

Entrusted Portion of Widening of Tolo Highway / Fanling Highway between Island House Interchange and Fanling Stage 2 (Contract No. CV/2012/09)

Final EM&A Review Report (Rev.2)
November 2013 to September 2021

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**

Final EM&A Review Report

(November 2013 to September 2021)



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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 Final EM&A Review Report November 2013 to September 2021 for the portion of Stage 2 works entrusted to CEDD under Contract No. CV/2012/09

26 October 2022
By Fax (2805 5028) & Hand

We refer to the revised Final EM&A Review Report (November 2013 to September 2021) for the Project received on 25 October 2022 submitted by ET via email. We confirm we have no comment.

Yours faithfully
for MOTT MACDONALD HONG KONG LIMITED






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Contents

	Page
EXECUTIVE SUMMARY	i
1 INTRODUCTION AND PROJECT INFORMATION	1
1.1 Background.....	1
1.2 Construction Programme and Activities.....	1
1.3 Project Organisation.....	2
1.4 Purpose of the Report	2
2 SUMMARY OF EM&A REQUIREMENT	2
2.2 Monitoring Parameters	3
2.3 Environmental Impact Hypothesis under Monitoring.....	4
3 ENVIRONMENTAL MITIGATION MEASURES	5
4 AIR QUALITY MONITORING	6
4.1 EM&A Monitoring Requirement	6
4.2 Monitoring Equipment	7
4.3 Monitoring Location	7
4.4 Monitoring Parameters, Frequency and Duration	7
4.5 Monitoring Methodology	8
4.6 Monitoring Results and Observations	8
4.7 Air Quality Monitoring Data Results	9
4.8 Environmental Impact Hypothesis Tested for Air Quality Monitoring.....	9
4.9 Event and Action Plan	10
5 NOISE MONITORING	10
5.1 Monitoring Requirements	10
5.2 Monitoring Equipment	10
5.3 Monitoring Locations	10
5.4 Monitoring Parameters, Frequency and Duration	10
5.5 Monitoring Methodology	11
5.6 Noise Monitoring Results.....	11
5.7 Environmental Impact Hypothesis Tested for Noise Monitoring	12
5.8 Event and Action Plan	12
6 WATER MONITORING	12
6.1 Monitoring Requirements	12
6.2 Monitoring Equipment	12
6.3 Monitoring Parameters, Frequency and Duration	13
6.4 Monitoring Locations	13

6.5	Monitoring Methodology	13
6.6	Water Quality Monitoring Results	14
6.7	Environmental Impact Hypothesis Tested for Water Quality Monitoring.....	15
6.8	Event and Action Plan	16
7	Summary of Monitoring Exceedances	16
8	WASTE MANAGEMENT	17
8.1	Waste Generated during the Construction Phase.....	17
8.2	Environmental Impact Hypothesis Tested for Waste Management.....	18
9	ECOLOGY	21
9.1	Environmental Impact Hypothesis Tested for Ecology.....	21
10	ENVIRONMENT SITE INSPECTION AND AUDIT	22
10.1	Site inspection and Audit.....	22
11	OPERATIONAL PHASE NOISE MONITORING	22
12	ENVIRONMENTAL NON-CONFORMANCE	22
12.1	Summary of Environmental Non-Compliance and Monitoring Exceedance	22
12.2	Summary of Environmental Complaints.....	22
12.3	Summary of Environmental Summon and Successful Prosecutions	23
13	REVIEW OF THE VALIDITY OF EIA PREDICTIONS	23
14	EFFECTIVENESS AND EFFICIENCY MITIGATION MEASURES	23
15	REVIEW OF EM&A PROGRAMME	24
16	IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENT	24
17	CONCLUSIONS	27

Table 1.1	Contact Information of Key Personnel
Table 4.1	Air Quality Monitoring Equipment
Table 4.2	Location of Air Quality Monitoring
Table 4.3	Air Quality Monitoring Parameters, Frequency and Duration
Table 4.4	Summary of 1-hr TSP Monitoring Results
Table 4.5	Summary of 24-hr TSP Monitoring Results
Table 5.1	Noise Monitoring Equipment
Table 5.2	Location of Noise Monitoring
Table 5.3	Noise Monitoring Parameters, Frequency and Duration
Table 5.4	Summary of Noise Monitoring Results
Table 6.1	Water Quality Monitoring Equipment
Table 6.2	Water Quality Monitoring Parameters, Frequency and Duration
Table 6.3	Locations of Water Quality Monitoring
Table 6.4	Action and Limit Levels for Water Quality Monitoring
Table 6.5	Summary of Water Monitoring Results
Table 7.1	Summary of Exceedance Events in the Construction period
Table 8.1	Summary of Waste Flow Table for Contract No. CV/2012/09
Table 8.2	Comparison of Inert Waste disposed under the Project and the amount of Inert waste predicted in ERR
Table 8.3	Comparison of Non-Inert waste and General Refuse disposed under the Project and the amount of Non-Inert waste and General Refuse predicted in ERR

Table 8.4 Comparison of Chemical waste processed under the Project and the amount of
Chemical waste predicted in ERR

Table 15.1 Status of Required Submission for Monthly EM&A Report during Construction
Phase

List of Figures

- Figure 1 Demarcation of Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling – Stage 2
- Figure 2 Environmental Monitoring Locations
- Figure 3 Project Layout Plan

List of Appendices

- Appendix A Construction Programme
- Appendix B Project Organization Structure
- Appendix C Summary of Meteorological Condition Extracted from HKO
- Appendix D Air Quality Monitoring Results and their Graphical Presentation
- Appendix E Noise Monitoring Results and their Graphical Presentation
- Appendix F Water Quality Monitoring Results and their Graphical Presentation
- Appendix G Summary of Event and Action Plan
- Appendix H Waste Flow Table
- Appendix I Implementation Schedule of Environmental Mitigation Measures (EMIS)
- Appendix J Confirmation Letter of Operation Phase Noise Monitoring from HY/2012/06
- Appendix K Statistics on Complaints, Notifications of Summons and Successful Prosecutions
- Appendix L Investigation Reports of Incident

EXECUTIVE SUMMARY

This is the Final Environmental Monitoring and Audit (EM&A) Review Report for Contract No. CV/2012/09 - the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. This report documents the findings of EM&A Works of the Project. The works areas are shown in **Figure 1 & 2**.

This final EM&A report presents the results of EM&A works conducted during the period between 5 November 2013 and 30 September 2021.

The impact stage EM&A programme for the Project includes air quality, noise and water quality monitoring.

The EM&A programme was carried out by the ET in accordance with the EM&A Manual requirement. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the construction period.

In the construction period, a total of 50 exceedance events were recorded in the reporting period, including 23 exceedance events regarding air quality, 2 exceedance events regarding construction noise and 25 exceedance events regarding water quality. And the investigation for the exceedance event in the reporting period has been completed. Two exceedances of Limit Level on Turbidity & Suspended Solids were recorded on 18 December 2013 were considered project-related due to leakage of the diverted river through the concrete blocks. Necessary remedy actions have been completed and the investigation reports for the incidents are presented in **Appendix L**. And the remaining 48 events are investigated for the exceedance was conducted which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

No environmental non-compliance was noted. A total 3 of environmental complaints was received, including 1 environmental complaint regarding air quality and 2 environmental complaints regarding water quality. Investigations have been conducted and the complaint was considered as invalid under this Project. The detail of complaint and cumulative complaint log is provided in **Appendix K**. No environmental related prosecution or notification of summons was received in the construction period.

1 INTRODUCTION AND PROJECT INFORMATION

1.1 Background

- 1.1.1 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.
- 1.1.2 The construction works for this project were delivered in 2 stages i.e. Stage 1 (between Island House Interchange and Tai hang) and Stage 2 (between Tai hang and Wo Hop Shek Interchange). Stage 2 was implemented under three works contracts. Contract No. HY/2012/06 “Widening of Fanling Highway – Tai Hang to Wo Hop Shek Interchange” and the entrusted portion to CEDD under Contract No. CV/2012/09” Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – Contract 3” (i.e. The Project).
- 1.1.3 In addition, the Contract No.” Provision of Bus- Bus Interchange on Fanling Highway Kowloon Bound” was carried out within the site boundary of Contract No. 02/HY/2015. The Contract No. 02/HY/2015 is the additional contract works for carrying the management and maintenance of roads in Tai Po and North Districts under the Project and the EP-324/2008/E.
- 1.1.4 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 (Contract No. CV/2012/09). 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 in 5 November 2013.
- 1.1.5 This is Final EM&A Review Report for Contract No. CV/2012/09 - the Entrusted Portion of Widening of Tolo Highway/Fanling Highway between Island House Interchange and Fanling Stage 2. This report documents the findings of EM&A Works of the Project. The works areas are shown in **Figure 1 & 2**.

