summary of meteorological data of the monitoring period#

Date	Mean Temperature(° C)	Prevailing Wind Direction	Mean Wind speed (km/h)
23 September	27.2	East	13.1
24 September	27.4	South East	13.7

The meteorological data was extracted from the website of HKO.

2.6.3 The monitoring results are summarised in **Table 2.6**. Graphical plots of results and details of monitoring data are shown in **Appendix E** (24-hour average, maximum and minimum H₂S concentration) and **Appendix F** (site record).

Report No.: 0151/15/ED/0973

Table 2.6 Summary of Monitoring Results

ID No.	EM&A Ref.	Monitoring Location	24-hour Average H ₂ S Concentration (ppb)
PRI203 ¹	OSM1	Stage I Primary Sedimentation Tank	121.1
PRI401 ¹	OSM2	Stage IV Primary Sedimentation Tank	59.0
AS12 ^{1,2}	OAM1	Government Staff Quarter (Inside)	5.0
AS4 ^{1,2}	OAM2	Interpac Containers Ltd (Outside)	30.8
AS1 ^{1,2}	OAM3	Watson's Water Centre (Outside)	21.9

¹EIA Reference No.

²Air Sensitive Receiver

2.6.4 Comparison of the average H₂S concentration for ASRs and the corresponding Action/Limit levels established in the odour baseline study is shown in **Table 2.7**.

Table 2.7 Comparison of Average H₂S Concentration with Action/Limit Levels

Location	H ₂ S Concentration (ppb)			Exceedance	
	Odour Impact monitoring	Action Level	Limit Level	Action Level	Limit Level
AS12	5.0	2.5	2.5	Y	Y
AS4	30.8	2.5	2.5	Y	Y
AS1	21.9	2.5	2.5	Y	Y

2.6.5 Exceedances of A/L levels of 2.5 ppb H₂S concentration at three Air Sensitive Receivers (AS1, AS12 and AS4) were recorded.

2.6.6 Odour mitigation measures such as the use of weir launders at Stage I/II and Stage IV Primary Sedimentation Tanks and addition of chemical (calcium nitrate) at Tai Yuen Sewage Pumping Station Package No. 4 were implemented during the odour impact monitoring. However, exceedances of A/L levels of H₂S were resulted.

2.6.7 Even though specific sources of odour that would contribute to the odour nuisance at ASRs was not observed in this monitoring exercise. It is important to consider the location and surrounding environment of the Tai Po Sewage Treatment Works. Located at the Tai Po Industrial Estate, the TPSTW is surrounded by different industrial buildings. Exceedances of A/L levels at ASRs might be attributed to other sources such as nearby Refuse Collection Station and the industrial nature of the surrounding environment. These potential sources may cause odour nuisance to the Air Sensitive Receivers and hence, the high H₂S levels measured at ASRs may be contributed by the emissions from sources other than that of the TPSTW.

2.6.8 In accordance with the Event and Action Plan for Operation Phase Air Quality Monitoring, the following actions have been taken in response to the exceedance of limit level.

2.6.9 The ET had repeated measurement to confirm exceedance. Then they had tried to identify the causes of exceedance and took photos for record. The operation team and DSD/SPD had been notified immediately when exceedance was recorded. After finishing the odour monitoring, the operation team was reminded to have better housekeeping of the TPSTW.

Report No.: 0151/15/ED/0973

3. MARINE WATER QUALITY MONITORING

3.1 Monitoring Requirements

Tolo Harbour Marine Water Quality Impact Monitoring

3.1.1 There was no marine water quality impact monitoring conducted during the reporting period and therefore, no marine water quality monitoring result is reported.

Water Quality Monitoring at Seawater Intakes

3.1.2 In accordance with Section 4.52 of the EM&A Manual, a water quality monitoring programme shall be conducted at the WSD Seawater Intakes at Tai Po and Sha Tin during the first wet season after commissioning of the Project, namely June 2016, July 2016 and August 2016.

3.1.3 Water quality monitoring was conducted on 14 June, 23 June, 5 July, 19 July, 19 August and 25 August 2016.

3.2 Methodology

Water Quality Monitoring at Seawater Intakes

3.2.1 The multifunctional meter (Model YSI 6920V2) was deployed to measure dissolved oxygen (DO) concentration, DO saturation, temperature, salinity, pH and turbidity

3.2.2 Water samples were collected by water samplers and were stored in polyethylene bottles, where they were taken to a HOKLAS accredited laboratory for analysis of suspended solids (SS) and Ammonia Nitrogen (NH₃-N). **Table 3.1** summaries the equipment used in marine water quality monitoring. **Table 3.2** summaries the laboratory test method for each laboratory test parameter and its associated limit of reporting.

Table 3.1 Equipment for Water Quality Monitoring at Seawater Intakes

Equipment	Manufacturer / Model	Serial Number	Calibration Date	Next Calibration Date
Water Sampler	Van Dorn	N/A	N/A	N/A
Multifunctional Meter	YSI / 6920V2	00019CB2	16 July 2016	16 October 2016
Multifunctional Meter	YSI / 6920V2	00019CB2	31 March 2016	30 June 2016

Table 3.2 Laboratory Test Method for Each Laboratory Test Parameter and Its Associated Limit of Reporting

Parameter	Test Method ¹	Reporting Limit
SS	APHA 2540 D	0.5 mg/L
NH ₃ -N	APHA 4500NH ₃ : H	0.005 mg/L

Note: ¹Test method refers to Standard Methods for the Examination of Water and Wastewater the American Public Health Association (APHA).

3.2.3 During each monitoring event, water quality monitoring was conducted at mid-flood and mid-ebb tides and the interval between two monitoring events was less than 36 hours. All in-situ measurements and samplings were conducted at three water depths, namely 1 m below water surface, mid-depth and 1 m above seabed, except where the water depth was less than 6 m, in which case the mid-depth station was omitted. Only mid-depth station was monitored if the water depth was less than 3 m.

Report No.: 0151/15/ED/0973

3.2.4 At each sampling depth, duplicate readings of DO concentration, DO saturation, salinity, turbidity, pH and temperature were taken. The probes were retrieved out of the water after the first measurement and re-deployed for the second measurement.

3.2.5 Water samples were collected by water samplers and were stored in polyethylene bottles. Sampling bottles were pre-rinsed with the same water samples. The sample bottles were then packed into a cool-box (kept at 4°C) and delivered immediately to a HOKLAS accredited laboratory ALS Technichem (HK) Pty Limited (ALS) for the analysis of SS and NH₃-N.

3.3 Monitoring Location

Water Quality Monitoring at Seawater Intakes

3.3.1 In accordance with the EM&A Manual, the measurements were taken at all designated impact and control stations as summarized in **Table 3.3**. The locations of the monitoring stations are shown in **Figure 3.1**.

Table 3.3 Water Quality Monitoring Stations

Station	Description	Easting	Northing
W1	WSD Seawater Intake at Tai Po	837688.18	834676.19
W2	WSD Seawater Intake at Sha Tin	840222.64	830058.70

3.4 Monitoring Parameter, Frequency and Duration

Water Quality Monitoring at Seawater Intakes

3.4.1 The monitoring parameters, frequency and duration of Water Quality Monitoring at Seawater Intake are summarised in **Table 3.4**.

Table 3.4 Seawater Intake Water Quality Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter, unit	Frequency	No. of Depths
Impact Stations: W1, W2	<ul style="list-style-type: none"> • Depth, m • pH • Temperature, °C • Salinity, ppt • DO, mg/L • DO Saturation, % • Turbidity, NTU • Suspended Solids, mg/L • Ammonia-Nitrogen, mg/L 	Twice per month during the first wet season (June 2016 to August 2016)	<ul style="list-style-type: none"> • 3 water depths: 1m below water surface, mid-depth and 1m above sea bed • If water depth is less than 3m, mid-depth sampling only • If water depth is between 3-6m, omit mid-depth sampling

3.5 Quality Assurance / Quality Control

Water Quality Monitoring at Seawater Intakes

3.5.1 The Multifunctional Meter (YSI 6920) used in water quality monitoring was checked, calibrated and certified by a laboratory accredited under HOKLAS before use and subsequently re-calibrated at 3-monthly intervals throughout all stages of the water quality monitoring. The copies of the calibration certificates for the Multifunctional Meter (YSI 6920) are attached in **Appendix D**.

Report No.: 0151/15/ED/0973

- 3.5.2 Before each round of monitoring, the dissolved oxygen probe of YSI 6920 was calibrated with wet bulb method.
- 3.5.3 During the measurement of DO concentration, DO saturation, salinity, turbidity, pH and temperature, if the difference 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.
- 3.5.4 During water sampling by water samplers, for QA/QC purpose, one duplicate sample from each batch of 20 samples was analysed as required by the HOKLAS. QA/QC results are shown in **Appendix H**.

3.6 Monitoring Result

Water Quality Monitoring at Seawater Intakes

- 3.6.1 Water quality monitoring at Seawater Intake was conducted on 14 June, 23 June, 5 July, 19 July, 19 August and 25 August 2016. A summary of the monitoring results are presented in **Table 3.5**. Details of the water quality monitoring results for the monitoring stations are presented in **Appendix I**. Graphical presentations of the results are given in **Appendix J**.
- 3.6.2 Based on the monitoring results, the depth-averaged water Dissolved Oxygen (bottom) and Turbidity were well within the baseline ranges.
- 3.6.3 The temperature measured at W1 and W2 (29.6 °C – 30.2 °C) in July were slightly higher than the baseline range (24.8 °C – 29.5 °C), the temperature restored to lower level and were within the baseline range in August.
- 3.6.4 The pH value measured at W1 and W2 (pH 8.2 - pH 9) in June, July and August were higher than the baseline range (pH 7.1 – pH 8.0). Given that the typical pH of seawater is around 8 or higher and the pH of treated effluent is typically around 7 or lower, if the pH value of seawater was affected by the discharge of TPSTW, the pH value should be lower than normal. Hence, the high reading of pH value in mid ebb tide is unlikely caused by the operation of TPSTW.
- 3.6.5 The Salinity measured at W1 and W2 (22.8 - 25.6 ppt) in August were lower than the baseline range (26.1 – 33.7 ppt). It might be due to the heavy rainstorm from 14 August 2016 to 19 August 2016 and 20 August 2016 to 21 August 2016 and not related to the operation of TPSTW.
- 3.6.6 The Suspended Solid level on 5 July 2016 at W1 (9.2 - 10mg/L) were higher than the baseline range (2-7mg/L) but it restored to the baseline range afterward.
- 3.6.7 The Dissolved Oxygen (DO) level (Surface & Middle) in June and July (2.9 - 6.2 mg/L) were lower than the baseline range. And the DO level at W2 during mid ebb tide was lower than mid flood tide. As a semi-enclosed water, Tolo Harbour suffers from naturally induced DO depletion during summertime and relies on flood tides from Mirs Bay to help replenish DO levels. The lower DO levels during ebb tide thus reflect the wider summertime conditions at Tolo Harbour. The Dissolved Oxygen level (Surface & Middle) restored to the level within baseline range in August.
- 3.6.8 The Ammonia nitrogen level on 23 June 2016 at W2 during mid – ebb tide (0.280 mg/L) was slightly higher than the baseline range. The Ammonia nitrogen level restored to the baseline range afterward.
- 3.6.9 Based on the findings of the water quality monitoring, it was confirmed that the operation of the project had not resulted in adverse water quality impacts to the two seawater intakes and the baseline was confirmed to be restored.

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Report No.: 0151/15/ED/0973

Table 3.5 Summary of the Water Quality Monitoring Results at Seawater Intakes (14 June, 23 June, 5 July, 19 July, 19 August and 25 August 2016)

Location		Temperature (°C)	pH	Salinity (ppt)	DO (Surface & Middle) (mg/L)	DO (Bottom) (mg/L)	Turbidity (NTU)	Suspended Solid (mg/L)	Ammonia-Nitrogen (mg/L)
Low Tide									
W1	Max	30.2	8.9	30.9	8.9	7.0	5.9	10.0	0.205
	Min	26.4	8.2	24.8	6.2	2.7	3.0	3.1	0.015
	Mean	28.4	8.6	27.8	7.4	4.8	4.4	4.7	0.094
W2	Max	30.1	8.8	33.4	8.6	6.0	7.0	4.5	0.280
	Min	25.5	7.2	24.5	2.9	1.1	1.8	1.0	<0.010
	Mean	27.5	8.2	29.1	5.7	3.4	4.0	3.0	0.110
High Tide									
W1	Max	29.6	9.0	33.3	8.7	7.4	5.8	9.2	0.236
	Min	26.2	7.5	22.8	4.4	1.9	3.0	3.0	0.015
	Mean	27.9	8.4	29.2	7.1	4.6	4.7	4.5	0.110
W2	Max	29.5	8.8	33.5	7.7	6.2	6.7	4.7	0.200
	Min	25.3	7.5	23.4	4.0	2.3	2.0	0.6	<0.010
	Mean	27.3	8.3	30.4	5.8	3.8	4.0	3.0	0.089
Defined Baseline Level	Max	29.5	8.0	33.7	9.9	9.2	8.5	7.0	0.270
	Min	24.8	7.1	26.1	6.3	0.8	1.0	2.0	0.010

Note: The max, min and mean results and baseline levels are depth-averaged values

There may be discrepancies in the mean values with those derived from Appendix I due to rounding errors

Report No.: 0151/15/ED/0973

4. ADVICE ON THE SOLID AND LIQUID WASTE MANAGEMENT STATUS

- 4.1.1 TPSTW had registered as a chemical waste producer for this Project. The license number of Chemical Waste Producer Registration is 0014-727-D2226-15 which is presented in **Appendix K**.
- 4.1.2 TPSTW is reminded that chemical waste should be properly handled and stored temporarily in designated chemical waste storage area on site in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. TPSTW should also engage a licensed waste collector to collect the chemical waste for proper disposal.
- 4.1.3 Sludge cake of TPSTW was temporarily stored within the dewatering house. Normally, all the sludge cake was disposed to Sludge Treatment Facility (STF). If STF breaks down, the sludge cake will be disposed to WENT landfill.

