

Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

Monthly EM&A Report

February 2017

Submitted to

Environmental Protection Department

Prepared By

Meinhardt Infrastructure and Environment Ltd

Meinhardt Infrastructure and Environment Limited

**Entrusted Portion of Widening of Tolo
Highway / Fanling Highway between Island
House Interchange and Fanling Stage 2**

Monthly EM&A Report

(February 2017)

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Date: 13 March 2017

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Environmental Monitoring and Audit (EM&A) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2 (between Tai Hang to Wo Hop Shek Interchange) – Entrusted Works Environmental Permit No. EP-324/2008/E Condition 3.3 – Submission of Monthly EM&A Report – February 2017 for the portion of Stage 2 works entrusted to Civil Engineering and Development Department (CEDD) under Contract No. CV/2012/09

13 March 2017
By Fax (2805 5028) & Hand

We refer to the revised Monthly EM&A Report – February 2017 received on 13 March 2017 submitted by the Environmental Team via email. Pursuant to Environmental Permit Condition 3.3, I hereby verify the Monthly EM&A Report – February 2017 (Rev. 0) for the portion of works under Stage 2 of the captioned Project which is entrusted to CEDD under Contract No. CV/2012/09.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED



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EXECUTIVE SUMMARY

The Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2 (hereafter called “the Project”) covers part of the construction of the widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling which aimed to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic. The Project covers construction activities at Yuen Leng along the existing Fanling Highway.

The impact EM&A for the Project includes air quality, noise and water quality monitoring. The EM&A programme commenced on 5 November 2013.

This report documents the findings of EM&A works conducted in February 2017. As informed by the Contractor, the major activities in the reporting month were:

- Abutment Construction;
- Construction of Boundary Wall for DSD Pumping Station;
- Cable Detection and Trial Trenches;
- Demolition of Existing Vehicular Bridge;
- Extended Podium Construction near Bored Pile Wall;
- Footbridge Construction;
- Noise Barrier Construction;
- Pier / Pier Table Construction;
- Portal Construction;
- Construction of Remaining Base Slab of Box Culvert ID4;
- Retaining Wall Construction;
- Road Works;
- Roundabout Modification Works;
- Utilities Duct Laying;
- Viaduct Segment Erection;
- Water Main Laying;
- Gabion Wall Construction; and
- Installation Steel Column and Panel of Noise Barrier.

Breach of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Level was recorded for 24-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.

No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.

Breach of Action and Limit Levels for Noise

No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.

Breach of Action and Limit Levels for Water Quality

One exceedance of Action Level and no exceedance of Limit Level was recorded at the monitoring location I5 in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

No complaint, notification of summons and successful prosecution was received in the reporting month.

Future Key Issues

The major construction works in the coming reporting month are anticipated to include:

- Boundary Wall for Pumping Station;
- Cable Detection and Trial Trenches;
- Construction of Remaining Slab of Box Culvert ID04;
- Demolition of Existing Kiu Tau Vehicular Bridge;
- Extended Podium Construction near Bored Pile Wall;
- Gabion Wall Construction;
- Installation Steel Column and Panel of Noise Barrier;
- Footbridge Construction;
- Installation Works of Mini-pile;
- Noise Barrier Construction;
- Pier Table Construction;
- Pipe Jacking works for DN2200 Water Mains;
- Portal Construction;
- Profile Barrier Construction on Viaduct;
- Road Works;
- Roundabout Modification Works;
- Utilities Duct Laying;
- Viaduct Segment Erection; and
- Water Main Laying.

Potential environmental impacts arising from the above construction activities are anticipated to be mainly associated with construction dust, noise, water quality and waste management.

1 INTRODUCTION

1.1.1 Chun Wo Construction & Engineering Co Ltd (Chun Wo) was commissioned by the Civil Engineering and Development Department (CEDD) as the Civil Contractor for the Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2. Meinhardt Infrastructure & Environment Ltd (MIEL) has been appointed by Chun Wo as the Environmental Team (ET) to fulfill the corresponding EM&A requirements pursuant to Environmental Permit No. EP-324/2008/E in accordance with the Updated EM&A Manual (dated October 2013) for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. The EM&A programme commenced on 5 November 2013.

1.2 Purpose of the Report

1.2.1 This is the monthly EM&A Report which summaries the impact monitoring results and audit findings for the Project during the reporting month of February 2017.

1.3 Report Structure

1.3.1 This monthly EM&A Report comprises the following sections:

Section 1: Introduction

Section 2: Project Information

Section 3: Status of Environmental Licenses, Notifications and Permits

Section 4: Air Quality Monitoring

Section 5: Noise Monitoring

Section 6: Water Monitoring

Section 7: Waste Management

Section 8: Environmental Site Inspection and Audit

Section 9: Implementation Status of Environmental Mitigation Measures

Section 10: Summary of EP Submission in the Reporting Month

Section 11: Environmental Non-Conformance

Section 12: Future Key Issues

Section 13: Conclusions and Recommendations

2 PROJECT INFORMATION

2.1 Background

- 2.1.1 Tolo Highway and Fanling Highway are expressways in the North East New Territories connecting Sha Tin, Tai Po and Fanling. These highways form a vital part of the strategic Route 1, which links Hong Kong Island to Shenzhen. At present, this section of Route 1 is a dual 3-lane carriageway. However, at several major interchanges along this section of Route 1, the highway is only dual-2 lane. Severe congestion is a frequent occurrence during peak periods, particularly in the Kowloon bound direction.
- 2.1.2 The objective of the Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling is to widen Tolo Highway and Fanling Highway to dual 4-lane carriageway in order to alleviate the current traffic congestion problems and to cope with the increasing transport demands to and from the urban areas and also cross boundary traffic.
- 2.1.3 The construction works for the Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling are to be delivered in 2 stages:
- Stage 1 – Construction works between Island House Interchange and Tai Hang; and
- Stage 2 – Construction works between Tai Hang and Wo Hop Shek Interchange.
- 2.1.4 The construction works of Stage 1 under the EP commenced in November 2009 and was planned to be completed in December 2013 tentatively. The works of Stage 2 was planned to commence in November 2013 and complete by end of 2016. Hyder-Arup-Black and Veatch Joint Venture (HABVJV) was appointed by the Highways Department (HyD) as the consultants for the design and construction assignment for the Project. Mott MacDonald Hong Kong Ltd is the Independent Environmental Checker (IEC) of both Stage 1 and Stage 2 works.
- 2.1.5 A portion of Stage 2 works of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling (hereafter called “the Project”) is entrusted to the contractor of Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works Contract 3, i.e. Chun Wo. AECOM Asia Co Ltd was appointed by the CEDD as the consultant for the design and construction assignment for the Liantang development.
- 2.1.6 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). An Environmental Impact Assessment (EIA) Report together with an Environmental Monitoring and Audit (EM&A) Manual were approved on 14 July 2000 (Register Number: EIA-043/2000). The Project is governed by an Environmental Permit (EP) (EP-324/2008) which was granted on 23 December 2008. A variation of EP (VEP) was applied and the VEP (EP-324/2008/A) was subsequently granted on 31 January 2012. An additional VEP has been applied on 24 February 2014 and the VEP (EP-324/2008/B) was subsequently granted on 17 March 2014. Furthermore, an additional VEP has been applied on 9 March 2015 and the VEP (EP-324/2008/C) was subsequently granted on 27 March 2015. The previous VEP (EP-324/2008/D) was granted on 27 August 2015. The current VEP (EP-324/2008/E) was granted on 26 January 2017.

2.2 Site Description

2.2.1 The major construction activities under the Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2 include:

At-Grade Road Works – Temporary and permanent road formation, pipe laying, road drainage, footpath and noise barrier construction;

Demolition of existing Kiu Tau Footbridge and Footbridge Re-provision; and

Box Culvert Extension – Flow diversion of existing stream, excavation, sub-base and blinding, base, wall and top slab construction.

2.2.2 **Figure 1** shows the works areas for the Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2.

2.3 Construction Programme and Activities

2.3.1 The major construction activities undertaken in the reporting month are summarized below:

- Abutment Construction;
- Construction of Boundary Wall for DSD Pumping Station;
- Cable Detection and Trial Trenches;
- Demolition of Existing Vehicular Bridge;
- Extended Podium Construction near Bored Pile Wall;
- Footbridge Construction;
- Noise Barrier Construction;
- Pier / Pier Table Construction;
- Portal Construction;
- Construction of Remaining Base Slab of Box Culvert ID4;
- Retaining Wall Construction;
- Road Works;
- Roundabout Modification Works;
- Utilities Duct Laying;
- Viaduct Segment Erection;
- Water Main Laying;
- Gabion Wall Construction; and
- Installation Steel Column and Panel of Noise Barrier.

2.3.2 The construction programme is presented in **Appendix A**.

2.4 Project Organisation

2.4.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project are summarised in **Table 2.1**.

Table 2.1 Contact Information of Key Personnel

Party	Role	Position	Name	Telephone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Alan Lee	2171 3303	2171 3498
		Resident Engineer (Environmental)	Mr. Perry Yam	2171 3350	
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Steven Tang	2828 5920	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Daniel Ho	2638 6144	2638 7077
		Environmental Officer	Mr. Victor Huang	2638 6181	
Meinhardt	Environmental Team (ET)	ET Leader	Mr. Fredrick Leong	2859 1739	2540 1580

3 STATUS OF ENVIRONMENTAL LICENSES, NOTIFICATION AND PERMITS

3.1.1 The relevant environmental licenses, permits and/or notifications on environmental protection for this Project and valid in the reporting month are summarized in **Table 3.1**.

Table 3.1 Status of Environmental Licenses, Notifications and Permits

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
Environmental Permit				
EP-324/2008/E	26 Jan 2017	--	Granted on 26 Jan 2017	
Construction Noise Permit				
GW-RN0561-16	16 Aug 2016	11 Feb 2017	Valid	For road diversion and maintenance of Fanling Highway Northbound
GW-RN0581-16	25 Aug 2016	24 Feb 2017	Valid	For segment delivery to Kiu Tau
GW-RN0580-16	25 Aug 2016	24 Feb 2017	Valid	For general works at the northward of site office
GW-RN0596-16	17 Aug 2016	15 Feb 2017	Valid	For fuel delivery entering the construction site next to MTRC's East Rail Line at Tong Hang Tung
GW-RN0619-16	22 Aug 2016	14 Feb 2017	Valid	For tractor with trailer entering the Construction Site next to MTRC's East Rail Line at Tong Hang Tung
GW-RN0646-16	10 Sep 2016	9 Mar 2017	Valid	For segment erection of pier AA4, AB6, AD7 and AA18
GW-RN0653-16	11 Sep 2016	10 Mar 2017	Valid	For segment erection AB7 to AB10
GW-RN0654-16	15 Sep 2016	14 Mar 2017	Valid	For segment erection crossing over MTRC's Rail Track of Pier AB11 and AD12 (1900-2300)

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
GW-RN0720-16	4 Oct 2016	31 Mar 2017	Cancelled on 21 Feb 2017	For segment erection of spans AA5, AA6, AA7, AB3 and AB4 across Fanling Highway
GW-RN0729-16	5 Oct 2016	31 Mar 2017	Valid	For segment erection of spans AA11, AA12, AC3 and AC4 across Fanling Highway
GW-RN0795-16	5 Nov 2016	29 Apr 2017	Valid	For falsework modification of pier AD12
GW-RN0816-16	13 Nov 2016	27 Mar 2017	Valid	For lane shifting work at Fanling Highway Northbound
GW-RN0833-16	13 Nov 2016	10 May 2017	Valid	For segment erection crossing over MTRC's Rail Track of Pier AB11 and AD12 (0115-0500)
GW-RN0843-16	18 Nov 2016	17 May 2017	Valid	For segment erection of Pier AB11
GW-RN0836-16	15 Nov 2016	31 Mar 2017	Valid	For segment erection at AC1 end span
GW-RN0871-16	29 Nov 2016	20 May 2017	Valid	For segment stitches concreting between AA11 and AA12 crossing over Fanling Highway
GW-RN0872-16	29 Nov 2016	20 May 2017	Valid	For segment stitches concreting from AB3 to AB5 crossing over Fanling Highway
GW-RN0870-16	30 Nov 2016	13 May 2017	Valid	Road marking works in Fanling Highway bothbounds
GW-RN0901-16	11 Dec 2016	4 Jun 2017	Valid	Demolition of Vehicular Bridge at Fanling Highway Southbound in Sunday and Public Holidays

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
GW-RN0939-16	22 Dec 2016	21 Jun 2017	Valid	For general works at southward of site office
GW-RN0002-17	8 Jan 2017	4 Jun 2017	Valid	For welding work of steel truss on Fanling Highway
GW-RN0004-17	13 Jan 2017	18 Feb 2017	Valid	For dismantling of catch fence within MTR Protection Zone at Tong Hang Tung Chuen
GW-RN0021-17	19 Jan 2017	8 Jul 2017	Valid	For traffic road works at a section of Fanling Highway both bounds
GW-RN0029-17	19 Jan 2017	8 Jul 2017	Valid	For loading and unloading along Fanling Highway both bounds
GW-RN0032-17	21 Jan 2017	10 Jul 2017	Cancelled on 19 Feb 2017	For road resurfacing of Fanling Highway Southbound
GW-RN0040-17	25 Feb 2017	24 Aug 2017	Valid	For general works at the northward of site office
GW-RN0048-17	25 Jan 2017	16 Jun 2017	Valid	For road diversion and maintenance of Fanling Highway Southbound
GW-RN0066-17	3 Feb 2017	15 Jul 2017	Valid	For installation of steel truss of Kiu Tau Footbridge at Fanling Highway Northbound
GW-RN0069-17	15 Feb 2017	14 Aug 2017	Valid	For tractor with trailer entering the Construction Site next to MTRC's East Rail Line at Tong Hang
GW-RN0070-17	3 Feb 2017	15 Jul 2017	Valid	For installation of steel truss of Kiu Tau Footbridge at Fanling Highway Southbound

Permit / License No. / Notification / Reference No.	Valid Period		Status	Remarks
	From	To		
GW-RN0071-17	16 Feb 2017	15 Aug 2017	Valid	For fuel delivery and tractor with trailer entering the construction site next to MTRC's East Rail Line at Tong Hang Tung
GW-RN0078-17	16 Feb 2017	21 Jun 2017	Valid	For dismantling of catch fence within MTR Protection Zone at Tong Hang Tung Chuen
GW-RN0084-17	8 Feb 2017	15 Jul 2017	Valid	For concreting slab of Kiu Tau Footbridge at Fanling Highway Both Bound
GW-RN0092-17	19 Feb 2017	30 Jul 2017	Valid	For loading and unloading along Fanling Highway both bounds on general holiday daytime
GW-RN0096-17	19 Feb 2017	10 Jul 2017	Valid	For road resurfacing of Fanling Highway Southbound
GW-RN0099-17	17 Feb 2017	12 Aug 2017	Valid	For road diversion and maintenance of Fanling Highway Northbound
GW-RN0103-17	24 Feb 2017	31 Mar 2017	Valid	For segment erection across Fanling Highway
GW-RN0111-17	26 Feb 2017	30 Jul 2017	Valid	For concreting the Bridge Deck of Kiu Tau Footbridge at Fanling Highway Both Bound
Wastewater Discharge License				
WT00016832-2013	28 Aug 2013	31 Aug 2018	Valid	--
Chemical Waste Producer Registration				
5113-634-C3817-01	7 Oct 2013	--	Valid	--
Billing Account for Construction Waste Disposal				
7017914	2 Aug 2013	--	Account Active	--
Notification Under Air Pollution Control (Construction Dust) Regulation				
--	31 Jul 2013	30 Jul 2019	Notified	--

4 AIR QUALITY MONITORING

4.1 Monitoring Requirement

4.1.1 In accordance with the Updated EM&A Manual, 1-hr and 24-hr total suspended particulate (TSP) levels at the designated air quality monitoring station are required. Impact 24-hour TSP monitoring should be carried out for at least once every 6 days. For the 1-hr TSP impact monitoring, the sampling frequency of at least three times in every 6 days should be undertaken when the highest dust impact occurs.

4.2 Monitoring Equipment

4.2.1 The 1hr- TSP and 24-hr TSP air quality monitoring were performed using a High Volume Sampler (HVS), of which its location and operation satisfy, as far as practicable, all the requirements as specified in the Updated EM&A Manual. The brand and model of the equipment are given in **Table 4.1**.

Table 4.1 Air Quality Monitoring Equipment

Equipment	Brand and Model	Quantity	Serial Number
High Volume Sampler (1-hr TSP and 24-hr TSP)	Tisch Total Suspended Particulate Mass Flow Controlled High Volume Air Sampler (Model No. TE-5170 MFC)	1	2359

4.2.2 The HVS and its accessories were maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.

4.2.3 Calibration of the HVS (five point calibration) using Calibration Kit was carried out every two months. The HVS calibration orifice will be calibrated annually. Calibration certificate of the TE-5025A Calibration Kit and the HVS are provided in **Appendix C**.

4.3 Monitoring Location

4.3.1 Air quality monitoring was conducted at the location specified in the Updated EM&A Manual. **Table 4.2** describes the details of the air quality monitoring station with its location as shown in **Figure 2**.

Table 4.2 Location of Air Quality Monitoring

Air Monitoring Station ID	Monitoring Location	Description
AM1(SR77) *	Yuen Leng 2 *	Residential, Ground floor

Remark:

* Location and Station / ASR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

4.4 Monitoring Parameters, Frequency and Duration

4.4.1 **Table 4.3** summarizes the monitoring parameters, frequency and duration of impact TSP monitoring.

Table 4.3 Air Quality Monitoring Parameters, Frequency and Duration

Parameter	Frequency and Duration
1-hour TSP	At least three times in every 6 days should be undertaken when the highest dust impact occur
24-hour TSP	Once every 6 days

4.5 Monitoring Methodology

1-hr and 24-hr TSP Monitoring

- 4.5.1 With the consideration of criteria stated in the Updated EM&A Manual, the HVS was installed in the vicinity of the air sensitive receivers.
- 4.5.2 The relevant data including temperature, pressure, weather conditions, elapsed-time meter reading for the start and stop of the sampler, identification and weight of the filter paper, and any special phenomena observed were recorded. The weather information was referenced from Hong Kong Observatory (<http://www.weather.gov.hk/wxinfo/pastwx/extractc.htm>).
- 4.5.3 A HOKLAS accredited laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments, to handle the 24-hr TSP samples, was employed for sample analysis.
- 4.5.4 Filter papers of size 8"x10" were labelled before sampling. They were inspected to be clean with no pin holes and conditioned in a humidity controlled chamber for over 24-hr and were pre-weighed before use for the sampling.
- 4.5.5 The 24-hr TSP levels were measured by following the standard high volume sampling method for TSP as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B. TSP was sampled by drawing air through a conditioned, pre-weighted filter paper inside the HVS at a controlled air flow rate. After 24-hr sampling, the filter papers loaded with dust were kept in a clean and tightly sealed plastic bag, and then returned to the laboratory for reconditioning in the humidity controlled chamber followed by accurate weighing by an electronic balance with a readout down to 0.1 mg.
- 4.5.6 All the collected samples were kept in a good condition for 6 months before disposal.
- 4.5.7 For 1-hr TSP monitoring, monitoring methodology is the same as 24-hr TSP monitoring which has been presented in **Section 4.5.1** to **Section 4.5.6**, but with sampling period changed to 1 hour.

4.6 Monitoring Schedule for the Reporting month

- 4.6.1 The schedule for environmental monitoring for the reporting month is provided in **Appendix D**. Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix E**.

4.7 Monitoring Results

- 4.7.1 The monitoring results for 1-hr and 24-hr TSP are summarised in **Table 4.4** and **Table 4.5** respectively. Detailed air quality monitoring results and the graphical presentation

of air quality monitoring data for the current and past three reporting months are presented in **Appendix F**.

Table 4.4 Summary of 1-hr TSP Monitoring Results

ASR ID	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1(SR77) *	162.6	151.2 – 175.4	292.7	500

Remark:

* Station / ASR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

Table 4.5 Summary of 24-hr TSP Monitoring Results

ASR ID	Average ($\mu\text{g}/\text{m}^3$)	Range ($\mu\text{g}/\text{m}^3$)	Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
AM1(SR77) *	74.1	67.5 – 80.3	170.3	260

Remark:

* Station / ASR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

- 4.7.2 No exceedance of Action and Limit Level was recorded for 24-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 4.7.3 No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 4.7.4 The Event and Action Plan for the occurrence of non-compliance of the air quality criteria is annexed in **Appendix G**.

5 NOISE MONITORING

5.1 Monitoring Requirements

5.1.1 In accordance with the Updated EM&A Manual, the impact noise monitoring frequency shall depend on the scale of the construction activities. An initial guide on the regular monitoring frequency should be at least once per week when noise generating activities are underway.

5.2 Monitoring Equipment

5.2.1 Noise monitoring was performed using a sound level meter at the monitoring station. The sound level meter deployed complies with the International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. An acoustic calibrator was deployed to check the sound level meter at a known sound pressure level. The brand and model of the equipment is given in **Table 5.1**.

Table 5.1 Noise Monitoring Equipment

Equipment	Brand and Model	Quantity	Serial Number
Sound Level Calibrator	Rion (Model No. NC-74)	1	34857296
Sound Level Meter	B&K (Model No. 2238)	1	2694908

5.2.2 The sound level calibrator and sound level meter were verified by a certified laboratory every year. Calibration certificates of the sound level meter and acoustic calibrator are provided in **Appendix C**.

5.3 Monitoring Locations

5.3.1 Impact noise monitoring was conducted at the location specified in the Updated EM&A Manual. **Table 5.2** describes the details of the noise monitoring station with its location as shown in **Figure 2**.

Table 5.2 Location of Noise Monitoring

NSR ID	Monitoring Location	Description
M1(SR77) *	Yuen Leng 2 *	Residential, Ground floor

Remark:

* Location and Station / NSR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

5.4 Monitoring Parameters, Frequency and Duration

5.4.1 **Table 5.3** summarizes the monitoring parameters, frequency and duration of impact noise monitoring.

Table 5.3 Noise Monitoring Parameters, Frequency and Duration

Parameter and Duration	Frequency
30-mins measurement at between 0700 and 1900 on normal weekdays. Leq, L10 and L90 would be recorded.	At least once per week

5.5 Monitoring Methodology

5.5.1 The monitoring procedures are summarised as follows:

The sound level meter was set on a tripod at a height of 1.2 m above the ground for free-field measurements at monitoring station SR77;

The battery condition was checked to ensure good functioning of the meter;

Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

Frequency weighting: A

Time weighting: Fast

Parameters: Leq, L10 and L90

Time measurement: Leq(30-minutes) during non-restricted hours i.e. 07:00 – 19:00 hrs on normal weekdays

Prior to and after each noise measurement, the meter was calibrated using the acoustic calibrator for 94dB(A) at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1dB(A), the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.

At the end of the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.

A façade correction of +3dB (A) shall be made to the noise parameter obtained by free field measurement.

5.6 Monitoring Schedule for the Reporting Month

5.6.1 The schedule for environmental monitoring for the reporting month is provided in **Appendix D**. Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix E**.

5.7 Monitoring Results

5.7.1 The monitoring results for noise are summarized in **Table 5.4** and the monitoring results and the graphical presentation of noise level for the current and past three reporting months are presented in **Appendix H**.

Table 5.4 Summary of Noise Monitoring Results

Noise Monitoring Station ID	Average, dB(A), Leq (30min) ⁽²⁾	Range, dB(A), Leq (30min) ⁽²⁾	Action Level	Limit Level, dB(A)
M1(SR77) ⁽¹⁾	65.3	60.0 – 68.0	When one documented valid complaint is received	75

Remark:

(1) Station / NSR ID as identified in Updated EM&A Manual / EIA Report for Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling

(2) +3dB(A) façade correction included

- 5.7.2 Major noise sources during the noise monitoring included construction activities of the Project and that along Tai Wo Service Road East, and nearby traffic noise.
- 5.7.3 No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.
- 5.7.4 The Event and Action Plan for the occurrence of non-compliance of the noise criteria is annexed in **Appendix G**.

6 WATER MONITORING

6.1 Introduction

- 6.1.1 The box culvert works have been partially completed by the end of March 2014 except the last construction activity, installation of a base slab at Box Culvert ID4. Due to the loading requirement of a fresh water main under the box culvert, installation of the base slab at Box Culvert ID4 has been commenced in December 2016.
- 6.1.2 The 4-week post construction water quality monitoring will be commenced after the installation of the base slab finishes, hence the completion of the box culvert works.
- 6.1.3 Impact monitoring for water quality were carried out twelve (12) times in the reporting month. The water quality monitoring was taken on 1, 3, 6, 8, 10, 13, 15, 17, 20, 22, 24 and 27 February 2017.

6.2 Monitoring Requirements

- 6.2.1 In accordance with the Updated EM&A Manual, during the course of the culvert extension works, monitoring shall be undertaken on three occasions per week. The interval between two sets of monitoring shall not be less than 36 hours except where there are exceedances of Action and/or Limit levels. The results are included in **Appendix I** and **Appendix J**.

6.3 Monitoring Equipment

- 6.3.1 The equipment used in the water quality monitoring programme is summarised in **Table 6.1**.

Table 6.1 Water Quality Monitoring Equipment

Equipment	Model and Make
Turbidity meter	HACH Model 2100Q is (Serial No. 13120C029845)
Multifunctional Meter (Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity and Temperature)	Professional Plus (Serial No. 10D101566)

- 6.3.2 The monitoring instruments were 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. Copies of the calibration certificates for the water quality monitoring equipment are attached in **Appendix C**.

6.4 Monitoring Parameters, Frequency and Duration

- 6.4.1 Measurements for each monitoring station were conducted 3 days per week for the reporting month. **Table 6.2** summarises the monitoring parameters, frequency and duration of the baseline water quality monitoring.

Table 6.2 Water Quality Monitoring Parameters, Frequency and Duration

Monitoring Stations	Parameter, unit	Frequency
Control Stations: C3a and C3b Impact Station: I5	- Depth, m - Temperature, °C - Salinity, ppt	3 days per week

Monitoring Stations	Parameter, unit	Frequency
	- pH - DO, mg/L - DO Saturation, % - Turbidity, NTU - SS, mg/L	

6.5 Monitoring Locations

6.5.1 According to the Updated EM&A Manual, measurements were taken at all impact and control stations as summarised in **Table 6.3**. The locations of the monitoring stations are shown in **Figure 3**.

Table 6.3 Locations of Water Quality Monitoring

Station	Description	Easting	Northing
I5	Downstream of Ma Wat River (Yuen Leng)	833931	837859
C3a	Upstream of Ma Wat River (Nam Wa Po)	833816	837644
C3b	Upstream of Ma Wat River (Yuen Leng)	833931	837736

6.6 Monitoring Methodology

Instrumentation

6.6.1 The parameters of in-situ measurements included water depth, dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity level, pH value and water temperature.

Operating/Analytical Procedures

6.6.2 Since water depths for all monitoring stations were less than 1m throughout the whole baseline measurement period, only mid-depth level was monitored.

6.6.3 At each monitoring station, at least duplicate readings of dissolved oxygen content and turbidity were taken. The probes were retrieved out of the water after the first measurement and then re-deployed for the second measurement.