1.2 Construction Programme and Activities

- 1.2.1 The master construction programme for the entire construction period is presented in **Appendix A**. As informed by the Contractor, the major construction activities undertaken in the construction period are summarized below:
- Widening of a section of the Fanling Highway of about 1 km long near the interchange;

- Realignment of the existing Tai Wo Service Road West and Tai Wo Service Road East;
- Construction of Noise Barriers;
- Demolition of the existing Kiu Tau Vehicular Bridge;
- Re-provisioning of the existing Kiu Tau Footbridge; and
- Landscape works.

1.3 Project Organisation

1.3.1 The project organization structure is shown in **Appendix B**. The key personnel contact names and numbers for the Project, together with the general enquiry hotline, are summarised in **Table 1.1**.

Table 1.1 Contact Information of Key Personnel

Party	Role	Position	Name	Tele- phone	Fax
AECOM	Engineer's Representative	Senior Resident Engineer	Mr. Julian Ling	2171 3303	2171 3498
Mott MacDonald	Independent Environmental Checker (IEC)	IEC	Mr. Steven Tang	2828 5920	2827 1823
Chun Wo	Contractor	Site Agent	Mr. Chan	2638 6144	2638 7077
		Environmental Officer	Mr. Yip Yum Lam	3166 5111	
		Environmental Supervisor	Mr. Yeung Sze Yin Mr. Lam Chi Man	2638 7005	
Meinhardt	Environmental Team (ET)	ET Leader	Ms. Claudine Lee	2859 5409	2540 1580
Enquiry Hotline	General Enquiry	--	Ms Helena Mak	6355 1731	--

1.4 Purpose of the Report

1.4.1 This is the Final EM&A Review Report which summaries the impact monitoring results and audit findings for the Project during the construction period between 5 November 2013 and 30 September 2021.

2 SUMMARY OF EM&A REQUIREMENT

2.1.1 The EM&A programme as specified in the EM&A Manual have been implemented during the construction stage. In addition, regular site inspection to active works area was carried out. The area of inspection included the pollution control and mitigation measures with the site, including air quality, construction noise, water quality, waste management and landscape and visual. The EM&A requirements are described in the following sections, including

- Environmental mitigation measures, as recommended in the project EIA Report;
- Environmental impact hypotheses tested;

- AL Levels;
- All monitoring parameters; and
- Event-Action Plans.

2.1.2 Also an environmental monitoring has been carried out during the construction stage. 1-hour and 24-hour of TSP levels shall be measured to indicate the impacts of construction dust on air quality. The construction noise level has been measured L_{eq} , L10 and L90. Parameters of Water quality monitoring included water depth, dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity level (NTU), suspended solids (SS), pH value and water temperature has been measured. Detailed can be referred to Section 4.

2.1.3 The EIA/ERR concluded that with proper mitigation measures implemented for construction and operation phases, the TSP and noise levels will comply with the criteria. The EIA/ERR has also demonstrated the acceptability of the residual impact from the project and the protection of the population and environmentally sensitive resources. Environmental monitoring and audit programmes have been recommended as necessary, to verify the validity of EIA/ERR the effectiveness of recommended mitigation measures.

2.2 Monitoring Parameters

2.2.1 Environmental Review Report (ERR) approved in November 2008 has demonstrated the acceptability of the residual impacts from the project and the protection of the population and environmentally sensitive resources. EM&A programmes have been recommended as necessary, to verify the validity of the EIA predictions and the effectiveness of recommended mitigation measures.

2.2.2 Based on the EM&A Manual approved in March 2000, there are designated 5 air quality (for both 1-hour TSP and 24-hour TSP) monitoring stations and 10 construction noise (for L_{eq} (30 mins) monitoring station during construction phase. And the updated EM&A Manual approved in October 2013 has designated 1 air quality (for both 1-hour TSP and 24-hour TSP) monitoring station and 2 construction noise (for L_{eq} (30 mins) monitoring stations to monitor environmental impacts on air quality and noise due to the Project under Contract No. CV/2012/09.

2.2.3 The updated EM&A Manual has designated 3 water quality monitoring stations to monitor environmental impacts on water quality due to the Project, monitoring of turbidity in NTU, dissolved oxygen (DO) in mg/l and suspended solids (SS) in mg/l were carried out by the ET. The water quality monitoring was only carried under Contract No. CV/2012/09. The implemented mitigation measures can be referred to the Monthly EM&A report and Final EM&A Review report under Contract No. CV/2012/09.

2.2.4 According to the updated EM&A Manual, the Contractor was responsible for the implementation of ecological mitigation measures to minimize ecological impacts due to Stage 2 of the Project. The implementation of these measures was checked by the ET as part of the environmental audit.

2.2.5 According to the updated EM&A Manual, the Contractor was responsible for waste control (i.e. waste auditing on the amount of various types of waste) within the construction site, removal of waste material produced by the site and the implementation of any mitigation measures to minimize waste or redress problems arising from site waste.

- 2.2.6 The updated EM&A Manual also required environmental site inspections for air quality, noise, water quality, waste management and ecological impacts for checking the effectiveness of recommended mitigation measures.

2.3 Environmental Impact Hypothesis under Monitoring

- 2.3.1 The EIA Report concluded that with proper implementation of recommended mitigation measures, no adverse environmental impact due to the Project during construction phase is anticipated. The hypotheses above have been tested by reviewing the audit and monitoring results to assess the performance of mitigation measures. The result of the hypothesis tests will reflect the implementation effectiveness of mitigation measures recommended in ERR and EIA report.

Hypothesis for Air Quality and Construction Noise Monitoring

- 2.3.2 Air quality and construction noise were monitored throughout the construction phase. Hypothesis for air quality and construction noise will be tested through comparing the impact monitoring results with non-compliance criteria of air quality and construction noise set up in the updated EM&A Manual, namely Action and Limit Levels to be used, for determining effectiveness of air and noise mitigation measures implemented by the Contractor and the residual environmental impacts with measures in place.

Hypothesis for Water Quality

- 2.3.3 According to the updated EM&A Manual (Oct 2013), the contractor is responsible to implement water quality monitoring and mitigation measures has recommended in the ERR for control and minimizing the wastewater generated from box culvert works in the construction phase. Water quality was monitored throughout the construction phase. Hypothesis for water quality will be carried through comparing the impact monitoring results with non-compliance criteria of water quality and construction noise set up in the updated EM&A Manual, namely Action and Limit Levels to be used, for determining effectiveness of mitigation measures implemented by the Contractor and the residual environmental impacts with measures in place.

Hypothesis for Waste Management

- 2.3.4 According to the updated EM&A manual (Oct 2013), the Contractor is responsible to implement waste management mitigation measure for control and minimizing the waste generated in the construction phase. The construction waste amount after implementation of waste management mitigation measure was predicted in ERR. The hypothesis for waste management will be tested through comparing the amount of construction waste generated by the Contractor and the amount of construction waste predicted in ERR in order to determine effectiveness of waste management mitigation measures implemented by the Contractor and the residual environmental impacts with measures in place.

Hypothesis for Ecology

- 2.3.5 According to the updated EM&A Manual (Oct 2013), mitigation measures for ecological impacts are required to be implemented by the Contractor and checked by the ET team during the environmental audit. The hypothesis for ecological impacts will be tested through reviewing the environmental audit results related to ecological impact for determination effectiveness of ecological impact mitigation measures implemented by the Contractor and the residual environmental impacts with measures in place.

3 ENVIRONMENTAL MITIGATION MEASURES

3.1.1 The Contractor has implemented the relevant environmental mitigation measures as specified in the EIA/ERR, EPs and updated EM&A Manual. The implementation status of environmental mitigation measures during the construction period is summarized in **Appendix I**.

3.1.2 The Contractor has been reminded to strengthen the mitigation measures including:

Air Quality

- Covering of exposed slopes near the river;
- Mud and debris shall be removed to prevent potential muddy water flow to public road;
- Watering and covering of exposed slopes and stockpiles to avoid fugitive dust emission;
- Watering within site and vehicle washing facilities shall be enhanced;
- Water spraying should be properly implemented whenever necessary for the unpaved roads, access roads and construction areas;
- Water treatment facilities should be properly maintained avoid untreated water entering storm drain;
- All vehicles should be washed to remove any dusty materials before leaving the construction site, and the wheel washing facilities should be properly maintained to ensure proper functioning;
- Colour NRMM label shall be provided for all Non Road Mobile Machineries and
- Plant equipment should be properly maintained to avoid emitting black smoke;

Chemical and Waste Management

- Ensuring regular maintenance and cleaning of waste storage area;
- Good housekeeping should be maintained and general refuse should be removed regularly;
- All types of wastes, both on land floating in the river stream, should be collected sorted properly, also be disposed timely properly. Refuse collection bins should be labelled properly;
- Refuse collection bins should be labelled properly;
- On site segregation should be implemented as far as practicable for reuse and recycle;
- All chemicals stored on site should be provided with drip trays/ secondary containment;

- A spill response procedure shall be in place absorption material available for minor spillages; and
- Good housekeeping should be maintained and stagnant water should be removed from secondary containment regularly.