Report No.: 0151/15/ED/0973

5. IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

- 5.1.1 A summary of the Implementation Schedule of Environmental Mitigation Measures (EMIS) for operation phase is presented in Appendix G. Most of the necessary mitigation measures at this stage of works were implemented properly.
- 5.1.2 Implementation status of operational landfill gas monitoring was confirmed with operation team of TPSTW. There is no accumulation of landfill gas at area for normal occupation inside TPSTW. When confined space works were being conducted, gas monitoring was performed before entry in accordance with Code of Practice on Safety and Health at Work in Confined Spaces.

Report No.: 0151/15/ED/0973

6. SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

6.1.1 There was no complaint received in relation to the environmental impact or notifications of summons or prosecutions received during this reporting period.

Report No.: 0151/15/ED/0973

7. CONCLUSION AND RECOMMENDATIONS

- 7.1.1 The fourth odour impact monitoring was carried out from 23 September 2016 to 24 September 2016 during this reporting period in accordance with the EM&A requirements.
- 7.1.2 Air quality monitoring of hydrogen sulphide (H₂S) was conducted at five monitoring stations including three Air Sensitive Receivers around TPSTW. Exceedances of A/L levels of 2.5 ppb at three ASRs (AS1, AS12 and AS4) were recorded.
- 7.1.3 There was no marine water quality impact monitoring conducted during this reporting period and therefore, no marine water quality impact monitoring result is reported.
- 7.1.4 Water quality monitoring at WSD Seawater Intakes was carried out in accordance with the requirement of EM&A Manual on 14 June 2016, 23 June 2016, 5 July 2016, 19 July 2016, 19 August 2016 and 25 August 2016. Water quality data was collected during high and low tides.
- 7.1.5 Based on the monitoring results, the overall water quality at Seawater Intakes was considered acceptable during the monitoring period. The results did not reveal any evidence showing that the operation of TPSTW has caused any significant water quality impact to the surrounding water body.

Report No.: 0151/15/ED/0973

Figure 2.1

Air Quality (H₂S) Monitoring Stations

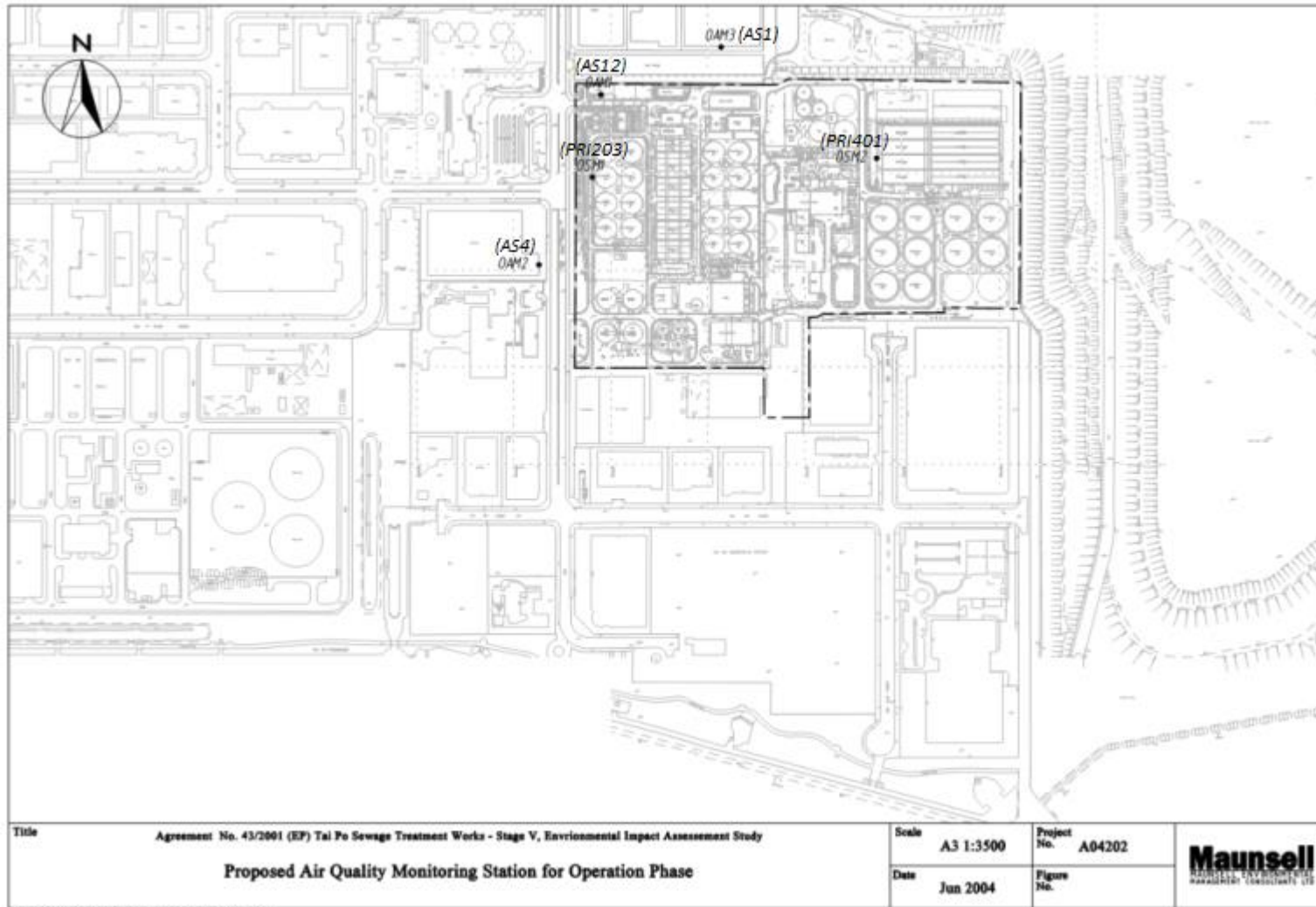
MaterialLab – Waste & Environmental Technologies Joint Venture

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Figure 3.1

Water Quality Monitoring Stations at Seawater Intakes



DETAILS:

W1 - WSD SEAWATER INTAKE AT TAI PO
W2 - WSD SEAWATER INTAKE AT SHA TIN



ENVIRONMENTAL MONITORING & AUDIT FOR TAI PO SEWAGE TREATMENT WORKS
STAGE 5 PHASE 1 - INVESTIGATION

LOCATIONS OF WATER QUALITY IMPACT STATIONS

SCALE	A3 1 : 40000	DATE	SEP 2011
CHECK	--	DRAWN	--
JOB No.	S05605	DRAWING No.	2.1
		REV	--

Plotting By: SAK/CS

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Appendix A

Project Organisation Chart

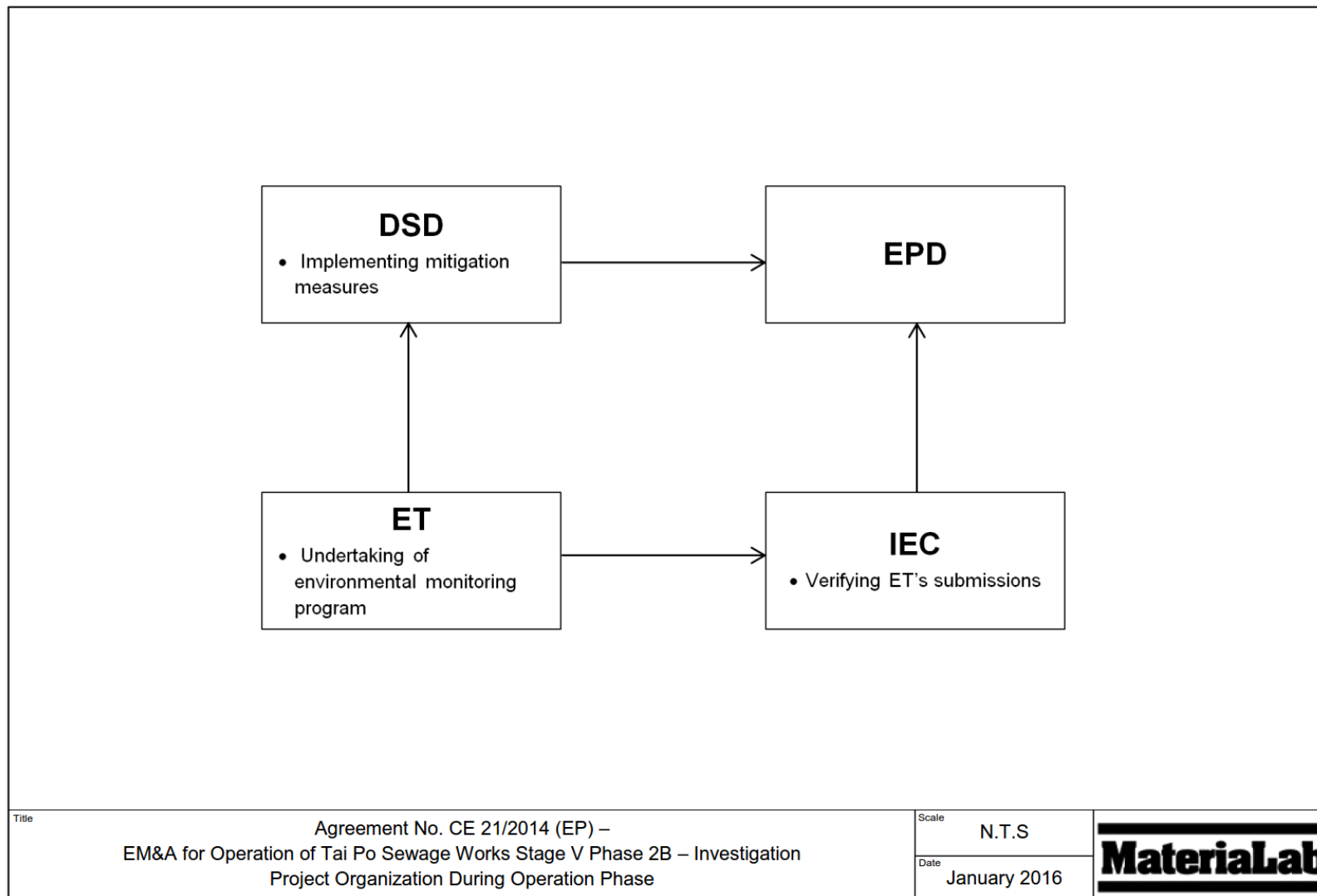
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P:\MCL\EM&A\2015\0151-15\O-Chart

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Appendix B

Monitoring Schedule

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Air Quality Monitoring Schedule for September 2016

Sep-2016						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23 Odour (H ₂ S) Monitoring	24 Odour (H ₂ S) Monitoring
25	26	27	28	29	30	

Note: There was no marine water quality monitoring conducted during September 2016

Tentative Air Quality Monitoring Schedule for October 2016

Oct-2016						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28 Odour (H ₂ S) Monitoring	29 Odour (H ₂ S) Monitoring
30	31					

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Appendix C

Event / Action Plan for Air Quality Monitoring (Operation Phase)

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Report No.: 0151/15/ED/0973

Event	Action		
	TPSTW Engineer –in-charge of Odour Monitoring	DSD ST1	DSD/SP / E &MP (*)
Exceedance of action level or receipt of any odour complaints	<ol style="list-style-type: none"> 1. Identify source/ reason of exceedance or odour complaints; and 2. Repeat measurement confirm finding. 	<ol style="list-style-type: none"> 1. carry out investigation to identify the source / reason of exceedance or complaints. Investigation shall be completed within 1 week; 2. rectify any unacceptable practice; 3. amended working methods if required; 4. inform DSD SP/E&MP if cause of complaints or exceedance is considered to be caused by civil or E &M design problems; 5. Correspond to the complaints within 10 days to inform the cause of nuisance and action taken; and cause of nuisance; and 6. Implement amended working methods. 	<ol style="list-style-type: none"> 1. Assist ST1 to find the root cause of the complaint or exceedance; and 2. modify or improve design as appropriate.
Exceedance of Limit level or receipt of two or more complaints in 3 months	<ol style="list-style-type: none"> 1. Identify source / reason of exceedance or odour complaints; 2. Repeat measurements to confirm findings; 3. Increase monitoring frequency to monthly; and 4. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Carry out investigation to identify the source / reason of exceedance or complaints. Investigation shall be completed within 1 week; 2. rectify any unacceptable practice; 3. amended working methods if required; 4. notify DSD SP / E&MP; 5. formulate remedial actions; 6. ensure amended working methods and remedial actions properly implemented; 7. if exceedance continues, consider what portion of the work is responsible and stop that portion of work until the exceedance is abated; and 8. correspond to the complaints within 10 days to inform the cause of the nuisance and action taken. 	<ol style="list-style-type: none"> 1. Assist ST1 to find the root cause of the complaint or exceedance; 2. modify or improve design as appropriate; and 3. formulate remedial actions in association with ST1

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Appendix D

Calibration Certificate



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Kwai Chung, N.T., Hong Kong
T: +852 2610 1044
F: +852 2610 2021
www.alsglobal.com

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

CONTACT: MR THOMAS WONG
CLIENT: ENOVATIVE ENVIRONMENTAL SERVICE LTD
ADDRESS: RM811, HIN PUI HOUSE,
HIN KENG ESTATE,
TAI WAI,
N.T., HONG KONG

WORK ORDER: HK1612309
SUB-BATCH: 0
LABORATORY: HONG KONG
DATE RECEIVED: 31/03/2016
DATE OF ISSUE: 06/04/2016

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.