6.6.4 Water samples were collected by the water sampler and filled into polyethylene bottles for laboratory determination of suspended solids. Sampling bottles were pre-rinsed with the same water samples, and filled up to the rim, capped tightly and labeled immediately. The sample bottles were then packed into a cool-box kept at 4°C, and delivered to a HOKLAS accredited laboratory, Enviro Labs Ltd. (HOKLAS no.: 128) for analysis. The results for laboratory analysis of suspended solids are presented in **Appendix I**.

6.7 Monitoring Schedule for the Reporting Month

6.7.1 The schedule for environmental monitoring for the reporting month is provided in **Appendix D**. Meteorological data extracted from Hong Kong Observatory for the reporting month is provided in **Appendix E**.

6.8 Monitoring Results

6.8.1 The water quality criteria, namely Action and Limit Levels, as specified in the Updated EM&A Manual are shown in **Table 6.4**.

Table 6.4 Action and Limit Levels for Water Quality Monitoring

Parameters	Action	Limit
DO in mg/L	6.7 mg/L	4 mg/L or 40% saturation at 15 degree Celsius
SS in mg/L	42.6 mg/L or 120% of upstream control station's SS of the same day	46.8 mg/L or 130% of upstream station's SS of the same day and specific sensitive receiver water quality requirements
Turbidity (Tby) in NTU	81.9NTU or 120% of upstream control station's Tby of the same day	91.9NTU or 130% of upstream control station's Tby of the same day

Notes:

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

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

6.8.2 The detailed water quality monitoring results and the graphical presentation of water quality monitoring data for the current and past three reporting months are presented in **Appendix J**.

6.8.3 The possible influences in monitoring results were suspected to be natural variation.

6.8.4 No exceedance of Limit Level was recorded in the reporting month. One (1) exceedance of Action Level on Dissolved Oxygen was recorded at the monitoring location I5 on 8 February 2017. Investigation for the exceedance was conducted which concluded that the exceedance was not related to the project works. The investigation report is presented in **Appendix M**.

6.8.5 The Event and Action Plan for the occurrence of non-compliance of the water quality criteria is annexed in **Appendix G**.

7 WASTE MANAGEMENT

- 7.1.1 The Contractor has registered as a chemical waste producer of the Project. The C&D materials and waste sorting were carried out on-site. Receptacles were provided for general refuse collection.
- 7.1.2 As advised by the Contractor, a total of 1,160m³ of excavated material has been generated. 660m³ of inert C&D materials was disposed of at public fill to Tuen Mun Area 38. 192m³ inert C&D materials were reused on site. 140m³ of general refuse was disposed of at North East New Territories (NENT) Landfill. 1m³ of plastics was collected by recycling contractor in the reporting month. No paper/cardboard packaging was collected by recycling contractor in the reporting month. No metal was collected by recycling contractor in the reporting month. No chemical waste was collected by licensed contractor in the reporting period. Details of the waste management data are presented in **Appendix K**.

8 ENVIRONMENTAL SITE INSPECTION AND AUDIT

8.1 Site Inspection

- 8.1.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures for the Project. A summary of the site inspection is provided in **Appendix L**.
- 8.1.2 In the reporting month, 5 site inspections were carried out on 2, 6, 15, 20 and 27 February 2017. The one held on 27 February 2017 was a joint inspection with the IEC, ER, ET and Contractor. No site inspection was conducted by the EPD during the reporting month. No non-compliance was recorded during the site inspection. A summary of the reminders and observations recorded during the site inspections are presented in **Table 8.1**.

Table 8.1 Observations and Recommendations of Site Audit

Parameters	Date	Observations and Recommendations	Follow-up
Water Quality	N/A	N/A	N/A
Air Quality	N/A	N/A	N/A
Noise	N/A	N/A	N/A
Water Quality	02 Feb 2017	Site surface runoff has been observed to be flowing into the Nullah (SA12)	De-silting measures have been enhanced for site surface runoff at SA 12 during the site inspection on 6 February 2017.
Waste / Chemical Management	N/A	N/A	N/A
Landscape & Visual	N/A	N/A	N/A
Permits / Licenses	N/A	N/A	N/A

9 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

- 9.1.1 The Contractor has implemented the relevant environmental mitigation measures as specified in the EIA Reports, EPs and updated EM&A Manual. The implementation status of environmental mitigation measures during the reporting period is summarized in **Appendix L**.

10 SUMMARY OF EP SUBMISSION IN THE REPORTING MONTH

10.1.1 The status of the required submission under the EP during the reporting period is summarized in **Table 10.1**.

Table 10.1 Status of Required Submission under Environmental Permit

EP Condition	Submission	Submission Date
Condition 3.3	Monthly EM&A Report for January 2017	13 February 2017

10.1.2 The Quarterly EM&A Report (November 2016 to January 2017) was prepared and submitted on 27 February 2017 in accordance to Section 8.3.4 of the EM&A Manual.

11 ENVIRONMENTAL NON-CONFORMANCE

11.1 Summary of Monitoring Exceedances

- 11.1.1 No exceedance of Action and Limit Level was recorded for 24-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 11.1.2 No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 11.1.3 No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.
- 11.1.4 One (1) exceedance of Action Level was recorded for water quality monitoring at the monitoring location I5 in the reporting month. No Limit Level exceedance of water quality monitoring was recorded in the reporting month,

11.2 Summary of Environmental Non-Compliance

- 11.2.1 No environmental non-compliance was recorded in the reporting month. The cumulative statistics are provided in **Appendix N**.

11.3 Summary of Environmental Complaints

- 11.3.1 No environmental complaints were received in the reporting month. The cumulative statistics are provided in **Appendix N**.

11.4 Summary of Environmental Summon and Successful Prosecutions

- 11.4.1 No environmental related prosecution or notification of summons was received in the reporting month. The cumulative statistics are provided in **Appendix N**.

12 FUTURE KEY ISSUES

12.1 Construction Programme for the Next Month

12.1.1 The major construction works in the coming reporting month are anticipated to include:

- Boundary Wall for Pumping Station;
- Cable Detection and Trial Trenches;
- Construction of Remaining Slab of Box Culvert ID04;
- Demolition of Existing Kiu Tau Vehicular Bridge;
- Extended Podium Construction near Bored Pile Wall;
- Gabion Wall Construction;
- Installation Steel Column and Panel of Noise Barrier;
- Footbridge Construction;
- Installation Works of Mini-pile;
- Noise Barrier Construction;
- Pier Table Construction;
- Pipe Jacking works for DN2200 Water Mains;
- Portal Construction;
- Profile Barrier Construction on Viaduct;
- Road Works;
- Roundabout Modification Works;
- Utilities Duct Laying;
- Viaduct Segment Erection; and
- Water Main Laying.

12.2 Key Issues for the Coming Month

12.2.1 Key issues to be considered in the coming month are anticipated to include:

- Site discharges should be properly collected and treated prior to discharge;
- Properly maintain all drainage facilities and wheel washing facilities on site;
- Expose slopes and dusty stockpile should be covered up properly if no work will be conducted;
- Operation of construction plant should be sequenced where practicable;
- Good housekeeping should be maintained and general refuse should be removed regularly;
- Chemical waste should be stored, handled and disposed of properly;

- Properly store and label oils and chemicals on site; and
- A spill response procedure shall be in place and absorption material available for minor spillages.

12.3 Monitoring Schedule for the Next Month

- 12.3.1 The tentative schedule for environmental monitoring for the coming month is provided in **Appendix D**.

13 CONCLUSIONS AND RECOMMENDATIONS

13.1 Conclusions

- 13.1.1 The construction phase EM&A programme of the Project commenced on 5 November 2013.
- 13.1.2 The 1-hr TSP, 24-hr TSP, noise and water quality monitoring were carried out in the reporting period.
- 13.1.3 No exceedance of Action and Limit Level was recorded for 24-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 13.1.4 No exceedance of Action and Limit Level was recorded for 1-hour TSP monitoring at the monitoring location AM1(SR77) in the reporting month.
- 13.1.5 No noise complaint was received in the reporting month, so no Action Level exceedance was recorded. Also, no Limit Level exceedance of noise monitoring was recorded in the reporting month.
- 13.1.6 One (1) exceedance of Action Level on Dissolved Oxygen and no exceedance of Limit Level were recorded for water quality monitoring at the monitoring location I5 in the reporting month.
- 13.1.7 Five (5) environmental site inspections were carried out in the reporting month. Recommendations on remedial actions were given to the Contractors for the deficiencies identified during the site audit.

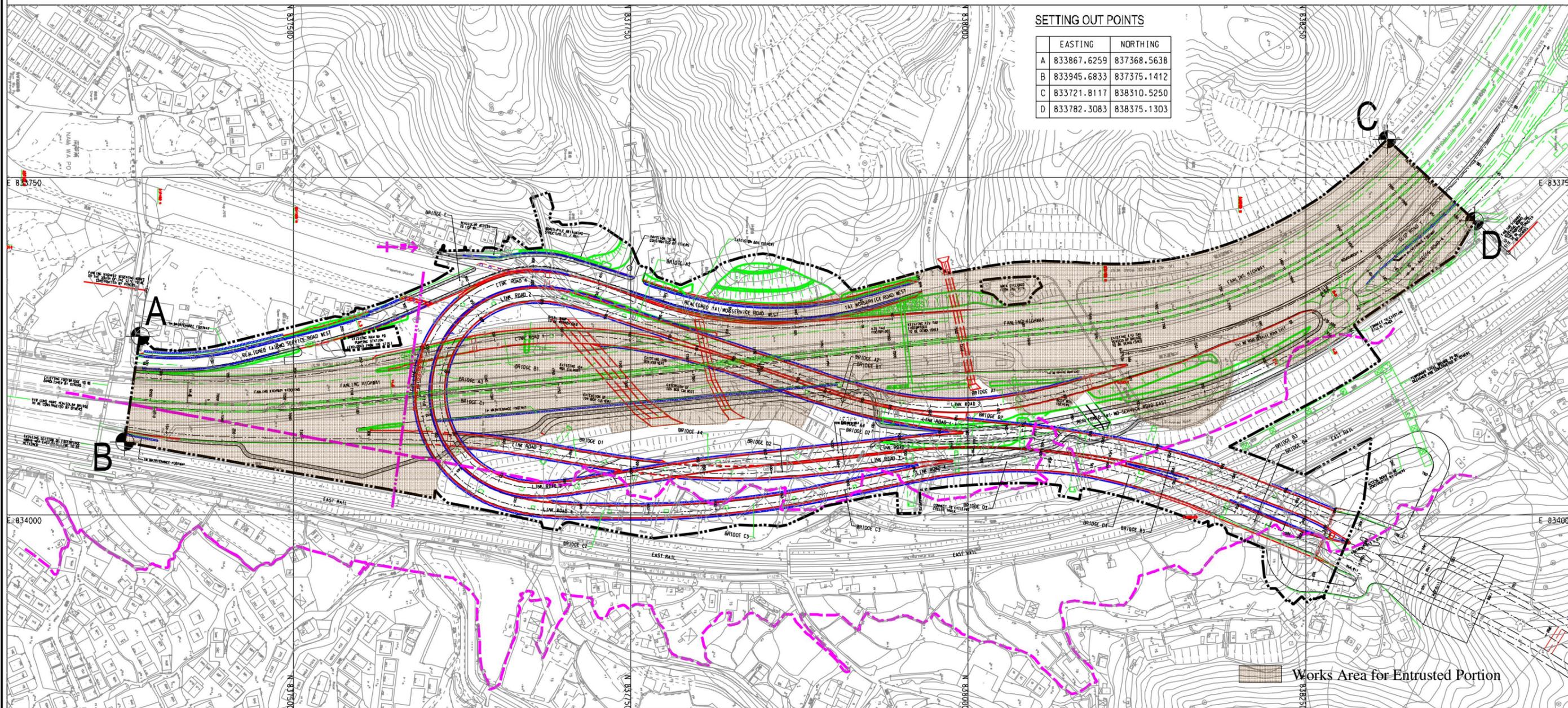
13.2 Recommendations

- 13.2.1 According to the environmental site inspections performed in the reporting month, the following recommendation was provided:

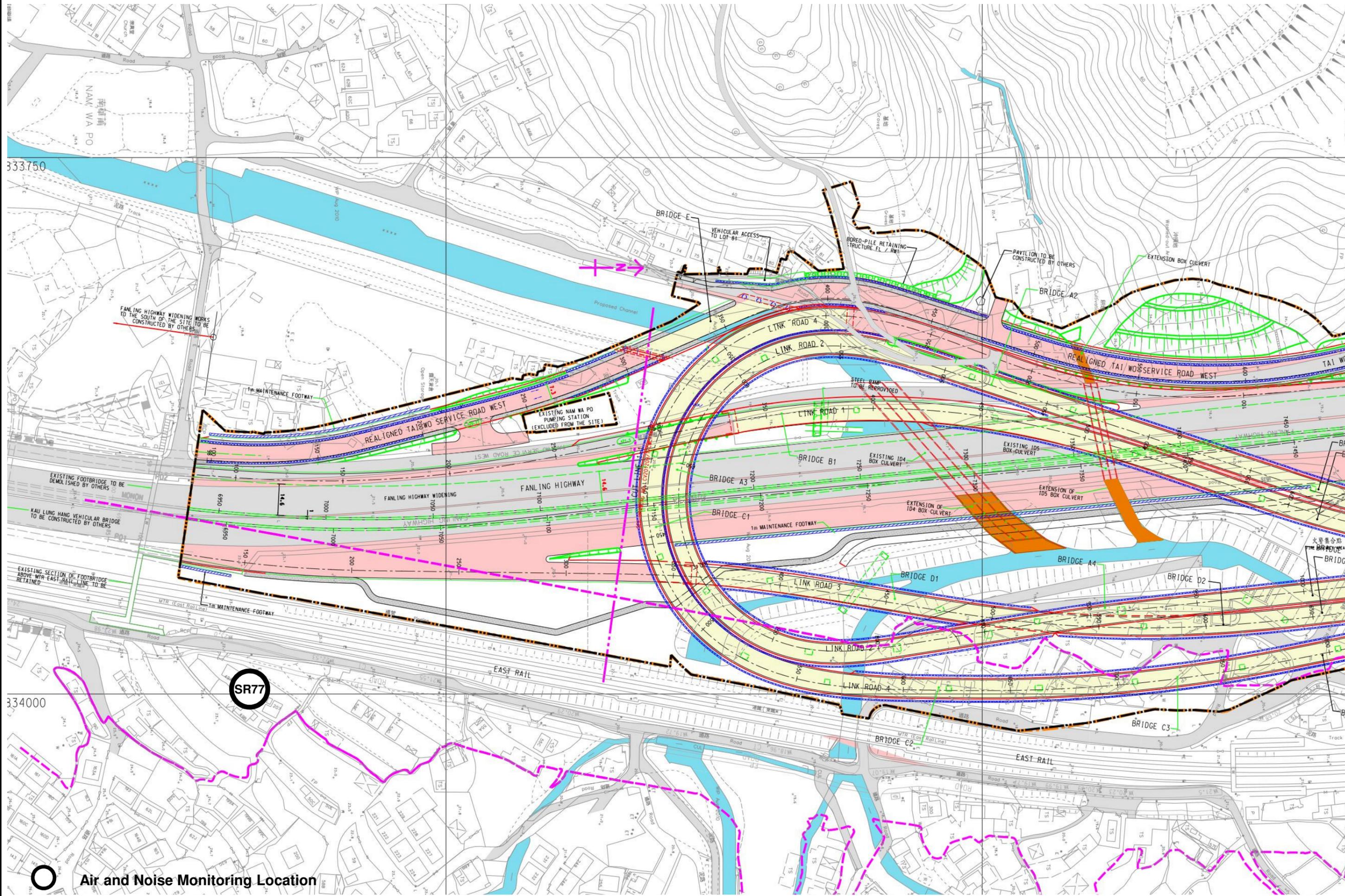
Water Quality

- Ensure the de-silting facilities are cleared frequently

Figure



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Appendix A

Construction Programme

Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017				
							Feb	Mar	Apr	May	Jun
3-Month Rolling Programme 2017-02-21											
Key Dates (Contractual)											
KD-1300	KD10: Stage S4 - Completion of road widening of Fanling Highway within SBZ2 and allow access for HY/2012/06	0	0		21-Feb-17*	-81	◆ KD10: Stage S4 - Completion of road widening of Fanling Highway within SBZ2 and allow access for HY/2012/06				
Dependent Milestones from Other Contracts											
MS-DM04	Completion of NB70 by FHW3	0	0		21-Jan-17 A		◆ Completion of NB70 by FHW3				
Major Milestones and Events											
MS-0120	Completion of 2 nos. of piers crash with existing FLH (by 1 set)	0	0		21-Feb-17	21	◆ Completion of 2 nos. of piers crash with existing FLH (by 1 set)				
MS-1080a	T8a: TTA to shift FLH NB Fast Lane to the Permanent Alignment (4th lane) & FLHS SB 3rd Lane (South Portion)[TTA no.R-6]	1	1	18-Mar-17	18-Mar-17	2	T8a: TTA to shift FLH NB Fast Lane to the Permanent Alignment (4th lane) & FLHS SB 3rd Lane (South Portion)[TTA no.R-6]				
MS-1060	T6: TTA to shift FLHS SB (Slow Lane) to the Permanent Alignment (1st lane) [TTA no.R-4A]	1	1	22-Mar-17	22-Mar-17	90	T6: TTA to shift FLHS SB (Slow Lane) to the Permanent Alignment (1st lane) [TTA no.R-4A]				
MS-1070A	T7a: TTA to shift FLH SB 3 Lanes to the Permanent Alignment & FLHS SB 2nd lane [TTA no.R-5]	1	1	31-Mar-17	31-Mar-17	0	T7a: TTA to shift FLH SB 3 Lanes to the Permanent Alignment & FLHS SB 2nd lane [TTA no.R-5]				
MS-0310	Demolition of the whole Kiu Tau Vehicular Bridge	0	0		31-Mar-17*	0	◆ Demolition of the whole Kiu Tau Vehicular Bridge				
MS-1090a	T9a: TTA to shift FLH NB Middle Lane to the Permanent Alignment (3rd lane) (South Portion) [TTA no.R-7]	1	1	30-Apr-17	30-Apr-17	4	T9a: TTA to shift FLH NB Middle Lane to the Permanent Alignment (3rd lane) (South Portion) [TTA no.R-7]				
MS-1080b	T8b: TTA to shift FLH NB Fast Lane to the Permanent Alignment (4th lane) & FLHS SB 3rd Lane (North Portion)[TTA no.R-6]	1	1	14-May-17	14-May-17	0	T8b: TTA to shift FLH NB Fast Lane to the Permanent Alignment (4th lane) & FLHS SB 3rd Lane (North Portion)[TTA no.R-6]				
MS-1070C	T7c: TTA to shift FLH SB (Middle Lane) to the Permanent Alignment (2nd lane) [TTA no.R-5]	1	1	21-May-17	21-May-17	84	T7c: TTA to shift FLH SB (Middle Lane) to the Permanent Alignment (2nd lane) [TTA no.R-5]				
MS-1100a	T10a: TTA to shift FLH NB Slow Lane to the Permanent Alignment (2nd lane) (South Portion) [TTA no.R-8]	1	1	06-Jun-17	06-Jun-17	2	T10a: TTA to shift FLH NB Slow Lane to the Permanent Alignment (2nd lane) (South Portion) [TTA no.R-8]				
Major Procurement & Delivery											
Footbridge Steel Truss											
MM-3030	On-Site Welding for Steel Truss KT-FB-1-2A & 2B	14	0	19-Jan-17 A	18-Feb-17 A		On-Site Welding for Steel Truss KT-FB-1-2A & 2B				
MM-3010	Fabrication Delivery of Footbridge Steel Truss (incl. KT-AB4, KT-RP3 & KT-P5), Western Side	88	6	30-Aug-16 A	27-Feb-17	737	Fabrication Delivery of Footbridge Steel Truss (incl. KT-AB4, KT-RP3 & KT-P5), Western Side, Fabrication Delivery of Footbridge Steel Truss (incl. KT-AB1 & AB2), Eastern Side				
MM-3020	Fabrication Delivery of Footbridge Steel Truss (incl. KT-P3, P4, KT-RP-1 & 2, KT-SC-1, KT-AB1 & AB2), Eastern Side	92	15	30-Aug-16 A	09-Mar-17	37	Fabrication Delivery of Footbridge Steel Truss (incl. KT-P3, P4, KT-RP-1 & 2, KT-SC-1, KT-AB1 & AB2), Eastern Side				
Lift for New Kiu Tau Footbridge											
MM-4000	Procurement, Fabrication and delivery of Lift	120	120	21-Feb-17	19-Jul-17	38	Procurement, Fabrication and delivery of Lift				
Design and Submissions											
Statutory Approval											
PRE-1060	Submission & approval of CDIA report for temporary works on nullah for construction of new retaining wall 3SW-D/FR32	90	90	02-May-17*	17-Aug-17	61	Submission & approval of CDIA report for temporary works on nullah for construction of new retaining wall 3SW-D/FR32				
Method Statement and Design (Major) Approved by AECOM											
PRE-2030	Submission of E&M design for lighting of Kiu Tau Footbridge	60	14	05-Sep-16 A	08-Mar-17	239	Submission of E&M design for lighting of Kiu Tau Footbridge; Submission of E&M design for lighting of Kiu Tau Footbridge				
PRE-2040	Submission of E&M design for lighting inside viaduct structures of Bridge A, B, C & D	60	14	01-Apr-16 A	08-Mar-17	48	Submission of E&M design for lighting inside viaduct structures of Bridge A, B, C & D; Submission of E&M design for lighting inside viaduct structures of Bridge A, B, C & D				
Section IA & IB - Fanling Highway Widening (KD-1 & KD-2)											
Fanling Highway South Portion between CH6935 and CH7470											
Fanling Highway Zone 1 between CH6935 and CH7130 (within SBZ2)											
At-Grade Roadworks (195m)											
FHW-1220a	Noise Barrier NB68 - Footing at central median (Bay 4, 14m)	63	15	11-Nov-16 A	09-Mar-17	4	Noise Barrier NB68 - Footing at central median (Bay 4, 14m), Noise Barrier NB68 - Footing at central median				
FHW-1230	Road Formation (Middle Part: FLH NB Fast lanes), except CH.6935 - CH.7035	50	22	17-Jan-17 A	17-Mar-17	1	Road Formation (Middle Part: FLH NB Fast lanes), except CH.6935 - CH.7035, Road Formation (Middle Part: FLH NB Fast lanes), except CH.6935 - CH.7035				
FHW-1160	Road Formation (FLH SB 1st lane)	48	25	19-Jan-17 A	21-Mar-17	70	Road Formation (FLH SB 1st lane), Road Formation (FLH SB 1st lane)				



俊和建築工程有限公司
CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

- Actual Work
- Remaining Work
- Summary Bar
- Critical Remaining Work
- Milestone
- Project Baseline Bar

CEDD Contract No. CV/2012/09

Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

3-Month Rolling Programme

Programme ID: 3MPR043 (Data Date: 21-Feb-17) Page 1 of 10

3-Month Rolling Programme updated to 2017-02-21

Date	Revision	Checked	Approved
21-Feb-17	Rev.1	SL	

Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017													
							Jan	Feb	Mar	Apr	May	Jun								
FHW-1220b	Noise Barrier NB68 - Footing at central median (Bay 1 - 3, 63m)	68	49	05-Dec-16 A	22-Apr-17	694														
FHW-1150	Noise Barrier NB70 - Footing adjacent to SB lane (30m)	70	70	21-Feb-17	19-May-17	207														
FHW-1170	Road Formation (FLH SB 2nd lane)	45	45	23-Mar-17	20-May-17	70														
FHW-1180	Road Drainage, Road Formation & Pavement (FLH SB 3rd lane)	52	52	22-May-17	22-Jul-17	70														
Fanling Highway Zone 2 between CH7130 and CH7290																				
At-Grade Roadworks (160m)																				
FHW-2220	Noise Barrier NB68A - Footing at central median (Bay 1 - 12, 141m)	70	0	27-Jul-16 A	04-Feb-17 A															
FHW-2230	Road Formation & Pavement and Central Barrier (Middle Part: FLH NB 4th lanes)	50	22	17-Jan-17 A	17-Mar-17	1														
FHW-2360	Temporary Platform for Mini-Pile Installation Works within W SD Restriction Zone	25	25	21-Feb-17*	21-Mar-17*	9														
FHW-2310	Road Formation & Pavement (FLH NB 3rd lane) by re-surfacing	32	32	20-Mar-17	29-Apr-17	1														
FHW-2370	Construction of opening on the existing retaining wall for piling works	35	35	22-Mar-17	08-May-17	12														
FHW-2320	Road Formation & Pavement (FLH NB 2nd lane) by re-surfacing	28	28	02-May-17	05-Jun-17	2														
FHW-2330A	Noise Barrier NB67 - Pre-drilling and Mini-Piling adjacent to NB lane within WSD Restriction Zone (Type ID4-1A: 22 nos)	70	70	09-May-17	31-Jul-17	12														
FHW-2330B	Noise Barrier NB67 - Pre-drilling and Mini-Piling adjacent to NB lane (Type F5: 36 nos)	86	86	07-Jun-17	15-Sep-17	2														
Fanling Highway Zone 3 between CH7290 and CH7380																				
Box Culvert Extension - ID4																				
ID4-3090	Bay 1 - Remaining Base Slab (To be carried out after diversion of DN1400 water mains)	95	34	30-Nov-16 A	31-Mar-17	78														
At-Grade Roadworks (130m)																				
FHW-3220B	Noise Barrier NB68A - Footing at central median (Bay 14 - 15, 24m)	32	6	28-Nov-16 A	27-Feb-17	13														
FHW-3210	Noise Barrier NB68A - Pre-drilling and Mini-Piling at central median (CSD: 20 nos)	50	14	21-May-16 A	08-Mar-17	89														
FHW-3230	Road Formation & Central Barrier (Middle Part: FLH NB 4th lanes)	55	22	17-Jan-17 A	17-Mar-17	1														
FHW-3310	Road Formation & Pavement (FLH NB 3rd lane) by re-surfacing	32	32	20-Mar-17	29-Apr-17	1														
FHW-3320	Road Formation & Pavement (FLH NB 2nd lane) by re-surfacing	28	28	02-May-17	05-Jun-17	2														
FHW-3220C	Noise Barrier NB68A - Footing at central median (Bay 16 - 18, 25m)	45	45	02-May-17	24-Jun-17	48														
FHW-3330	Noise Barrier NB69 - Pre-drilling & Mini-Piling adjacent to NB lane (30nos)	90	90	07-Jun-17	20-Sep-17	3														
Fanling Highway North Portion between CH7470 and CH7925																				
Fanling Highway Zone 4 between CH7380 and CH7470																				
At-Grade Roadworks (90m)																				
FHW-4220	Road Formation & Pavement, and Central Barrier (Middle Part: FLH NB 4th lanes)	55	22	17-Jan-17 A	17-Mar-17	1														
FHW-4210	Road Drainage, Road Formation & Pavement (FLH SB 3rd lanes)	30	33	17-Jan-17 A	30-Mar-17	0														
FHW-4300	Road Formation & Pavement (FLH NB 3rd lane) by re-surfacing	32	32	20-Mar-17	29-Apr-17	1														
FHW-4310	Road Formation & Pavement (FLH NB 2nd lane) by re-surfacing	28	28	02-May-17	05-Jun-17	2														
FHW-4110	Noise Barrier NB68A - Footing at central median (Bay 19 - 20, 54m)	80	80	11-May-17	14-Aug-17	6														