Water Quality

- Surface run-off, rainwater and waste water from construction site discharged into appropriate drains via adequately designed sand/ silt removal facilities (e.g. sand traps, silt traps and sedimentation basins) and pH adjusted before discharge;
- Building a river diversion structure at the river channel to protect the river from potential site runoff and fill up the leakage and strengthen the river diversion works to avoid future leakage;
- Pay attention on accidental site runoff, including construction of additional protection structure if necessary, to minimize the risk of site runoff;
- Silty effluent should be treated/desilted before discharged. Untreated effluent should be prevented from entering public drain channel;
- Channels or earth bunds or sand bag barriers should be provided on site to prevent surface runoff and properly direct stormwater to silt removal facilities;
- Proper drainage channels/bunds should be provided at the site boundaries to collect/intercept the surface run-off from works areas;
- Drainage facilities shall be well maintained and inspected regularly;
- Preventive measure shall be enhanced to prevent soil/ rock from engineering the WSD area;
- Trapped Water shall be pumped or removed to avoid site runoff overflow;
- Enhancement to water pumping pipe at NB 67 shall be adopted; and
- Wastewater shall be removed and treated properly prior to discharge in accordance with WPCO License.

Others

- Ensuring the provision of tree protection zone for all existing trees to be transplanted or retained.

4 AIR QUALITY MONITORING

4.1 EM&A 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 1 hr-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
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
Handheld TSP meter	TSI AM520	1

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.

4.2.4 The electricity supply of HVS at AM1(SR77) was suspended from 16 May to 22 May 2019 and was no longer available. In order to have a more secure electricity supply, alternative monitoring method (i.e. an Handheld TSP meter) was proposed to use for the temporary monitoring of 24-hr & 1hr air quality from 22 May 2019 to 31 October 2020. In this regard, IEC and ER have no adverse comment on it.

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**, but with sampling period changed to 1 hour.

4.6 Monitoring Results and Observations

- 4.6.1 Monitoring has been conducted in accordance with the specification in the EM&A Manual in the reporting period from 5 November 2013 to 31 October 2020. The air quality monitoring has been suspended since 31 October 2020 as no remaining construction activities undertaken. Summary of meteorological condition for the reporting period have been extracted from Hong Kong Observatory and are given in **Appendix C**.

4.7 Air Quality Monitoring Data 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. Total 438 of 1-hr and 24-hr TSP monitoring were conducted during the construction period. Detailed air quality monitoring results and the graphical presentation of air quality monitoring data for the construction period are presented in **Appendix D**.

Table 4.4 Summary of 1-hr TSP Monitoring Results

ASR ID	Monitoring Location	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) *	Yuen Leng 2 ⁽¹⁾ (Residential, Ground Floor)	133.8	25.4-283.0	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	Monitoring Location	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) *	Yuen Leng 2 ⁽¹⁾ (Residential, Ground Floor)	87.7	12.1 – 402.1	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 According to the monitoring record in the construction phase, the major dust sources were construction activities and the traffic emissions. However, Twenty-three (23) not project related Limit Level exceedances were recorded during the construction phase. and no particular weather effect was recorded during the construction phase. From the graphical presentation of the monitoring data of air quality, no particular trend contributed from major construction activities, weather condition or other significant effect was identified in graphical presentation, and air quality monitoring results with mitigation measures implemented during the period was observed.

4.8 Environmental Impact Hypothesis Tested for Air Quality Monitoring

4.8.1 The EIA Report concluded that with proper mitigation measures implemented, fugitive dust emission during construction phase would be controlled and will not exceed the acceptable criteria.

4.8.2 The Average 24-hour and 1-hour TSP monitoring were $62.0\mu\text{g}/\text{m}^3$ and $65.6\mu\text{g}/\text{m}^3$ respectively measured during baseline monitoring and the measured Average 1-hour and 24-hour TSP levels during construction phase were $89.3\mu\text{g}/\text{m}^3$ and $135.0\mu\text{g}/\text{m}^3$. From the result of comparison, it concludes that the average 24-hour and 1-hour TSP level of construction phase are higher than the baseline level but it is also lower than the Action level were $170.3\mu\text{g}/\text{m}^3$ and $292.7\mu\text{g}/\text{m}^3$. The measured levels were in line with the ERR predictions generally.

4.8.3 And the Contractor has implemented mitigation measures as stated in the EIA report, ERR and EM&A Manual. Therefore, the construction dust did not exceed the acceptable criteria.

4.9 Event and Action Plan

- 4.9.1 The Event and Action Plan for the occurrence of non-compliance of the criteria of the air monitoring parameters 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
Sound Level Calibrator	Rion (Model No. NC-74)	1
Sound Level Meter	Rion (Model No. NL-52)	1

- 5.2.2 The sound level calibrator and sound level meter were verified by a certified laboratory every year.

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 Noise Monitoring Results

5.6.1 The monitoring results for noise are summarized in **Table 5.4**. Total 355 of noise monitoring were conducted during the construction period. The monitoring results and the graphical presentation of noise level for the construction period are presented in **Appendix E**.

Table 5.4 Summary of Noise Monitoring Results

Noise Monitoring Station ID	Monitoring Location	Average, dB(A), Leq (30min) ⁽²⁾	Range, dB(A), Leq (30min) ⁽²⁾	Action Level	Limit Level, dB(A)
M1(SR77) ⁽¹⁾	Yuen Leng 2 ⁽¹⁾ (Residential, Ground Floor)	66.6	54.5 – 76.5	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

5.6.2 According to the monitoring record in the construction phase, the major noise sources was traffic noise. There was no significant construction noise and particular weather effect were recorded throughout the construction phase. Two (2) not-project related Limit Level exceedances were recorded during the construction phase. Mitigation measures were also implemented for preventive action after the exceedance. From the graphical presentation of the monitoring data of noise, no particular trend contributed from major construction activities, weather condition or other significant effect was identified in graphical presentation, and noise monitoring results with mitigation measures implemented during the period was observed. No complaints related to construction noise were received.

5.7 Environmental Impact Hypothesis Tested for Noise Monitoring

5.7.1 The baseline noise level of SR77 were 67.8dB(A) and the 30-min average noise level measures during construction phase were lower than the baseline monitoring result. The measured levels were in line with the ERR predictions generally. From the result of comparison, it is concluded that construction noise did not exceed the acceptable criteria.

5.8 Event and Action Plan

5.8.1 The Event and Action Plan for the occurrence of non-compliance of the criteria of the noise monitoring parameters is annexed in **Appendix G**.

6 WATER MONITORING

6.1 Monitoring Requirements

6.1.1 In accordance with the Updated EM&A Manual (Oct 2013), 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.

6.1.2 Upon completion of all culvert extension work, a post project monitoring exercise on river water quality shall be carried out for four weeks in the same manner as the impact monitoring.

6.2 Monitoring Equipment

6.2.1 The equipment used in the water quality monitoring programme is summarized in **Table 6.1**.

Table 6.1 Water Quality Monitoring Equipment

Equipment	Model and Make
Turbidity meter	HACH Model 2100 Q (Serial No. 12010C015757)
Multimeter (Scope of Test: Conductivity, Dissolved Oxygen, pH, Salinity and Temperature)	YSI Proplus (Serial No. 09K100735)

6.2.2 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.

6.3 Monitoring Parameters, Frequency and Duration

6.3.1 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 - pH - DO, mg/L - DO Saturation, % - Turbidity, NTU - SS, mg/L	3 days per week

6.4 Monitoring Locations

6.4.1 According to the Updated EM&A Manual, measurements were taken at all impact and control stations as summarized in **Table 6.3**. The locations of the monitoring stations are shown in **Figure 2**.

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

6.5 Monitoring Methodology

Instrumentation

6.5.1 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

- 6.5.2 Since water depths for all monitoring stations were less than 1m throughout the whole baseline measurement period, only mid-depth level was monitored.
- 6.5.3 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.
- 6.5.4 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, ALS Technichem (HK) Pty Ltd for analysis.
- 6.5.5 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	81.9 mg/L or 120% of upstream control station's Tby of the same day	91.9 mg/L 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.