The "Next Calibration Date" is recommended according to best practice principals as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity, Temperature and Turbidity
Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: 6920 V2
Serial No.: 00019CB2
Equipment No.: --
Date of Calibration: 31 March, 2016

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.


Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

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Page 1 of 3

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1612309
Sub-Batch: 0
Date of Issue: 06/04/2016
Client: ENOVATIVE ENVIRONMENTAL SERVICE LTD



Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6920 V2
Serial No.: 00019CB2
Equipment No.: --
Date of Calibration: 31 March, 2016 Date of next Calibration: 30 June, 2016

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	149.2	+1.6
6667	6689	+0.3
12890	12920	+0.2
58670	58062	-1.0
	Tolerance Limit (%)	±10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
1.50	1.54	+0.04
5.02	5.09	+0.07
9.04	8.96	-0.08
	Tolerance Limit (mg/L)	±0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B


Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.06	+0.06
7.0	7.06	+0.06
10.0	9.94	-0.06
	Tolerance Limit (pH unit)	±0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
10	9.92	-0.8
20	19.82	-0.9
30	29.88	-0.4
	Tolerance Limit (%)	±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


Mr. Fung Lim Chee Richard
General Manager
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

Work Order: HK1612309
Sub-Batch: 0
Date of Issue: 06/04/2016
Client: ENOVATIVE ENVIRONMENTAL SERVICE LTD



Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6920 V2
Serial No.: 00019CB2
Equipment No.: --
Date of Calibration: 31 March, 2016 Date of next Calibration: 30 June, 2016

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
13	13.2	+0.2
21	21.1	+0.1
31	30.6	-0.4
Tolerance Limit (°C)		±2.0

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
4	4.2	+5.0
40	40.5	+1.3
80	78.9	-1.4
400	384.1	-4.0
800	786.7	-1.7
Tolerance Limit (%)		±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


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REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

CONTACT: MR THOMAS WONG
CLIENT: ENOVATIVE ENVIRONMENTAL SERVICE LTD
ADDRESS: RM811, HIN PUI HOUSE,
HIN KENG ESTATE,
TAI WAI,
N.T., HONG KONG

WORK ORDER: HK1628798
SUB-BATCH: 0
LABORATORY: HONG KONG
DATE RECEIVED: 16/07/2016
DATE OF ISSUE: 25/07/2016

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.


The "Next Calibration Date" is recommended according to best practice principals as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity, Temperature and Turbidity
Equipment Type: Multifunctional Meter
Brand Name: YSI
Model No.: 6920V2
Serial No.: 00019CB2
Equipment No.: --
Date of Calibration: 16 July, 2016

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.


Mr. Fung Lim Chee, Richard
General Manager -
Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Work Order: HK1628798
Sub-Batch: 0
Date of Issue: 25/07/2016
Client: ENOVATIVE ENVIRONMENTAL SERVICE LTD



Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6920V2
Serial No.: 00019CB2
Equipment No.: --
Date of Calibration: 16 July, 2016 **Date of next Calibration:** 16 October, 2016

Parameters:

Conductivity

Method Ref: APHA (21st edition), 2510B

Expected Reading (uS/cm)	Displayed Reading (uS/cm)	Tolerance (%)
146.9	147	+0.1
6667	6548	-1.8
12890	13168	+2.2
58670	57511	-2.0
Tolerance Limit (%)		±10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.30	2.44	+0.14
5.18	5.26	+0.08
7.41	7.51	+0.10
Tolerance Limit (mg/L)		±0.20

pH Value

Method Ref: APHA 21st Ed. 4500H:B

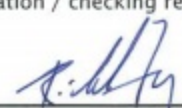
Expected Reading (pH Unit)	Displayed Reading (pH Unit)	Tolerance (pH unit)
4.0	4.05	+0.05
7.0	7.03	+0.03
10.0	10.06	+0.06
Tolerance Limit (pH unit)		±0.20

Salinity

Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.01	--
10	9.92	-0.8
20	19.31	-3.5
30	27.95	-6.8
Tolerance Limit (%)		±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


 Mr. Fung Lim Chee, Richard
 General Manager -
 Greater China & Hong Kong

REPORT OF EQUIPMENT PERFORMANCE CHECK / CALIBRATION

Work Order: HK1628798
Sub-Batch: 0
Date of Issue: 25/07/2016
Client: ENOVATIVE ENVIRONMENTAL SERVICE LTD



Description: Multifunctional Meter
Brand Name: YSI
Model No.: 6920V2
Serial No.: 00019CB2
Equipment No.: --

Date of Calibration: 16 July, 2016

Date of next Calibration:

16 October, 2016

Parameters:

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
13.5	13.9	+0.4
26.5	26.7	+0.2
37.0	37.3	+0.3
Tolerance Limit (°C)		±2.0

Turbidity

Method Ref: APHA (21st edition), 2130B

Expected Reading (NTU)	Displayed Reading (NTU)	Tolerance (%)
0	0.4	--
4	4.2	+5.0
40	40.7	+1.8
80	81.6	+2.0
400	397	-0.8
800	807	+0.9
Tolerance Limit (%)		±10.0

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.


Mr. Fung Lim Chee Richard
General Manager -
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www.azic.com • customerservice@azic.com



Certification of Instrument Calibration

Guyline (Asia) Ltd
Rm 1611, Eastern Harbour Centre
Quarry Bay,

RMA # 2352086

This is to certify that the Jerome X631 0003 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2966, with Sensor Number 14-11-23-R2D, was calibrated with standard units traceable to NIST.

Calibration Status as Received: **Out of Calibration**

		Actual	Calibration Gas	Allowable Range
Incoming:	Range 1	0.378 ppm H2S	0.500 ppm H2S	+/- 6%
	RSD %	4.02		<5%
Outgoing:	Range 1	0.496 ppm H2S	0.500 ppm H2S	+/- 6%
	RSD %	1.84		<5%

Calibration Status as Left: **In Calibration**

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 24-Jun-2016 Recalibration Date: 23-Jun-2017

Temperature °F: 73.40 % Relative Humidity: 41.10

Cheryl Hradek

Approved By: _____
Title: Cheryl Hradek - Quality Control

Date Approved: 27-Jun-2016

Equipment Used:

H2S Calibration Standard: CC-128282 NIST#: 1323407

Calibration Date: 07-Jan-2015 **Calibration Date Due:** 08-Jan-2018

Mass Flow Controller B: 124606 NIST#: 130142

Calibration Date: 18-Nov-2015 **Calibration Date Due:** 18-Nov-2016

Mass Flow Controller D: 124609 NIST#: 130128

Calibration Date: 18-Nov-2015 **Calibration Date Due:** 18-Nov-2016

Digital Multimeter: 33390673WS NIST#: 7002611

Calibration Date: 24-Mar-2016 **Calibration Date Due:** 24-Mar-2017

Flowmeter: US04H25956 NIST#: 1813; 1817; 1796

Calibration Date: 18-Nov-2015 **Calibration Date Due:** 18-Nov-2016

Calibration Procedure Used: 730-0032

Arizona Instrument certifies that the above listed instrument meets or exceeds all published specifications and has been calibrated using standards whose accuracy are traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY within the limitations of the Institute's calibration services, or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of self-calibration techniques.

Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, Arizona Instrument LLC WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.

As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

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Certification of Instrument Calibration

Guyline (Asia) Ltd
Rm 1611, Eastern Harbour Centre
Quarry Bay,

RMA # 2352084

This is to certify that the Jerome X631 0003 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2967, with Sensor Number 16-4-13-V2DS, was calibrated with standard units traceable to NIST.

Calibration Status as Received: **Out of Calibration**

		Actual	Calibration Gas	Allowable Range
Incoming:	Range 1	0.210 ppm H2S	0.500 ppm H2S	+/- 6%
	RSD %	13.62		<5%
Outgoing:	Range 1	0.496 ppm H2S	0.500 ppm H2S	+/- 6%
	RSD %	1.18		<5%

Calibration Status as Left: **In Calibration**

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 23-Jun-2016 Recalibration Date: 22-Jun-2017

Temperature °F: 74.30 % Relative Humidity: 38.30

Cheryl Hradek

Approved By: _____

Date Approved: 23-Jun-2016

Title: Cheryl Hradek - Quality Control

Equipment Used:

H2S Calibration Standard: CC-128282 NIST#: 1323407

Calibration Date: 07-Jan-2015 **Calibration Date Due:** 08-Jan-2018

Mass Flow Controller B: 124606 NIST#: 130142

Calibration Date: 18-Nov-2015 **Calibration Date Due:** 18-Nov-2016

Mass Flow Controller D: 124609 NIST#: 130128

Calibration Date: 18-Nov-2015 **Calibration Date Due:** 18-Nov-2016

Digital Multimeter: 33390673WS NIST#: 7002611

Calibration Date: 24-Mar-2016 **Calibration Date Due:** 24-Mar-2017

Flowmeter: US04H25956 NIST#: 1813; 1817; 1796

Calibration Date: 18-Nov-2015 **Calibration Date Due:** 18-Nov-2016

Calibration Procedure Used: 730-0032

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Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, Arizona Instrument LLC WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.

As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

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MaterialLab

Report No.: 0151/15/ED/0973

Appendix E

Air Quality (H₂S) Monitoring Data and Graphical Plots

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Email : mcl@fugro.com



Report No.: 0151/15/ED/0973

Location	Time Interval	H ₂ S concentration (ppb)*							
		3 rd Odour Impact Monitoring (26-27 August 2016)							
		15-minute integrated average	24-hour average	Maximum	Minimum	Action Level	Exceedance	Limit Level	Exceedance
AS12 ^{1,2}	1600-1900	5.0	5.0	8.3	0.0	2.5	Yes	2.5	Yes
	1900-2200	8.0							
	2200-0100	8.3							
	0100-0400	5.0							
	0400-0700	7.3							
	0700-1000	5.0							
	1000-1300	0.0							
1300-1600	1.7								
AS4 ^{1,2}	1600-1900	95.7	30.8	95.7	0.0	2.5	Yes	2.5	Yes
	1900-2200	75.7							
	2200-0100	0.0							
	0100-0400	0.0							
	0400-0700	0.7							
	0700-1000	73.0							
	1000-1300	0.0							
1300-1600	1.0								
AS1 ^{1,2}	1600-1900	6.0	21.9	114.3	0.0	2.5	Yes	2.5	Yes
	1900-2200	3.0							
	2200-0100	114.3							
	0100-0400	14.3							
	0400-0700	30.7							
	0700-1000	3.7							
	1000-1300	0.0							
1300-1600	3.0								
PRI401	1600-1900	52.0	59.0	336.7	0.3	NA	NA	NA	NA
	1900-2200	66.7							
	2200-0100	6.3							
	0100-0400	0.3							
	0400-0700	8.7							
	0700-1000	336.7							
	1000-1300	0.3							
1300-1600	1.0								
PRI203	1600-1900	320.0	121.1	320.0	3.0	NA	NA	NA	NA
	1900-2200	283.3							
	2200-0100	28.7							
	0100-0400	41.0							
	0400-0700	32.7							
	0700-1000	253.3							
	1000-1300	6.7							
1300-1600	3.0								

*Accuracy is not guaranteed by the manufacturer for readings that are lower than 0.003 ppm (3 ppb).