Date	Revision	Checked	Approved
21-Feb-17	Rev.1	SL	

Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017						
							Jan	Feb	Mar	Apr	May	Jun	
FHW-4100A	Noise Barrier NB72 - Footing adjacent to SB lane (78m)	108	108	19-Jun-17	25-Oct-17	16							
Fanling Highway Zone 5 between CH7470 and CH7600 (Provision of Kiu Tau Footbridge)													
Kiu Tau Footbridge Reprovision (East)													
FHW-5010C3	KT-P2 & P3 - RC Deck & Bearing Installation	30	0	14-Jan-17 A	21-Jan-17 A								
FHW-5010A2	KT-AB1 (South Portion) - Ple Cap, Abutment and Bearing Installation	44	0	05-Sep-16 A	20-Feb-17 A								
FHW-5110	Additional BFA Facilities - Sump Pit (covered by VO no. 59)	25	25	21-Feb-17	21-Mar-17	43							
FHW-5040	Steel Truss Installation across Fanling Highway	18	27	20-Feb-17 A	23-Mar-17	16							
FHW-5020	Steel Truss Installation at TWSR East	11	11	01-Apr-17*	18-Apr-17	18							
FHW-5050	Installation of Bridge Decking and Cladding	17	17	28-Mar-17	20-Apr-17	16							
FHW-5070	Opening of new footbridge	1	1	21-Apr-17	21-Apr-17	16							
FHW-5060	Installation of Drainage and Lighting Facilities (Overall)	25	25	22-Apr-17	23-May-17	205							
Provision of BFA Facilities (Lift)													
FHW-L-1000	RC Works for Lift Shaft	55	55	22-Mar-17	01-Jun-17	43							
FHW-L-1010	Glazing & Louvre Installation	35	35	02-Jun-17	13-Jul-17	43							
At-Grade Road Works (130m)													
FHW-5150	Road Formation & Pavement (FLH SB 3rd lane)	30	33	17-Jan-17 A	30-Mar-17	0							
FHW-5220	Road Formation & Pavement (FLH NB 4th lane)	31	31	01-Apr-17	13-May-17	0							
FHW-5140	Demolition of existing Kiu Tau Footbridge	18	18	22-Apr-17	15-May-17	16							
FHW-5160	Preparation Works for TTA scheme E3B (Shifting TWSRE East Westward, at the area of existing Kiu Tau Footbridge)	28	28	16-May-17	17-Jun-17	16							
FHW-5170	Implementation of TTA - Scheme E3B (Shifting TWSRE East Westward, at the area of existing Kiu Tau Footbridge)	0	0	19-Jun-17		16							
FHW-5310	Road Formation & Pavement (FLH NB 3rd lane) by re-surfacing	32	32	15-May-17	21-Jun-17	0							
FHW-5180	Noise Barrier NB72 & NB73 (Stage 1) - Footing adjacent to SB lane (97m)	108	108	19-Jun-17	25-Oct-17	56							
Fanling Highway Zone 6 between CH7600 and CH7660 (Existing Vehicular Bridge)													
At-Grade Roadworks (60m)													
FHW-6120	Road Formation & Pavement (FLH SB 1st - 3rd lanes)	30	33	17-Jan-17 A	30-Mar-17	0							
FHW-6220	Road Formation & Pavement, and Central Barrier (FLH NB 4th lane)	31	31	01-Apr-17	13-May-17	0							
FHW-6310	Road Formation & Pavement (FLH NB 3rd lane) by re-surfacing	32	32	15-May-17	21-Jun-17	0							
FHW-6110	Noise Barrier NB73 - Footing adjacent to SB lane (95m)	108	108	11-May-17	15-Sep-17	24							
FHW-6210	Road Drainage, Road Formation & Pavement (FLH SB 4th lane)	158	158	01-Apr-17	13-Oct-17	64							
Fanling Highway Zone 7 between CH7660 and CH7925													
At-Grade Roadworks (265m)													
FHW-7210a	Road Drainage, Road Formation & Pavement, Central Barrier (FLH SB 4th lane) - Stage 1 (incl. MS12.1 ~ 12.3a)	5	16	08-Sep-16 A	10-Mar-17	17							
FHW-7310a	Road Drainage, Road Formation & Pavement (FLH NB 1st lane and hard shoulder)	125	111	05-Jan-17 A	08-Jul-17	16							



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3-Month Rolling Programme

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Date	Revision	Checked	Approved
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Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017					
							Feb	Mar	Apr	May	Jun	
Remaining Works for Noise Barrier along widened Fanling Highway												
FHW-NB-220	Noise Barrier Steelworks & Panel for NB68A (225m), Fanling Highway central median at Zones 2 & 3	4	4	28-Feb-17	03-Mar-17	13						
FHW-NB-210	Noise Barrier Steelworks & Panel for NB68 (77m), Fanling Highway central median at Zones 1 & 3	4	4	10-Mar-17	14-Mar-17	4						
FHW-NB-120	Noise Barrier Steelworks & Panel for NB6 (123m), adjacent to Fanling Highway SB lanes at Zone 1	20	20	21-Feb-17*	15-Mar-17	253						
FHW-NB-130	Noise Barrier Steelworks & Panel for NB7 (60m), adjacent to Fanling Highway SB lanes at Zone 1	10	10	16-Mar-17	27-Mar-17	253						
FHW-NB-140	Noise Barrier Steelworks & Panel for NB71 (254m), adjacent to Fanling Highway SB lanes at Zones 2,3 & 4	45	45	21-Feb-17*	18-Apr-17	238						
FHW-NB-110	Noise Barrier Steelworks & Panel for NB70 (25m), adjacent to Fanling Highway SB lanes at Zone 1	6	6	20-May-17	26-May-17	207						
Section II - Remainder of the Works (KD-3)												
At Grade Link Road at Fanling Highway Interchange												
Link Road 1 (near Abutment AB1)												
FHI-LR1-1010	Completion of Abutment AB1	0	0		03-Mar-17	79						
FHI-LR1-1200	Completion of Segment Erection Works at TWSRW	0	0		21-Apr-17	19						
FHI-LR1-1030	Noise Barrier NB66 - Footing adjacent NB lane (24m long, Bay 5 - Bay 6)	54	54	18-Mar-17	26-May-17	106						
FHI-LR1-1040	Noise Barrier NB66 - Footing adjacent NB lane (50m long, Bay 1 - Bay 4)	90	90	21-Feb-17 A	13-Jun-17	0						
FHI-LR1-1050	Noise Barrier NB67 - Pre-drilling & Mini-Piling (Cap 1-10 for raking piles, 20no.)	72	72	18-Mar-17	17-Jun-17	107						
FHI-LR1-1310	Installation of Steelwork & Transparent Panel - Noise Barrier 66 (76m)	20	20	14-Jun-17	07-Jul-17	143						
FHI-LR1-1060	Noise Barrier NB67 - Footing (37.6m) (Bay 1 - Bay 3)	52	52	19-Jun-17	18-Aug-17	107						
FHI-LR1-1070	Noise Barrier NB67 - Pre-drilling & Mini-Piling (Cap 11-20 for raking piles, Bay 7-10 for vertical piles, 44no.)	112	112	22-Apr-17	04-Sep-17	19						
FHI-LR1-1020	Construction of Retaining Wall beside Abutment AB1	120	120	13-Jun-17	03-Nov-17	0						
Link Road 2 (near Abutment AA1)												
FHI-LR2-2000	Completion of Demolition of Existing Vehicular Bridge	0	0		21-Feb-17	173						
FHI-LR2-2010	Completion of Abutment AA1	0	0		21-Feb-17	74						
FHI-LR2-2020	Construction of Retaining Wall beside Abutment AA1	120	120	11-May-17	29-Sep-17	12						
Link Road 3 (near Abutment AD1)												
FHI-LR3-3010	Completion of Abutment AD1	0	0		21-Feb-17	26						
FHI-LR3-3020	Construction of Retaining Wall beside Abutment AD1	120	120	18-Mar-17	14-Aug-17	4						
Link Road 4 (near Abutment AC1)												
FHI-LR4-4020	Construction of Retaining Wall beside Abutment AC1	120	120	06-Mar-17*	01-Aug-17	14						
WSD Works												
DN450 Fire Mains (CHA)												
WA-3020	Pipe Laying - CHA 720 - 765 (DN450) near Ext. TWSR West, 45m	85	0	08-Nov-16 A	26-Jan-17 A							
WA-3030	Pipe Laying - CHA 765 - 800 (DN450) near Ext. TWSR West, 35m	70	20	07-Feb-17 A	15-Mar-17	93						
WA-2010	Pipe Laying - CHA 460 - 500 (DN450) near Ext. TWSR West, 40m	70	52	01-Sep-16 A	26-Apr-17	-64						



俊和建築工程有限公司
CHUN WO CONSTRUCTION & ENGINEERING CO., LTD.

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3-Month Rolling Programme

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3-Month Rolling Programme updated to 2017-02-21			
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Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017					
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WA-3040	Pipe Laying - CHA 800 - 835 (DN450) near Ext. TWSR West, 35m	70	70	16-Mar-17	13-Jun-17	93						
WA-1000	Pipe Laying - CHA 0 - 60 (DN450) near Ext. TWSR West, 60m	28	28	14-Jun-17	17-Jul-17	11						
WA-2020	Pipe Laying - CHA 500 - 540 (DN450) near Ext. TWSR West, 40m	70	70	27-Apr-17	21-Jul-17	-64						
WA-3050	Pipe Laying - CHA 835 - 880 (DN450) near Ext. TWSR West, 45m	85	85	14-Jun-17	21-Sep-17	93						
DN600 Water Mains (CHB)												
WB-1030C	Pipe Laying - CHB 410 - 510 (DN600) from Portal AB7/AD9/AC12 to Realigned TWSR East	35	53	01-Nov-16 A	27-Apr-17	2						
WB-1030B	Pipe Laying - CHB 360 - 460 (DN600) from TWSRE to Portal AB7/AD9/AC12	40	40	28-Apr-17	16-Jun-17	172						
WB-4000	Pressure Test for CHB (CHB 360 - 570)	5	5	17-Jun-17	22-Jun-17	172						
DN1200 Water Mains (CHC)												
WC-1090C	Pipe Laying - CHC 715 - 810 (DN1200) from Portal AB7/AD9/AC12 to Realigned TWSR East	35	37	06-Jul-16 A	05-Apr-17	18						
WC-1090B	Pipe Laying - CHC 615 - 715 (DN1200) from TWSRE to Portal AB7/AD9/AC12	40	40	28-Apr-17	16-Jun-17	177						
WC-1000B	Pipe Laying - CHC 0 - 70 (DN1200) near Realigned TWSR West (TWSRW: CH100-155), 70m long & 3m depth	28	28	14-Jun-17	17-Jul-17	11						
Twin DN1400 Water Mains (CHE & CHG)												
WE-1040	Pipe Laying - CHE & CHG 220 - 300 (Twins DN1400) from TWSRE to Portal AB7/AD9/AC12	42	42	06-Mar-17*	27-Apr-17	2						
WE-1050	Pipe Laying - CHE & CHG 300 - 380 (Twins DN1400) from Portal AB7/AD9/AC12 to new connection point	131	88	12-Dec-16 A	10-Jun-17	2						
WE-3010A	Pressure Test, for CHE (Stage 2 Diversion)	3	3	12-Jun-17	14-Jun-17	7						
WE-3020A	Cleaning & CCTV Inspection for CHE (Stage 2 Diversion)	3	3	15-Jun-17	17-Jun-17	7						
WE-3030A	Installation of Connecting Pipe for Connection to Existing Mains (CHE)	7	7	19-Jun-17	26-Jun-17	7						
DN2200 Water Mains (CHF)												
WF-1050 A	Construction of Launching Pit for DN2200 (CHF), Section 3	60	60	21-Feb-17	08-May-17	-25						
WF-1000B	Construction of Launching Pit for DN2200 (CHF), Section 1 (near Pier AB3)	60	60	21-Feb-17	08-May-17	48						
WF-1000A	Construction of Receiving Pit for DN2200 (CHF), Section 1 (near Pier AA8)	60	60	11-Mar-17	26-May-17	32						
WF-1050 B	Construction of Receiving Pit for DN2200 (CHF), Section 3 (near FLH NB)	60	60	07-Jun-17	16-Aug-17	39						
WF-1010	Excavation - CHF 5 - 20 (DN2200) across ext. TWSRW by Trenchless Method, 15m long	75	75	27-May-17	24-Aug-17	32						
WF-1060	Excavation - CHF 83 - 113 (DN2200) across Box Culvert BC01 by Trenchless Method, 30m long	148	148	09-May-17	02-Nov-17	-25						
DN2300 Water Mains and Leakage Collection System (CHJ & CHKA/CHK)												
WJ-3030	Pressure Test for CHK/CHKA	7	7	21-Feb-17	28-Feb-17	258						
Existing Nam Wa Po Trunk Sewage Pumping Station (PST3)												
PS-1010	Construction of New Boundary Wall for Pumping Station (PST3)	80	34	25-Nov-16 A	31-Mar-17	51						
Stage 1A - Realignment of Tai Wo Service Road West (KD-7)												
TWSRW Zone 2 between CH155 and CH280												
At-Grade Roadworks												
TWSRW-2130C	Remaining Road Formation & Pavement (above Southern Trunk Sewer)	30	0	31-Dec-16 A	20-Feb-17 A							
TWSRW Zone 4 between CH315 and CH376												

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							Jan	Feb	Mar	Apr	May	Jun
Construction of Bridge E												
TWSRW-4100C	Construction of Gabion Wall and Remaining Slope Reinstatement Works	68	34	03-Jan-17 A	31-Mar-17	250						
TWSRW Zone 5 between CH376 and CH520												
At-Grade Roadworks												
TWSRW-5110D	Remaining Retaining Wall RW9 - Bay 9001 & Coping Block (covered by VO No.116)	55	0	11-Jan-17 A	18-Feb-17 A							
TWSRW-5100C	Remaining Retaining Wall RW7 - Bay 7001 (6.7m) (covered by VO No.100)	30	2	18-Nov-16 A	22-Feb-17	741						
TWSRW-5120A	Filling Works between Retaining Wall RW7 and RW8	192	65	07-Jun-16 A	13-May-17	111						
TWSRW-5120B	Permanent Vehicular Access to Lot 81 (incl. filling works behind retaining wall RW8)	58	58	15-May-17	22-Jul-17	111						
TWSRW-5160	Construction of Extended Podium near RW7 incl. demolition of existing staircase and filling works (covered by VO No.100)	85	232	27-Oct-16 A	30-Nov-17	52						
TWSRW Zone 7 between CH530 and CH640												
At-Grade Roadworks												
TWSRW-7190	Implementation of TTA - Scheme W3C (shift TWSRW SB traffic westward, i.e. permanent alignment)	0	0	27-Apr-17		107						
TWSRW Zone 8 between CH640 and CH695												
Kiu Tau Footbridge Reprvision (West)												
TWSRW-8040	Steel Truss Installation at TWSR West	12	0	16-Feb-17 A	20-Feb-17 A							
At-Grade Roadworks												
TWSRW-8100	Fill Replacement Works	95	95	21-Feb-17	19-Jun-17	64						
Remainder of the Works												
Utilities Laying Works												
UU-1030B	Utilities Duct Laying in Area 3, Temp Works, Towngas - DN400, approx. 30m	25	0	01-Nov-16 A	10-Feb-17 A							
UU-1030A	Utilities Duct Laying in Area 3, Phase 2, CLP - 132kV(150mVA), approx. 30m	27	27	18-Mar-17	22-Apr-17	597						
UU-1040A	Utilities Duct Laying in Area 4, Phase 2, Towngas - DN600 & DN400, approx. 50m (by their own TTA)	121	90	15-Sep-16 A	13-Jun-17	523						
UU-1040B	Utilities Duct Laying in Area 4, Phase 2, CLP - 132kV(150mVA), approx. 50m (by their own TTA)	33	33	14-Jun-17	22-Jul-17	523						
Switch-Over of Existing Utilities												
UU-SO-3520	Temporary Diversion of DN400 Gas Mains	6	0	13-Feb-17 A	16-Feb-17 A							
UU-SO-2000	Cabling Works for CLP 132kV (300mVA)	21	8	05-Dec-16 A	01-Mar-17	47						
UU-SO-2020	Cabling Works for CLP 11kV	21	8	17-Dec-16 A	01-Mar-17	47						
UU-SO-2500	Switch-over Works (CLP 132kV, 300mVA)	16	16	02-Mar-17*	17-Mar-17	60						
UU-SO-2520	Switch-over Works (CLP 11kV)	16	16	02-Mar-17*	17-Mar-17	60						
UU-SO-1010	Cabling Works for telecom utilities	146	146	06-Mar-17*	29-Jul-17	0						
Remaining Works for Noise Barrier along realigned TWSR West												
TWSRW-NB-110	Noise Barrier Steelworks & Panel for NB4 at Zones 1 & 2	30	0	15-Feb-17 A	18-Feb-17 A							
TWSRW-NB-130	Noise Barrier Steelworks & Panel for NB1b at Zone 4	30	0	15-Feb-17 A	18-Feb-17 A							
Stage N4A & N4B - Realignment of Tai Wo Service Road East (KD-13 & KD-14)												
TWSRE Zone 1 between CH100 and CH270												
At-Grade Roadworks												

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TWSRE-1140B*	Pipe laying - DN600 & DN1200 Watermains (CHB & CHC) along Realigned TWSR East	106	93	06-Jul-16 A	16-Jun-17	177	[Green bar from Feb to Jun]					
TWSRE-1170	Remaining Noise Barrier NB3 Stem Wall (a total of 24m long)	45	45	28-Apr-17	22-Jun-17	2	[Green bar from Apr to Jun]					
TWSRE-1160	Road Formation, Road Drainage, Kerb, Planter and Pavement (Incl. FL/F8A, FL/F9)	118	118	28-Apr-17	16-Sep-17	2	[Green bar from Apr to Jun]					
TWSRE Zone 2 between CH270 and CH380												
At-Grade Roadworks												
TWSRE-2060B	Demolition of Existing Kiu Tau Vehicular Bridge (Portion 2), above existing TWSRE	35	0	27-Dec-16 A	25-Jan-17 A		[Blue bar from Dec to Jan] Demolition of Existing Kiu Tau Vehicular Bridge (Portion 2), above existing TWSRE					
TWSRE-2060C	Demolition of Existing Kiu Tau Vehicular Bridge (Portion 3), above new TWSRE	25	25	01-Mar-17*	29-Mar-17	2	[Green bar from Mar to Mar] Demolition of Existing Kiu Tau Vehicular Bridge (Portion 3), above new TWSRE					
TWSRE-2080	Remaining Noise Barrier NB3 Stem Wall (total 2 bays)	45	45	30-Mar-17	27-May-17	26	[Green bar from Mar to May] Remaining Nois					
TWSRE-2090	Road Formation, Kerb, Footpath, Cycle Track, Planter and Pavement	70	70	29-May-17	19-Aug-17	26	[Green bar from May to Aug]					
TWSRE Zone 3 between CH380 and CH456												
At-Grade Roadworks												
TWSRE-3040	Road Formation, Kerb, Footpath, Cycle Track, Planter and Pavement (Incl. FL/F10)	70	70	28-Apr-17	22-Jul-17	50	[Green bar from Apr to Jul]					
Roundabout A, Slip Road and Access Road												
TWSRE-5010	Modification Works to new Roundabout A	90	27	29-Nov-16 A	23-Mar-17	7	[Blue bar from Nov to Mar] Modification Works to new Roundabout A, Modification Works to new Roundabout A					
TWSRE-5020	Hand Over the area to BBI Contractor	0	0		23-Mar-17*	7	[Milestone diamond at Mar] Hand Over the area to BBI Contractor					
Stage 1C - Viaduct Structure & TCSS Civil Provisions (KD-9)												
Foundation & Pier Construction												
Bridge A												
BA-06-1030	Pier AA6 - Pier Construction	35	0	14-Nov-16 A	17-Feb-17 A		[Blue bar from Nov to Feb] Pier AA6 - Pier Construction					
BA-01-1020C	Abutment AA1 - Plinth Construction	5	0	26-Jan-17 A	20-Feb-17 A		[Blue bar from Jan to Feb] Abutment AA1 - Plinth Construction					
Bridge B												
BB-12-1020B	Abutment AB12/AD14 - Abutment Wall	120	0	15-Aug-16 A	09-Feb-17 A		[Blue bar from Aug to Feb] Abutment AB12/AD14 - Abutment Wall					
BB-12-1020C	Abutment AB12/AD14 - Plinth Construction	14	0	16-Feb-17 A	20-Feb-17 A		[Blue bar from Feb to Feb] Abutment AB12/AD14 - Plinth Construction					
BB-01-1020C	Abutment AB1 - Plinth Construction	10	10	21-Feb-17	03-Mar-17	19	[Green bar from Feb to Mar] Abutment AB1 - Plinth Construction					
Bridge D												
BD-11-1050	Portal AD11 - Portal Beam Construction together with Kicker	55	55	27-Feb-17*	08-May-17	-38	[Red bar from Feb to May] Portal AD11 - Portal Beam Constructi					
Pier Table Construction												
Bridge A												
PA-1020	Pier Table Construction at Portal AA2 (2 nos.)	21	21	21-Feb-17*	16-Mar-17	12	[Green bar from Feb to Mar] Pier Table Construction at Portal AA2 (2 nos.)					
PA-1060	Pier Table Construction at Pier AA6 (3 nos.)	35	35	06-Mar-17	19-Apr-17	4	[Green bar from Mar to Apr] Pier Table Construction at Pier AA6 (3 nos.)					
Bridge B												
PB-1020	Pier Table Construction at Pier AB2 (3 nos.)	30	0	13-Jan-17 A	10-Feb-17 A		[Blue bar from Jan to Feb] Pier Table Construction at Pier AB2 (3 nos.)					
PB-1040	Pier Table Construction at Pier AB4 (3 nos.)	30	5	21-Jan-17 A	25-Feb-17	12	[Blue bar from Jan to Feb] Pier Table Construction at Pier AB4 (3 nos.), Pier Table Construction at Pier AB4 (3 nos.)					
Bridge D												
PD-1120B	Pier Table Construction at Pier AD12 (4 nos.)	3	3	21-Feb-17	23-Feb-17	-42	[Red bar from Feb to Feb] Pier Table Construction at Pier AD12 (4 nos.)					
PD-1130	Pier Table Construction at Pier AD13 (4 nos.)	15	15	21-Feb-17	09-Mar-17	15	[Green bar from Feb to Mar] Pier Table Construction at Pier AD13 (4 nos.)					



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3-Month Rolling Programme

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Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017														
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C-4100	Permanent Prestressing for Bridge D1 (AD1-AD5)	15	15	18-Mar-17	05-Apr-17	56															
C-4210	Parapet Installation for Bridge D2 (AD5-AD8)	47	47	10-Mar-17	10-May-17	222															
C-2100	Permanent Prestressing for Bridge B1 (AB1-AB6)	15	15	22-Apr-17	11-May-17	29															
C-2200A	Permanent Prestressing for Bridge B2E (AB6-AB12)	15	15	24-Apr-17	12-May-17	28															
C-2200B	Permanent Prestressing for Bridge B2W (AB6-AB12)	15	15	24-Apr-17	12-May-17	31															
C-1310	Parapet Installation for Bridge A3 (AA9-AA13)	51	51	10-Mar-17	15-May-17	218															
C-1410	Parapet Installation for Bridge A4 (AA13-AA18)	55	55	11-Mar-17	20-May-17	213															
C-3110	Parapet Installation for Bridge C1 (AC1-AC5)	58	58	10-Mar-17	23-May-17	211															
C-1100	Permanent Prestressing for Bridge A1 (AA1-AA5)	15	15	11-May-17	27-May-17	15															
C-3210	Parapet Installation for Bridge C2 (AC5-AC12)	63	63	10-Mar-17	29-May-17	206															
C-4110	Parapet Installation for Bridge D1 (AD1-AD5)	42	42	06-Apr-17	31-May-17	205															
C-1200	Permanent Prestressing for Bridge A2 (AA5-AA9)	15	15	10-Jun-17	27-Jun-17	4															
C-2210A	Parapet Installation for Bridge B2E (AB6-AB12)	60	60	13-May-17	24-Jul-17	160															
C-2210B	Parapet Installation for Bridge B2W (AB6-AB12)	60	60	13-May-17	24-Jul-17	160															
C-1110	Parapet Installation for Bridge A1 (AA1-AA5)	50	50	29-May-17	27-Jul-17	157															
C-2110	Parapet Installation for Bridge B1 (AB1-AB6)	64	64	12-May-17	27-Jul-17	157															
Roadworks, Road Facilities and Miscellaneous inside Viaduct Internal Voids																					
RS-1020	Movement Joints and Road Furniture incl. Deck Drainage, Lightings, Steel Rails,NB, Water Main for Bridge C	150	150	10-Mar-17	09-Sep-17	47															
RS-1010	Movement Joints and Road Furniture incl. Deck Drainage, Lightings, Steel Rails,NB, Water Main for Bridge B	150	150	13-May-17	09-Nov-17	28															
RS-1000	Movement Joints and Road Furniture incl. Deck Drainage, Lightings, Steel Rails,NB, Water Main for Bridge A	150	150	12-Jun-17	07-Dec-17	4															
Section VI - Works in Portion FH9 (KD-6A)																					
Major Works																					
S6-2000*	Construction of Abutment AB12/AD14 (including Piling, Pile Cap & Abutment construction)	276	0	06-Feb-15 A	20-Feb-17 A																
S6-4010	Falsework Erection for Installation of Bridge Deck at Abutment AB12	45	45	21-Feb-17	18-Apr-17	-19															
S6-4000	Falsework Erection for Installation of Bridge Deck at Abutment AD14	45	45	02-Mar-17	27-Apr-17	-19															
S6-5010	Key Segment and Stitch between Pier AB11 and Abutment AB12	14	14	24-Apr-17	11-May-17	-11															
S6-5000	Key Segment and Stitch between Pier AD13 and Abutment AD14	14	14	05-May-17	20-May-17	-19															
S6-6010	Removal of Falsework near Abutment AB12	14	14	12-May-17	27-May-17	-11															
S6-6000	Removal of Falsework near Abutment AD14	14	14	22-May-17	07-Jun-17	-19															
S6-3000	Drainage Connection between Piers and Designated Manhole, Removal of plant and facilitate and Reinstatement to original	55	55	08-Jun-17	11-Aug-17	-19															
Landscaping & Establishment Works (KD-4, 4A, 5, 5A, 6)																					

Date	Revision	Checked	Approved
21-Feb-17	Rev.1	SL	

Activity ID	Activity Name	OD	RD	Start	Finish	TF	2017					
							Jan	Feb	Mar	Apr	May	Jun
Secton III - Remainder of Landscaping Softworks Not Included in Secton IIIA												
S3-1020	Remaining Drainage Works and Land Formation at FH3, FH4, FH5	74	74	23-Mar-17	24-Jun-17	0						
S3-1000	Transplanting along Realigned TWSR West	135	135	01-Apr-17	14-Sep-17	51						
S3-1010	Transplanting along Fanling Highway	140	140	05-May-17	19-Oct-17	53						

-  Actual Work
-  Remaining Work
-  Summary Bar
-  Critical Remaining Work
-  Milestone
-  Project Baseline Bar

CEDD Contract No. CV/2012/09

Liantang / Heung Yuen Wai BCP - Site Formation & Infrastructure Works, Contract 3