- 6.5.6 The possible influences in monitoring results were suspected to be the domestic discharges, and possible erosion of silt after rainfall at up-stream locations.

6.6 Water Quality Monitoring Results

- 6.6.1 During the course of the culvert extension works, impact monitoring shall be undertaken on three occasions per week. The box culvert works have been started from Nov 2013 and have been partially completed by the end of March 2014 except the last construction activity, i.e. installation of a base slab at Box Culvert ID4.
- 6.6.2 The remaining box culvert works of installation of the base slab at Box Culvert ID4 have been started from Feb 2016 and completed in March 2017. The impact monitoring shall be undertaken on three occasions per week. The 4-week post-construction water quality monitoring at I5 was completed in 28 April 2017.
- 6.6.3 The monitoring results for water quality are summarized in **Table 5.5**. Total 128 of water monitoring were conducted during the construction period. The monitoring results and the graphical presentation of water quality for the construction period are presented in **Appendix F**.

Table 6.5 Summary of Water Monitoring Results

Water Monitoring Station ID	Monitoring Location	Minimum	Maximum	Average	Baseline	Action Level	Limit Level
Water Quality							
DO							
I5	Downstream of Ma Wat River (Yuen Leng)	4.3mg/L	11.5mg/L	8.0mg/L	8.0 mg/L	6.7	4mg/L or 40% saturation at 15 degree Celsius
C3a	Upstream of Ma Wat River (Nam Wa Po)	4.2mg/L	10.3mg/L	7.5mg/L	7.5 mg/L		
C3b	Upstream of Ma Wat River (Yuen Leng)	5.4mg/L	10.1mg/L	7.8mg/L	7.6 mg/L		
Turbidity							
I5	Downstream of Ma Wat River (Yuen Leng)	2.0NTU	86.7NTU	17.9NTU	26.1 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
C3a	Upstream of Ma Wat River (Nam Wa Po)	4.1NTU	135.0NTU	24.6NTU	22.6 NTU		
C3b	Upstream of Ma Wat River (Yuen Leng)	3.2NTU	90.3NTU	21.0NTU	51.2 NTU		
SS							
I5	Downstream of Ma Wat River (Yuen Leng)	2.0mg/L	72.5mg/L	9.3mg/L	16.4 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
C3a	Upstream of Ma Wat River (Nam Wa Po)	2.6mg/L	72.0mg/L	13.3mg/L	16.1 mg/L		
C3b	Upstream of Ma Wat River (Yuen Leng)	2.5mg/L	133.0mg/L	12.2mg/L	34.3 mg/L		

6.6.4 The box culvert works have been partially completed by March 2014 and March 2017. Impact monitoring has been conducted in accordance with the specification in the updated EM&A Manual (Oct 2013) in the construction period. And the 4 weeks post project monitoring had been conducted on April 2017 after the completion of the all box culvert works on March 2017 in accordance with the specification in the updated EM&A Manual (Oct 2013) in the same manner as the impact monitoring.

6.7 Environmental Impact Hypothesis Tested for Water Quality Monitoring

6.7.1 From the above Table 6.5, the baseline water quality monitoring station for I5, C3a and C3b were measured and the parameters of Dissolved Oxygen (mg/L), Turbidity (NTU) and Suspended Solids (mg/L) were measured during construction phase. For the result comparison, the measurements during construction phase were lower than the baseline monitoring result. It is concluding that water quality did not contribute significant impact to the environment.

6.8 Event and Action Plan

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

7 Summary of Monitoring Exceedances

7.1.1 The number of exceedance events recorded in the construction period is summarized in **Table 7.1**.

7.1.2 Investigation for the exceedance event in the construction period has been completed and the exceedance was concluded not related to the Project. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report. Necessary remedy actions have been completed and the investigation reports for the incidents are presented in **Appendix L**.

Table 7.1 Summary of Exceedance Events in the Construction period

Parameter		Number of Exceedance Events	Number of Project Related Exceedance Events
Air Quality			
1-hour Total Suspended Particulates	Action Level	0	0
	Limit Level	0	0
24-hour Total Suspended Particulates	Action Level	19 ⁽²⁾	0
	Limit Level	4 ⁽²⁾	0
Construction Noise			
Leq 30min	Action Level	0	0
	Limit Level	2 ⁽²⁾	0
Water Quality			
DO	Action Level	4 ⁽²⁾	0
	Limit Level	6 ⁽²⁾	0
Turbidity	Action Level	2 ⁽²⁾	0
	Limit Level	3 ⁽²⁾	1 ⁽¹⁾
SS	Action Level	1 ⁽²⁾	0
	Limit Level	9 ⁽²⁾	1 ⁽¹⁾

Notes:

⁽¹⁾ In the construction period, a total of 50 exceedance events were recorded in the reporting period. Only 2 of the exceedances of Suspended Solids and Turbidity respectively recorded on 18 December 2013 were concluded to be project related. Necessary remedial actions have been taken and the exceedances have been rectified. The respective investigation reports have been presented in the respective Monthly EM&A Reports.

⁽²⁾ The remaining 48 exceedances event in the reporting period has been completed and the exceedance was concluded not related to the Project. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

8 WASTE MANAGEMENT

8.1 Waste Generated during the Construction Phase

- 8.1.1 The Contractor has been 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.
- 8.1.2 As advised by the Contractor No. CV/2012/09, a total of 138,852m³ of inert C&D materials material has been generated (112,008m³ of inert C&D materials was disposed of at public fill to Tuen Mun Area 38. 26,844m³ of inert C&D materials were reused on site.) 8,475m³ of general refuse was disposed of at North East New Territories (NENT) Landfill. 113 m³ plastic was collected by recycling contractor in the reporting month. 100m³ paper/cardboard packaging was collected by recycling contractor in the reporting month. 779m³ metals were collected by recycling contractor in the reporting month. 4.243 m³ chemical waste was collected by licensed contractor in the construction period.
- 8.1.3 The actual amounts of different types of waste generated by the activities of Contractor No. CV/2012/09 during the construction phase are summarizes in Table 8.1. Details of the waste management data are presented in **Appendix H**.

Table 8.1 Summary of Waste Flow Table for Contract No. CV/2012/09

Waste Type	Actual Amount	Disposal/ Reuse Locations
Inert C&D materials disposed of as public fill	112,008 m ³	TM38
Broken concrete	18,712 m ³	TM38
C&D wastes disposed as general refuse	8,475 m ³	NENT
Paper/ Cardboard packaging	100 m ³	Recycling Contractors
Plastics	113 m ³	Recycling Contractors
Metals	779 m ³	Recycling Contractors
C&D materials reused on site	26,844 m ³	Site Area
C&D materials reused in other Projects	0 m ³	Other Projects
Chemical wastes	4.243 m ³	Licensed Chemical Waste Collector

8.2 Environmental Impact Hypothesis Tested for Waste Management

8.2.1 According to the Section 7.10 of ERR, waste generated from the Project was acceptable with proper implementation of waste management mitigation measures. The waste amount after implementation of waste management mitigation measures was predicted in ERR. In order to determinate the effectiveness of waste management mitigation measures implemented by the Contractor, the amount of waste generated from the Project is compared with the amount of waste predicted in ERR.

Comparison for Inert waste (Waste disposed to the Public fill)

8.2.2 The amount of construction waste disposed to the public fill under Contract No. CV/2012/09 was 112,008 m³. According to the information provided from the Contract No. HY/2012/06 and 02/HY/2015, the amount of inert waste disposed to the public fill was 81,469 m³. Therefore, the total amount of inert waste disposed to the public fill under Stage 2 of the Project was 193,477 m³.

8.2.3 According to Table 7-4 of ERR, the total amount of construction waste for Non re-useable within site (disposed to public fill) was predicted as 249,000m³. However, this predict amount was considered all the projects under Widening of Tolo Highway/ Fanling Highway between Island House Interchange and Fanling. It means the construction waste disposed to public fill under the Projects of Stage 1 should be included in this comparison.

- 8.2.4 The construction waste disposed to public fill under the projects of Stage 1 was 58,434 m³. The total construction waste disposed to public fill under Stage 1 and Stage 2 of the Project was 251,911 m³ .-
- 8.2.5 The comparison of inert waste between actual disposed amount and predicted amount was shown in Table 8.2.