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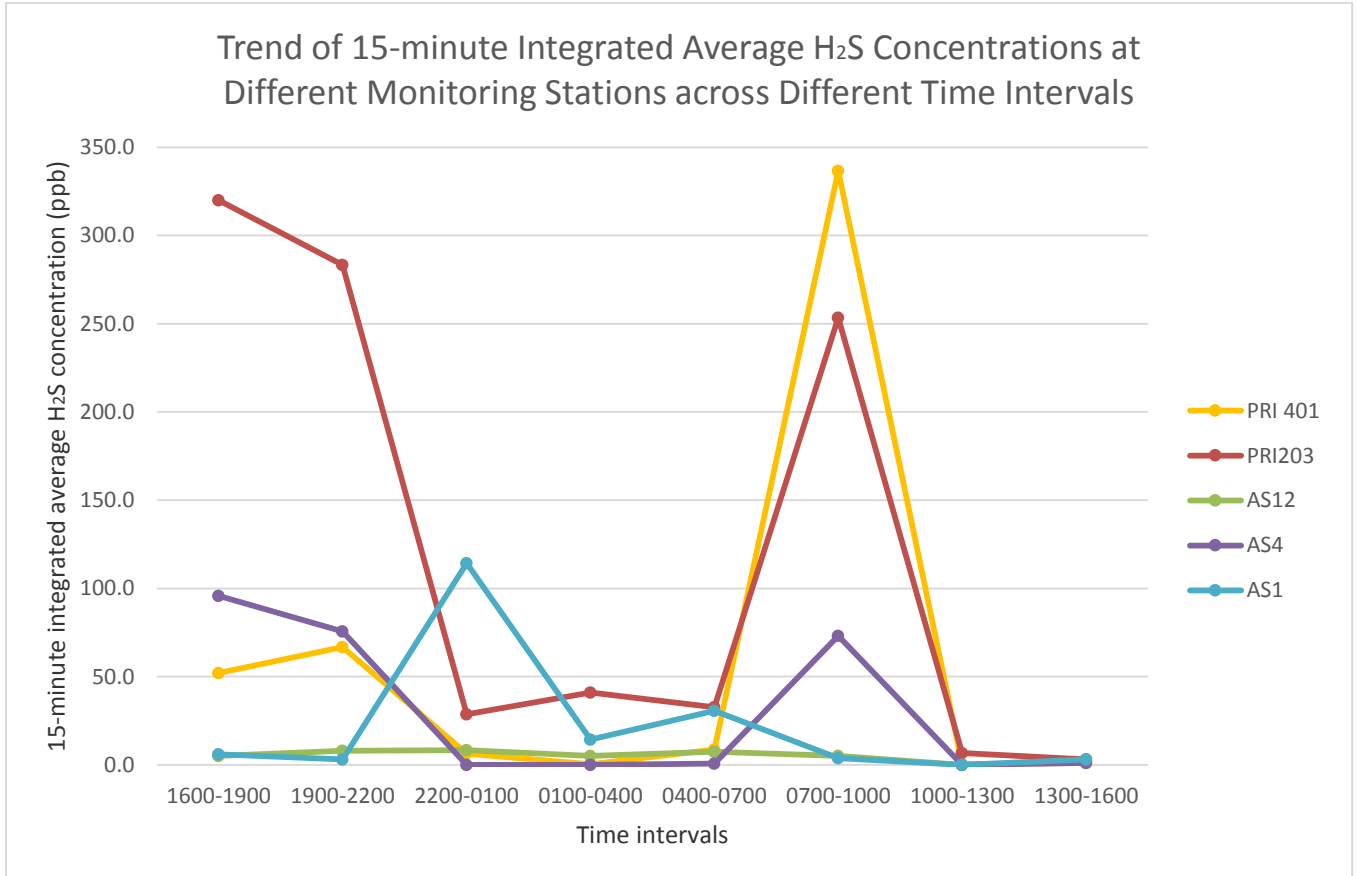
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Report No.: 0151/15/ED/0973

	1600-1900	1900-2200	2200-0100	0100-0400	0400-0700	0700-1000	1000-1300	1300-1600
AS12	5.0	8.0	8.3	5.0	7.3	5.0	0.0	1.7
AS4	95.7	75.7	0.0	0.0	0.7	73.0	0.0	1.0
AS1	6.0	3.0	114.3	14.3	30.7	3.7	0.0	3.0
PRI401	52.0	66.7	6.3	0.3	8.7	336.7	0.3	1.0
PRI203	320.0	283.3	28.7	41.0	32.7	253.3	6.7	3.0



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The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0151/15/ED/0973

Appendix F

Site Record

General Information				
Monitoring Station	PRI 401			
Date	23-9-2016			
Weather	Sunny			
Monitoring Results				
Sample No.	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 18:01	0.2 m/s	S	0.041 0.056 0.059
	Stop: 18:16	1.1 m/s	S	
Sample 2	Start: 21:08	0.2 m/s	S	0.20 0.000 0.000
	Stop: 21:23	0.2 m/s	S	
Sample 3	Start: 23:50	/	/	0.015 0.002 0.002
	Stop: 00:05	/	/	
Sample 4	Start: 02:55	/	/	0.001 0.000 0.000
	Stop: 03:10	/	/	
Sample 5	Start: 06:15	/	/	0.006 0.007 0.013
	Stop: 06:30	/	/	
Sample 6	Start: 07:00 07:40	/	/	0.018, 0.075, 0.15 0.18, 0.25, 0.58
	Stop: 07:55	/	/	
Sample 7	Start: 10:40	/	/	0.001, 0.000, 0.000
	Stop: 10:55	/	/	
Sample 8	Start: 13:55	/	/	0.001, 0.002, 0
	Stop: 14:10	/	/	
Other Observations No special observations				

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	hem ATO		23-9-2016
Checked by:	Kam ATO		23-9-2016
	To Jitin ATO		24-9-2016
	IM Kulk SEC		26/09/2016

General Information				
Monitoring Station	PR1 203			
Date	23-9-2016			
Weather	Cloudy Sunny			
Monitoring Results				
Sample No.	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 18:42	1.2m/s	N	0.25 0.25
	Stop: 18:57	/	/	0.32 0.39
Sample 2	Start: 21:48	/	/	0.31
	Stop: 22:03	/	/	0.28 0.26
Sample 3	Start: 22:08	/	/	0.034, 0.02, 0.032
	Stop: 22:25	/	/	
Sample 4	Start: 01:10	/	/	0.042, 0.045, 0.036
	Stop: 01:25	/	/	
Sample 5	Start: 04:30	/	/	0.028, 0.010, 0.060
	Stop: 06:45	/	/	
Sample 6	Start: 10:00	/	/	0.4, 0.24, 0.12
	Stop: 10:15	/	/	
Sample 7	Start: 13:10	0.8m/s	NE	0, 0, 0.02
	Stop: 13:25	/	/	
Sample 8	Start: 16:20	/	/	0.005, 0.004, 0
	Stop: 16:35	/	/	
Other Observations: No special observations				

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	hen ATO Kam ATO		23-9-2016
Checked by:	To Ji Tin ATO		23-9-2016
	LM Kwok SEC		24-9-2016
			26/09/2016





General Information				
Monitoring Station	AS12			
Date	23-9-2016			
Weather	Sunny			
Monitoring Results				
Sample No.	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 16:45	1.5 m/s	S	0.004
	Stop: 17:00	0.4 m/s	S	0.004 0.007
Sample 2	Start: 19:51	/	/	0.005
	Stop: 20:06	/	/	0.006 0.013
Sample 3	Start: 00:50	/	/	0.008 0.008 0.012
	Stop: 01:05	/	/	0.005
Sample 4	Start: 03:55	/	/	0.005 0.005 0.005
	Stop: 04:10	/	/	
Sample 5	Start: 07:15	/	/	0.012 0.008 0.002
	Stop: 07:30	/	/	
Sample 6	Start: 09:00	/	/	0.007, 0.004, 0.004
	Stop: 09:15	/	/	
Sample 7	Start: 12:05	/	/	0, 0, 0
	Stop: 12:20	/	/	
Sample 8	Start: 15:15	0.2 m/s	S	0, 0.003, 0.002
	Stop: 15:30	/	/	
Other Observations: No special observations				

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	hen A70		23-9-2016
Checked by:	kum A70		23-9-2016
	To Ji Tin A70		24-9-2016
	LM Kwok SEC		26/09/2016

General Information				
Monitoring Station	AS1			
Date	23-9-2016			
Weather	Sunny			
Monitoring Results				
Sample No.	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 16:25	/	/	0.007
	Stop: 16:40	/	/	0.007 0.004
Sample 2	Start: 17:30	/	/	0.004
	Stop: 17:45	/	/	0.002 0.003
Sample 3	Start: 23:10	0.1 m/s	E	0.073 0.13 0.14
	Stop: 23:25	/	/	
Sample 4	Start: 02:13	0.1 m/s	E	0.017 0.018 0.008
	Stop: 02:28	/	/	
Sample 5	Start: 08:35	0.2 m/s	E	0.045 0.016 0.031
	Stop: 08:50	/	/	
Sample 6	Start: 0920	/	/	0.004, 0.002,
	Stop: 0935	/	/	0.005
Sample 7	Start: 12:30	1.1 m/s	E	
	Stop: 12:45	/	/	0, 0, 0
Sample 8	Start: 15:40	/	/	
	Stop: 15:55	/	/	0.004, 0.002, 0.003
Other Observations No special observations				

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	hen ATo		23-9-2016
Checked by:	kam ATo		23-9-2016
	To Ji Tin ATo		24-9-2016
	LM Knok SEC		26/09/2016

General Information				
Monitoring Station	AS4			
Date	23-9-2016			
Weather	Sunny			
Monitoring Results				
Sample No.	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 16:04	1 m/s	S	0.017
	Stop: 16:19	0.8 m/s	S	0.13 0.14
Sample 2	Start: 19:10	3.1 m/s	S	0.11
	Stop: 19:25	1.3 m/s	S	0.068 0.049
Sample 3	Start: 22:30	0.3 m/s	E	0.000 0.000 0.000
	Stop: 22:45	—	—	
Sample 4	Start: 01:30	0.2 m/s	E	0.000 0.000 0.000
	Stop: 01:45	—	—	
Sample 5	Start: 04:30	0.3 m/s	E	0.001 0.001 0.000
	Stop: 05:05	0.2 m/s	E	
Sample 6	Start: 09:40	—	—	0.066 0.11 0.043
	Stop: 09:55	—	—	
Sample 7	Start: 12:50	0.3 m/s	N	0, 0, 0
	Stop: 13:05	—	—	
Sample 8	Start: 16:00	0.5 m/s	N	0.001, 0.001, 0.001
	Stop: 16:15	—	—	
Other Observations: No. special observations				

	<u>Name & Designation</u>	<u>Signature</u>	<u>Date</u>
Recorded by:	Ken ATO		23-9-2016
Checked by:	Kam ATO		23-9-2016
	To Ji Tin ATO		24-9-2016
	WY Kwok SEC		26/09/2016

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Hourly Temperature of the Monitoring Period:

Date	Time	Temperature (° C)
23-Sep-16	16:00	28
	17:00	28
	18:00	27
	19:00	27
	20:00	27
	21:00	27
	22:00	27
	23:00	27
24-Sep-16	0:00	27
	1:00	27
	2:00	27
	3:00	27
	4:00	27
	5:00	27
	6:00	27
	7:00	27
	8:00	27
	9:00	28
	10:00	28
	11:00	28
	12:00	28
	13:00	29
	14:00	29
	15:00	29
16:00	29	

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Appendix G

Implementation Schedule of Environmental Mitigation Measures (EMIS) for Operation Phase

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EIA Ref.	Environmental Protection Measures	Location of the measures	Implementation Status
Air Quality			
S3.7.5 & 3.7.8	Exposed area at Stage I/II & IV of inlet pumping stations, sludge digestion tank outlet chambers should be covered, with the foul air drawn through deodorization units and discharged after treatment. The grit removal & flume channel at Stage I/II inlet works and the grit removal at Stage IV inlet works should be covered.	TPSTW	Completed
S3.7.6	Weir launders of the Stage I/II and Stage IV primary sedimentation tanks should be covered to control odour emission. Chemical should also be added to the sewage at Tai Yuen Sewage Pumping Station No.4 for the control of odour at Stage IV inlet pumping station, screen house and primary sedimentation tanks.	TPSTW	Completed
S3.7.7	The sludge gravity thickeners, sludge consolidation tanks, screening unit (next to dewatering house), exposed area of wet well of Stage I/II returned activated sludge pumping station and wet well of Stage I/II sludge pumping station should be enclosed to ensure no leakage of odorous gas whereas foul air from the sludge gravity thickeners and sludge consolidation tanks would be discharged via deodorizers.	TPSTW	Completed
Water Quality			
S4.8.10	Silt curtains should be installed at the Shatin and Tai Po Seawater Intakes. Relevant government departments including EPD and WSD should be informed of then maintenance.	TPSTW	Not applicable in this reporting month
S4.8.11	Dual power supply or ring main supply from CLP should be provided for the Project to avoid any loss of electrical supply. In addition, standby facilities for the main treatment units, standby parts/accessories to the equipment should also be provided in order to minimize the chance of emergency discharge.	TPSTW	Completed
S4.8.10 S4.8.12	Shutdown of the THEES, if unavoidable, should be shortened as far as possible. The relevant procedures established in the contingency plan as attached in Appendix 4.5 of the EIA report should be properly followed.	TPSTW	Not applicable in this reporting month
S4.8.13	Dye test is recommended for detection of pipe leakage.	Submarine pipeline at Tolo Harbour	Not applicable in this reporting month
S4.10.1	Effluent monitoring is recommended to ensure the effectiveness of the proposed treatment process. Details of the monitoring requirements are specified in the EM&A.	Exit of disinfection facilities	Completed
S4.10.2	A post project monitoring (PPM) programme for Victoria Harbour should be implemented to confirm the predictions of the water quality made in the EIA report. The PPM would consist of one- year baseline monitoring before commissioning and one-year impact monitoring after commissioning of the Project. The extent of PPM programme is subject to the prevailing environmental conditions at the time before commissioning of the Project. A more detailed description of the PPM requirements is given in the standalone EM&A Manual	Victoria Harbour	Not applicable in this reporting month
S4.10.3	A PPM programme will be also implemented in the Tolo Harbour during the operational phase. The PPM would involve water quality monitoring at the Tai Po and Sha Tin seawater intake during the first wet season (June to August) after full commissioning of the Project. Marine water quality parameters including SS and NH3-N should be monitored. The water quality monitoring frequency shall be twice per month and should cover the effects of different tidal status (at least one for high tide and one for low tide) for each seawater intake.	Tolo Harbour	Completed