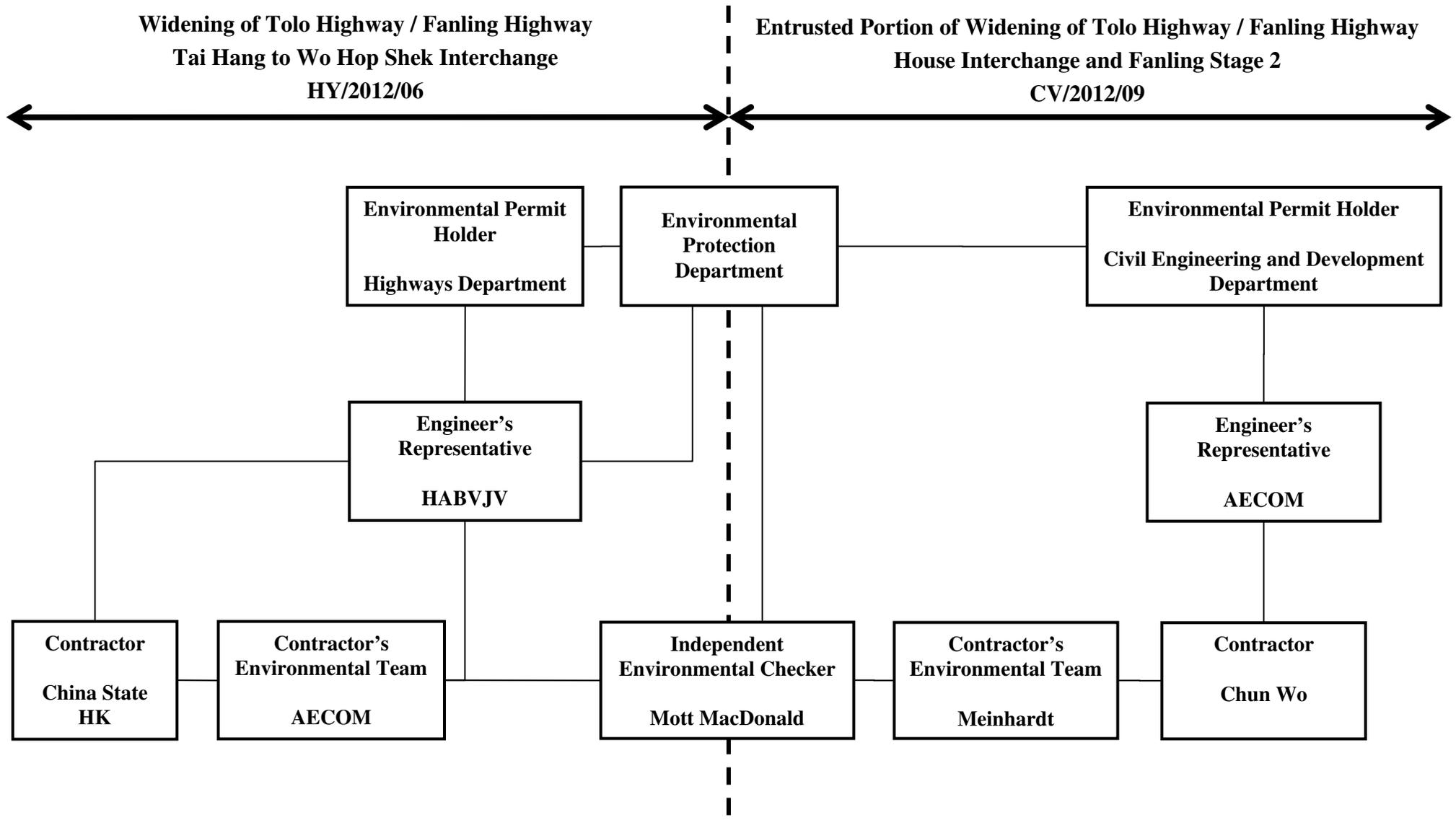
3-Month Rolling Programme

3-Month Rolling Programme updated to 2017-02-21

Date	Revision	Checked	Approved
21-Feb-17	Rev.1	SL	

Appendix B

Project Organization Structure



Appendix C

Calibration Certificates of Monitoring

Equipment

ORIFICE TRANSFER STANDARD CERTIFICATION WORKSHEET TE-5025A

Date - Mar 14, 2016 Rootsmeter S/N 0438320 Ta (K) - 295
 Operator Tisch Orifice I.D. - 1612 Pa (mm) - 745.49

PLATE OR Run #	VOLUME START (m3)	VOLUME STOP (m3)	DIFF VOLUME (m3)	DIFF TIME (min)	METER DIFF Hg (mm)	ORFICE DIFF H2O (in.)
1	NA	NA	1.00	1.3770	3.2	2.00
2	NA	NA	1.00	0.9710	6.4	4.00
3	NA	NA	1.00	0.8710	7.8	5.00
4	NA	NA	1.00	0.8310	8.7	5.50
5	NA	NA	1.00	0.6860	12.6	8.00

DATA TABULATION

Vstd	(x axis) Qstd	(y axis)	Va	(x axis) Qa	(y axis)
0.9866	0.7165	1.4078	0.9957	0.7231	0.8896
0.9824	1.0117	1.9909	0.9914	1.0210	1.2581
0.9804	1.1256	2.2259	0.9894	1.1360	1.4066
0.9793	1.1785	2.3345	0.9883	1.1893	1.4753
0.9741	1.4200	2.8155	0.9830	1.4330	1.7792
Qstd slope (m) = 2.00411			Qa slope (m) = 1.25494		
intercept (b) = -0.03059			intercept (b) = -0.01933		
coefficient (r) = 0.99995			coefficient (r) = 0.99995		
y axis = SQRT[H2O(Pa/760) (298/Ta)]			y axis = SQRT[H2O(Ta/Pa)]		

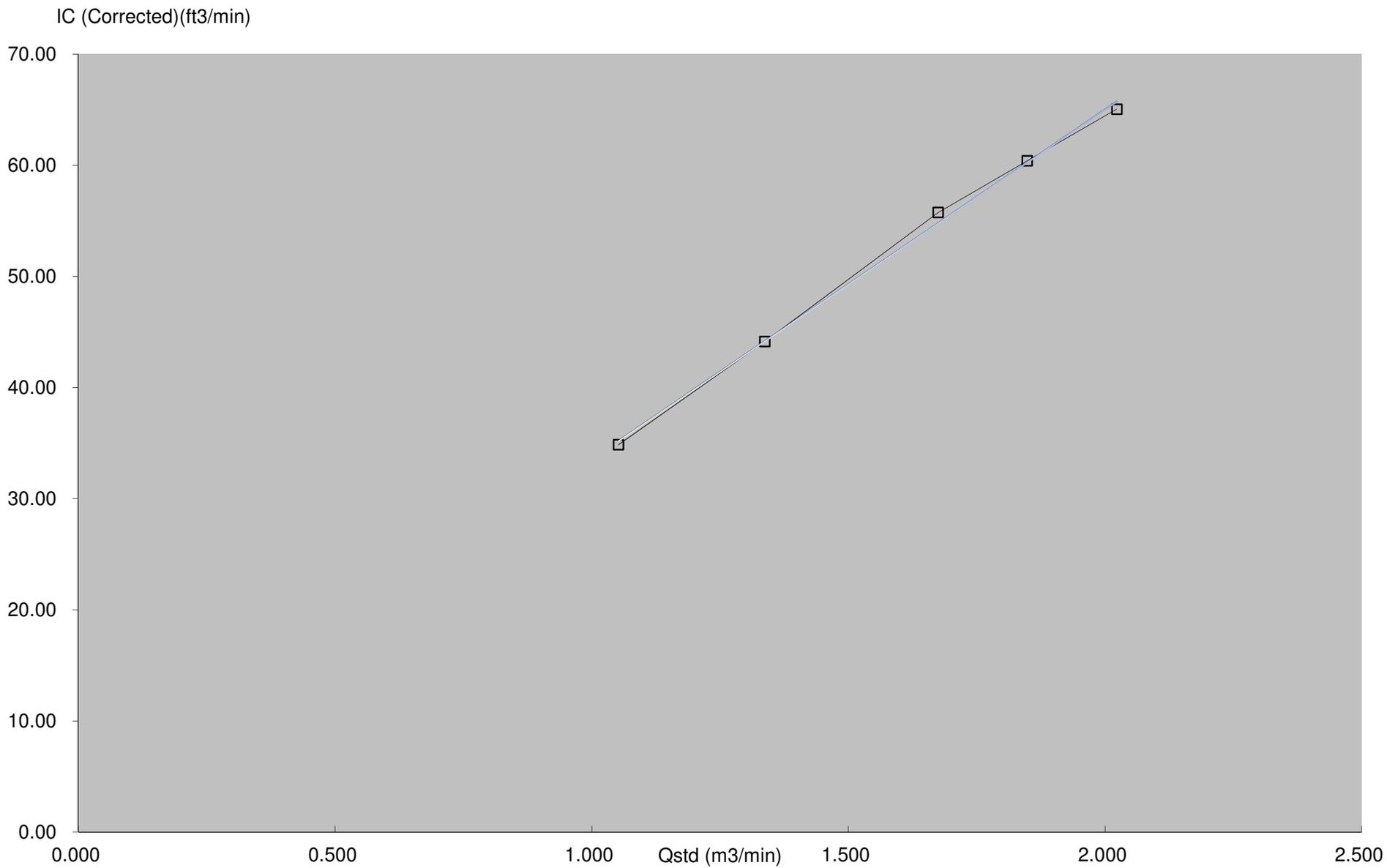
CALCULATIONS

Vstd = Diff. Vol [(Pa-Diff. Hg)/760] (298/Ta)
 Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa]
 Qa = Va/Time

For subsequent flow rate calculations:

Qstd = 1/m{ [SQRT(H2O(Pa/760) (298/Ta))] - b}
 Qa = 1/m{ [SQRT H2O(Ta/Pa)] - b}





Calibration Certificate

Certificate No. **607984**

Page 1 of 2 Pages

Customer : Enovative Environmental Service Limited

Address : Flat 6, 3/F, Block E, Wah Lok Industrial Centre, 31-35 Shan Mei Street, Shatin, N.T., Hong Kong.

Order No. : Q63261

Date of receipt : 6-Sep-16

Item Tested

Description : Sound Level Calibrator

Manufacturer : Rion

I.D. : 215901

Model : NC-74

Serial No. : 34857296

Test Conditions

Date of Test : 23-Sep-16

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : F21, Z02, IEC 60942.

Test Results

All results were within the IEC 60942 Class 1 specification.

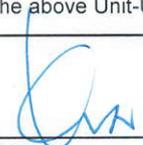
The results are shown in the attached page(s).

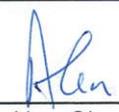
Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S014	Spectrum Analyzer	605758	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	601604	NIM-PRC & SCL-HKSAR
S041	Universal Counter	607883	SCL-HKSAR
S206	Sound Level Meter	605757	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant. The test results apply to the above Unit-Under-Test only

Calibrated by : 
Kin Wong

Approved by : 
Alan Chu

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

Date: 23-Sep-16



Calibration Certificate

Certificate No. 607984

Page 2 of 2 Pages

Results :

1. Generated Sound Pressure Level

UUT Nominal Value (dB)	Measured Value (dB)	IEC 60942 Class 1 Spec.
94	94.1	± 0.4 dB

Uncertainty : ± 0.1 dB

2. Short-term Level Fluctuation : 0.0 dB

IEC 60942 Class 1 Spec. : ± 0.1 dB

Uncertainty : ± 0.01 dB

3. Frequency

UUT Nominal Value (kHz)	Measured Value (kHz)	IEC 60942 Class 1 Spec.
1	1.002 1	± 1 %

Uncertainty : ± 3.6 x 10⁻⁶

4. Total Distortion : < 1.3 %

IEC 60942 Class 1 Spec. : < 3 %

Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1018 hPa.

----- END -----



Calibration Certificate

Certificate No. **608737**

Page 1 of 3 Pages

Customer : Enovative Environmental Service Limited

Address : Flat 6, 3/F, Block E, Wah Lok Industrial Centre, 31-35 Shan Mei Street, Shatin, N.T., Hong Kong.

Order No. : Q63459

Date of receipt : 22-Sep-16

Item Tested

Description : Sound Level Meter

Manufacturer : B&K

I.D. : --

Model : 2238

Serial No. : 2694908

Test Conditions

Date of Test : 3-Oct-16

Supply Voltage : --

Ambient Temperature : (23 ± 3)°C

Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure: Z01, IEC 651 and IEC 804.

Test Results

All results were within the IEC 651 Type1 and IEC 804 Type1 specification.

The results are shown in the attached page(s).

Main Test equipment used:

<u>Equipment No.</u>	<u>Description</u>	<u>Cert. No.</u>	<u>Traceable to</u>
S017	Multi-Function Generator	C147450	SCL-HKSAR
S240	Sound Level Calibrator	601604	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : 
Kin Wong

Approved by : 
Alan Chu

This Certificate is issued by:

Hong Kong Calibration Ltd.

Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street, Kwai Chung, NT, Hong Kong.

Tel: 2425 8801 Fax: 2425 8646

Date: 3-Oct-16



Calibration Certificate

Certificate No. **608737**

Page 2 of 3 Pages

Results :

1. SPL Accuracy

UUT Setting				Applied Value (dB)	UUT Reading (dB)
Range	Freq. Wgt.	Bandwith	Center Freq.		
20 ~ 100	A	BB/F	--	94.0	94.0
	A	BB/S	--		94.0
	C	BB/F	--		94.0
40 ~ 120	A	BB/F	--	94.0	94.0
	A	BB/F	--	114.0	114.2

IEC 60651 Type 1 Spec. : ± 0.7 dB

Uncertainty : ± 0.1 dB

2. Level Stability : 0.0 dB

IEC 60651 Type 1 Spec. : ± 0.3 dB

Uncertainty : ± 0.1 dB

3. Linearity

3.1 Level Linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 60651 Type 1 Spec. (Primary Indicator Range)
140	114.0	114.0	0.0	± 0.7 dB
130	104.0	104.0	0.0	
120	94.0	94.0 (Ref.)	--	
110	84.0	84.0	0.0	
100	74.0	74.0	0.0	
90	64.0	64.0	0.0	
80	54.0	54.0	0.0	

Uncertainty : ± 0.1 dB

3.2 Differential level linearity

UUT Range (dB)	Applied Value (dB)	UUT Reading (dB)	Variation (dB)	IEC 60651 Type 1 Spec.
120	84.0	84.1	+0.1	± 0.4 dB
	94.0	93.9 (Ref.)	--	
	95.0	95.0	0.0	± 0.2 dB

Uncertainty : ± 0.1 dB



Calibration Certificate

Certificate No. 608737

Page 3 of 3 Pages

4. Frequency Weighting

A weighting

Frequency	Attenuation (dB)	IEC 60651 Type 1 Spec.
31.5 Hz	-39.3	- 39.4 dB, ± 1.5 dB
63 Hz	-26.2	- 26.2 dB, ± 1.5 dB
125 Hz	-16.2	- 16.1 dB, ± 1 dB
250 Hz	-8.7	- 8.6 dB, ± 1 dB
500 Hz	-3.2	- 3.2 dB, ± 1 dB
1 kHz	0.0 (Ref)	0 dB, ± 1 dB
2 kHz	+1.2	+ 1.2 dB, ± 1 dB
4 kHz	+1.0	+ 1.0 dB, ± 1 dB
8 kHz	-1.2	- 1.1 dB, + 1.5 dB ~ -3 dB
16 kHz	-6.7	- 6.6 dB, + 3 dB ~ - ∞

Uncertainty : ± 0.1 dB

5. Time Averaging

Applied Burst duty Factor	Applied Leq Value (dB)	UUT Reading (dB)	IEC 60804 Type 1 Spec.
continuous	40.0	40.0	--
1/10	40.0	39.9	± 0.5 dB
1/10 ²	40.0	39.9	
1/10 ³	40.0	39.9	± 1.0 dB
1/10 ⁴	40.0	39.5	

Uncertainty : ± 0.1 dB

- Remarks:
1. UUT : Unit-Under-Test
 2. The uncertainty claimed is for a confidence probability of not less than 95%.
 3. Atmospheric Pressure : 1013 hPa
 4. The UUT was adjusted with the laboratory's sound calibrator at the reference sound pressure level before the calibration.

----- END -----



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF120114a
Date of Issue : 04 January, 2017
Page No. : 1 of 1

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas Wong

PART B – SAMPLE INFORMATION

Description of Samples : HACH 2100Q Portable Turbidimeter
Brand Name : HACH
Model Number : 2100Q
Serial Number : 13120C029845
Equipment Number : --
Date of Received : 16 Dec, 2016
Date of Calibration : 16 Dec, 2016
Date of Next Calibration^(a) : 16 Mar, 2017

PART C – CALIBRATION REQUESTED

<u>Parameter</u>	<u>Reference Method</u>
Turbidity	APHA 21e 2130 B

PART D – RESULT^(b,c)

Turbidity

Expected Reading (NTU)	Displayed Reading ^(d) (NTU)	Tolerance ^(e) (%)	Results
0	0.00	--	Satisfactory
4	4.12	+3.0	Satisfactory
20	20.9	+4.5	Satisfactory
100	105	+5.0	Satisfactory
800	817	+2.1	Satisfactory

Tolerance limit of turbidity should be less than ± 10.0 (%)

~ END OF REPORT ~

This report supersedes the previous report no. AF120114 dated 20 December 2016.

Remark(s)

^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

^(b) The results relate only to the tested sample as received

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

^(d) "Displayed Reading" presents the figures shown on item under calibration/ checking regardless of equipment precision or significant figures.

^(e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted form relevant international standards.

APPROVED SIGNATORY :


FUNG Yuen-ehing Aries
Laboratory Manager



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

Unit 10, 14/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong

Email: info@qualityprotest.com; Website: www.qualityprotest.com

Tel: (852) 3956 8717; Fax: (852) 3956 3928

Report of Equipment Performance Check/Calibration

Test Report No. : AF120113
Date of Issue : 20 December, 2016
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Enovative Environmental Service Ltd.
Rm 811, Hin Pui House,
Hin Keng Estate, Tai Wai
New Territories, Hong Kong
Attn: Mr. Thomas WONG

PART B – DESCRIPTION

Name of Equipment : YSI Professional Plus (Pro Plus) Multiparameter with sensor probe
Manufacturer : YSI (a xylem brand)
Serial Number : IOD 101566
Client's Reference Number : --
Date of Received : 16 Dec, 2016
Date of Calibration : 16 Dec, 2016
Date of Next Calibration^(a) : 16 Mar, 2017

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Conductivity at 25°C	APHA 21e 2510B
Salinity	APHA 21e 2520B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,e)

pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	3.96	-0.04	Satisfactory
7.42	7.37	-0.05	Satisfactory
10.01	10.05	+0.04	Satisfactory

Tolerance of pH should be less than ± 0.10 (pH unit)

~ CONTINUED ON NEXT PAGE ~

Remark(s)

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.
- ^(b) The results relate only to the calibrated equipment as received
- ^(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
- ^(d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
- ^(e) The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

APPROVED SIGNATORY :

FUNG Yuen-ching Aries
Laboratory Manager



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Report of Equipment Performance Check/Calibration

Test Report No. : AF120113
Date of Issue : 20 December, 2016
Page No. : 2 of 2

PART D – RESULT (Cont'd)

Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
16.0	15.6	-0.4	Satisfactory
21.0	20.4	-0.6	Satisfactory
34.5	34.0	-0.5	Satisfactory

Tolerance limit of temperature should be less than ± 2.0 (°C)

Dissolved Oxygen

Reading of Ref. DO (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
0.15	0.19	+0.04	Satisfactory
3.43	3.49	+0.06	Satisfactory
8.60	8.70	+0.10	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.20 (mg/L)

Conductivity at 25°C

Expected Reading ($\mu\text{S}/\text{cm}$)	Displayed Reading ($\mu\text{S}/\text{cm}$)	Tolerance (%)	Results
146.9	142.5	-3.0	Satisfactory
1412	1387	-1.8	Satisfactory
12890	12804	-0.7	Satisfactory
58670	57964	-1.2	Satisfactory
111900	110282	-1.4	Satisfactory

Tolerance limit of conductivity should be less than ± 10.0 (%)

Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.92	-0.8	Satisfactory
20	20.14	+0.7	Satisfactory
30	30.26	+0.9	Satisfactory

Tolerance limit of salinity should be less than ± 10.0 (%)

~ END OF REPORT ~

Appendix D

EM&A Monitoring Schedules

**Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2
Impact Monitoring & Site Auditing Schedule for February 2017**

February 2017						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Water (I5, C3a, C3b)	2 ET Site Walk(09:30am – 11:00am) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	3 Water (I5, C3a, C3b)	4
			5	6 ET Site Walk(09:30am – 11:00am) Water (I5, C3a, C3b)	7	8 24-hour TSP + 3 x 1-hour TSP, Noise (SR77) Water (I5, C3a, C3b)
12	13 Water (I5, C3a, C3b)	14 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	15 Water (I5, C3a, C3b) ET Site Walk(09:30 am – 11:00 am) with Liantang Project-wide ET and IEC + SSEMC	16	17 Water (I5, C3a, C3b)	18
19	20 ET Site Walk(09:30am – 11:00am) 24-hour TSP + 3 x 1-hour TSP, Noise (SR77), Water (I5, C3a, C3b)	21	22 Water (I5, C3a, C3b)	23	24 24-hour TSP + 3 x 1-hour TSP, Water (I5, C3a, C3b)	25
26	27 ET Site Walk(09:30am – 11:00 am) with Fanling Stage 2 IEC & Liantang Project-wide ET and IEC Water (I5, C3a, C3b)	28				

**Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2
Impact Monitoring & Site Auditing Schedule for March 2017**

March 2017						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Water (I5, C3a, C3b)	2 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	3 Water (I5, C3a, C3b)	4
			5	6 ET Site Walk(09:30am – 11:00am) Water (I5, C3a, C3b)	7	8 24-hour TSP + 3 x 1-hour TSP, Noise (SR77), Water (I5, C3a, C3b)
12	13 ET Site Walk(09:30am – 11:00am) Water (I5, C3a, C3b)	14 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	15 Water (I5, C3a, C3b)	16	17 Water (I5, C3a, C3b)	18
19	20 24-hour TSP + 3 x 1-hour TSP, Noise (SR77), Water (I5, C3a, C3b)	21	22 ET Site Walk(09:30 am – 11:00 am) with Liantang Project-wide ET and IEC + SSEM (To be confirmed) Water (I5, C3a, C3b)	23	24 24-hour TSP + 3 x 1-hour TSP, Water (I5, C3a, C3b)	25
26	27 ET Site Walk(09:30am – 11:00 am) with Fanling Stage 2 IEC & Liantang Project-wide ET and IEC (To be confirmed) Water (I5, C3a, C3b)	28	29 Water (I5, C3a, C3b)	30 24-hour TSP + 3 x 1-hour TSP, Noise (SR77)	31 Water (I5, C3a, C3b)	

Appendix E

Meteorological Data Extracted from Hong Kong Observatory

Daily Extract of Meteorological Observations , February 2017

Day	Hong Kong Observatory								King's Park	Waglan Island [^]	
	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)	Total Bright Sunshine (hours)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg. C)	Absolute Daily Min (deg. C)							
01	1021.3	22.0	18.4	16.6	14.8	80	80	Trace	6.5	080	23.9
02	1022.7	17.7	16.8	16.2	13.8	83	86	Trace	0.0	080	43.0
03	1020.3	19.6	17.1	15.4	12.7	76	87	0.0	0.4	070	31.4
04	1016.0	20.9	18.2	16.3	14.5	79	72	1.6	6.0	080	22.2
05	1013.9	22.0	19.0	16.7	16.0	83	67	3.3	4.4	020	11.0
06	1015.7	19.7	18.1	16.9	14.6	80	80	Trace	5.6	070	38.5
07	1016.9	18.7	16.7	15.9	12.1	74	83	0.0	2.9	070	47.2
08	1016.6	20.6	17.7	15.5	13.9	78	88	Trace	1.2	080	29.7
09	1020.2	16.8	14.0	11.1	5.3	56	72	Trace	6.2	010	39.9
10	1023.3	15.6	12.8	10.8	4.3	56	88	0.0	0.4	010	27.7
11	1026.3	17.9	14.0	11.5	5.4	57	32	0.0	10.0	010	22.7
12	1026.7	19.1	15.0	12.5	8.6	66	6	0.0	10.0	080	20.8
13	1027.1	20.1	16.1	13.1	9.3	65	9	0.0	10.5	080	30.3
14	1028.2	21.1	17.3	15.6	9.7	62	34	0.0	10.0	080	35.3
15	1026.1	20.9	17.4	15.3	9.7	62	20	0.0	10.6	080	28.3
16	1021.6	24.0	18.7	15.4	12.7	69	11	0.0	10.6	040	16.3
17	1020.6	25.4	20.4	17.1	15.3	74	39	0.0	10.5	030	10.5
18	1021.2	24.1	19.9	18.0	15.4	76	33	0.0	10.3	050	19.1
19	1018.0	19.1	17.9	16.4	14.7	82	88	0.3	0.0	080	30.0
20	1013.9	25.5	21.0	18.3	18.2	84	72	Trace	5.5	030	12.8
21	1017.1	21.1	18.3	16.6	16.6	90	90	4.6	0.2	080	35.5
22	1015.3	21.3	18.9	16.4	17.3	91	89	8.0	0.9	040	18.5
23	1017.4	20.2	17.9	15.0	15.8	88	95	Trace	0.0	020	18.8
24	1022.1	15.1	13.0	12.0	9.9	81	88	Trace	0.0	010	28.0
25	1020.9	13.8	12.2	10.7	9.6	85	89	0.7	0.0	010	22.4
26	1021.2	17.0	13.9	10.6	10.3	79	88	1.4	0.6	360	21.7
27	1022.5	19.8	17.0	15.4	10.3	66	77	0.0	7.1	070	33.6
28	1020.6	20.8	17.4	15.1	10.3	64	51	0.0	9.5	080	31.3
Mean/Total	1020.5	20.0	17.0	14.9	12.2	75	65	19.9	139.9	080	26.8
Normal [§]	1018.5	18.9	16.8	15.0	13.0	80	74	54.4	94.2	070	24.5

[^] Information of wind direction and wind speed for Waglan Island are based on automatic weather station data since January 1989