Table 8.2 Comparison of Inert Waste disposed under the Project and the amount of Inert waste predicted in ERR

	Inert Waste		
	#1 Stage 1	#1 Stage 2	
Actual Amount	58,434 m ³	Contract No. CV/2012/09 112,008 m ³	Contract No. HY2012/06 & 20/HY/2015 81,469 m ³
		Sub Total : 193,477 m ³	
	Total: 251,911 m ³		
Prediction in ERR	#2 Total: 249,000 m ³		

#1: All of inert waste disposed to public fill
#2: All of inert waste listed in Table 7-4 of ERR

Comparison for Non-Inert waste and General Refuse (Waste disposed to the Landfill)

- 8.2.6 The amount of non-inert waste and general refuse disposed to the landfill (C&D wastes disposed as general refuse) under Contract No. CV2012/09 was 8,475 m³. According to the information provided from the Contract No. HY/2012/06 and 02/HY2015 was 9,908 m³. Therefore, the total amount of non-inert waste and general refuse disposed to the landfill under Stage 2 of the Project the was 17,598 m³.
- 8.2.7 The non-inert waste and general refuse disposed to landfill under Stage 1 of the Project was 31,375 m³ . The total non-inert waste and general refuse disposed to landfill under Stage 1 and Stage 2 of the Project was 49,758 m³ .
- 8.2.8 According to Table 7-4 of ERR, the amount of non-inert waste and general refuse were predicted as 35,500 m³ and 2420.6 m³ respectively.
- 8.2.9 The ERR predicted the amount of non-inert waste and general refuse separately, the comparison between predicted amount and actual disposed amount shall compare non-inert waste and general refuse separately. However, the Contractor treated the non-inert waste and general refuse with the same method, which were disposed to landfill, the recorded amount of non-inert waste and general refuse were summed in monthly EM&A reports. Therefore, the predicted amount of non-inert waste and general refuse in ERR should be summed during comparison. The comparison of non-inert waste and general refuse between actual disposed amount and predicted amount was shown in Table 8.3.

Table 8.3 Comparison of Non-Inert waste and General Refuse disposed under the Project and the amount of Non-Inert waste and General Refuse predicted in ERR

	Non Inert Waste Disposal			
Actual Amount	#1 Stage 1	#1 Stage 2		
	31,375 m ³	Contract No. CV/2012/09 8,475 m ³	Contract No. HY2012/06 9,908 m ³	Contract No. 02/HY/2015 0 m ³
		Sub Total : 18,383 m³		
#2 Total : 49,758 m³				
Prediction in ERR	#3 35,500 m ³		#4#5 2420.6 m ³	
	Total: 37,920.6 m³			

#1: All non-inert waste and general refuse disposed to the landfill

#2: The amount of general refuse and non-inert waste were predicted separately in ERR, but the contractor treated non-inert waste and general refuse in the same method, which was disposed to landfill. The predicted amount of general refuse and non-inert waste in ERR should be summed during comparison.

#3: All of the non-inert waste listed in Table 7-4 of ERR

#4: General refuse listed in Table 7-4 of ERR, 4,896kg x 613 weeks (total construction period for Stage 1&2). As the Contractor recorded the amount of disposed of general refuse and non-inert waste in unit Cubic meter (m³), so the predicted amount of general refuse in ERR should be converted from kilogram (kg) to m³ with general refuse density at 1.29 ton/m³.

#5: According to a report from Audit Commission (Section 5.19 at Government's efforts in managing municipal solid waste), from 1993 to 2011, the three landfills received waste with a total weight of 98.3 million tonnes, which had used up 79 million m³ of the total capacity of 139 million m³ of the three landfills. Accordingly, the weight-to-volume ratio during the period was 1.24 ton of waste: 1 m³ of landfill space, this ratio is adopted as general refuse density. https://www.aud.gov.hk/pdf_e/e65ch01.pdf

Comparison for Chemical waste

- 8.2.10 The amount of chemical waste was processed by licensed chemical waste collector under Contract No. CV/2012/09 was 4,246L. According to the information provided from the Contract No. HY/2012/06 and 02/HY/2015, there was no chemical waste was generated and processed under the Contracts in the construction phase. Therefore, the total amount chemical waste processed under Stage 2 of the Project the was 4,243 L.
- 8.2.11 According to Table 7-4 of ERR, the total amount of chemical waste generated from the Project was predicted as 64,350L.
- 8.2.12 The chemical waste processed by the licensed chemical waste collector under Stage 1 of the Project was 10,200L. The total amount of chemical waste processed under Stage 1 and Stage 2 of the Project was 14,443L.
- 8.2.13 The comparison of chemical waste between actual processed amount and predicted amount was shown in **Table 8.4**.

Table 8.4 Comparison of Chemical waste processed under the Project and the amount of Chemical waste predicted in ERR

	Chemical Waste			
	#1 Stage 1	#1 Stage 2		
Actual Amount	10,200L	Contract No. CV/2012/09 4,243 L	Contract No. HY2012/06 0 L	Contract No. 02/HY/2015 0 L
		Sub Total: 4,243 L		
	Total: 14,443L			
Prediction in ERR	#2 Total: 64,350L			

#1: All of chemical waste collected by licensed chemical waste collector

#2: The amount of chemical waste listed in Table 7-4 of ERR, 450L x 143months (total construction period for Stage 1&2)

Summary for Waste Management Hypothesis Test

- 8.2.14 As shown in Table 8.4 above, the amount of chemical waste processed under Stage 1 and Stage 2 of the Projects was lower than the amount of chemical waste predicted in ERR.
- 8.2.15 As shown in Table 8.2 and Table 8.3, the amount of inert and non-inert waste disposed under Stage 1 and Stage 2 of the Projects was both higher than the amount of inert and non-inert waste predicted in ERR, but the exceeded amount was considered as insignificant.
- 8.2.16 In addition, referring to the disposal, reuse, and recycling record in Table 6.1 and Table 6.2, it is observed that the Contractor was carried waste management strategy for implement recycling, storage, transportation, and disposal measures, which were recommended in ERR, to avoid or minimize potential adverse impacts associated with waste arising from the Project. There was no significant observation related to waste management mitigation measure was identified in environmental site inspection. Considered both the waste management strategy, environmental inspection record and the comparisons above, it can conclude that mitigation measures recommended in the ERR / EIA report for waste management was implemented effectively with no adverse residual waste impacts with mitigation measures in place.

9 ECOLOGY

9.1 Mitigation Measures

- 9.1.1 In accordance with the Updated EM&A Manual, the Contractor was responsible for the implementation of all mitigation measures as listed in Section 6.2 of the EM&A Manual to minimize ecological impacts from site activities. The implementation of these measures was checked by the ET as part of the environmental audit.

9.2 Environmental Impact Hypothesis Tested for Ecology

- 9.2.1 Site audit of the implementation of ecology mitigation measures was conducted throughout the construction period in accordance to the ERR and EM&A Manual. The implementation of mitigation measures for ecology was considered as satisfying.

10 ENVIRONMENT SITE INSPECTION AND AUDIT

10.1 Site inspection and Audit

- 10.1.1 Site inspection and audit was carried out by representatives of the Contractor, Engineer and ET on weekly basis to observe the aspect of water quality, noise, air quality, waste management. Reminders and recommendation were given to the Contractor, and the Contractor rectified and implemented environmental practices and mitigation measures timely and properly in the Project site. The representative of the IEC joined the site inspections once per month. For details of site inspection findings, please refer to respective monthly EM&A report.
- 10.1.2 According to the EIA Report, ERR, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed the documents are recommended to be implemented during the construction phase and all were implemented timely and properly. A summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix I**.

11 ENVIRONMENTAL NON-CONFORMANCE

11.1 Summary of Environmental Non-Compliance and Monitoring Exceedance

- 11.1.1 No environmental non-compliance and no action taken were recorded in the construction period.
- 11.1.2 In the construction period, a total of 50 exceedance events were recorded in the reporting period which are included 23 exceedances of 24-hr TSP monitoring, 2 exceedances of $L_{eq(30min)}(A)$ Noise monitoring and 25 exceedances of Water monitoring. And the investigation for the exceedance event in the reporting period has been completed. Only two exceedances of Limit Level on Turbidity & Suspended Solid for water monitoring were recorded on 18 December 2013 and 18 December 2013 on both Suspended Solids and Turbidity were considered related to a leakage of the diverted river through the concrete blocks. Necessary remedy actions have been completed and the investigation reports for the incidents are presented in **Appendix L**. And the remaining 48 events are investigated for the exceedance was conducted which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

11.2 Summary of Environmental Complaints

- 11.2.1 Total Three (3) environmental complaints were received in the construction period.