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S4.8.10 &S4.10.4	Marine water quality monitoring should be carried out under emergency condition or during maintenance of the THEES tunnel to verify the findings of the water quality modelling. It is recommended that the maintenance of the THEES tunnel, if unavoidable, should be conducted during winter season or low flow periods and to avoid the "blooming" season of algae (normally from April to June) if practicable. Details of the monitoring requirements are specified in the EM&A Manual.	Tolo Harbour	Not applicable in this reporting month
Waste Management			
S5.5.9	<u>Chemical Waste</u> For the disposal of spent UV lamps, the STW operator would be required to register with the EPD as a Chemical Waste Producer and to follow the requirements stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. A chemical waste producer must engage a licensed waste collector to transport and dispose of the chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	TPSTW	Completed
Landfill Gas Hazard			
S6.6.9	When service voids, manholes or inspection chambers within the proposed site are entered for maintenance, monitoring and a checklist system of safety requirements should be performed before entry in accordance with Code of Practice on Safety and Health at Work in Confined Spaces.	Area of TPSTW within 250m consultation zone	Completed
S6.6.10	For newly built permanent structures, gas-resistant polymeric membranes shall be incorporated into floor or wall construction to act as a continuous sealed layer for the structure. In addition, forced ventilation shall be installed in such rooms or buildings. Gas detection systems should also be proposed where there is an organization involved in the long-term or frequently use of the development in order to monitor internal spaces inside buildings.	Area of TPSTW within 250m consultation zone	Completed
S6.6.11	Forced ventilation should be used if methane of more than 0.5% (by volume) in the internal atmosphere (e.g. In service voids, manholes, inspection chambers or rooms as mentioned above) is detected.	Area of TPSTW within 250m consultation zone	Completed
S6.6.12	No person should enter or remain in any confined spaces or trenches where the carbon dioxide concentration exceeds 1.5% (by volume).	Area of TPSTW within 250m consultation zone	Completed
S6.6.13	Oxygen concentration should be monitored and no person shall enter or remain in any confined spaces or trenches where the oxygen content of air has fallen below 18 % by volume.	Area of TPSTW within 250m consultation zone	Completed
S6.6.14	All the access to these confined spaces should be restricted only to authorized personnel who should be aware of the LFG hazard. No member of general public should be permitted or allowed to access these confined spaces, manholes or inspection chambers.	Area of TPSTW within 250m consultation zone	Completed

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**Appendix H
QA/QC Results**



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 4231676)								
HK1623871-001	IN-W1-MF-S	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.8	3.8	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231695)								
HK1623931-005	Anonymous	EK055K: Ammonia as N	7664-41-7	0.1	mg/L	0.5	0.5	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231696)								
HK1622499-009	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	2.65	2.62	1.1

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EA/ED: Physical and Aggregate Properties (QC Lot: 4231676)												
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	93.0	----	85	115	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231695)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	----	92	108	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231696)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	100	----	92	108	----	----	

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231695)										
HK1623767-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	104	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231696)										
HK1622499-009	Anonymous	EK055K: Ammonia as N	7664-41-7	5 mg/L	111	----	75	125	----	----



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 4231676)								
HK1623871-001	IN-W1-MF-S	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.8	3.8	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231695)								
HK1623931-005	Anonymous	EK055K: Ammonia as N	7664-41-7	0.1	mg/L	0.5	0.5	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231696)								
HK1622499-009	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	2.65	2.62	1.1

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EA/ED: Physical and Aggregate Properties (QC Lot: 4231676)												
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	93.0	----	85	115	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231695)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	----	92	108	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231696)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	100	----	92	108	----	----	

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231695)										
HK1623767-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	104	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4231696)										
HK1622499-009	Anonymous	EK055K: Ammonia as N	7664-41-7	5 mg/L	111	----	75	125	----	----



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 4246471)								
HK1626565-001	IN-W1-MF-S	EA025: Suspended Solids (SS)	----	0.5	mg/L	8.8	8.5	2.6
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4246636)								
HK1626565-001	IN-W1-MF-S	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	0.06	0.06	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EA/ED: Physical and Aggregate Properties (QC Lot: 4246471)												
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	108	----	85	115	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4246636)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	104	----	93	109	----	----	

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4246636)										
HK1626565-001	IN-W1-MF-S	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	106	----	75	125	----	----



Laboratory Duplicate (DUP) Report

Matrix: WATER				Laboratory Duplicate (DUP) Report				
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 4259480)								
HK1629366-001	IN-W1-MF-S	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.0	4.2	5.1
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4260667)								
HK1629066-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	28.8	28.7	0.3
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4260668)								
HK1629366-001	IN-W1-MF-S	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	0.14	0.15	6.9

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: WATER				Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report					
Method: Compound	CAS Number	LOR	Unit	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)		
						LCS	DCS	Low	High	Value	Control Limit	
EA/ED: Physical and Aggregate Properties (QC Lot: 4259480)												
EA025: Suspended Solids (SS)	----	0.5	mg/L	<0.5	20.0 mg/L	107	----	85	115	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4260667)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	103	----	93	109	----	----	
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4260668)												
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	94.9	----	93	109	----	----	

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: WATER				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4260667)										
HK1629066-001	Anonymous	EK055K: Ammonia as N	7664-41-7	50 mg/L	119	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 4260668)										
HK1629366-001	IN-W1-MF-S	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	94.0	----	75	125	----	----

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The logo for MaterialLab, featuring the word "MaterialLab" in a bold, sans-serif font. The text is centered between two thick, horizontal black bars.

Report No.: 0151/15/ED/0973

Appendix I Water Quality Monitoring Results

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Water Quality Results at W1 – Mid - Flood Tide (In-situ Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)		Temperature (°C)			pH			Salinity (ppt)			DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)								
						Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average	DA*						
14-Jun-16	Cloudy	Calm	17:35	Surface	1.0	26.9	26.9	26.4	8.6	8.6	8.6	28.8	28.8	29.8	106.8	106.8	7.3	7.3	7.3	5.3	5.3	5.7						
					26.9	8.6			28.8			106.7			7.3		5.2											
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
					Bottom	3.6	25.8		25.8	8.6		8.6	30.8		30.8	44.6	44.6	3.1		3.1	3.1		6.1	6.1				
				25.8		8.6	30.8			44.6			3.1			6.1												
				23-Jun-16	Sunny	Calm	11:35		Surface	1.0		30.2	30.2		28.2	8.6	8.6	8.5		32.6	32.6		33.3	113.2	113.2	7.1	7.1	7.1
30.2	8.6	32.6	113.2					7.1		2.4																		
Middle	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A		
	Bottom	3.9	26.2					26.2	8.4	8.4	34.0	34.0	82.1	82.1		5.5	5.5		5.5	3.6	3.6							
26.2		8.4	34.0						82.0		5.5		3.6															
05-Jul-16	Sunny	Calm	11:35					Surface	1.0	29.6	29.5	29.6	9.0	9.0		9.0	30.2		30.2	31.1	106.7	106.1		6.9	6.8	6.8	3.5	
				29.4	9.0	30.2	105.5		6.7	4.0																		
				Middle	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		N/A	
					Bottom	2.8	29.7	29.7	9.0	9.0	31.9		31.9	97.0	98.3		6.2	6.3	6.3		4.4	4.5						
				29.7		9.0	31.9		99.5		6.3			4.6														
				19-Jul-16	Cloudy	Calm	06:55	Surface	1.0	26.1	26.1		26.2	7.7	7.7		7.5	32.1	32.1		31.4	67.6	67.4	4.4	4.4		4.4	3.0
26.1	7.7	32.1	67.1						4.4	3.0																		
Middle	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		
	Bottom	3.2	26.3					26.3	7.3	7.3	30.7	30.7		33.8	33.2	1.8		1.9	1.9	4.7		4.6						
26.3		7.3	30.7						32.6		1.9			4.5														
19-Aug-16	Cloudy	Moderate	10:25					Surface	1.0	28.0	28.0	28.0		8.2	8.2	8.3		23.3	23.3	26.8		123.4	123.4	8.5	8.5	8.5		4.6
				28.0	8.2	23.3	123.4		8.5	4.6																		
				Middle	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		N/A	
					Bottom	3.8	28.0	28.0	8.3	8.3	30.4		30.4	112.2	112.2		7.4	7.4	7.4		6.9	7.0						
				28.0		8.3	30.4		112.2		7.4			7.0														
				25-Aug-16	Sunny	Moderate	15:45	Surface	1.0	29.6	29.6		28.9	8.3	8.3		8.3	18.6	18.6		22.8	126.2	126.2	8.7	8.7		8.7	4.2
29.6	8.3	18.6	126.2						8.7	4.2																		
Middle	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		
	Bottom	4.1	28.1					28.1	8.2	8.2	26.9	26.9		48.5	48.5	3.5		3.5	3.5	7.2		7.2						
28.1		8.2	26.9						48.5		3.5			7.2														

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Water Quality Results at W1 – Mid- Flood Tide (Laboratory Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)	Suspended Solids (mg/L)		Ammonia-Nitrogen (mg-N/L)	
					Value	DA	Value	DA
14-Jun-16	Cloudy	Calm	17:35	1.0	3.8	4.1	0.020	0.100
				N/A	N/A		N/A	
				3.6	4.3		0.180	
23-Jun-16	Sunny	Calm	11:35	1.0	2.7	3.6	<0.01	0.015
				N/A	N/A		N/A	
				3.9	4.4		0.030	
05-Jul-16	Sunny	Calm	11:35	1.0	8.8	9.2	0.060	0.030
				N/A	N/A		N/A	
				2.8	9.5		<0.01	
19-Jul-16	Cloudy	Calm	06:55	1.0	4.0	3.9	0.140	0.110
				N/A	N/A		N/A	
				3.2	3.8		0.080	
19-Aug-16	Cloudy	Moderate	10:25	1.0	3.5	3.0	0.280	0.171
				N/A	N/A		N/A	
				3.8	2.5		0.062	
25-Aug-16	Sunny	Moderate	15:45	1.0	3.5	3.6	0.252	0.236
				N/A	N/A		N/A	
				4.1	3.6		0.219	

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Water Quality Results at W1 – Mid - Ebb Tide (In-situ Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)		Temperature (oC)			pH			Salinity (ppt)			DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)						
						Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	Value	Average	Value	Average	Value	Average	DA*			
14-Jun-16	Cloudy	Calm	11:05	Surface	1.0	26.7	26.7	26.4	8.6	8.6	8.6	26.9	26.9	27.6	112.3	112.3	7.7	7.7	7.7	4.4	4.4	5.1				
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A
				Bottom	2.9	26.0	26.0		8.6	8.6		28.3	28.3		39.2	39.2	2.7	2.7		39.2	39.2		2.7	2.7	5.9	5.8
23-Jun-16	Sunny	Calm	17:40	Surface	1.0	28.8	28.8	27.3	8.7	8.7	8.5	27.4	27.4	28.1	106.8	106.8	7.1	7.1	7.1	2.1	2.1	3.0				
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	
				Bottom	2.6	25.8	25.8		8.2	8.2		28.8	28.8		43.2	43.1	3.0	3.0		43.1	43.2		3.0	3.0	3.9	4.0
05-Jul-16	Sunny	Moderate	16:05	Surface	1.0	30.1	30.2	30.2	8.9	8.9	8.9	29.6	29.9	30.9	94.1	95.0	6.1	6.2	6.2	4.0	4.0	3.9				
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	
				Bottom	3.2	30.3	30.2		30.3	8.9		8.9	31.7		31.8	98.1	98.5	6.3		6.3	98.5		98.3	6.3	6.3	3.9
19-Jul-16	Cloudy	Calm	16:15	Surface	1.0	30.1	30.2	30.2	8.9	8.9	8.9	29.6	29.9	30.9	94.1	95.0	6.1	6.2	6.2	4.0	4.0	3.9				
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	
				Bottom	2.1	30.3	30.2		30.3	8.9		8.9	31.7		31.8	98.1	98.5	6.3		6.3	98.5		98.3	6.3	6.3	3.9
19-Aug-16	Cloudy	Moderate	16:35	Surface	1.0	29.1	29.1	29.1	8.3	8.3	8.3	21.2	21.2	24.8	130.2	130.2	8.9	8.9	8.9	3.9	4.0	4.9				
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	
				Bottom	2.6	29.0	29.0		29.0	8.3		8.3	28.3		28.3	106.5	106.4	7.0		7.0	106.4		106.5	7.0	7.0	5.8
25-Aug-16	Sunny	Moderate	08:30	Surface	1.0	27.4	27.4	27.3	8.3	8.3	8.2	21.2	21.2	24.8	120.4	120.4	8.5	8.5	8.5	3.9	3.9	5.9				
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	
				Bottom	2.7	27.1	27.1		27.1	8.2		8.2	28.4		28.4	48.5	48.5	3.3		3.3	48.5		48.5	3.3	3.3	7.9