Trace means rainfall less than 0.05 mm

[§] 1981-2010 Climatological Normal, unless otherwise specified

Appendix F

Air Quality Monitoring Results and their Graphical Presentation

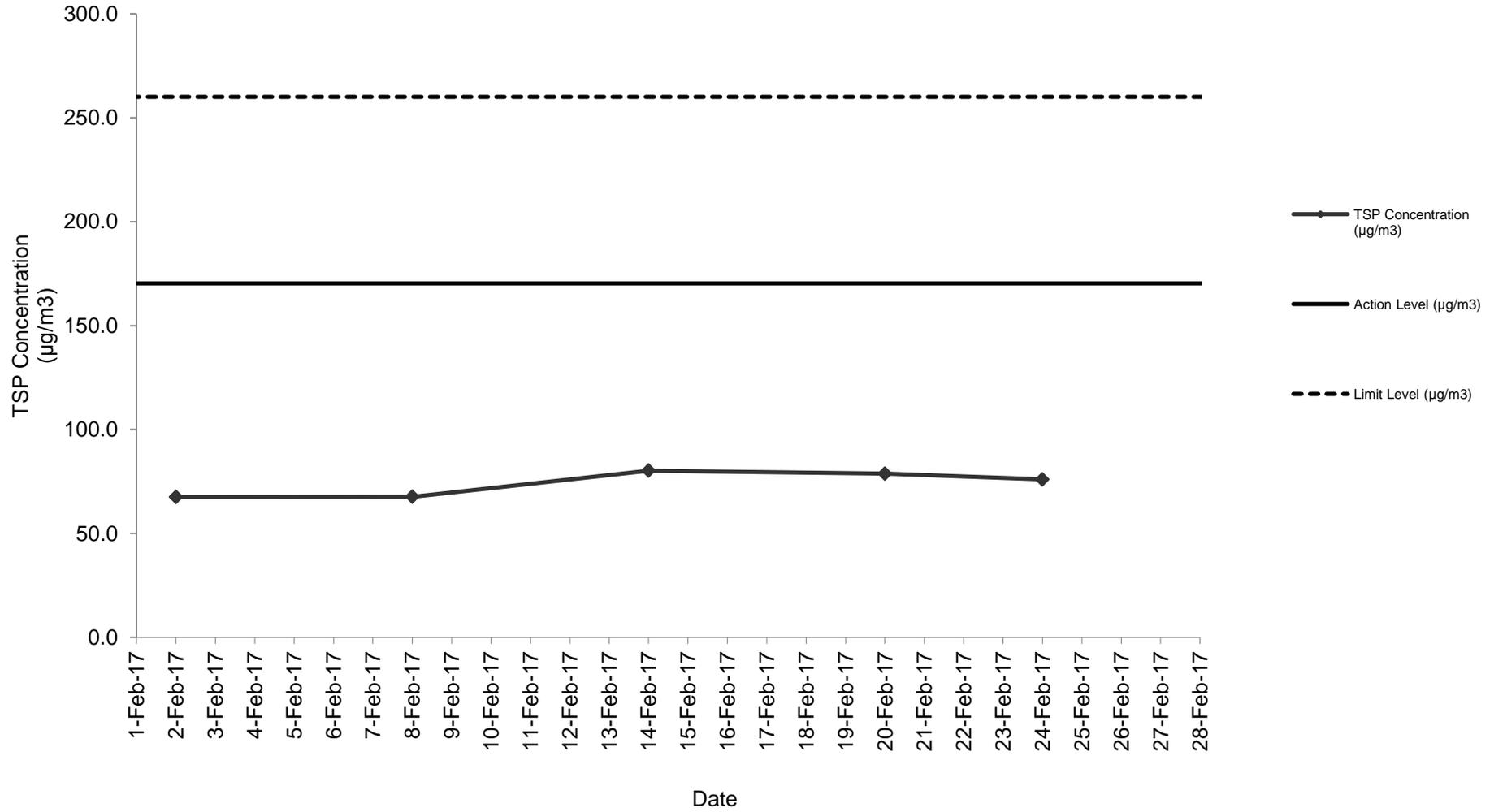
Appendix F
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

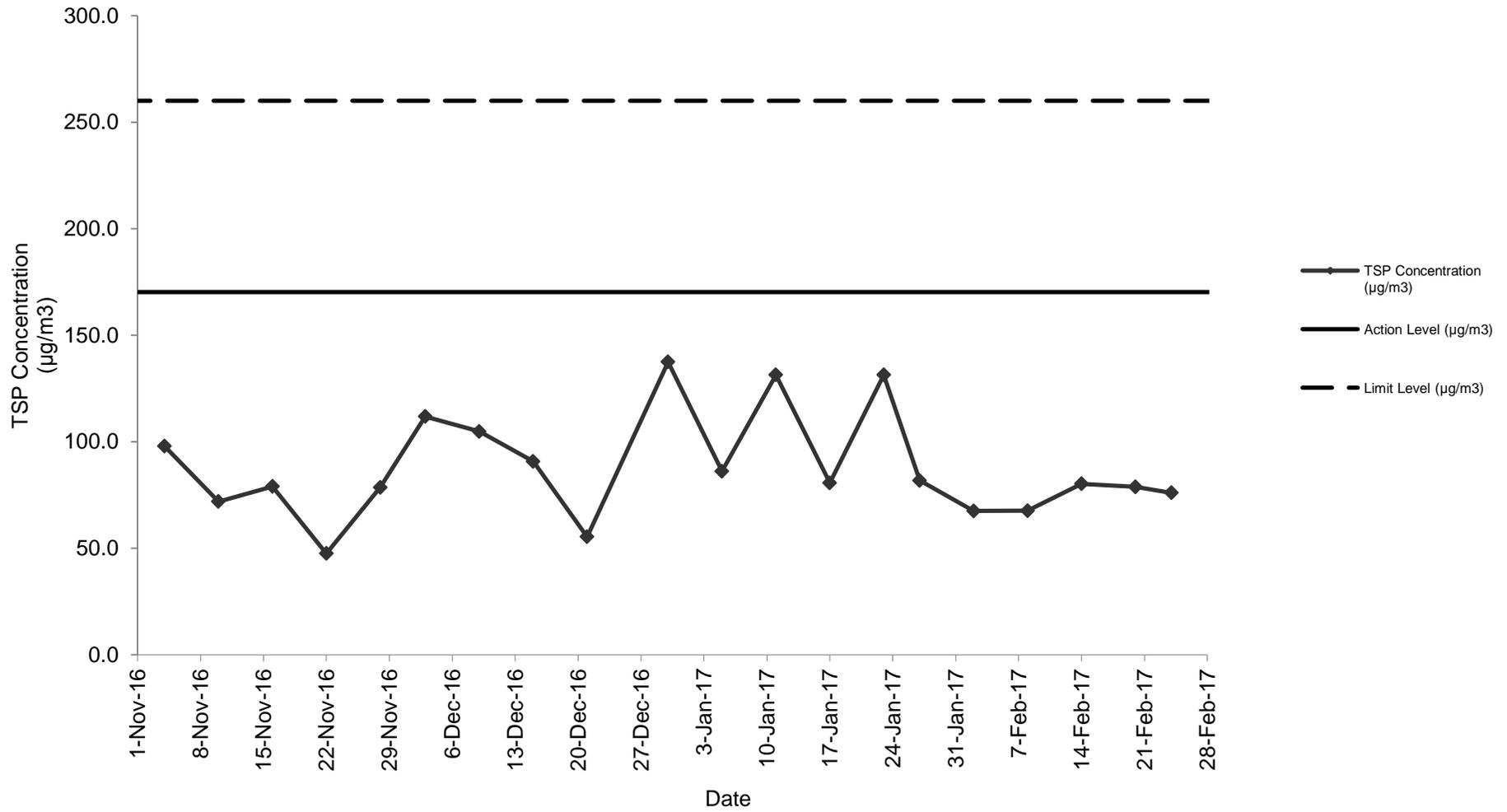
Sampling Date	Weather Condition	Starting Time	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m ³ /min)			Total Volume (m ³)	TSP Concentration (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Wind speed m/s	Wind direction
				Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate						
2-Feb-17	Fine	12:11	CC6	2.8670	3.0074	0.1404	5980.67	6004.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	67.5	170.3	260.0	<5	N
8-Feb-17	Fine	12:11	CC8	2.8619	3.0026	0.1407	6007.67	6031.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	67.7	170.3	260.0	<5	N
14-Feb-17	Sunny	12:11	CC10	2.8398	3.0067	0.1669	6034.67	6058.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	80.3	170.3	260.0	<5	N
20-Feb-17	Sunny	12:10	CC12	2.8563	3.0202	0.1639	6061.67	6085.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	78.8	170.3	260.0	<5	N
24-Feb-17	Cloudy	12:09	CC14	2.8631	3.0212	0.1581	6088.67	6112.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	76.0	170.3	260.0	<5	N
																Average	74.1				
																Min	67.5				
																Max	80.3				

Note: No major dust source observed during the monitoring period
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

24-Hour TSP Monitoring Result at Station: SR77



24-Hour TSP Monitoring Result at Station: SR77 (November 2016 - February 2017)



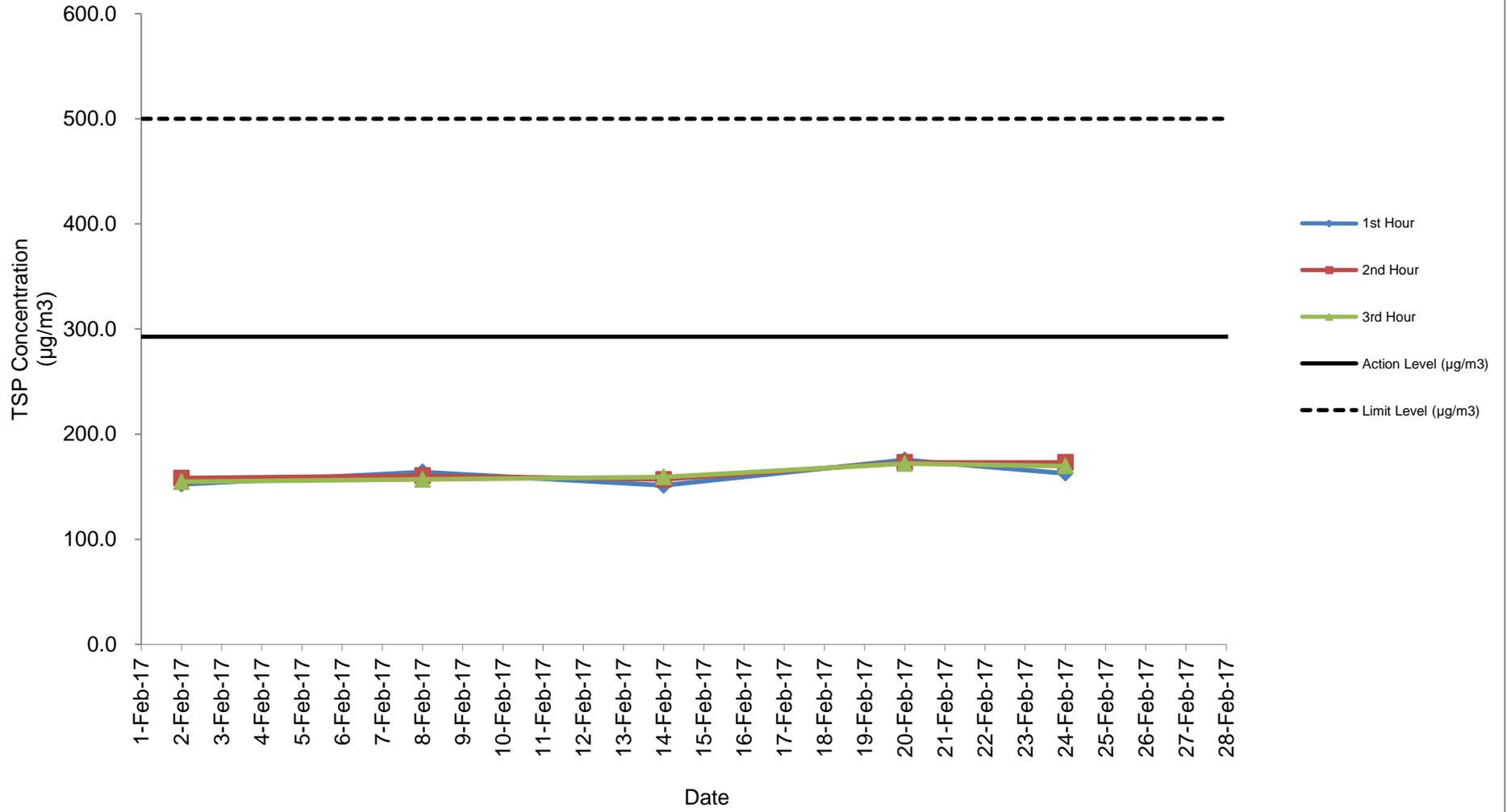
Appendix F
Air Quality Monitoring Results and their Graphical Presentation

Detailed Calculation of 1-Hour TSP Monitoring Result at Station: SR77

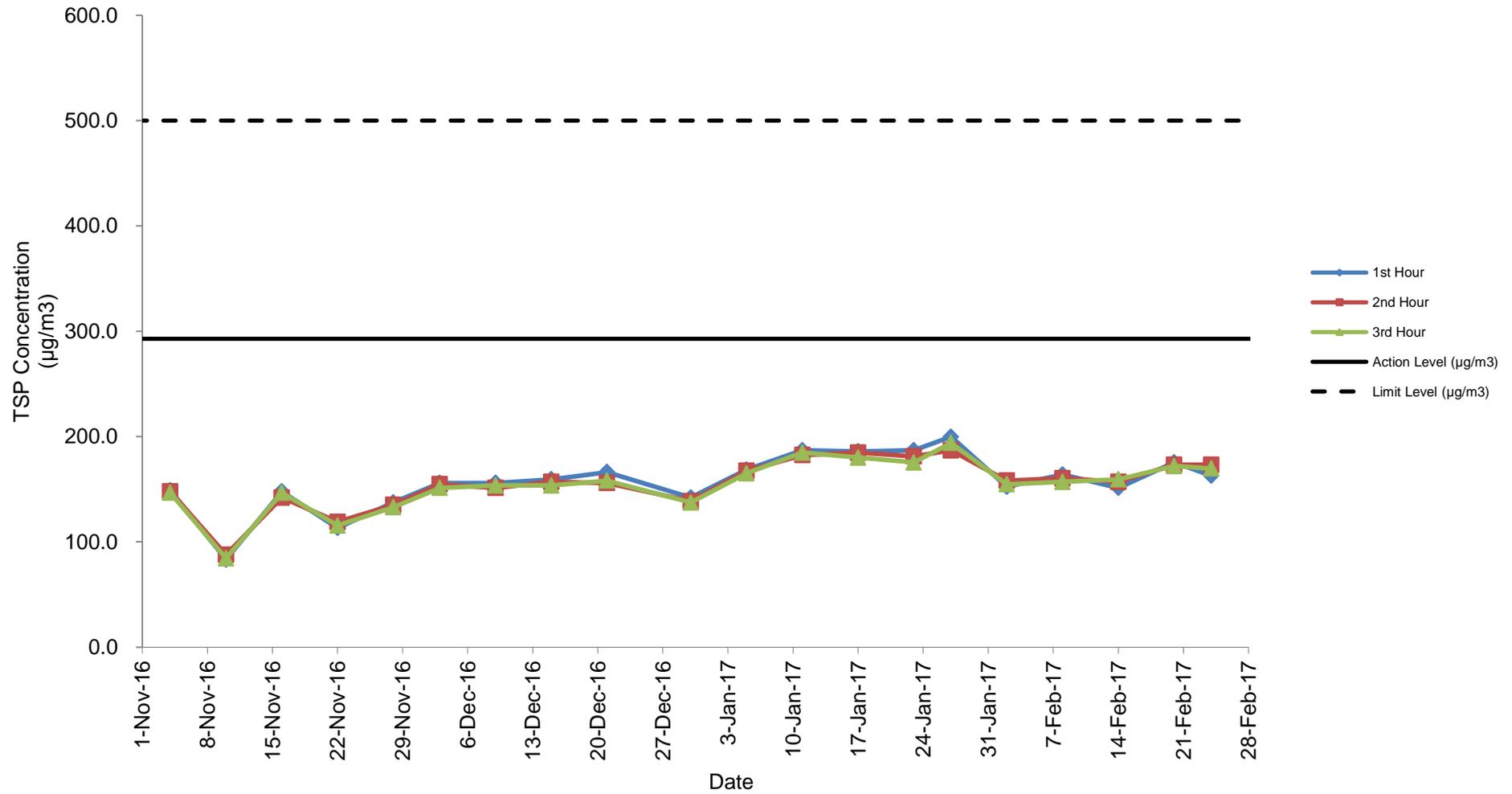
Sampling Date	Weather Condition	Starting Time	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m ³ /min)			Total Volume (m ³)	TSP Concentration (µg/m ³)	Action Level (µg/m3)	Limit Level (µg/m3)	Wind speed m/s	Wind direction
				Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate						
2-Feb-17	Fine	09:00	CC7A	2.8802	2.8934	0.0132	5977.67	5978.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	152.3	292.7	500.0	<5	N
	Fine	10:03	CC7B	2.8690	2.8827	0.0137	5978.67	5979.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	158.1	292.7	500.0	<5	N
	Fine	11:09	CC7C	2.8684	2.8818	0.0134	5979.67	5980.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	154.6	292.7	500.0	<5	N
8-Feb-17	Fine	09:00	CC9A	2.8547	2.8689	0.0142	6004.67	6005.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	163.9	292.7	500.0	<5	N
	Fine	10:03	CC9B	2.8529	2.8668	0.0139	6005.67	6006.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	160.4	292.7	500.0	<5	N
	Fine	11:06	CC9C	2.8551	2.8687	0.0136	6006.67	6007.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	157.0	292.7	500.0	<5	N
14-Feb-17	Sunny	09:00	CC11A	2.8835	2.8966	0.0131	6031.67	6032.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	151.2	292.7	500.0	<5	N
	Sunny	10:03	CC11B	2.8791	2.8927	0.0136	6032.67	6033.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	157.0	292.7	500.0	<5	N
	Sunny	11:07	CC11C	2.8799	2.8937	0.0138	6033.67	6034.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	159.3	292.7	500.0	<5	N
20-Feb-17	Sunny	09:00	CC13A	2.8402	2.8554	0.0152	6058.67	6059.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	175.4	292.7	500.0	<5	N
	Sunny	10:03	CC13B	2.8501	2.8651	0.0150	6059.67	6060.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	173.1	292.7	500.0	<5	N
	Sunny	11:06	CC13C	2.8469	2.8618	0.0149	6060.67	6061.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	172.0	292.7	500.0	<5	N
24-Feb-17	Cloudy	09:00	CC15A	2.8644	2.8785	0.0141	6085.67	6086.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	162.7	292.7	500.0	<5	N
	Cloudy	10:03	CC15B	2.8588	2.8738	0.0150	6086.67	6087.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	173.1	292.7	500.0	<5	N
	Cloudy	11:06	CC15C	2.8616	2.8763	0.0147	6087.67	6088.67	1.00	51	51	51.0	1.44	1.44	1.44	86.65	169.6	292.7	500.0	<5	N
																Average	162.6				
																Min	151.2				
																Max	175.4				

Note: No major dust source observed during the monitoring period
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

1-Hour TSP Monitoring Result at station: SR77



1-Hour TSP Monitoring Result at station: SR77 (November 2016 - February 2017)



Appendix G

Summary of Event and Action Plan

Event and Action Plan for Air Quality

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method. 	<ol style="list-style-type: none"> 1. Notify Contractor. 	<ol style="list-style-type: none"> 1. Rectify any unacceptable practice; 2. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC and ER; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency to daily; 5. Discuss with IEC and Contractor on remedial actions required; 6. If exceedance continues, arrange meeting with IEC and ER; 7. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise Implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Submit proposals for remedial actions to IEC within 3 working days of notification; 2. Implement the agreed proposals; 3. Amend proposal if appropriate.

Event	Action			
	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, Contractor and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor, and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 4. Increase frequency to daily; 5. Analyse Contractor's working procedures to determine possible mitigation to be; 6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consultation with the IEC, agree with the Contractor on the remedial measures to be implemented; 4. Ensure remedial measures properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals; 4. Resubmit proposals if problem still not under control; 5. Stop the relevant portion of works as determined by ER until the exceedance is abated.

Event and Action Plan for Noise

Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to IEC and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review with analysed results submitted by ET. 2. Review the proposed remedial measures by the Contractor and advise ER accordingly. 3. Supervise the implement of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC. 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Notify IEC, ER, EPD and the Contractor. 2. Identify the source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform IEC, ER, and EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of the Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 8. If exceedance stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise ER accordingly. 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedance continues, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedance is abated. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance. 2. Submit proposals for remedial actions to IEC within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated.

Event and Action Plan for Water Quality

Event	Action			
	ET Leader	IEC	ER	Contractor
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Repeat in-situ measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor & ER; 4. Check monitoring data, all plant, equipment & contractor's working methods; 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET & Contractor's working methods; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; Notify, Contractor 	<ol style="list-style-type: none"> 1. Inform the ER & confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Amend working methods if appropriate.
Action level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> 1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor, ER & EPD; 4. Check monitoring data, all plant, equipment & Contractor's working methods; 5. Discuss mitigation measures with IEC, ER & Contractor; 6. Ensure mitigation measures are implemented; 7. Increase monitoring to daily until no exceedance of Action level. 	<ol style="list-style-type: none"> 1. Checking monitoring data submitted by ET & Contractor's working method; 2. Discuss with ET & Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor & advise the ER accordingly; 4. Supervise the implementation of mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC on the proposed mitigation measures; 2. Ensure mitigation measures properly implemented; 3. Assess the effectiveness of the implemented mitigation measures. 	<ol style="list-style-type: none"> 1. Inform the Engineer & confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant & equipment & consider changes of working methods; 4. Submit proposal of mitigation measures to ER within 3 working days of notification & discuss with ET, IEC & ER; 5. Implement the agreed mitigation measures.

Event	Action			
	ET Leader	IEC	ER	Contractor
Limit level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Repeat measurement on next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER & EPD; 4. Check monitoring data, all plant, equipment & contractor's working methods; 5. Discuss mitigation measures with IEC, Contractor & ER. 	<ol style="list-style-type: none"> 1. Checking monitoring data submitted by ET & Contractor's working method; 2. Discuss with ET & Contractor on the possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor & advise the ER accordingly. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Discuss with IEC, ET & Contractor on the proposed mitigation measures; 3. Request Contractor to review the working methods. 	<ol style="list-style-type: none"> 1. Inform the ER & confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant & equipment & consider changes of working methods; 4. Submit proposal of mitigation measures to ER within 3 working days of notification & discuss with ET, IEC & ER.
Limit level being exceeded by two or more consecutive sampling days	<ol style="list-style-type: none"> 1. Repeat measurement on the next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform IEC, Contractor, ER & EPD; 4. Check monitoring data, all plant, equipment & Contractor's working methods; 5. Discuss mitigation measures within IEC, Contractor & ER; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days. 	<ol style="list-style-type: none"> 1. Checking monitoring data submitted by ET & Contractor's working method; 2. Discuss with ET & Contractor on potential remedial actions; 3. Review Contractor's mitigation measures whenever necessary to assure their effectiveness & advise the ER accordingly; 4. Supervise the implementation of mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET & Contractor on the proposed mitigation measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the mitigation measures to be implemented; 4. Ensure mitigation measures are properly implemented; 5. Consider & instruct, if necessary, the Contractor to slow down or to stop all or part of the construction activities until no exceedance of Limit level. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposal of mitigation measures to ER within 3 working days of notification & discuss with ET, IEC & ER; 3. Implement the agreed mitigation measures; 4. Resubmit proposals of mitigation measures if problem still not under control; 5. As directed by the Engineer, to slow down or to stop all or part of the construction activities until no exceedance of Limit level.

Appendix H Noise Monitoring Results and their Graphical Presentation

Appendix H
Noise Monitoring Results and their Graphical Presentation

Noise Monitoring Result at SR77

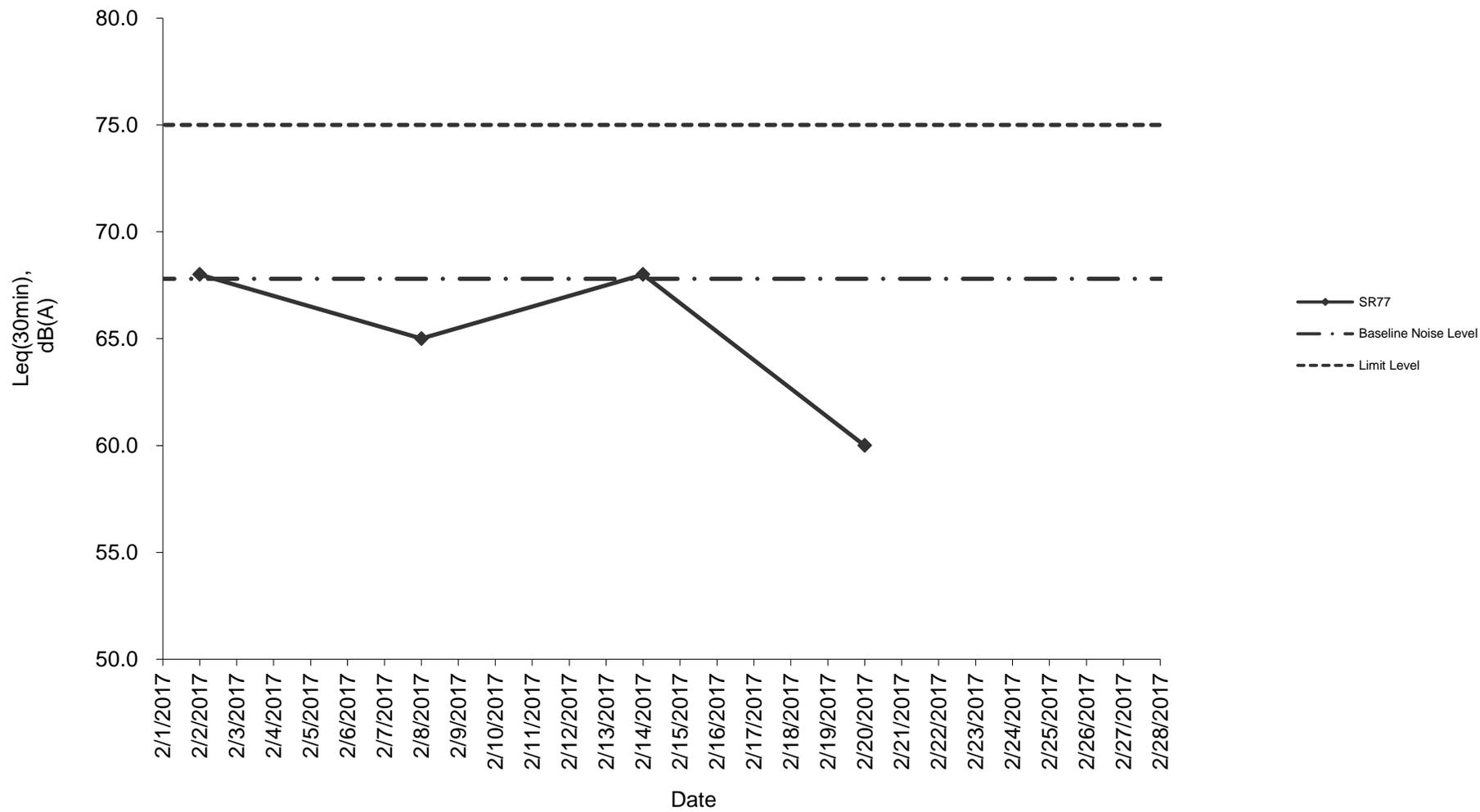
Date	Weather Condition	Start Time	End Time	Measured Noise Level (dB(A))*			Baseline Corrected Level, dB(A)**	Baseline Noise Level (dB(A)), Leq(30min)	Limit Level dB(A)	Exceedance (Y / N)
				L10(30min)	L90(30min)	Leq(30min)				
2017/02/02	Fine	11:30	12:00	87.0	65.0	68.0	-	67.8	75.0	N
2017/02/08	Fine	11:30	12:00	95.0	59.0	65.0	-	67.8	75.0	N
2017/02/14	Sunny	11:30	12:00	98.0	61.0	68.0	-	67.8	75.0	N
2017/02/20	Sunny	11:30	12:00	93.0	55.0	60.0	-	67.8	75.0	N
						Average	65.3			
						Minimum	60.0			
						Maximum	68.0			