One (1) environmental complaint was received in the construction period regarding water quality of Ma Wat River at 26 November 2013. Another One (1) environmental complaint was received in the construction period regarding water quality of Ng Tung River at 20 November 2014. And one (1) environmental complaint was received in the construction period regarding air quality nearby Kau Lung Hang and Hong Lok Yuen

was received on 28 Dec 2017. Investigations have been conducted and all complaints were considered unlikely due to the construction works of this Project. The complaints have been handled in accordance with the requirements specified in the updated EM&A Manual (Oct2013). All complaint cases have been resolved and closed. The complaint log is provided in is provided in **Appendix K**.

11.3 Summary of Environmental Summon and Successful Prosecutions

11.3.1 No environmental related prosecution or notification of summons was received in the construction period.

12 REVIEW OF THE VALIDITY OF EIA/ERR PREDICTIONS

12.1.1 According to the paragraph 2 of section 4.1 of EIA Report/ERR, the construction dust impact was assessment qualitatively in this Project EIA study therefore the air impact monitoring could not be compared with the EIA Report. Most of the air quality monitoring results in the reporting period was below the Action and Limit Level and some of the exceedances were recorded into the **Appendix D** which is concluded that was not related to the Project. The results were in line with EIA/ERR prediction that with the implementation of mitigation measures.

12.1.2 Referring to the Table 5.8 of an EIA Report/ERR, the predicted construction noise $L_{eq(30min)}$ is 71.8dB (A). To compare with the average noise impact results in the report period is 66.8dB (A). Most of the construction noise monitoring results in the reporting period was below the Action and Limit Level and two of the exceedances were recorded are 76.5dB(A) which are concluded that was not related to the Project. The details can be referred to the **Appendix E**. The results were in line with EIA/ERR prediction that with the implementation of mitigation measures.

12.1.3 The waste management strategy, environmental inspection record for waste management and the waste amount were reviewed. The result was in line with the EIA and ERR prediction so that waste generation would be controlled and would not exceed the acceptable criteria, with proper implementation of the recommended waste management mitigation measures.

12.1.4 During the reporting period, mitigation measures and good site practices for water quality, waste management and ecology were implemented timely and properly. Environmental site inspections were carried out to monitor and audit the environmental performance and rectified where necessary. The mitigation measures were found to be effective and EIA predictions reminded valid.

12.1.5 The mitigation measures in EIA Prediction and the approved EM&A Manual have been effectively implemented during the construction period.

12.1.6 The environmental monitoring methodology was considered well established as the monitoring results were found in line with EIA predictions.

13 EFFECTIVENESS AND EFFICIENCY MITIGATION MEASURES

13.1.1 The impact air quality, water quality and noise monitoring programme ensured that any environmental impacts to the receivers would be readily detected and timely actions could be taken to rectify any non-compliance. The environmental monitoring results indicated that the construction activities in general were in compliance with the relevant environmental requirements and were environmentally acceptable.

- 13.1.2 For air quality, water quality and noise monitoring as mentioned in Section 4, 5 and 6. The measured levels were in line with the EIA and ERR predictions generally. This indicates that the mitigation measures were effectively and efficiently implemented.
- 13.1.3 The mitigation measures for ecology recommended in the EIA, ERR and EM&A Manual were effectively implemented. The implemented mitigation measures for this Project under relevant requirements in EIA/ERR & EM&A Manual can be referred to the **Appendix I**.
- 13.1.4 For waste management as mentioned in Section 8, the amount of construction phase generated in construction phase was lower than the predicted amount. The mitigation measures for waste management recommended in the EIA/ERR were effectively implemented.
- 13.1.5 The weekly site inspections ensured that all the environmental mitigation measures recommended in the EIA, ERR and EM&A Manual were effectively implemented. Despite the minor deficiencies within a reasonable timeframe. Therefore, the effectiveness and efficiency of the mitigation measures were considered high in most of the time.
- 13.1.6 The overall EM&A programme was conducted satisfactorily. All aspects of the EM&A programme were reviewed and audited independently and objectively. The requirements in the EM&A Manual are fully complied with.

14 REVIEW OF EM&A PROGRAMME

- 14.1.1 The EM&A programme was considered successfully and adequately conducted during the course of the construction period. With the environmental monitoring and site inspection to directly ensure the timely implementation of mitigation measures during the Project, the environmental performance of the project was acceptable. Analysis of all EM&A data collected throughout the construction periods also demonstrated the environmental acceptability of the Project.
- 14.1.2 With the success of the overall EM&A programme, the deterioration of the environmental caused by the Project was cost-effectively identified and necessary prompt effective mitigation measures were implemented to avoid any unacceptable impacts.

15 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENT

- 15.1.1 The status of the required submissions under the EP 3.3 Monthly Environmental Monitoring & Audit Report during the construction phase is summarized in **Table 15.1**.
- 15.1.2 The status of the other required submissions under the EP during the construction phase and before the operational phase has been summarized in the termination proposal.

Table 15.1 Status of Required Submission for Monthly EM&A Report during Construction Phase

EP Condition	Submission	Submission Date/ Status
Condition 3.3	Monthly EM&A Report for November 2013	13 December 2014

EP Condition	Submission	Submission Date/ Status
Condition 3.3	Monthly EM&A Report for December 2013	14 January 2014
Condition 3.3	Monthly EM&A Report for January 2014	14 February 2014
Condition 3.3	Monthly EM&A Report for February 2014	13 March 2014
Condition 3.3	Monthly EM&A Report for March 2014	11 April 2014
Condition 3.3	Monthly EM&A Report for April 2014	13 May 2014
Condition 3.3	Monthly EM&A Report for May 2014	13 June 2014
Condition 3.3	Monthly EM&A Report for June 2014	14 July 2014
Condition 3.3	Monthly EM&A Report for July 2014	14 August 2014
Condition 3.3	Monthly EM&A Report for August 2014	12 September 2014
Condition 3.3	Monthly EM&A Report for September 2014	13 October 2014
Condition 3.3	Monthly EM&A Report for October 2014	14 November 2014
Condition 3.3	Monthly EM&A Report for November 2014	10 December 2014
Condition 3.3	Monthly EM&A Report for December 2014	14 January 2015
Condition 3.3	Monthly EM&A Report for January 2015	10 February 2015
Condition 3.3	Monthly EM&A Report for March 2015	14 April 2015
Condition 3.3	Monthly EM&A Report for April 2015	14 May 2015
Condition 3.3	Monthly EM&A Report for May 2015	10 June 2015
Condition 3.3	Monthly EM&A Report for June 2015	13 July 2015
Condition 3.3	Monthly EM&A Report for July 2015	14 August 2015
Condition 3.3	Monthly EM&A Report for August 2015	14 September 2015
Condition 3.3	Monthly EM&A Report for September 2015	13 October 2015
Condition 3.3	Monthly EM&A Report for October 2015	13 November 2015
Condition 3.3	Monthly EM&A Report for November 2015	14 December 2015
Condition 3.3	Monthly EM&A Report for December 2015	14 January 2016
Condition 3.3	Monthly EM&A Report for January 2016	12 February 2016
Condition 3.3	Monthly EM&A Report for February 2016	14 March 2016
Condition 3.3	Monthly EM&A Report for March 2016	12 April 2016
Condition 3.3	Monthly EM&A Report for April 2016	13 May 2016
Condition 3.3	Monthly EM&A Report for May 2016	14 June 2016
Condition 3.3	Monthly EM&A Report for June 2016	14 July 2016
Condition 3.3	Monthly EM&A Report for July 2016	12 August 2016
Condition 3.3	Monthly EM&A Report for August 2016	13 September 2016
Condition 3.3	Monthly EM&A Report for September 2016	14 October 2016
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Condition 3.3	Monthly EM&A Report for December 2016	13 January 2017
Condition 3.3	Monthly EM&A Report for January 2017	13 February 2017
Condition 3.3	Monthly EM&A Report for February 2017	13 March 2017
Condition 3.3	Monthly EM&A Report for March 2017	12 April 2017
Condition 3.3	Monthly EM&A Report for April 2017	12 May 2017
Condition 3.3	Monthly EM&A Report for May 2017	12 June 2017
Condition 3.3	Monthly EM&A Report for June 2017	12 July 2017
Condition 3.3	Monthly EM&A Report for July 2017	11 August 2017
Condition 3.3	Monthly EM&A Report for August 2017	13 September 2017
Condition 3.3	Monthly EM&A Report for September 2017	11 October 2017
Condition 3.3	Monthly EM&A Report for October 2017	9 November 2017
Condition 3.3	Monthly EM&A Report for November 2017	11 December 2017
Condition 3.3	Monthly EM&A Report for December 2017	12 January 2018
Condition 3.3	Monthly EM&A Report for January 2018	12 February 2018
Condition 3.3	Monthly EM&A Report for February 2018	9 March 2018
Condition 3.3	Monthly EM&A Report for March 2018	11 April 2018
Condition 3.3	Monthly EM&A Report for April 2018	11 May 2018
Condition 3.3	Monthly EM&A Report for May 2018	11 June 2018
Condition 3.3	Monthly EM&A Report for June 2018	11 July 2018