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Water Quality Results at W1 – Mid - Ebb Tide (Laboratory Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)	Suspended Solids (mg/L)		Ammonia-Nitrogen (mg-N/L)	
					Value	DA	Value	DA
14-Jun-16	Cloudy	Calm	11:05	1.0	2.4	3.3	0.020	0.065
				N/A	N/A		N/A	
				2.9	4.1		0.110	
23-Jun-16	Sunny	Calm	17:40	1.0	3.1	3.9	0.010	0.015
				N/A	N/A		N/A	
				2.9	4.7		0.020	
05-Jul-16	Sunny	Moderate	16:05	1.0	9.9	10.0	0.070	0.035
				N/A	N/A		N/A	
				4.8	10.0		<0.01	
19-Jul-16	Cloudy	Calm	16:15	1.0	4.3	4.2	0.030	0.015
				N/A	N/A		N/A	
				4.0	4.1		<0.01	
19-Aug-16	Cloudy	Moderate	17:05	1.0	4.2	3.1	0.353	0.205
				N/A	N/A		N/A	
				4.4	2.0		0.057	
25-Aug-16	Sunny	Moderate	08:46	1.0	3.6	3.8	0.211	0.231
				N/A	N/A		N/A	
				4.6	4.0		0.251	

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Water Quality Results at W2 – Mid - Flood Tide (In-situ Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)		Temperature (oC)			pH			Salinity (ppt)			DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)										
						Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	DA*							
14-Jun-16	Cloudy	Calm	18:10	Surface	1.0	26.1	26.1	25.8	8.6	8.6	8.6	31.9	31.9	32.0	32.0	64.2	64.2	4.3	4.3	4.0	2.1	2.1	3.3							
					26.1	8.6																		31.9	64.2	4.3	2.1			
					26.0	8.6																		32.0	53.2	3.6	2.9			
				Middle	3.0	26.0	26.0	25.8	8.6	8.6	32.0	32.0	32.0	32.0	32.0	32.0	53.2	53.2	3.6	3.6	2.3	2.3	2.3	3.0	3.0	4.9				
					26.0	8.5																					32.0	53.2	3.6	3.0
					25.3	8.6																					32.2	33.3	2.3	4.9
				Bottom	5.0	25.3	25.3	25.8	8.6	8.6	32.2	32.2	32.0	32.0	32.0	32.0	33.3	33.3	2.3	2.3	2.3	2.3	2.3	4.9	4.9	4.9				
					25.3	8.6																					32.2	33.3	2.3	4.9
				23-Jun-16	Sunny	Calm	12:05	Surface	1.0	29.1	29.1	26.9	8.7	8.7	8.5	32.5	32.5	33.5	33.5	107.8	107.8	6.9	6.9	6.2	1.3	1.3	3.3			
29.1	8.7	32.5	107.8						6.9	1.3																				
26.2	8.5	34.0	82.1						5.5	2.1																				
Middle	3.1	26.2	26.2					26.9	8.5	8.5	34.0	34.0	34.0	34.0	34.0	34.0	34.0	82.1	82.1	5.5	5.5	3.1	3.1	2.0	2.1	6.6				
	26.2	8.3																									34.1	46.6	3.1	6.6
	25.5	8.3																									34.1	46.7	3.1	6.6
Bottom	5.1	25.5	25.5					26.9	8.3	8.3	34.1	34.1	34.1	34.1	34.1	34.1	34.1	46.7	46.7	3.1	3.1	3.1	3.1	6.6	6.6	6.6				
	25.5	8.3																									34.1	46.7	3.1	6.6
05-Jul-16	Sunny	Calm	10:42					Surface	1.0	29.6	29.6	29.5	8.8	8.8	8.8	32.3	32.3	32.6	32.6	91.9	92.1	5.9	7.4	6.5	2.1	2.1	2.0			
				29.6	8.8	32.3	92.3		8.9	2.0																				
				29.5	8.9	32.6	85.5		5.5	2.0																				
				Middle	3.1	29.5	29.5	29.5	8.9	8.9	32.5	32.5	32.5	32.5	32.5	32.5	32.5	88.4	87.0	5.6	5.5	5.7	5.7	1.9	1.9	2.0				
					29.5	8.8																					32.9	90.3	5.8	1.9
					29.4	8.8																					32.9	87.6	5.6	1.9
				Bottom	5.1	29.4	29.4	29.5	8.8	8.8	32.9	32.9	32.9	32.9	32.9	32.9	32.9	87.6	89.0	5.6	5.7	5.7	5.7	1.9	1.9	2.0				
					29.4	8.8																					32.9	87.6	5.6	1.9
				19-Jul-16	Cloudy	Calm	07:30	Surface	1.0	25.8	25.8	25.3	7.6	7.6	7.5	32.7	32.6	31.7	31.7	60.4	61.1	4.0	4.0	4.0	1.5	1.6	2.0			
25.8	7.6	32.5	61.7						4.0	1.7																				
Middle	N/A	N/A	N/A					25.3	N/A	N/A	7.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.0				
	N/A	N/A																									N/A	N/A	N/A	N/A
Bottom	4.4	24.7	24.7					25.3	7.3	7.3	7.5	30.8	30.8	30.8	30.8	30.8	30.8	30.8	33.4	33.2	2.3	2.3	2.3	2.3	2.3	2.3				
	24.7	7.3																									30.7	33.0	2.3	2.3
19-Aug-16	Cloudy	Moderate	11:00	Surface	1.0	28.2	28.2	28.2	8.6	8.6	8.5	26.8	26.8	29.5	29.5	117.2	117.2	7.9	7.9	7.7	5.2	5.2	6.4							
					28.2	8.6																		26.8	117.2	7.9	5.2			
					28.2	8.5																		30.2	114.3	7.5	6.0			
				Middle	3.3	28.2	28.2	28.2	8.5	8.5	30.2	30.2	30.2	30.2	30.2	30.2	29.5	114.3	114.3	7.5	7.5	6.2	6.2	6.0	6.0	8.1				
					28.2	8.4																					31.4	114.3	7.5	6.0
					28.1	8.4																					31.4	94.9	6.2	8.1
				Bottom	5.6	28.1	28.1	28.2	8.4	8.4	31.4	31.4	31.4	31.4	31.4	31.4	29.5	94.9	94.9	6.2	6.2	6.2	6.2	8.1	8.1	9.3				
					28.1	8.4																					31.4	94.9	6.2	8.1
				25-Aug-16	Sunny	Moderate	16:07	Surface	1.0	28.4	28.4	28.0	8.3	8.3	8.2	16.4	16.4	23.4	23.4	132.4	132.4	9.4	9.4	6.7	5.0	5.0	6.7			
28.4	8.3	16.4	132.4						9.4	5.0																				
27.9	8.2	26.5	59.8						4.0	5.9																				
Middle	3.5	27.9	27.9					28.0	8.1	8.1	26.5	26.5	26.5	26.5	26.5	26.5	23.4	59.8	59.8	4.0	4.0	4.0	4.0	5.9	5.9	9.3				
	27.9	8.1																									27.2	59.8	4.0	5.9
	27.8	8.1																									27.2	44.2	3.1	9.3
Bottom	5.9	27.8	27.8					28.0	8.1	8.1	27.2	27.2	27.2	27.2	27.2	27.2	23.4	44.2	44.2	3.1	3.1	3.1	3.1	9.3	9.3	9.3				
	27.8	8.1																									27.2	44.2	3.1	9.3

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Email : mcl@fugro.com

MaterialLab

Report No.: 0151/15/ED/0973

Water Quality Results at W2 – Mid- Flood Tide (Laboratory Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)	Suspended Solids (mg/L)		Ammonia-Nitrogen (mg-N/L)	
					Value	DA	Value	DA
14-Jun-16	Cloudy	Calm	18:10	1.0	4.3	4.7	0.230	0.180
				3.0	4.2		0.150	
				5.0	5.5		0.160	
23-Jun-16	Sunny	Calm	12:05	1.0	1.8	2.6	0.460	0.200
				3.1	3.1		0.060	
				5.1	2.9		0.080	
05-Jul-16	Sunny	Calm	10:42	1.0	2.9	2.5	<0.01	<0.010
				3.1	2.3		<0.01	
				5.1	2.4		<0.01	
19-Jul-16	Cloudy	Calm	07:30	1.0	4.3	4.1	<0.01	<0.010
				N/A	N/A		N/A	
				4.4	3.9		<0.01	
19-Aug-16	Cloudy	Moderate	11:00	1.0	0.6	0.6	0.052	0.056
				3.2	0.7		0.056	
				5.6	0.5		0.061	
25-Aug-16	Sunny	Moderate	16:07	1.0	3.3	3.7	0.032	0.095
				3.5	3.5		0.090	
				5.9	4.2		0.163	

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Water Quality Results at W2 – Mid - Ebb Tide (In-situ Data)

Date	Weather Condition	Sea Condition	Sampling Time	Depth (m)		Temperature (oC)			pH			Salinity (ppt)			DO Saturation (%)		Dissolved Oxygen (mg/L)			Turbidity (NTU)								
						Value	Average	DA*	Value	Average	DA*	Value	Average	DA*	Value	Average	Value	Average	DA*	Value	Average	DA*						
14-Jun-16	Cloudy	Calm	11:40	Surface	1.0	26.9	26.9	26.2	8.5	8.5	8.5	28.9	28.9	29.6	63.2	63.2	4.3	4.3	4.3	1.9	1.9	3.5						
					26.9	8.5			28.9			63.2			4.3		1.8											
				Middle	N/A	N/A	N/A		N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
					Bottom	4.1	25.5		25.5	8.5		8.5	30.2		30.2	31.2	31.3	2.2		2.2	2.2		2.2	5.2	5.2			
				25.5		8.5	30.2			31.3			2.2			5.2												
				23-Jun-16	Sunny	Calm	18:10		Surface	1.0		28.5	28.5		27.0	8.6	8.6	8.5		28.6	28.6		29.3	73.5	73.6	4.6	4.6	4.6
28.5	8.6	28.6	73.6					4.6		1.6																		
Middle	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A		N/A	N/A	N/A	N/A		N/A	N/A	N/A		
	Bottom	3.8	25.4					25.4	8.3	8.3	29.9	29.9	37.4	37.4		2.6	2.6		2.6	2.6	5.2	5.2						
25.4		8.3	29.9						37.4		2.6		5.2															
05-Jul-16	Sunny	Moderate	16:39					Surface	1.0	30.1	30.1	30.1	8.8	8.8		8.8	32.3		32.3	32.4	83.4	85.8		5.4	5.5	5.5	1.9	
				30.1	8.8	32.3	88.2		5.7	1.9																		
				Middle	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		N/A	
					Bottom	4.8	30.1	30.1	8.8	8.8	32.5		32.4	93.9	94.1		6.0	6.0	6.0		6.0	1.7	1.7					
				30.1		8.8	32.4		94.2		6.1			1.6														
				19-Jul-16	Cloudy	Calm	15:25	Surface	1.0	25.4	25.4		25.5	7.3	7.3		7.2	33.1	33.1		33.4	44.1	44.0	2.9	2.9		2.9	2.2
25.4	7.3	33.1	43.8						2.9	2.5																		
Middle	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		
	Bottom	4.0	25.6					25.6	7.1	7.1	33.8	33.8		13.2	13.0	1.1		1.1	1.1	1.1		2.7	2.9					
25.6		7.1	33.7						12.7		1.1			3.0														
19-Aug-16	Cloudy	Moderate	17:05					Surface	1.0	28.8	28.8	28.5		8.4	8.4	8.3		20.4	20.4	24.5		124.3	124.3	8.6	8.6	8.6		6.0
				28.8	8.4	20.4	124.3		8.6	6.1																		
				Middle	N/A	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		N/A	
					Bottom	4.4	28.2	28.2	8.1	8.1	28.6		28.6	69.2	69.2		4.6	4.6	4.6		4.6	8.0	8.0					
				28.2		8.1	28.6		69.2		4.6			8.0														
				25-Aug-16	Sunny	Moderate	08:46	Surface	1.0	28.0	28.0		27.7	8.2	8.2		8.2	22.1	22.1		25.6	119.5	119.6	8.3	8.3		8.3	3.2
28.0	8.2	22.1	119.6						8.3	3.3																		
Middle	N/A	N/A	N/A					N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A		
	Bottom	4.6	27.4					27.4	8.2	8.2	29.0	29.0		55.1	55.1	3.7		3.7	3.7	3.7		8.2	8.2					
27.4		8.2	29.0						55.1		3.7			8.2														

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Report No.: 0151/15/ED/0973

Water Quality Results at W2 – Mid - Ebb Tide (Laboratory Data)