Remarks

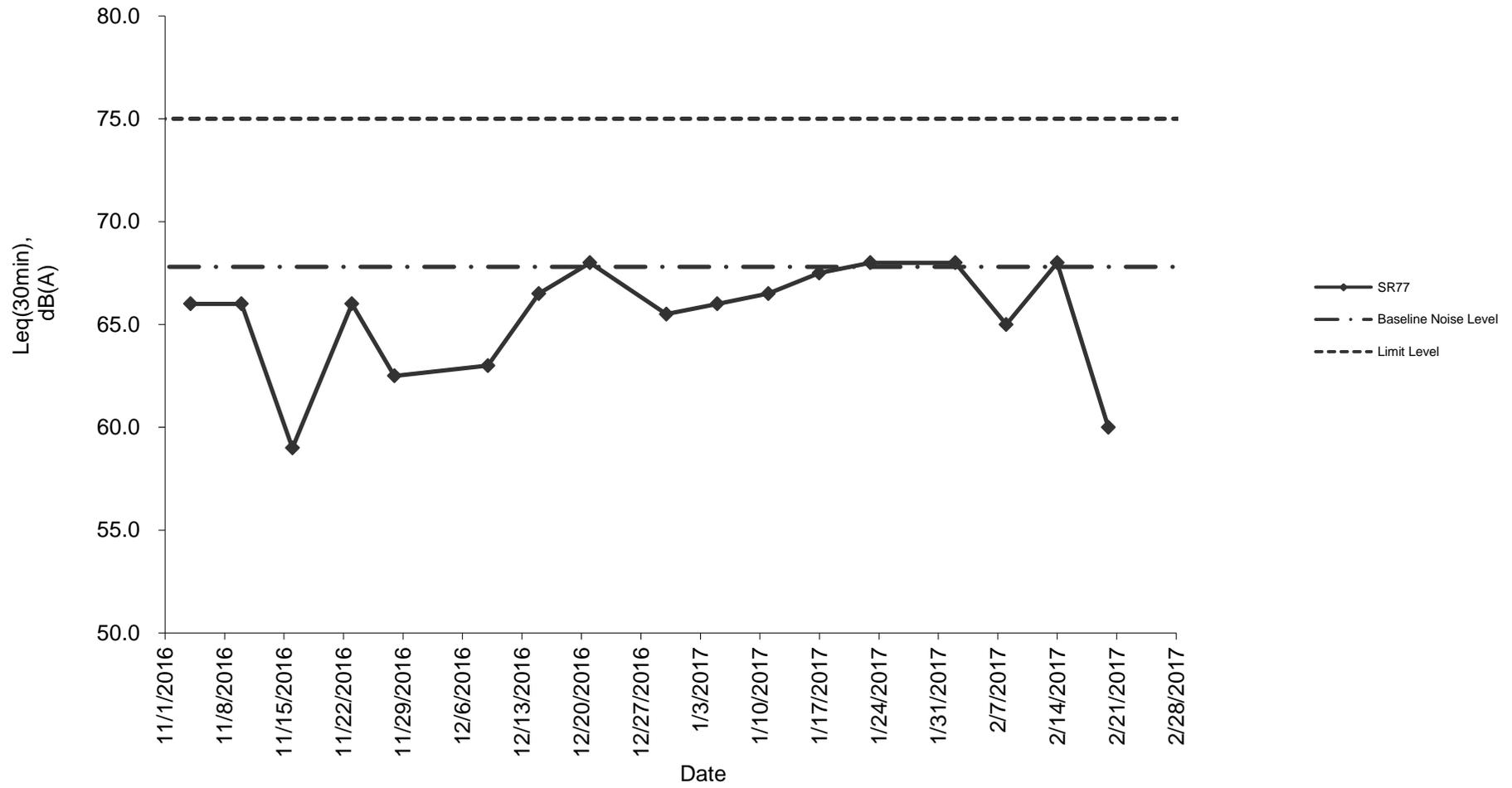
* +3dB(A) Façade effect correction included

** Baseline corrected level is only calculated when measured noise level (Leq) > limit level.

Noise monitoring result: SR77



Noise monitoring result: SR77 (November 2016 - February 2017)



Appendix I

Laboratory Results for Water Quality



ENVIRO LABS LIMITED

Rm. 510 & 611-612, Hong Leong Plaza, 33 Lok Yip Rd., Fanling, N.T., H.K.
Tel: (852) 2676 2983 Fax: (852) 2676 2860
e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO.	: N17020025	PAGE	: Page 1 of 1
DATE OF ISSUE	: 03 February 2017		

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 01 Feb 2017
Received Date : 01 Feb 2017
Testing Period : 01 Feb 2017 to 03 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 1/2/2017	001	Total Suspended Solids	2.8	mg/L
LT3 I5-2 1/2/2017	002	Total Suspended Solids	<2.5	mg/L
LT3 C3a-1 1/2/2017	003	Total Suspended Solids	11	mg/L
LT3 C3a-2 1/2/2017	004	Total Suspended Solids	11	mg/L
LT3 C3b-1 1/2/2017	005	Total Suspended Solids	3.6	mg/L
LT3 C3b-2 1/2/2017	006	Total Suspended Solids	4.1	mg/L

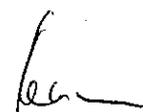
--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm. 510 & 611-612, Hong Leong Plaza, 33 Lok Yip Rd., Fanling, N.T., H.K.

Tel: (852) 2676 2983 Fax: (852) 2676 2860

e-mail: ell@envirolabs.com.hk website: <http://www.envirolabs.com.hk>

TEST REPORT

JOB NO.	: N17020109	PAGE	: Page 1 of 1
DATE OF ISSUE	: 07 February 2017		

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 03 Feb 2017
Received Date : 03 Feb 2017
Testing Period : 03 Feb 2017 to 07 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 3/2/2017	001	Total Suspended Solids	<2.5	mg/L
LT3 I5-2 3/2/2017	002	Total Suspended Solids	2.8	mg/L
LT3 C3a-1 3/2/2017	003	Total Suspended Solids	9.1	mg/L
LT3 C3a-2 3/2/2017	004	Total Suspended Solids	17	mg/L
LT3 C3b-1 3/2/2017	005	Total Suspended Solids	3.7	mg/L
LT3 C3b-2 3/2/2017	006	Total Suspended Solids	3.6	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

Rm. 510 & 611-612, Hong Leong Plaza, 33 Lok Yip Rd., Fanling, N.T., H.K.

Tel: (852) 2676 2983 Fax: (852) 2676 2860

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TEST REPORT

JOB NO. : N17020134
DATE OF ISSUE : 08 February 2017
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 06 Feb 2017
Received Date : 06 Feb 2017
Testing Period : 06 Feb 2017 to 08 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 6/2/2017	001	Total Suspended Solids	<2.5	mg/L
LT3 I5-2 6/2/2017	002	Total Suspended Solids	<2.5	mg/L
LT3 C3a-1 6/2/2017	003	Total Suspended Solids	16	mg/L
LT3 C3a-2 6/2/2017	004	Total Suspended Solids	35	mg/L
LT3 C3b-1 6/2/2017	005	Total Suspended Solids	5.7	mg/L
LT3 C3b-2 6/2/2017	006	Total Suspended Solids	5.9	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



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TEST REPORT

JOB NO. : N17020167
DATE OF ISSUE : 10 February 2017 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 08 Feb 2017
Received Date : 08 Feb 2017
Testing Period : 08 Feb 2017 to 10 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 8/2/2017	001	Total Suspended Solids	3.2	mg/L
LT3 I5-2 8/2/2017	002	Total Suspended Solids	3.2	mg/L
LT3 C3a-1 8/2/2017	003	Total Suspended Solids	8.9	mg/L
LT3 C3a-2 8/2/2017	004	Total Suspended Solids	27	mg/L
LT3 C3b-1 8/2/2017	005	Total Suspended Solids	6.2	mg/L
LT3 C3b-2 8/2/2017	006	Total Suspended Solids	5.3	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:

Kenneth, Kar-kin LAM
Senior Lab. Manager



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TEST REPORT

JOB NO. : N17020239
DATE OF ISSUE : 14 February 2017 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 10 Feb 2017
Received Date : 10 Feb 2017
Testing Period : 10 Feb 2017 to 14 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 10/2/2017	001	Total Suspended Solids	5.9	mg/L
LT3 I5-2 10/2/2017	002	Total Suspended Solids	5.9	mg/L
LT3 C3a-1 10/2/2017	003	Total Suspended Solids	19	mg/L
LT3 C3a-2 10/2/2017	004	Total Suspended Solids	17	mg/L
LT3 C3b-1 10/2/2017	005	Total Suspended Solids	7.1	mg/L
LT3 C3b-2 10/2/2017	006	Total Suspended Solids	7.5	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:

Susan, Wai-shan Ko
Senior Chemist



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TEST REPORT

JOB NO.	: N17020257	PAGE	: Page 1 of 1
DATE OF ISSUE	: 15 February 2017		

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 13 Feb 2017
Received Date : 13 Feb 2017
Testing Period : 13 Feb 2017 to 15 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 13/2/2017	001	Total Suspended Solids	<2.5	mg/L
LT3 I5-2 13/2/2017	002	Total Suspended Solids	<2.5	mg/L
LT3 C3a-1 13/2/2017	003	Total Suspended Solids	14	mg/L
LT3 C3a-2 13/2/2017	004	Total Suspended Solids	14	mg/L
LT3 C3b-1 13/2/2017	005	Total Suspended Solids	4.1	mg/L
LT3 C3b-2 13/2/2017	006	Total Suspended Solids	4.2	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



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TEST REPORT

JOB NO. : N17020309
DATE OF ISSUE : 17 February 2017 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 15 Feb 2017
Received Date : 15 Feb 2017
Testing Period : 15 Feb 2017 to 17 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 15/2/2017	001	Total Suspended Solids	13	mg/L
LT3 I5-2 15/2/2017	002	Total Suspended Solids	17	mg/L
LT3 C3a-1 15/2/2017	003	Total Suspended Solids	30	mg/L
LT3 C3a-2 15/2/2017	004	Total Suspended Solids	39	mg/L
LT3 C3b-1 15/2/2017	005	Total Suspended Solids	16	mg/L
LT3 C3b-2 15/2/2017	006	Total Suspended Solids	13	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:

Kenneth, Kar-kin LAM
Senior Lab. Manager



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TEST REPORT

JOB NO. : N17020371
DATE OF ISSUE : 21 February 2017 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 17 Feb 2017
Received Date : 17 Feb 2017
Testing Period : 17 Feb 2017 to 21 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 17/2/2017	001	Total Suspended Solids	9.7	mg/L
LT3 I5-2 17/2/2017	002	Total Suspended Solids	11	mg/L
LT3 C3a-1 17/2/2017	003	Total Suspended Solids	17	mg/L
LT3 C3a-2 17/2/2017	004	Total Suspended Solids	16	mg/L
LT3 C3b-1 17/2/2017	005	Total Suspended Solids	10	mg/L
LT3 C3b-2 17/2/2017	006	Total Suspended Solids	11	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



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TEST REPORT

JOB NO. : N17020406
DATE OF ISSUE : 22 February 2017
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 20 Feb 2017
Received Date : 20 Feb 2017
Testing Period : 20 Feb 2017 to 22 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 20/2/2017	001	Total Suspended Solids	4.8	mg/L
LT3 I5-2 20/2/2017	002	Total Suspended Solids	4.7	mg/L
LT3 C3a-1 20/2/2017	003	Total Suspended Solids	11	mg/L
LT3 C3a-2 20/2/2017	004	Total Suspended Solids	12	mg/L
LT3 C3b-1 20/2/2017	005	Total Suspended Solids	11	mg/L
LT3 C3b-2 20/2/2017	006	Total Suspended Solids	13	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:

Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

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TEST REPORT

JOB NO. : N17020479
DATE OF ISSUE : 24 February 2017
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 22 Feb 2017
Received Date : 22 Feb 2017
Testing Period : 22 Feb 2017 to 24 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 22/2/2017	001	Total Suspended Solids	14	mg/L
LT3 I5-2 22/2/2017	002	Total Suspended Solids	14	mg/L
LT3 C3a-1 22/2/2017	003	Total Suspended Solids	24	mg/L
LT3 C3a-2 22/2/2017	004	Total Suspended Solids	25	mg/L
LT3 C3b-1 22/2/2017	005	Total Suspended Solids	11	mg/L
LT3 C3b-2 22/2/2017	006	Total Suspended Solids	9.5	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:

Kenneth, Kar-kin LAM
Senior Lab. Manager



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TEST REPORT

JOB NO. : N17020508
DATE OF ISSUE : 28 February 2017
PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 24 Feb 2017
Received Date : 24 Feb 2017
Testing Period : 24 Feb 2017 to 28 Feb 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 24/2/2017	001	Total Suspended Solids	5.9	mg/L
LT3 I5-2 24/2/2017	002	Total Suspended Solids	6.0	mg/L
LT3 C3a-1 24/2/2017	003	Total Suspended Solids	12	mg/L
LT3 C3a-2 24/2/2017	004	Total Suspended Solids	13	mg/L
LT3 C3b-1 24/2/2017	005	Total Suspended Solids	21	mg/L
LT3 C3b-2 24/2/2017	006	Total Suspended Solids	22	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


Kenneth, Kar-kin LAM
Senior Lab. Manager



ENVIRO LABS LIMITED

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TEST REPORT

JOB NO. : N17020528
DATE OF ISSUE : 01 March 2017 PAGE : Page 1 of 1

1. Customer

Enovative Environmental Service Limited
Room 811, Hin Pui House,
Hin Keng Estate,
Tai Wai, Shatin, N.T., Hong Kong
Attn.: Mr. Thomas Wong

2. Sample Identification

Sample Description : Six batch(es) of water samples said to be discharge water were submitted by the customer and received at the laboratory in ambient condition.
Sampling : Conducted by the customer.
Sampling Date^a : 27 Feb 2017
Received Date : 27 Feb 2017
Testing Period : 27 Feb 2017 to 01 Mar 2017

3. Test Methods

Parameters	Reference Methods	Limits of Reporting
Total Suspended Solids dried at 103-105°C	APHA ^b 17e 2540 D	2.5 mg/L

4. Test Results^c

Sample I.D. marked by the customer	Sample No.	Parameters	Test Results	Units
LT3 I5-1 27/2/2017	001	Total Suspended Solids	15	mg/L
LT3 I5-2 27/2/2017	002	Total Suspended Solids	15	mg/L
LT3 C3a-1 27/2/2017	003	Total Suspended Solids	39	mg/L
LT3 C3a-2 27/2/2017	004	Total Suspended Solids	37	mg/L
LT3 C3b-1 27/2/2017	005	Total Suspended Solids	8.6	mg/L
LT3 C3b-2 27/2/2017	006	Total Suspended Solids	9.4	mg/L

--- END OF REPORT ---

^a Information is provided by the customer

^b APHA Standard Methods for the Examination of Water and Wastewater, AWWA

^c Test results relate only to the items received

APPROVED SIGNATORY:


John Chi-wai YAU
Assistant Lab. Manager

Appendix J

Water Quality Monitoring Results and their Graphical Presentation

Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3
 Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring: 2/1/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:07	<0.5	20.8	6.3	7.4	83.2	14.4	<0.1	11
C3b	11:32	<0.5	20.0	6.6	7.6	83.3	7.6	<0.1	3.85
I5	11:48	<0.5	20.8	7.0	7.9	88.6	6.3	<0.1	2.8

Date of Monitoring: 2/3/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:08	<0.5	18.9	6.4	7.2	77.5	12.9	<0.1	13.05
C3b	11:36	<0.5	18.7	6.7	8.0	85.2	7.5	<0.1	3.65
I5	11:50	<0.5	19.1	6.9	7.4	79.5	5.6	<0.1	2.8

Date of Monitoring: 2/6/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:22	<0.5	22.2	6.4	7.7	88.2	21.4	<0.1	25.5
C3b	11:44	<0.5	20.5	6.6	7.2	80.0	7.5	<0.1	5.8
I5	11:56	<0.5	21.5	6.8	6.8	77.4	5.7	<0.1	<2.5

Date of Monitoring: 2/8/2017 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	8:44	<0.5	18.4	6.3	5.7	60.3	14.3	<0.1	17.95
C3b	9:09	<0.5	18.3	6.5	6.6	70.1	7.6	<0.1	5.75
I5	9:22	<0.5	18.3	6.8	5.2	55.0	6.1	<0.1	3.2

Date of Monitoring: 2/10/2017 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	12:26	<0.5	16.9	6.6	8.6	88.5	17.0	<0.1	18
C3b	11:50	<0.5	16.1	6.5	9.3	94.5	11.2	<0.1	7.3
I5	12:01	<0.5	15.2	6.7	8.5	85.1	8.1	<0.1	5.9

Date of Monitoring: 2/13/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:17	<0.5	19.1	6.4	8.6	93.1	18.2	<0.1	14
C3b	11:46	<0.5	18.2	6.6	7.8	83.2	8.5	<0.1	4.15
I5	11:56	<0.5	18.0	7.1	8.1	85.3	6.4	<0.1	<2.5

Date of Monitoring: 2/15/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	10:54	<0.5	18.8	6.6	9.7	103.7	24.4	<0.1	34.5
C3b	11:10	<0.5	18.1	6.8	8.1	86.3	10.0	<0.1	14.5
I5	11:23	<0.5	18.5	7.2	7.6	80.7	11.1	<0.1	15

Date of Monitoring: 2/17/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:07	<0.5	21.4	6.7	8.9	101.1	17.4	<0.1	16.5
C3b	11:31	<0.5	20.5	6.9	8.2	91.0	8.6	<0.1	10.5
I5	11:42	<0.5	21.0	7.0	8.8	98.8	12.4	<0.1	10.35

Project Name: Contract No. CV/2012/09 Liantang / Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure works - Contract 3
Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling - Stage 2

Date of Monitoring: 2/20/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:28	<0.5	22.9	7.1	8.4	85.0	12.9	<0.1	11.5
C3b	11:57	<0.5	21.5	7.1	9.0	92.1	9.0	<0.1	12
I5	12:08	<0.5	22.2	7.3	8.3	82.4	5.7	<0.1	4.75

Date of Monitoring: 2/22/2017 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:27	<0.5	21.1	7.0	8.6	95.6	32.8	<0.1	24.5
C3b	11:49	<0.5	20.7	7.1	8.8	98.8	12.6	<0.1	10.25
I5	12:01	<0.5	22.0	7.2	9.1	103.8	23.5	<0.1	14

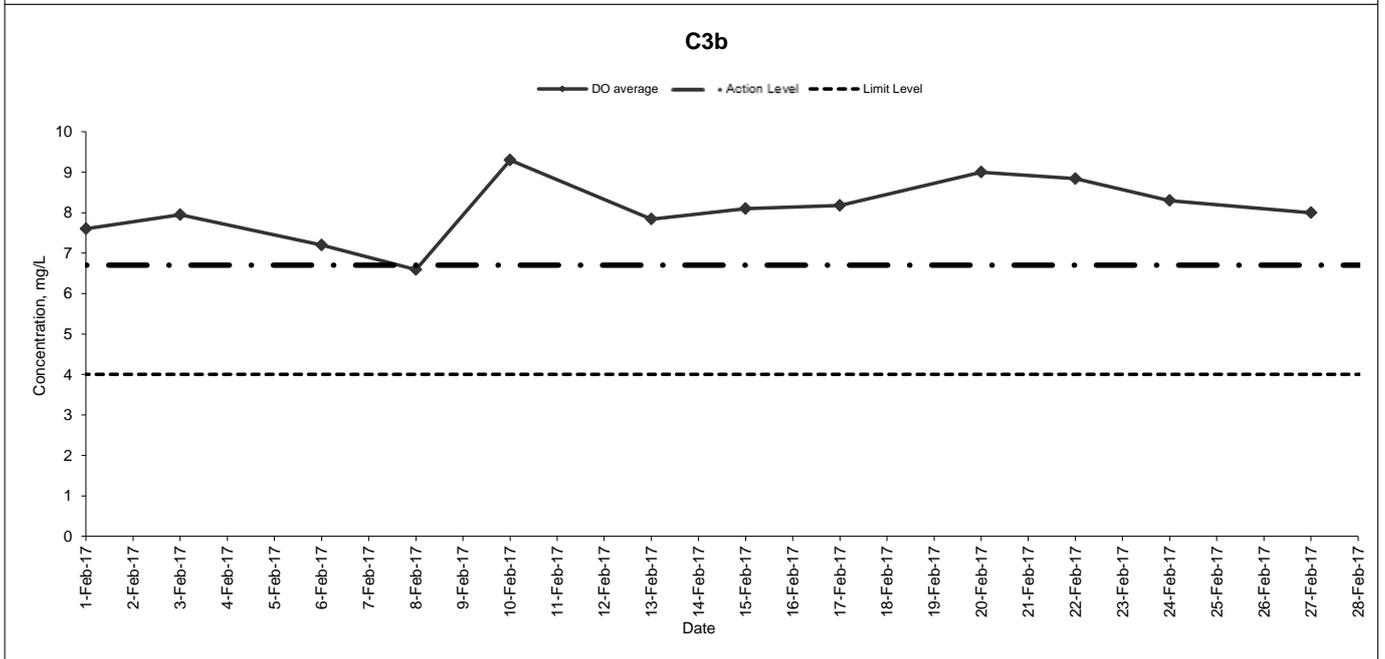
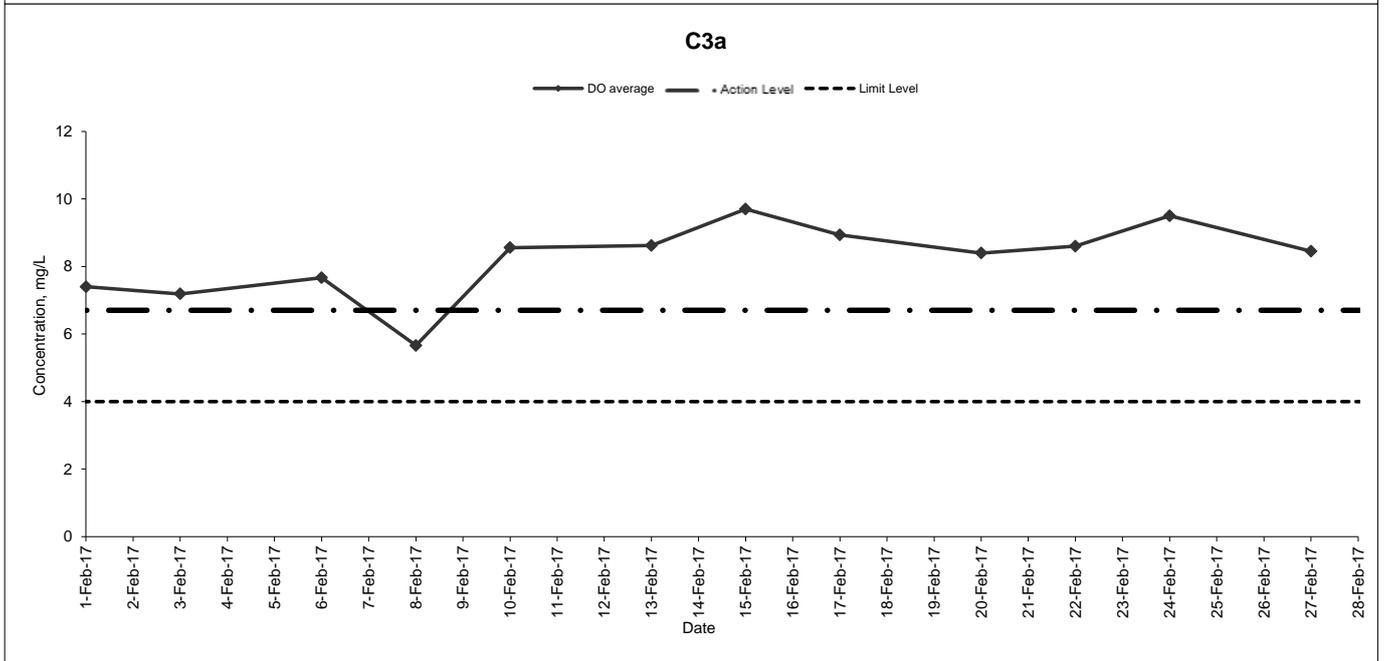
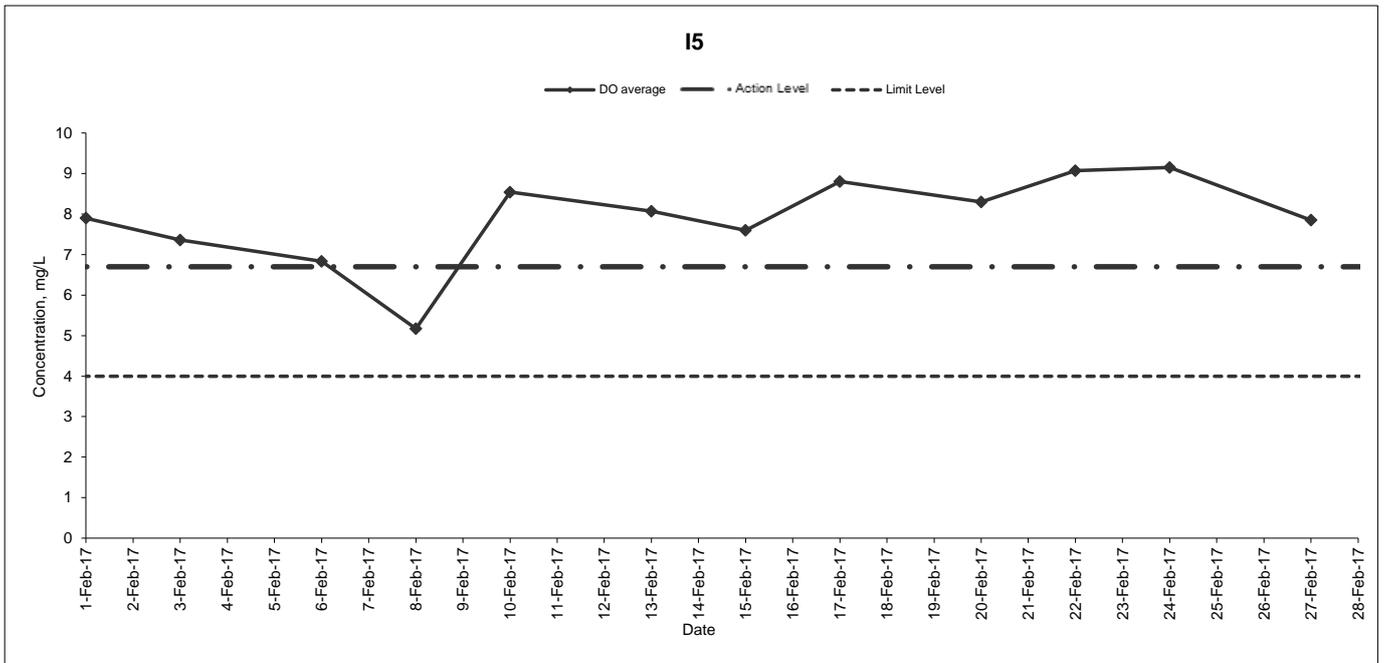
Date of Monitoring: 2/24/2017 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:22	<0.5	15.7	6.6	9.5	95.7	13.2	<0.1	12.5
C3b	11:46	<0.5	15.6	7.1	8.3	83.5	29.5	<0.1	21.5
I5	11:59	<0.5	14.9	7.3	9.2	91.4	6.9	<0.1	5.95