EP Condition	Submission	Submission Date/ Status
Condition 3.3	Monthly EM&A Report for July 2018	11 August 2018
Condition 3.3	Monthly EM&A Report for August 2018	11 September 2018
Condition 3.3	Monthly EM&A Report for September 2018	11 October 2018
Condition 3.3	Monthly EM&A Report for October 2018	9 November 2018
Condition 3.3	Monthly EM&A Report for November 2018	11 December 2018
Condition 3.3	Monthly EM&A Report for December 2018	9 January 2019
Condition 3.3	Monthly EM&A Report for January 2019	12 February 2019
Condition 3.3	Monthly EM&A Report for February 2019	11 March 2019
Condition 3.3	Monthly EM&A Report for March 2019	11 April 2019
Condition 3.3	Monthly EM&A Report for April 2019	10 May 2019
Condition 3.3	Monthly EM&A Report for May 2019	11 June 2019
Condition 3.3	Monthly EM&A Report for June 2019	11 July 2019
Condition 3.3	Monthly EM&A Report for July 2019	12 August 2019
Condition 3.3	Monthly EM&A Report for August 2019	12 September 2019
Condition 3.3	Monthly EM&A Report for September 2019	11 October 2019
Condition 3.3	Monthly EM&A Report for October 2019	13 November 2019
Condition 3.3	Monthly EM&A Report for November 2019	13 December 2019
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Condition 3.3	Monthly EM&A Report for February 2020	13 March 2020
Condition 3.3	Monthly EM&A Report for March 2020	9 April 2020
Condition 3.3	Monthly EM&A Report for April 2020	13 May 2020
Condition 3.3	Monthly EM&A Report for May 2020	13 June 2020
Condition 3.3	Monthly EM&A Report for June 2020	13 July 2020
Condition 3.3	Monthly EM&A Report for July 2020	14 August 2020
Condition 3.3	Monthly EM&A Report for August 2020	14 September 2020
Condition 3.3	Monthly EM&A Report for September 2020	14 October 2020
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Condition 3.3	Monthly EM&A Report for November 2020	11 December 2020
Condition 3.3	Monthly EM&A Report for December 2020	11 January 2021
Condition 3.3	Monthly EM&A Report for January 2021	10 February 2021
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Condition 3.3	Monthly EM&A Report for March 2021	13 April 2021
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Condition 3.3	Monthly EM&A Report for June 2021	12 July 2021
Condition 3.3	Monthly EM&A Report for July 2021	12 August 2021
Condition 3.3	Monthly EM&A Report for August 2021	14 September 2021
Condition 3.3	Monthly EM&A Report for September 2021	12 October 2021

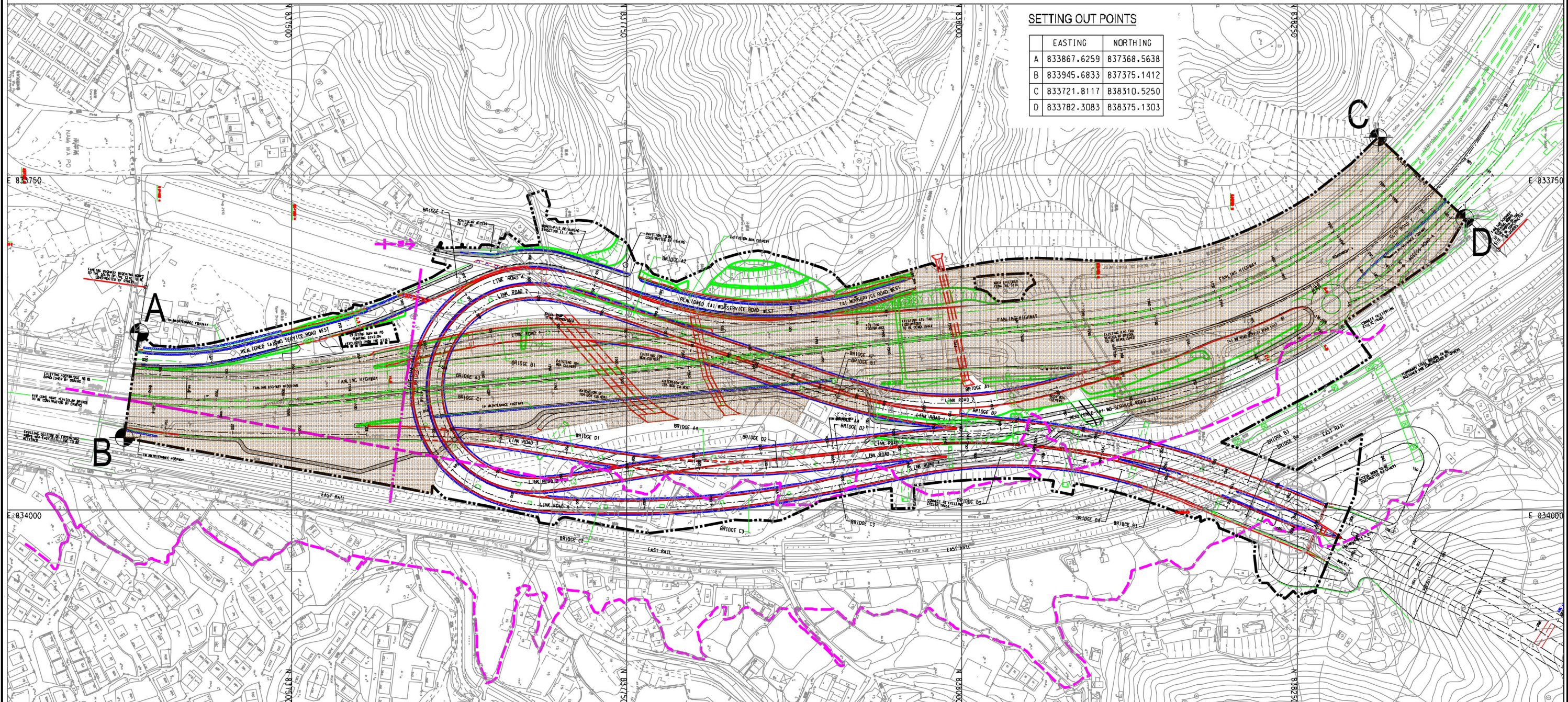
Notes:

- According to EP/324/E condition 4.1 & 4.2, electronic copies in Hyper Text Markup Language (HTML) and Portable Document Format (PDF) of EM&A Manual, Baseline Monitoring Report and Monthly EM&A Report from 5 Nov 2013 to 30 Sep 2021 were uploaded to the below Internet Website (<http://www.tolohighway-ema.com/Stage2/index2.htm>).
- For the EP/324/E condition 4.3, 1hrTSP, 24hr TSP and noise monitoring data, project profile of this project, the EIA report, environmental permits and all EM&A data and report from Nov 2013 to Sep 2021 were uploaded to the following website (<http://www.tolohighway-ema.com/Stage2/index2.htm>).

16 CONCLUSIONS

- 16.1.1 The EM&A programme were carried out by the ET in accordance with the EM&A Manual requirements. It is concluded from the environmental monitoring and audit works that adequate environmental mitigation measures have been implemented by the civil works contractors where appropriate in the construction period.
- 16.1.2 In the construction period, a total of 50 exceedance events were recorded in the reporting period. Two exceedances of Limit Level on Turbidity & Suspended Solids were recorded on 18 December 2013 and the exceedance event on 18 December 2013 on both Suspended Solids and Turbidity were considered related to a leakage of the diverted river through the concrete blocks. Necessary remedy actions have been completed and the investigation reports for the incidents are presented in **Appendix L**. The most of remaining exceedances of Action level on 24 hr TSP. Such works mainly involved excavation of the earth materials, handling and moving of earth materials to cause considerable suspended particulates impact and also the HVS is located closed to roadside, the vehicles may cause disturbance to the nearby open excavation sites, generate dust impact and affect the TSP results recorded by the HVS.
- 16.1.3 A total 3 of environmental complaint was received, which was concluded that it was unlikely due to the construction works of this Project after investigations were received. No environmental related prosecution or notification of summons was received in the construction period. No environmental complaint was received in the construction period. The cumulative statistics are provided in **Appendix K**.