Location	Weather Condition	Sea Condition	Sampling Time	Depth (m)	Suspended Solids (mg/L)		Ammonia-Nitrogen (mg-N/L)	
					Value	DA	Value	DA
14-Jun-16	Cloudy	Calm	11:40	1.0	3.7	4.5	0.210	0.200
				N/A	N/A		N/A	
				4.1	5.3		0.220	
23-Jun-16	Sunny	Calm	18:10	1.0	1.6	2.4	0.460	0.280
				N/A	N/A		N/A	
				3.8	3.1		0.100	
05-Jul-16	Sunny	Moderate	16:39	1.0	3.1	3.4	<0.010	<0.010
				N/A	N/A		N/A	
				4.8	3.7		<0.010	
19-Jul-16	Cloudy	Calm	15:25	1.0	3.3	3.2	<0.010	0.020
				N/A	N/A		N/A	
				4.0	3.0		0.040	
19-Aug-16	Cloudy	Moderate	17:05	1.0	1.0	1.0	0.061	0.077
				N/A	N/A		N/A	
				4.4	0.9		0.092	
25-Aug-16	Sunny	Moderate	08:46	1.0	4.3	3.7	0.102	0.082
				N/A	N/A		N/A	
				4.6	3.1		0.061	

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**Appendix J
Graphical Presentation of Water Quality Monitoring Results**

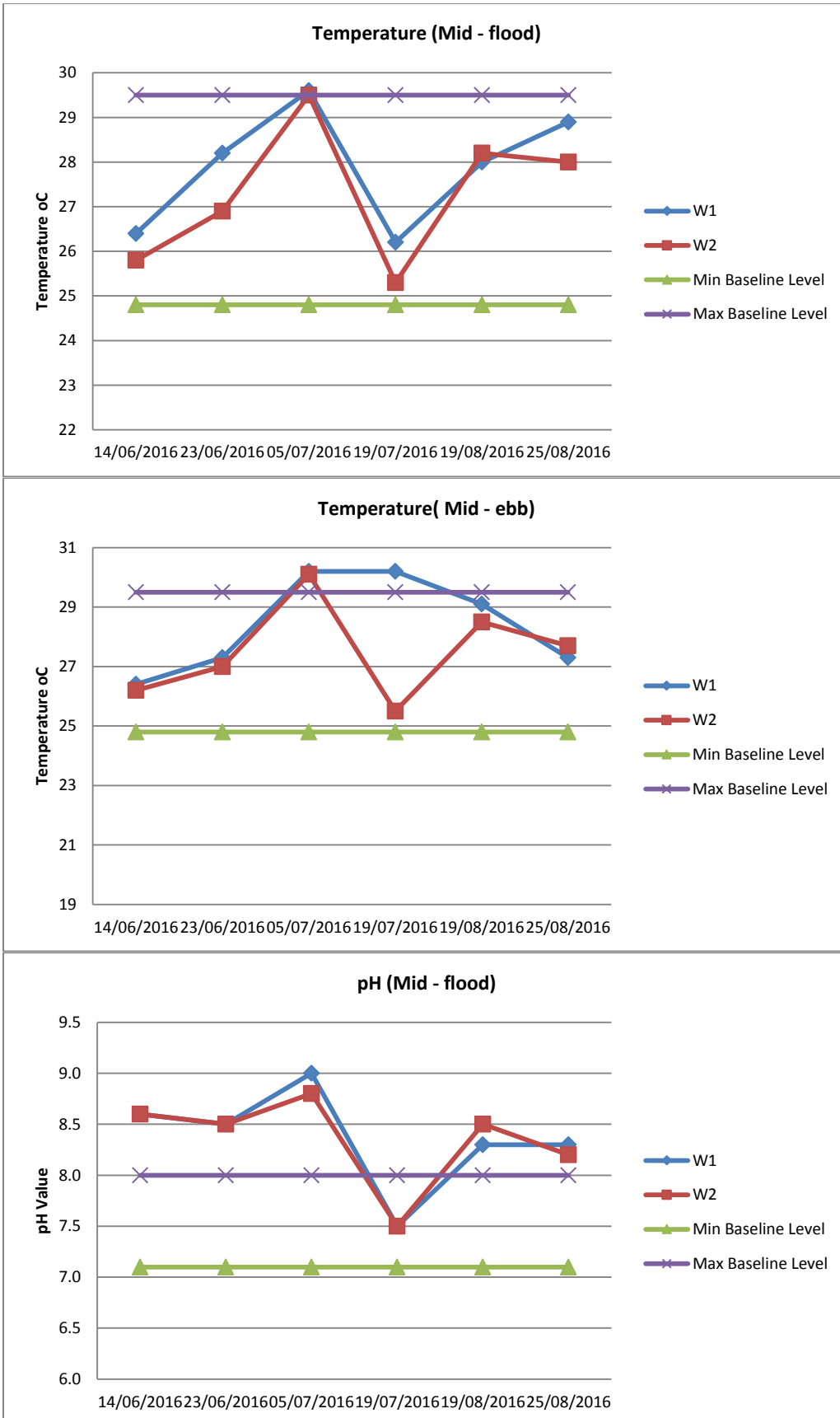
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Note: Results and baseline level are in depth-average values (except for DO).