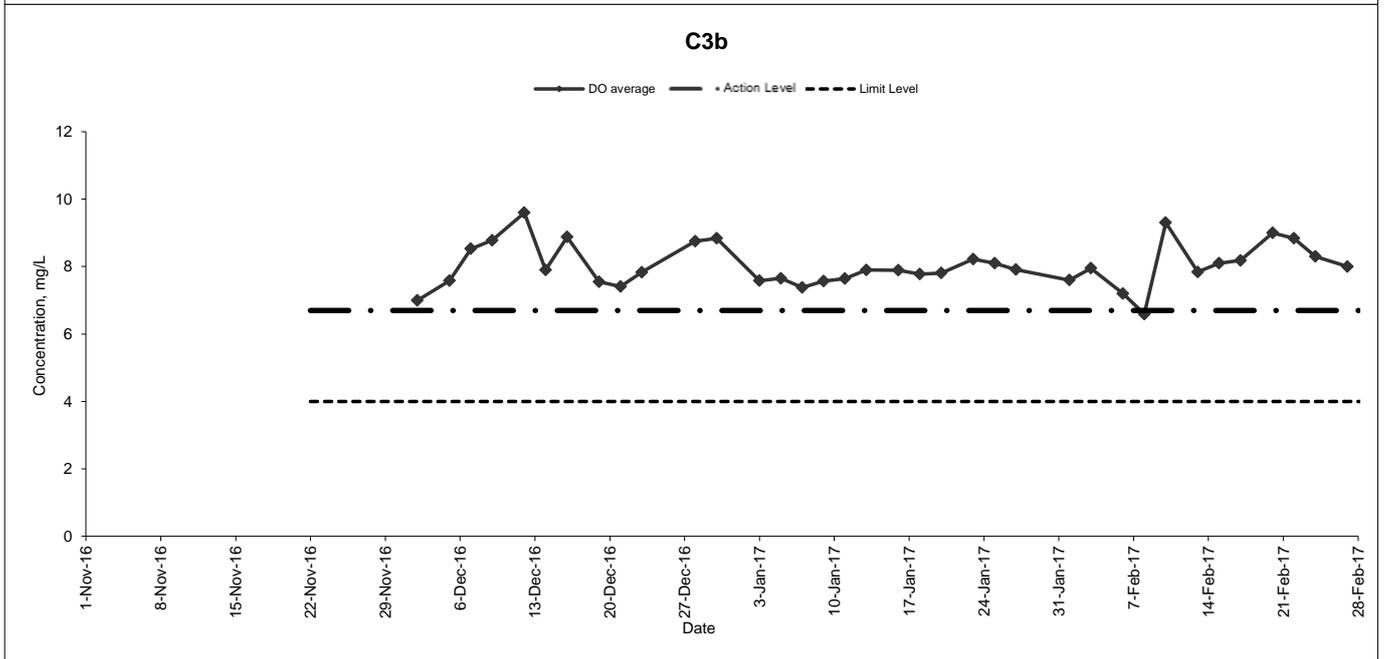
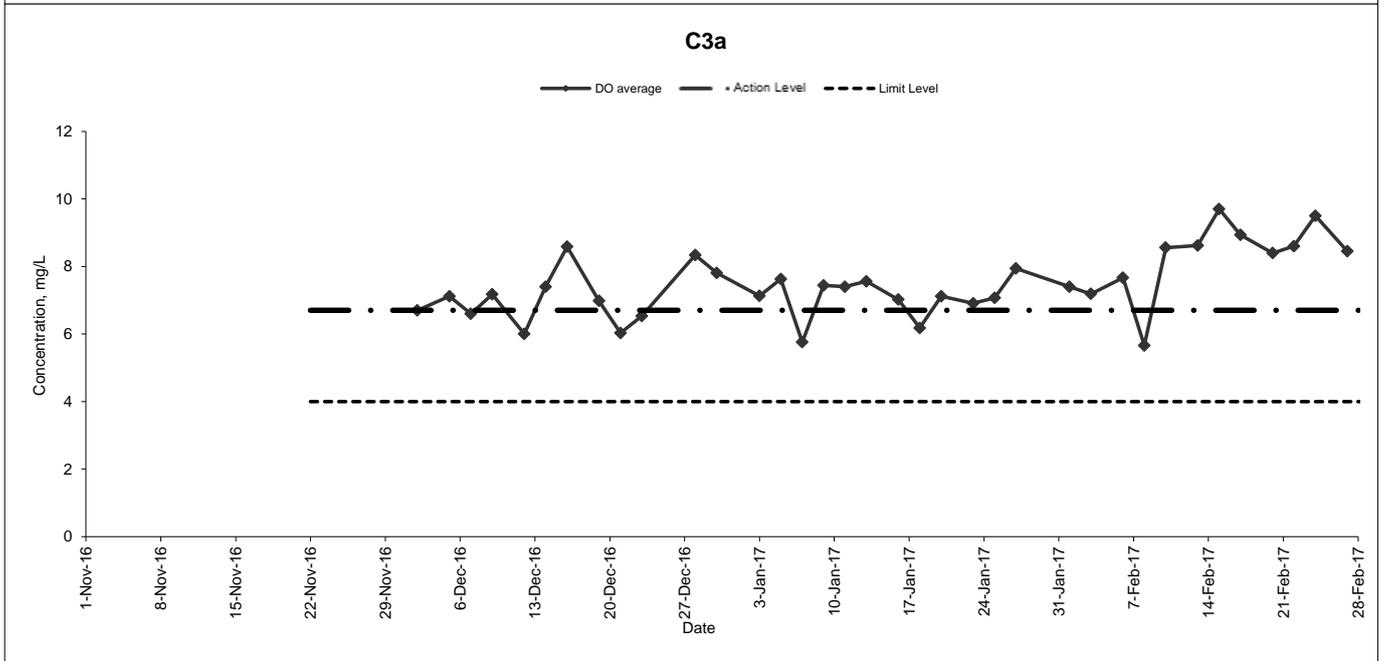
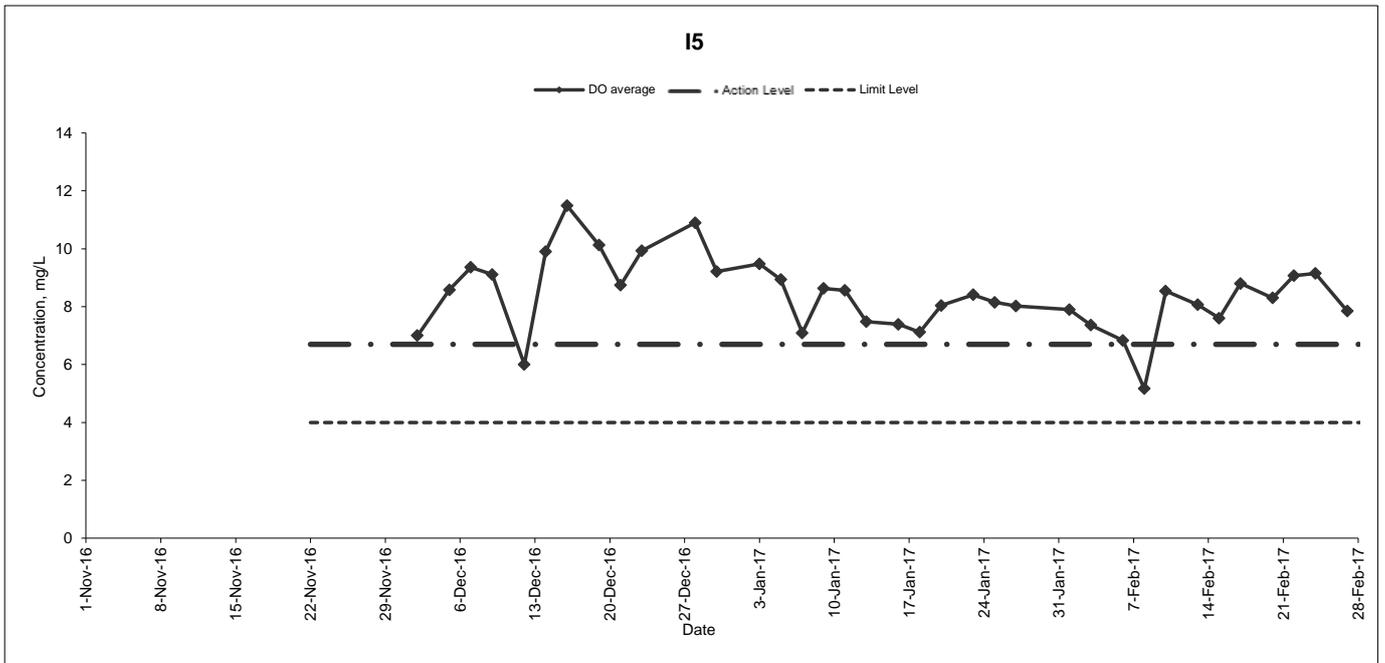
Date of Monitoring: 2/27/2017 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)	pH	DO (mg/L)	DO (% saturation)	Turbidity (NTU)	Salinity (g/L)	SS (mg/L)
			Average Value	Average Value	Average Value	Average Value	Average Value	Average Value	Average Value
C3a	11:36	<0.5	19.3	7.0	8.5	91.7	31.6	<0.1	38
C3b	11:56	<0.5	18.3	7.1	8.0	85.3	8.2	<0.1	9
I5	12:09	<0.5	20.3	7.2	7.9	87.5	24.7	<0.1	15

Dissolved Oxygen

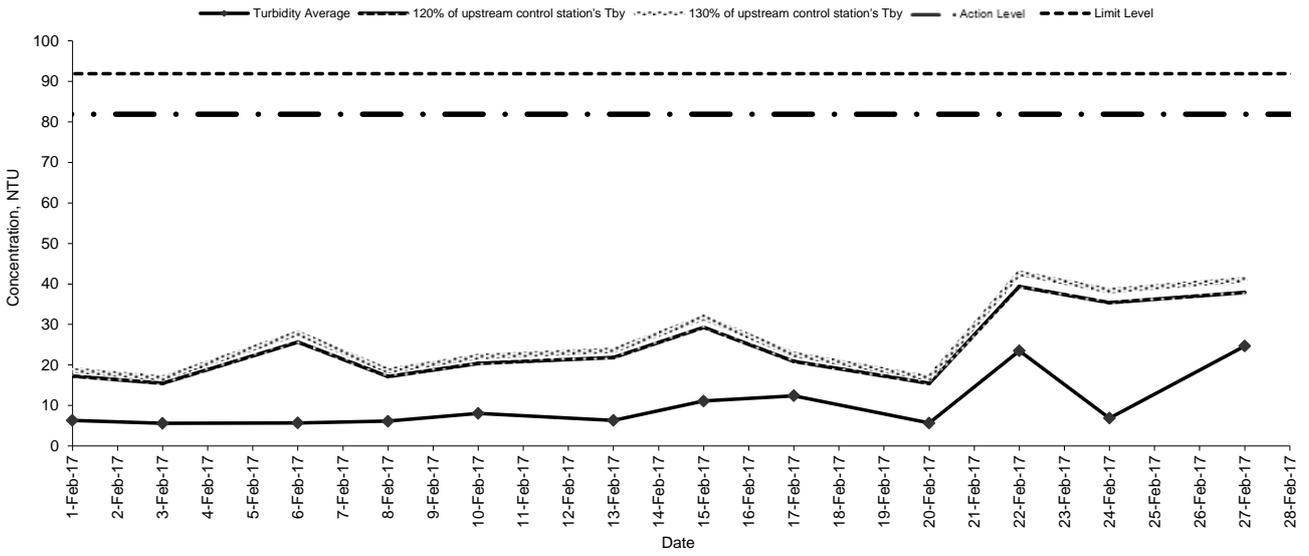


Dissolved Oxygen November 2016 - February 2017)

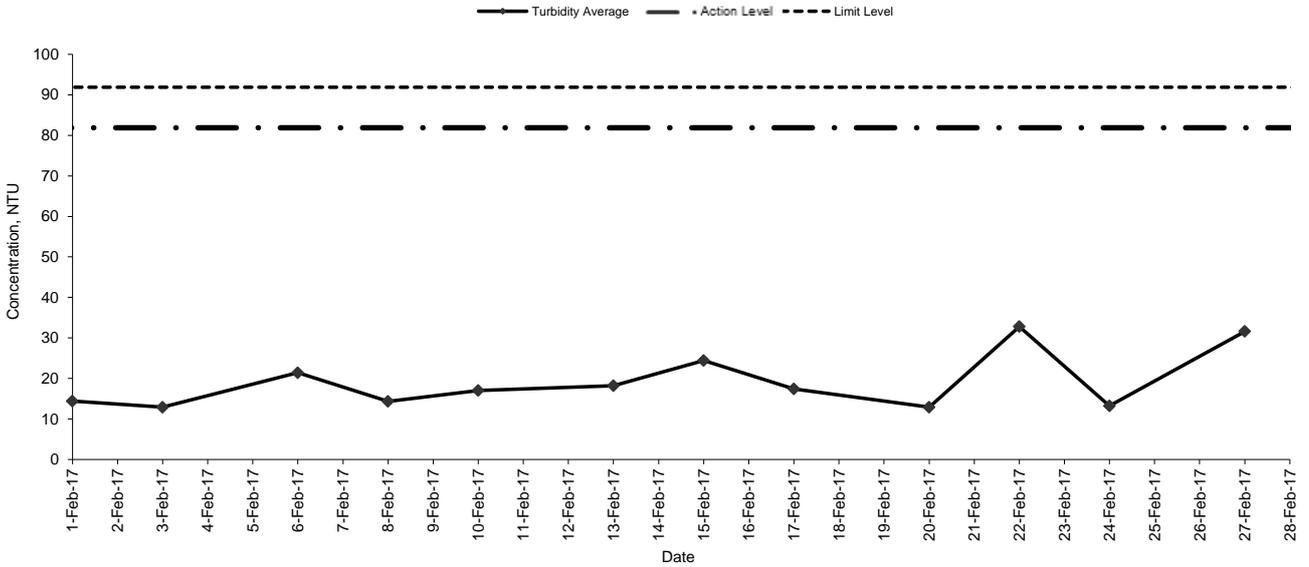


Turbidity

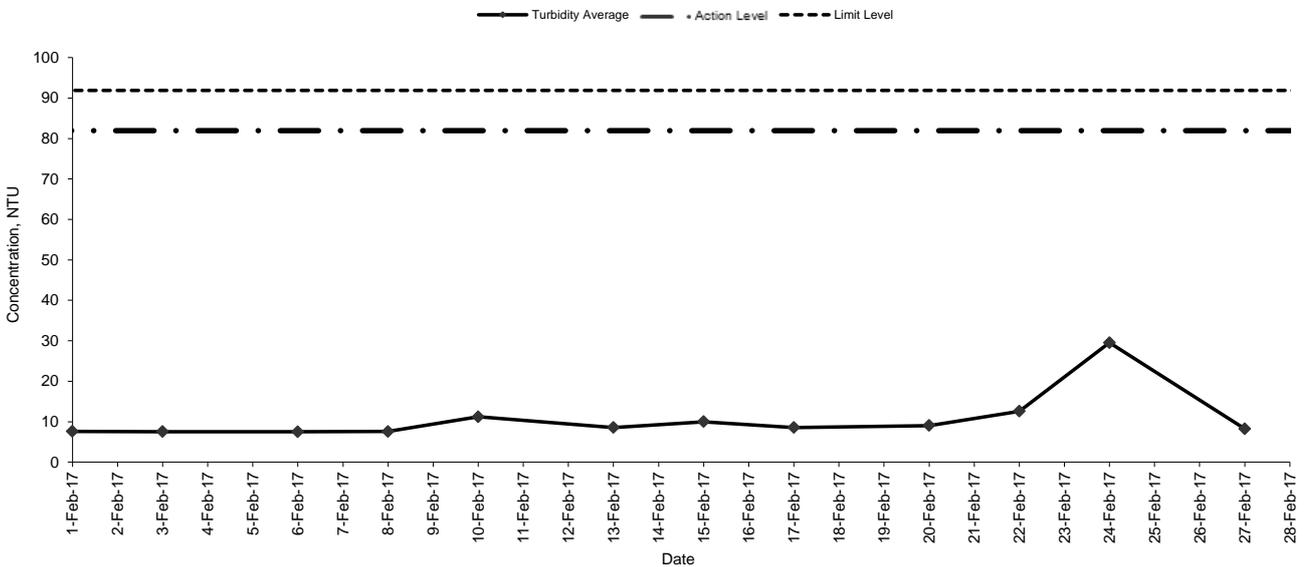
I5



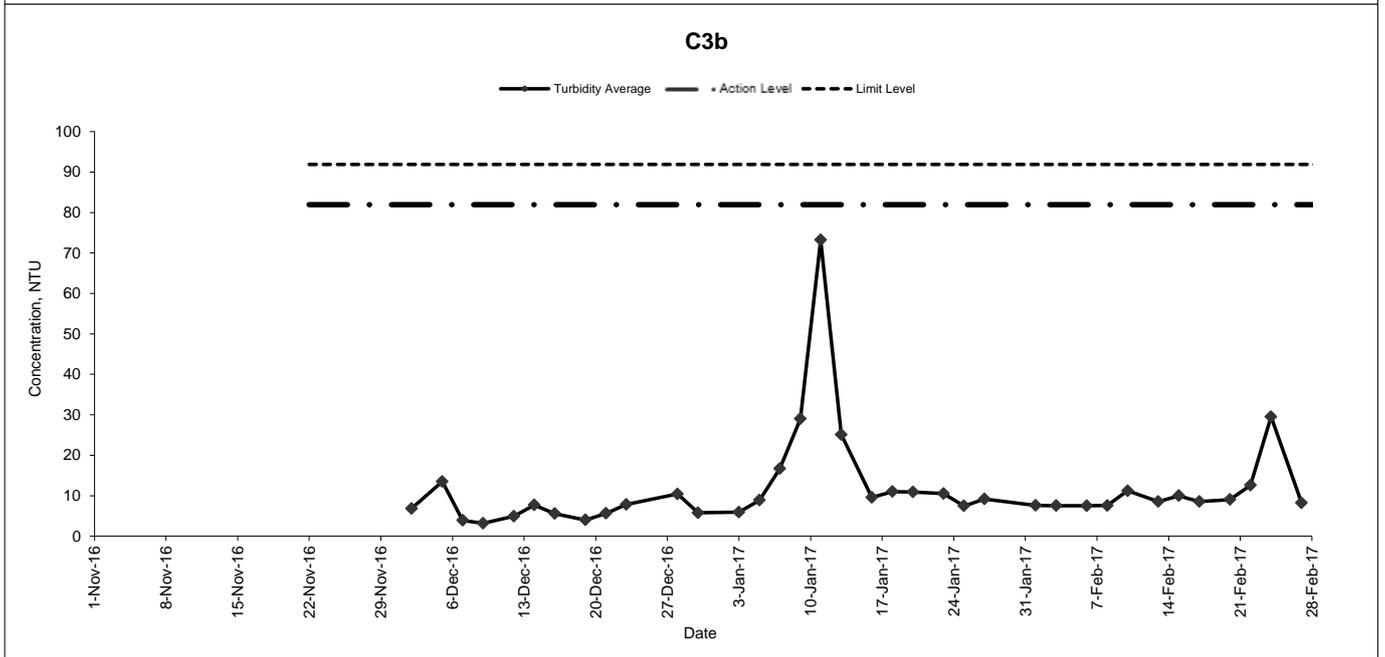
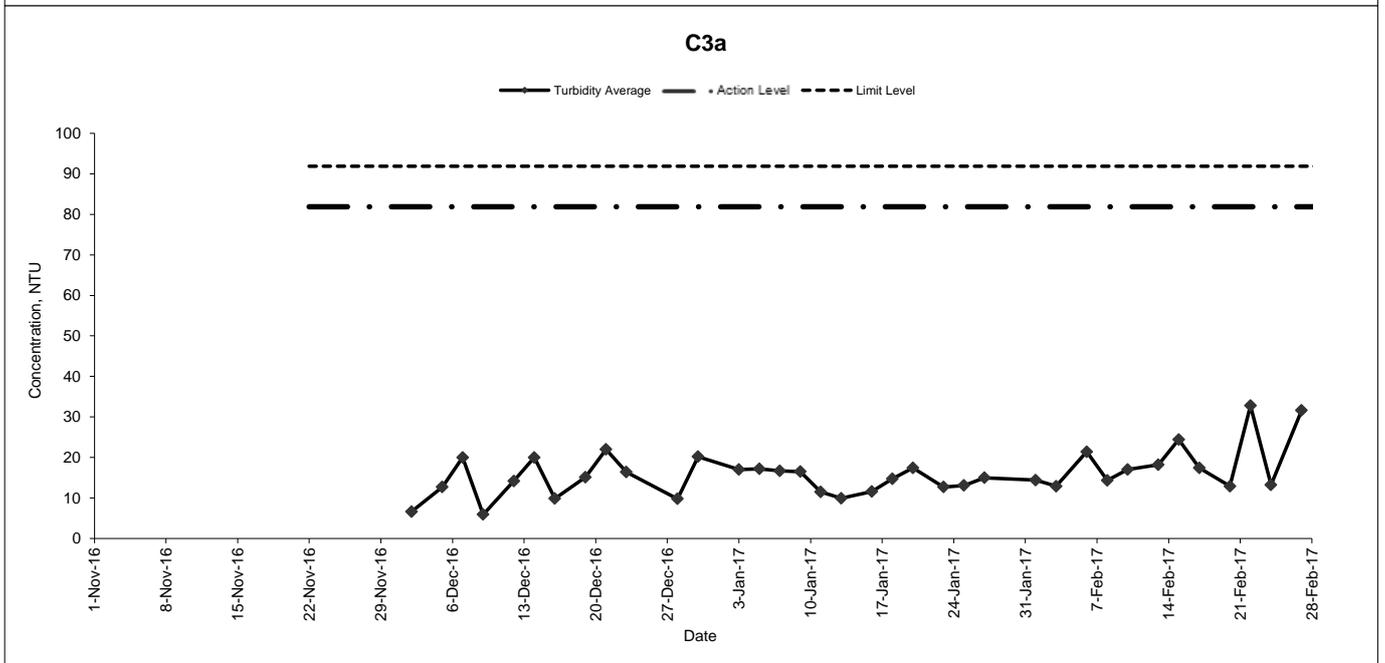
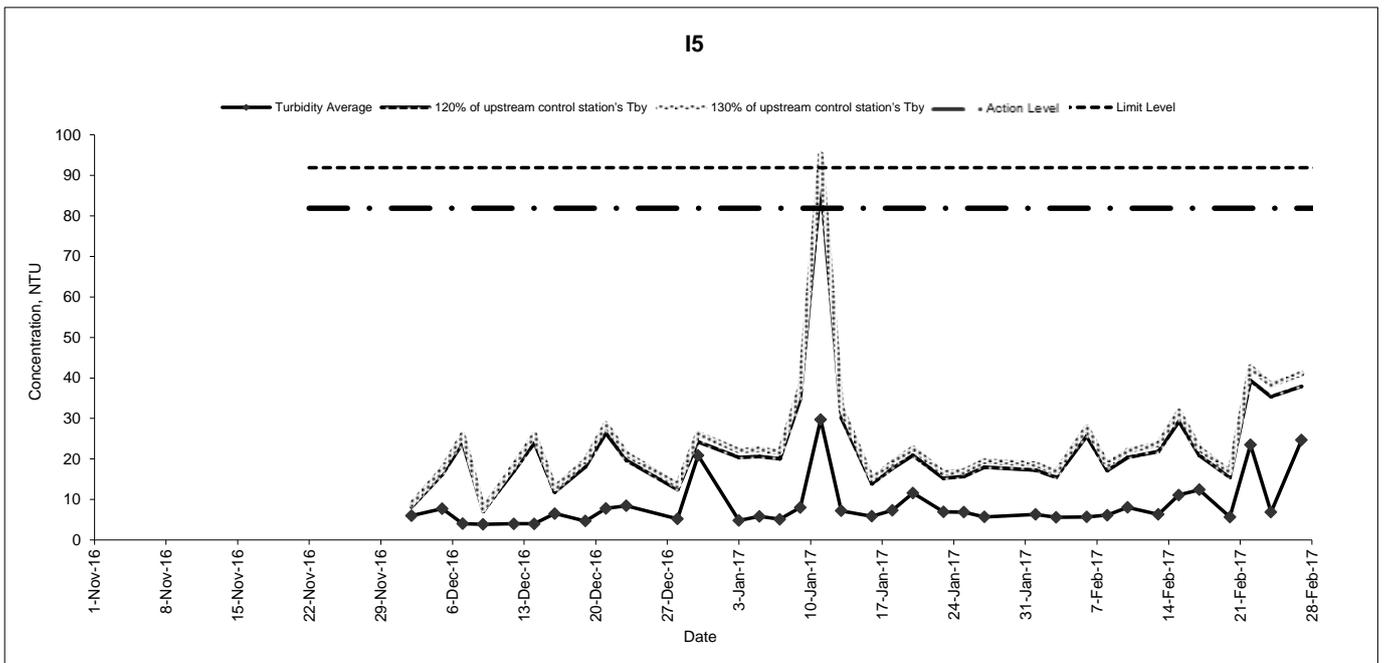
C3a