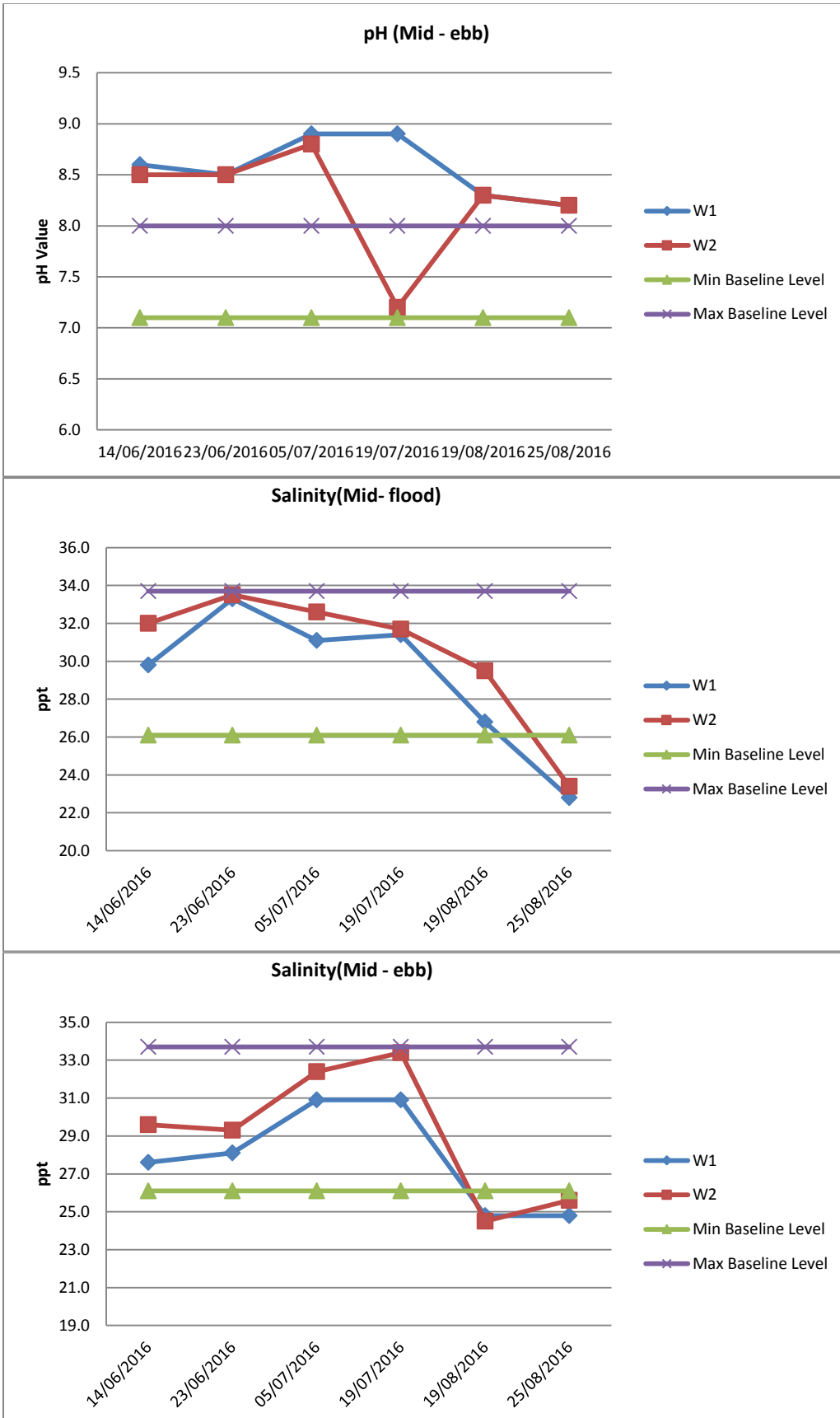
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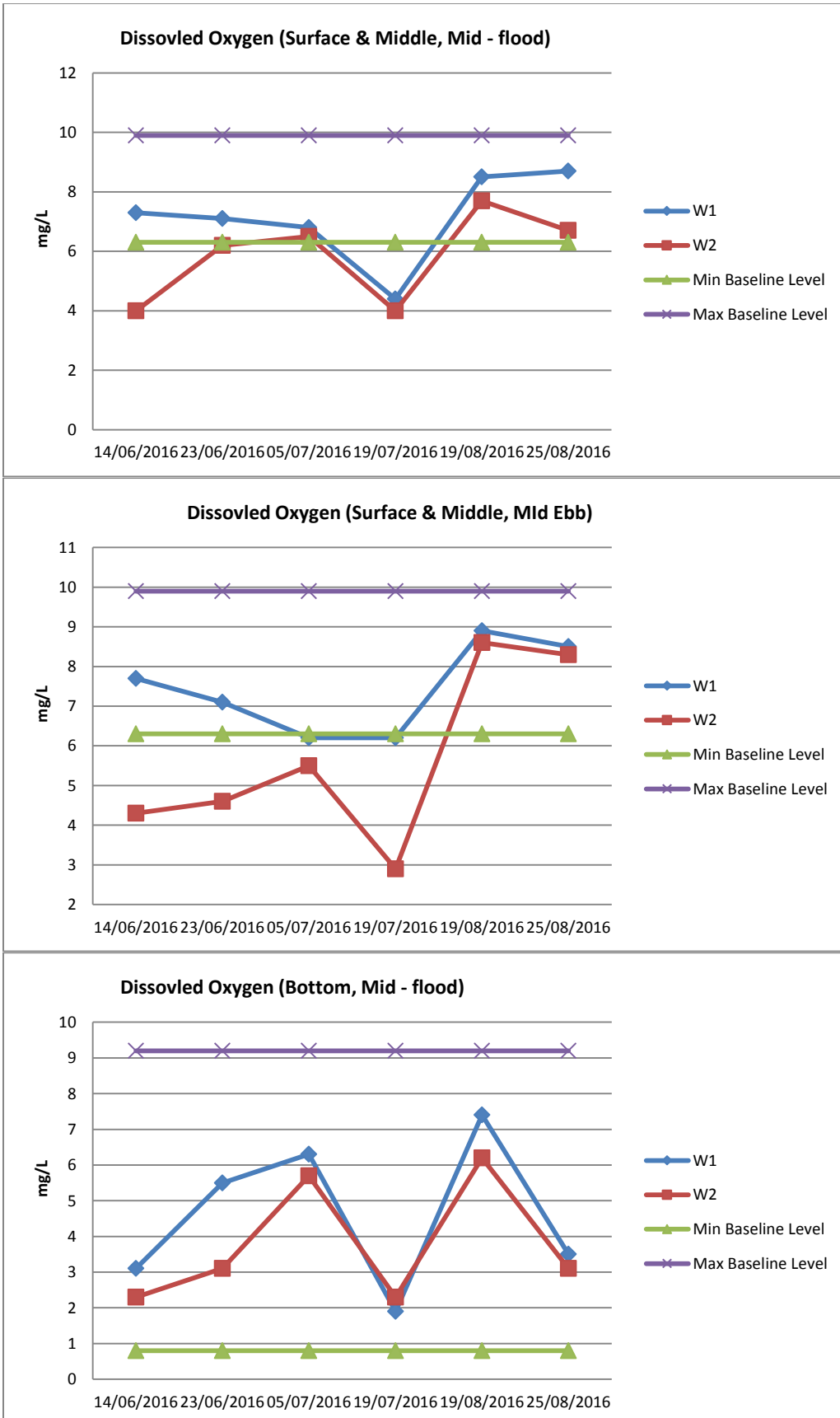
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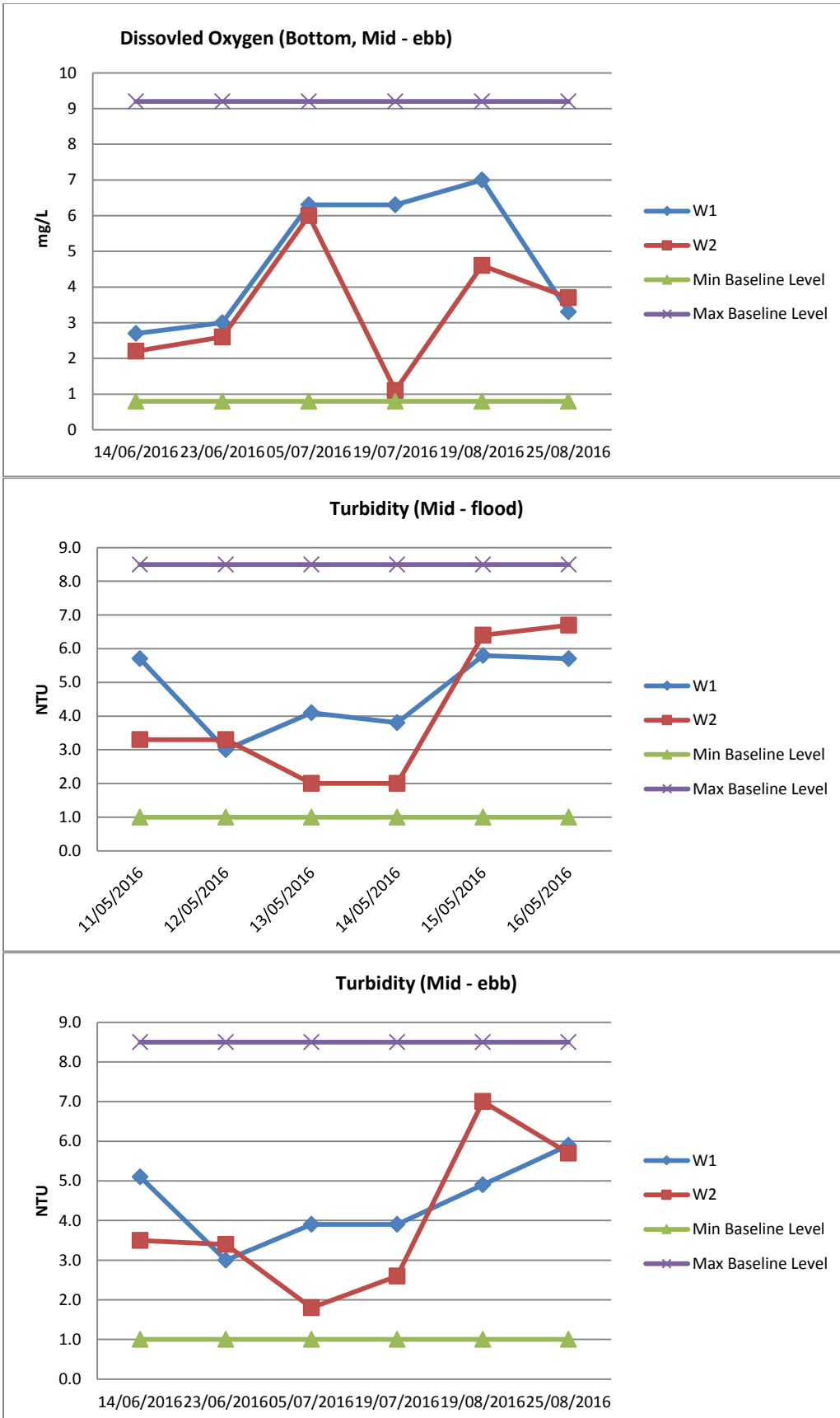
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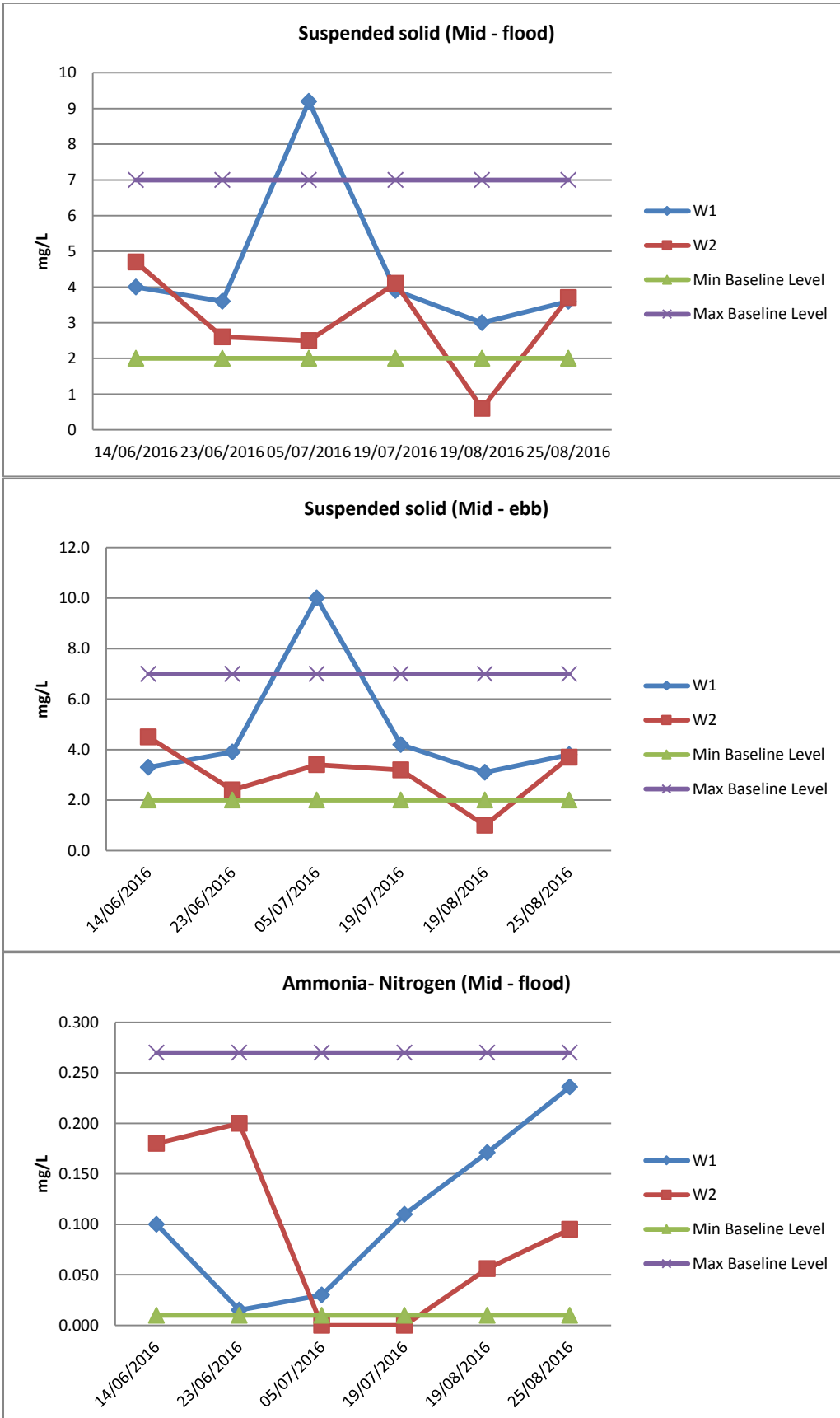
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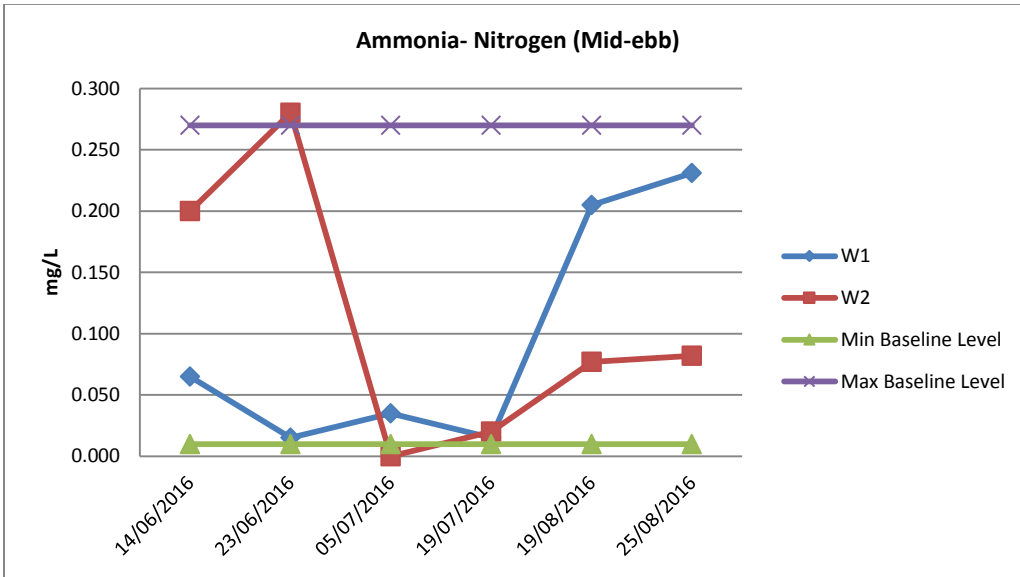
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**Appendix K
Chemical Waste Producer Registration License**

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MaterialLab

Report No.: 0151/15/ED/0973

MEMO

From : <u>Director of Environmental Protection</u>	To : <u>Director of Drainage Services</u> (Attn. Mr. Ho Wai Hung) <i>HW</i> 2/5 / Tai Po STW
Ref. : () in <u>EP CW/D2226/727/15</u>	Your Ref. : _____ in <u>TP/A57</u>
Tel. : <u>2634 3884</u> Fax <u>2685 1155</u>	dated : _____ Fax no <u>26660207</u>
Date : <u>19 APRIL, 2000</u>	

Waste Disposal Ordinance (Cap.354)
Waste Disposal (Chemical Waste) (General) Regulation
Registration as a Chemical Waste Producer
Tai Po Sewage Treatment Works

I refer to your memo under reference.

2. Our records show that there are duplicate registration as a chemical waste producer (CWP) for the Tai Po Sewage Treatment Works. As per your request, we have removed one of the CWP registration (WPN of 0014-727-D2158-02 dated 26.10.1992) from the register with effect from the date of this memo. As a result, the registration form (Form EPD 130) with WPN of 0014-727-D2158-02 dated 26.10.1992 for the above premises is no longer valid.

3. On the other hand, I am pleased to inform you that your revised registration (WPN of 0014-727-D2226-15) with this Department as a CWP has been completed. Your assigned Waste Producer Number (WPN) and the particulars of your establishment are printed in the enclosed form (EPD 130). Please check these entries in the form and notify this Department immediately in any irregularities are detected. Please note that this registration is not transferable and will be valid only in respect of the applicant and the premises registered. In case of any change in the registration particulars, you should inform this Department as soon as possible so that our record so that our record can be amended accordingly.

4. Should you have any queries, please contact our Mr. YIU on 26851156 or the undersigned.



(W.C. SUN)
Local Control Office (Territory North)
for Director of Environmental Protection

Encl.

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Report No.: 0151/15/ED/0973

**Environmental Protection Department
環境保護署
Waste Disposal Ordinance (Chapter 354)
香港法例第354章廢物處理條例
Waste Disposal (Chemical Waste) (General) Regulation
廢物處理(化學廢物)(一般)規例
Registration of Waste Producer
廢物產生者登記證**

To: 致	Waste Producer 廢物產生者	Full Name (English) DIRECTOR OF 全名:(英文) DRAINAGE SERVICES I.D. Card No. (if any) - - - 身份證號碼:(如有者) Business Reg. Cert. No. (if any) 商業登記證號碼:(如有者) Address for Correspondence 通訊地址: DSD, TAI PO SEWAGE TREATMENT WORKS, 7 DAI KWAI STREET, TAI PO INDUSTRIAL ESTATE, TAI PO, N.T. Tel. No. 電話: 26640011 Fax No. 圖文傳真: 26660207	(Chinese) 渠務署署長 (中文) 渠務署署長
----------	-------------------------	--	-------------------------------

With reference to your application dated 09 / 03 / 2000 for registration as a Waste Producer under the Waste Disposal (Chemical Waste) (General) Regulation, the Waste Producer Number, WPN [010114]-[71217]-[D121216]-[115] is assigned to you in respect of the location or premises listed below:-

前於 二000 年 三 月 九 日根據廢物處理(化學廢物)(一般)規例而來信,申請登記為廢物產生者,茲特配子廢物產生者編號第 [010114]-[71217]-[D121216]-[115] 號,予下開地點或樓宇:-

Location or Premises where the waste is produced 產生廢物的地點或樓宇	Name of Establishment 機構名稱: DSD, TAI PO SEWAGE TREATMENT WORKS Business Reg. Cert. No. (if any) 商業登記證號碼:(如有者) Nature of Business 業務性質: SEWAGE TREATMENT Major chemical waste types 主要化學廢物種類: SPENT LUBRICATING OIL & SPENT SOLVENT
	Address 地址: DSD, TAI PO SEWAGE TREATMENT WORKS, 7 DAI KWAI STREET, TAI PO INDUSTRIAL ESTATE, TAI PO, N.T. Tel. No. 電話: 26640011 Fax No. 圖文傳真: 26660207 Contact Person (Full Name) 聯絡人:(全名) HO WAI HUNG (Capacity) (職位) WORKS MANAGER



(W.C. SUN)
for Director of Environmental Protection
環境保護署署長 (辛偉才 代行)

Date
日期 19 / 04 / 2000

WARNING: Any registered waste producer who fails to inform the Director of Environmental Protection of any change in his registration particulars commits an offence and is liable on conviction to a fine of \$10,000.
警告: 任何已登記的廢物產生者,若其登記資料有任何改變而不知會環境保護署署長,即屬違法,被定罪者最高罰款港幣10,000元。