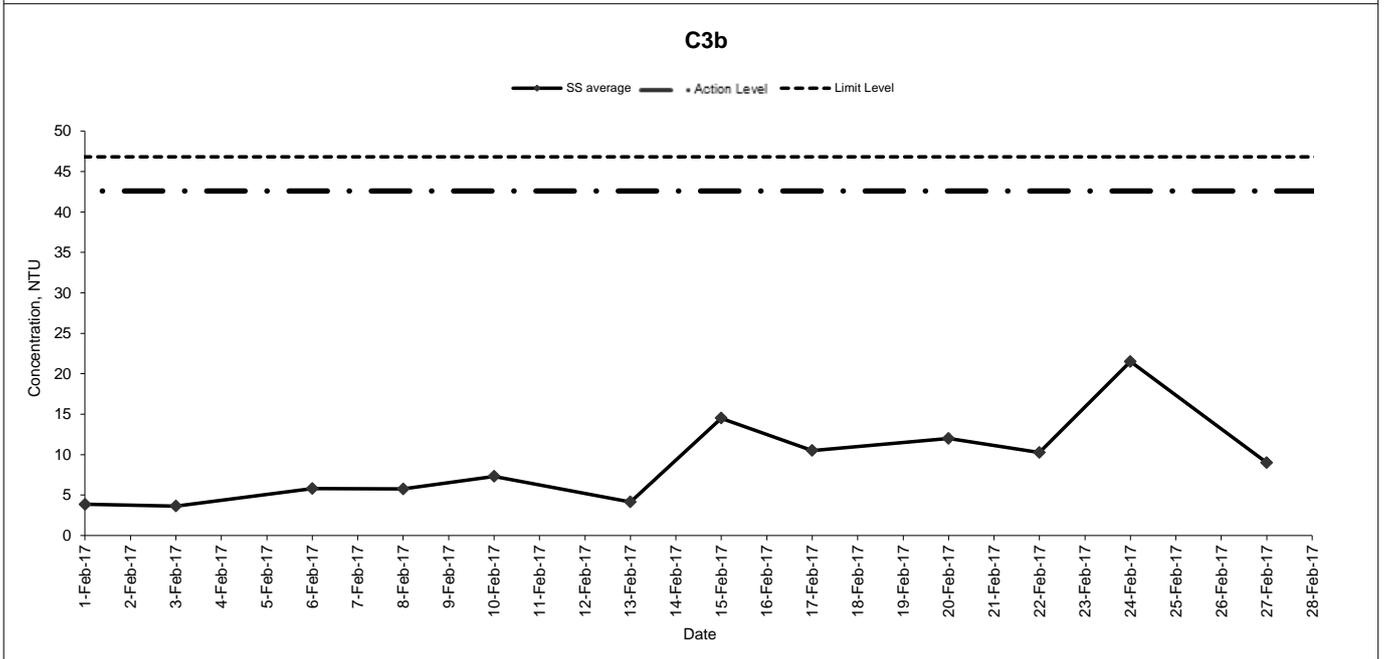
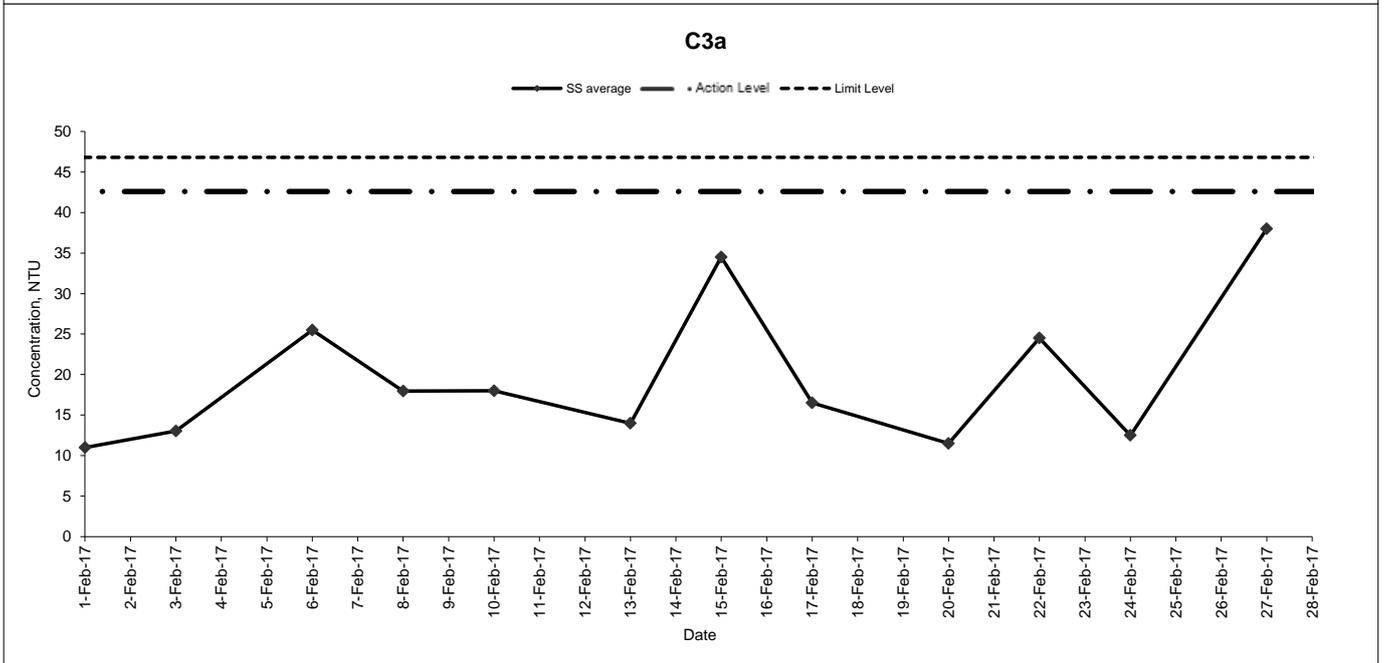
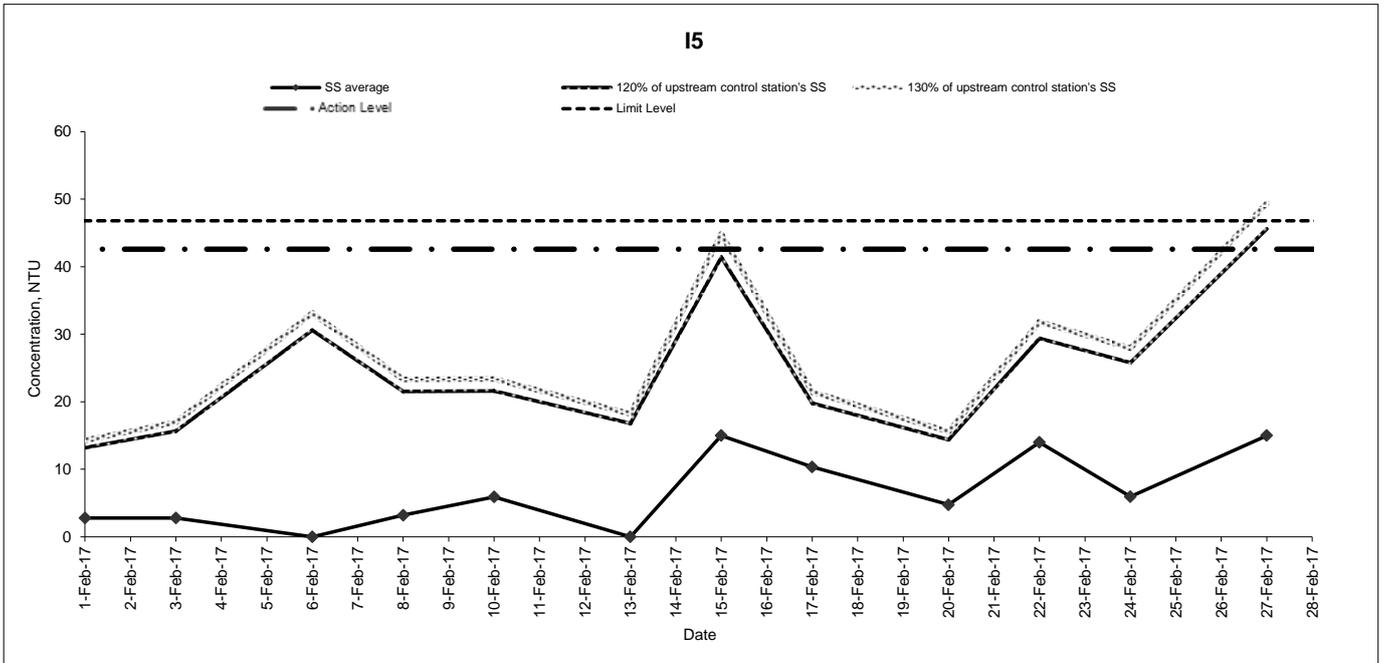
C3b



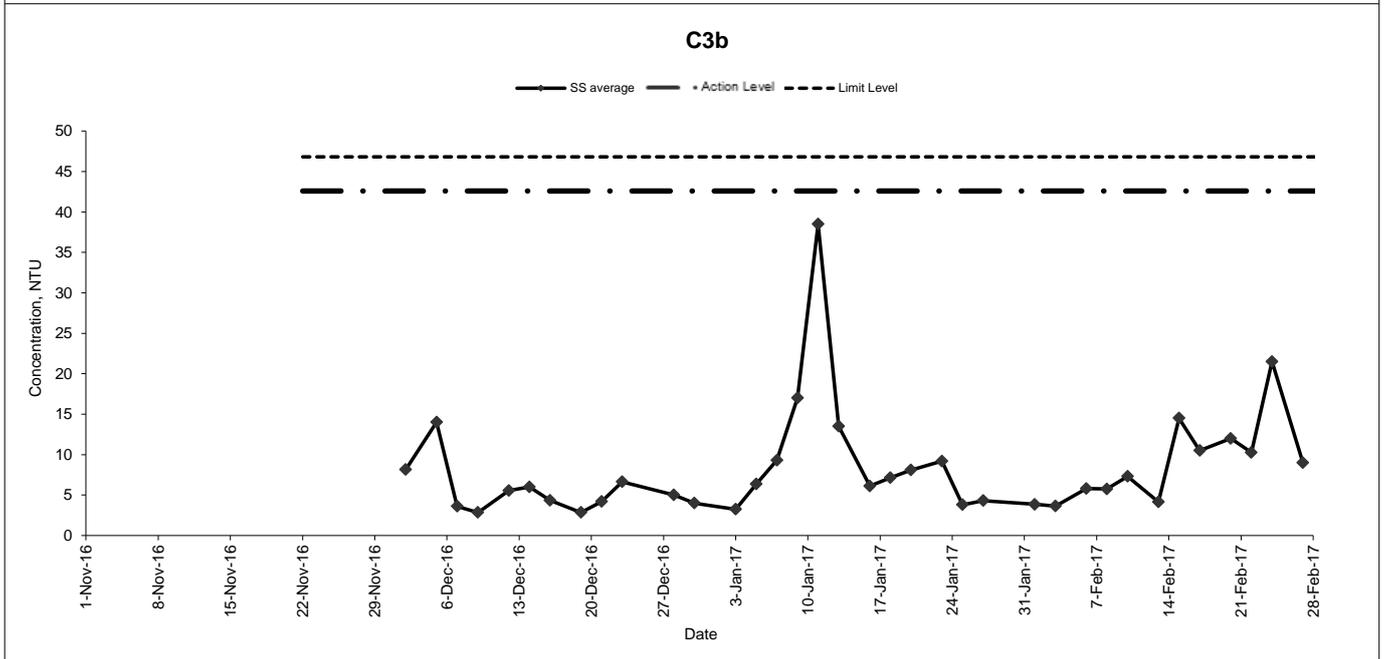
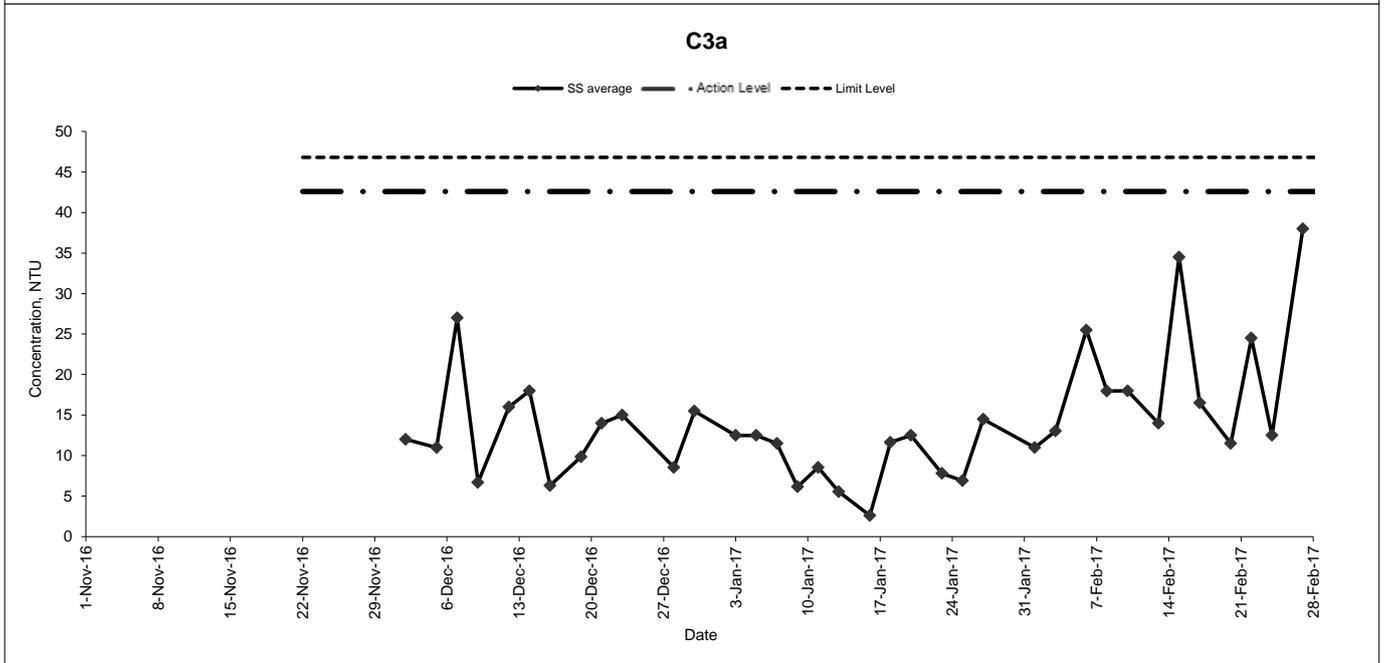
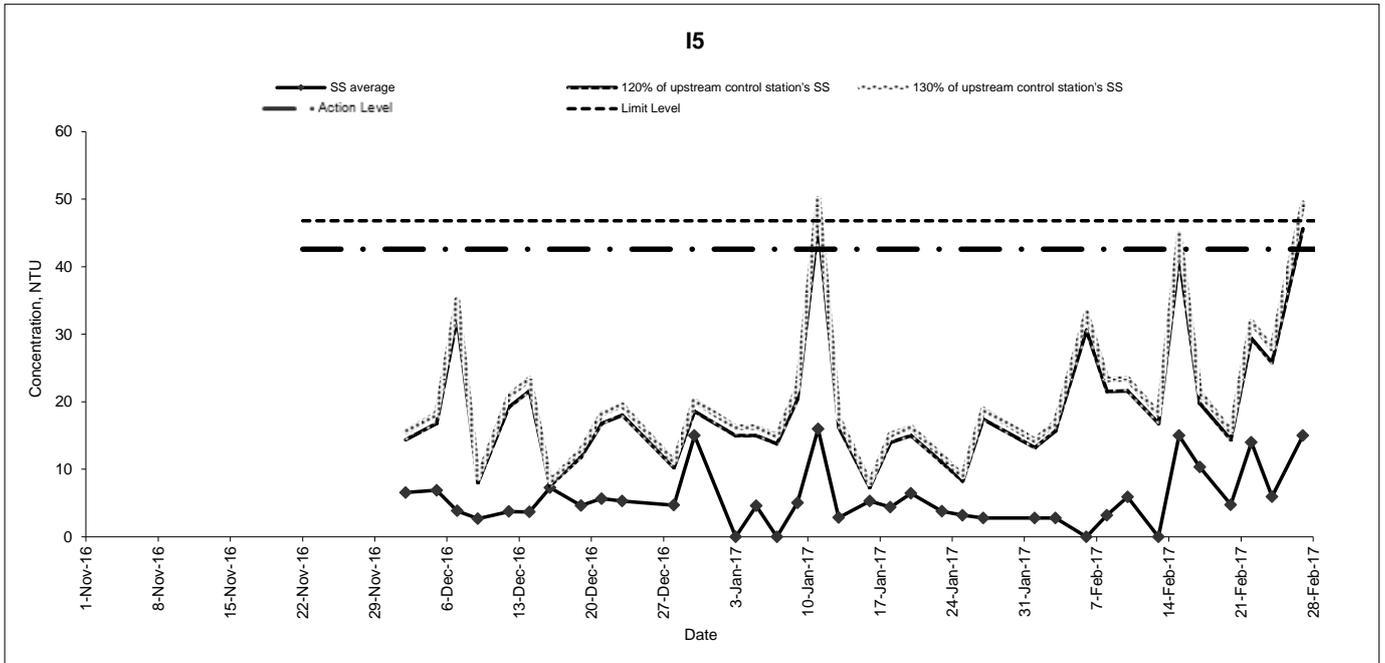
Turbidity (November 2016 - February 2017)



Suspended Solid



Suspended Solid (November 2016 - February 2017)



Appendix K Waste Flow Table

Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Soil	Soil Reused in the Contract	Soil Reused in other Projects	Soil Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging (Note 3)	Plastics	Chemical Waste	General Refuse (Note 2)
Unit	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in m ³)	(in '000m ³)
Jan-17	1.150	0.204	0.946	0.150	-	0.796	1.150	-	-	0.001	-	0.170
Feb-17	1.160	0.308	0.852	0.192	-	0.660	0.926	-	-	0.001	-	0.140
Mar-17	-	-	-	-	-	-	-	-	-	-	-	-
Apr-17	-	-	-	-	-	-	-	-	-	-	-	-
May-17	-	-	-	-	-	-	-	-	-	-	-	-
Jun-17	-	-	-	-	-	-	-	-	-	-	-	-
Sub-Total	2.310	0.512	1.798	0.342	-	1.456	2.076	-	-	0.002	-	0.310
Jul-17	-	-	-	-	-	-	-	-	-	-	-	-
Aug-17	-	-	-	-	-	-	-	-	-	-	-	-
Sep-17	-	-	-	-	-	-	-	-	-	-	-	-
Oct-17	-	-	-	-	-	-	-	-	-	-	-	-
Nov-17	-	-	-	-	-	-	-	-	-	-	-	-
Dec-17	-	-	-	-	-	-	-	-	-	-	-	-
Total	2.310	0.512	1.798	0.342	-	1.456	2.076	-	-	0.002	-	0.310

- Note:
1. Assume the density of soil fill is 2 ton/m³.
 2. Assume the density of rock and broken concrete is 2.5 ton/m³.
 3. Assume each truck of C&D wastes is 5m³.
 4. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38.
 5. The slurry and bentonite are disposed at Tseung Kwun O 137.
 6. The non-inert C&D wastes are disposed at NENT.
 7. Assume the density of metal is 7,850 kg/m³.

Appendix L Implementation Schedule of Environmental Mitigation Measures (EMIS)

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
Air Quality				
Air Quality during Construction	<ul style="list-style-type: none"> Restricting heights from which materials are dropped, as far as practicable to minimize the fugitive dust arising from unloading/loading. All stockpiles of excavated materials or spoil of more than 50m³ shall be enclosed, covered or dampened during dry or windy conditions. Effective water sprays shall be used to control potential dust emission sources such as unpaved haul roads and active construction areas. All spraying of materials and surfaces shall avoid excessive water usage. Vehicles that have the potential to create dust while transporting materials shall be covered, with the cover properly secured and extended over the edges of the side and tail boards. Materials shall be dampened, if necessary, before transportation. Travelling speeds shall be controlled to reduce traffic induced dust dispersion and re-suspension within the site from the operating haul trucks. Vehicle washing facilities shall be provided to minimise the quantity of material deposited on public roads. 	During Construction	Contractor	<ul style="list-style-type: none"> ✓ ✓ ✓ ✓ ✓ ✓ ✓
Air Quality during Operation	Not required	N/A	N/A	N/A
Noise				
Noise during Construction	<ul style="list-style-type: none"> Use of silenced plant or plant equipped with mufflers or dampers in substitute of ordinary plant. Reduce the number of equipment and their percentage on-time. 	During Construction	Contractor	<ul style="list-style-type: none"> ✓ ✓
Noise during Operation	Not required	N/A	N/A	N/A
Water Quality				
Water Quality during Construction	<u>Road Widening Works, Earthworks and Culvert Extension Works</u> <ul style="list-style-type: none"> Wastewater generated from any concrete batching washdown of equipment or similar activities should be discharged into foul sewers, after the removal of settleable solids, and pH adjustment as necessary. All sewage discharges from the study area should meet the TM standards and approval from EPD through the licensing process is required. 	During Construction	Contractor	<ul style="list-style-type: none"> ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> ● Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. ● Runoff from exposed working areas, unfinished slopes and from unlined temporary channels should be directed to stilling basins and/or silt traps before discharging to the drainage outfalls. ● Regular inspections of stilling basins and/or silt traps is required to ensure that sediment is not conveyed into the existing drainage system. ● Open stockpiles should be covered with a tarpaulin cover. ● During the wet season, any exposed top soils should be covered with a tarpaulin, shotcreted or hydroseeded. ● Sand and silt from wash-water from vehicle washing should be settled out before discharging into storm drains. ● Fuels should be stored in bunded areas such that spillage can be easily collected. 			✓ Rem ✓ ✓ ✓ ✓
Water Quality during Operation	Not required	N/A	N/A	N/A
Waste Management				
Waste Management during Construction	<u>General Waste</u> <ul style="list-style-type: none"> ● Transport of wastes off site as soon as possible. ● Maintenance of accurate waste records. ● Minimisation of waste generation for disposal (via reduction/recycling/re-use). ● No on-site burning will be permitted. ● Use of re-useable metal hoardings/signboards. <u>Vegetation from site clearance</u> <ul style="list-style-type: none"> ● Segregation of materials to facilitate disposal. ● Mulching to reduce bulk and where possible review opportunities for the possible beneficial use within landscaping areas. 	During Construction During Construction	Contractor Contractor	✓ ✓ ✓ ✓ ✓ ✓ ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> ● A spill response procedure shall be in place and absorption material available for minor spillages. ● Use appropriate and labelled containers. ● Educate site workers on site cleanliness/waste management procedures. ● If chemical wastes are to be generated, the contractor must register with EPD as a chemical waste producer. ● The chemical wastes shall be collected by a licensed chemical waste collector. <p><u>Municipal Wastes</u></p> <ul style="list-style-type: none"> ● Waste shall be stored within a temporary refuse collection facility, in appropriate containers prior to collection and disposal. ● Regular, daily collections are required by an approved waste collector. 	During Construction	Contractor	✓ ✓ ✓ ✓ ✓ ✓
Waste Management during Operation	Not required.	N/A	N/A	N/A
Ecology				
Ecology during Construction	<p><u>Accurate Delineation of Works Area</u></p> <ul style="list-style-type: none"> ● Boundaries of proposed works areas shall be clearly identified and separated from external areas by a physical barrier to prevent encroachment of adjacent habitats. ● Individual trees which fall within the works areas but which work plans show do not require removal are to be retained and fenced off to maximise protection. <p><u>Dust generation</u></p> <p>There are a number of measures which shall be taken as specified in the Air Pollution Control (Construction Dust) Regulation on 'Dust Control Requirements, including the following key measures to be applied during construction:</p> <ul style="list-style-type: none"> ● vehicle washing facilities to be provided at every discernible or designated vehicle exit point; 	During Construction During Construction	Contractor Contractor	✓ ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<ul style="list-style-type: none"> ● all temporary site access roads shall be sprayed with water to suppress dust as necessary; ● all dusty materials should be sprayed with water immediately prior to any handling; and ● all debris should be covered entirely by impervious sheeting or stored in a sheltered debris collection area. <p><u>Surface Run-off</u></p> <p>In general, mitigation measures shall be in accordance with ProPECC PN1/94 on 'Construction Site Drainage'. Key measures include:</p> <ul style="list-style-type: none"> ● Bund and cover stockpiles to avoid run-off; ● Channel any run-off through a system of oil, grease and sediment / silt traps and reuse water on site where ever practical; ● All vehicle maintenance to be undertaken within a bunded area; and ● Maximise vegetation retention on-site to maximise absorption (minimise transport). 	During Construction	Contractor	✓ ✓ ✓ ✓ ✓ ✓
Ecology during Operation	<ul style="list-style-type: none"> ● To conduct compensatory ecological planting as specified in the latest landscape plans approved by EPD (Clause 2.6 of the Environmental Permit refers). 	During Construction and operation	Contractor (during construction) / LCSD* (during operation) (Note: * The division of vegetation planting and maintenance responsibilities shall follow the guidelines stipulated in ETWB TCW No. 2/2004.)	N/A
Landscape and Visual				
Landscape and Visual during Construction	<p><u>Preservation of Existing Vegetation</u></p> <ul style="list-style-type: none"> ● Trees identified for retention within the project limit would be protected during the works ● The tree transplanting and planting works shall be implemented by approved Landscape Contractors 	During Construction	Contractor	✓ ✓

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable

Impact	Environmental Protection Measures	Timing	Responsibility	Implementation Status #
	<p><u>Temporary Works Areas</u> Where feasible the works areas would be screened using hoarding and existing vegetation would be retained where possible to reduce the landscape and visual impacts arising from the construction activity. The landscape of these works areas would be restored following the completion of the construction phase.</p> <p><u>Hoarding</u> A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs.</p> <p><u>Top Soils</u> The works will result in disturbance to extensive areas of topsoil. Topsoil worthy of retention should be stockpiled for use following completion of the civil engineering works. It should either be temporarily vegetated with hydroseeded grass or turned over on a regular basis.</p> <p><u>Protection of Important Landscape Features</u> Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected.</p>	During Construction	Contractor	✓
		During Construction	Contractor	✓
		During Construction	Contractor	N/A
		During Construction	Contractor	N/A
Landscape and Visual during Operation	Not required.	N/A	N/A	N/A

Notes (#): ✓ – Compliance; Rem – Reminder; Obs – Observation; N/C – Non Compliance; N/A – Not Applicable

Appendix M Investigation Report for Exceedances

Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2

Investigation Report of Environmental Quality Exceedance(s)

Ref. No.: W170208_DO

Date	8 February 2017
Time	9:22 AM
Monitoring Location	I5 - downstream of Ma Wat River at Yuen Leng
Parameter	Dissolved Oxygen
Action / Limit Levels	Action Level: 6.7 mg/L Limit Level: 4 mg/L or 40% saturation at 15 degree Celsius
Measured Level	5.2mg/L (Action level being exceeded)
Possible reason for the exceedance	The exceedance has been investigated and was considered not related to the project works as DO levels were low among all monitoring stations, including the control stations. No abnormal condition was observed during the monitoring. As such, the natural variation of water quality has been considered attributed to the low DO level.
Action taken / to be taken	As the non-compliance was non-project related, no further investigation and remedial measure(s) would be required.
Remarks	-

Site photos during water sampling (Date: 8 February 2017)



(At C3a)



(At I5)

Appendix N

Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Cumulative Complaint Log

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
C131126	26, November, 2013	Mr. Tony Hung from WWF	Mat Wat River (works sites for box culvert extension)	Suspected unauthorised discharge of water from a construction site to Ma Wat River, Tai Wo Service Road East, Tai Po	<p>It was found that the water leaving the end of the steel pipes was the diverted water from the upstream of the existing box culverts, instead of being discharged from the construction works sites.</p> <p>An EM&A Programme is being undertaken to monitoring the environmental performance of the construction works, and the Contractor has also implemented appropriate mitigation measures to avoid silt-laden runoff discharging from the works sites into the river.</p> <p>The complaint is considered an invalid complaint under this Project.</p>	Completed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
C141120	20 November, 2014	EPD	Ng Tung River and Ma Wat River nearby the site of the Liantang/Heung Yuen Wai BCP Project (Contract Number CV/2012/09)	At Bridge NF426 in Fanling, the whole Ng Tung River showed milky and suspected illegal discharge by nearby factory has undertaken. (粉嶺近天橋編號 NF426 梧桐河整條河河水呈奶白色懷疑附近有工廠非法排放污水)	<p>Water Supplies Department (WSD) conducted a washout procedure on 20 November 2014 at about 9:30am to flush the newly installed water pipe of diameter of 1400mm which has recently finished disinfection. It is understood that the procedure has lasted for about 1 hour and large amount of freshwater has been discharged into the Ma Wat River through a washout port.</p> <p>Although water was observed seeping from the gantry switch and flew into the works sites, the area is a sump pit and the water was unlikely to run off and entered the river directly. As such, it is anticipated that only freshwater has been discharged into Ma Wat River through the washout port.</p> <p>Both site inspections conducted by the ET before the complaint (19 November 2014), and after the complaint (24 November 2014) did not identify any deficiencies on environmental mitigation measures. Also, there were no rains during the period and the risk of construction site run-off is considered minimal.</p>	Completed

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
					<p>The water from the Ma Wat Channel adjoins the Ng Tung River before passing through the complaint location, so other pollution sources may also occur at upstream of Ng Tung River</p> <p>The complaint is considered unlikely due to the construction works of this project.</p>	



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