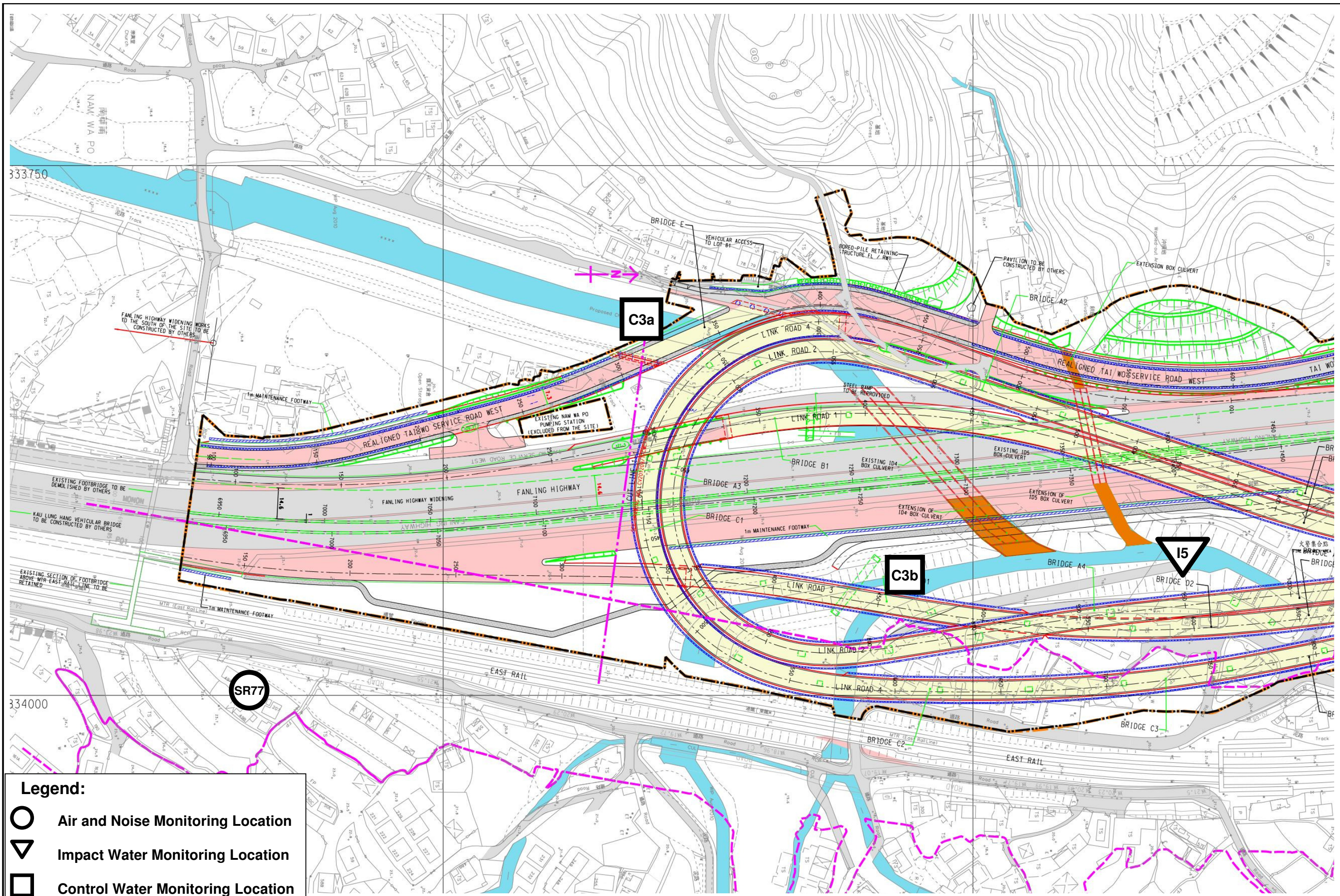
Figures



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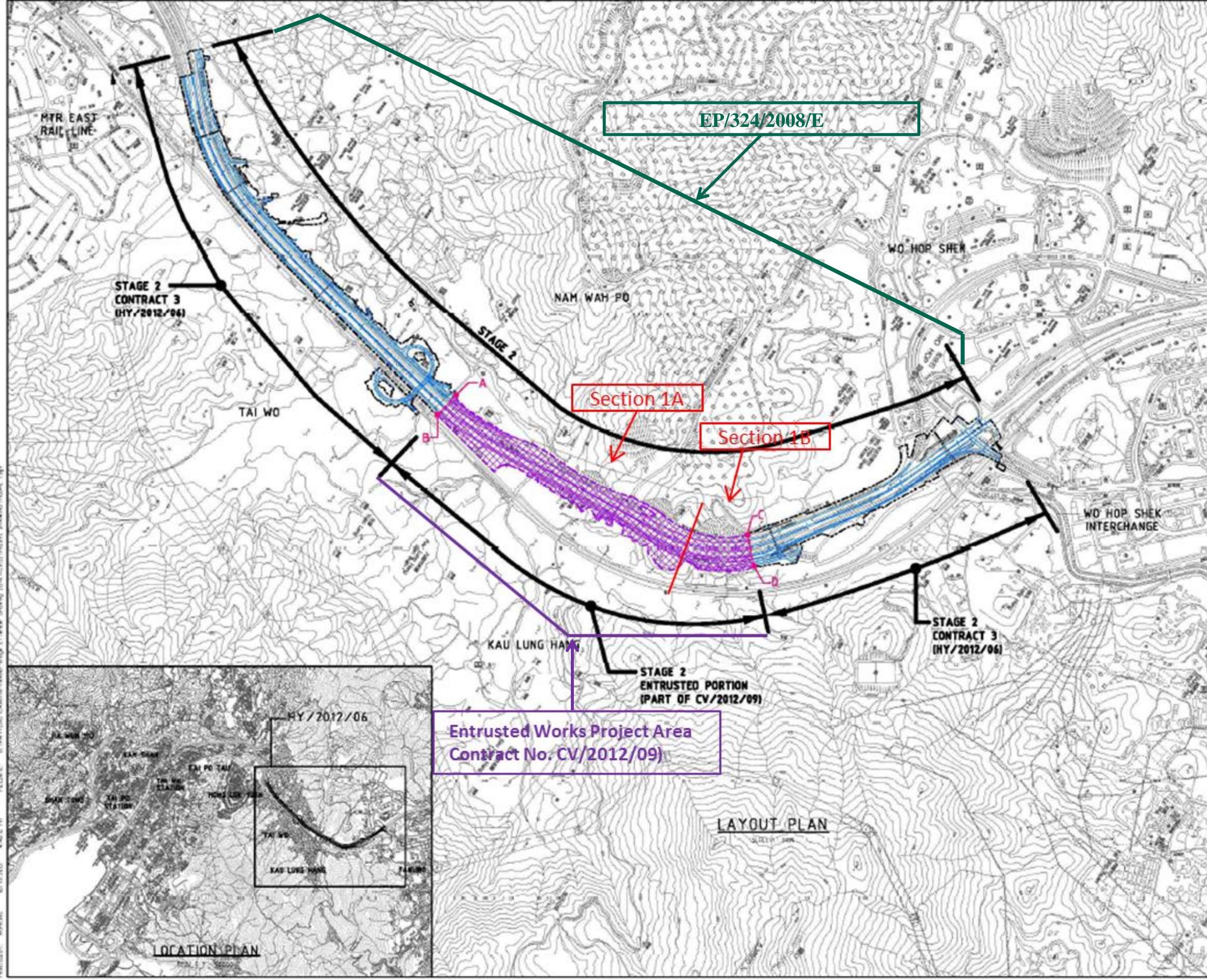
Legend:

 Works Area for Entrusted Portion



- Legend:**
- Air and Noise Monitoring Location
 - ▽ Impact Water Monitoring Location
 - Control Water Monitoring Location

Figure 2: Environmental Monitoring Locations



LEGEND:

- PROPOSED WORKS LIMIT
- ALL WORKS WITHIN THE HATCHED AREA (ABED) TO BE CONSTRUCTED BY OTHERS

SETTING OUT POINTS

	EASTING	NORTHING
A	833867.6259	837386.5638
B	833945.6833	837375.1412
C	833721.8117	838310.5250
D	833782.3063	838375.1303

NO.	NAME	DESIGN	DATE	SCALE
1	K. CHAN	DESIGN		
2	P. LI	CHECK		
3	I. DEERY	DESIGN		
4		CHECK		

HYDER ARUP BLACK & VEATCH

HIGHWAYS DEPARTMENT
ROADS PROJECT MANAGEMENT OFFICE

Widening of Fanling Highway
- Tai Hang to Wo Hop Shek Interchange

CONTRACT NO HY/2012/06

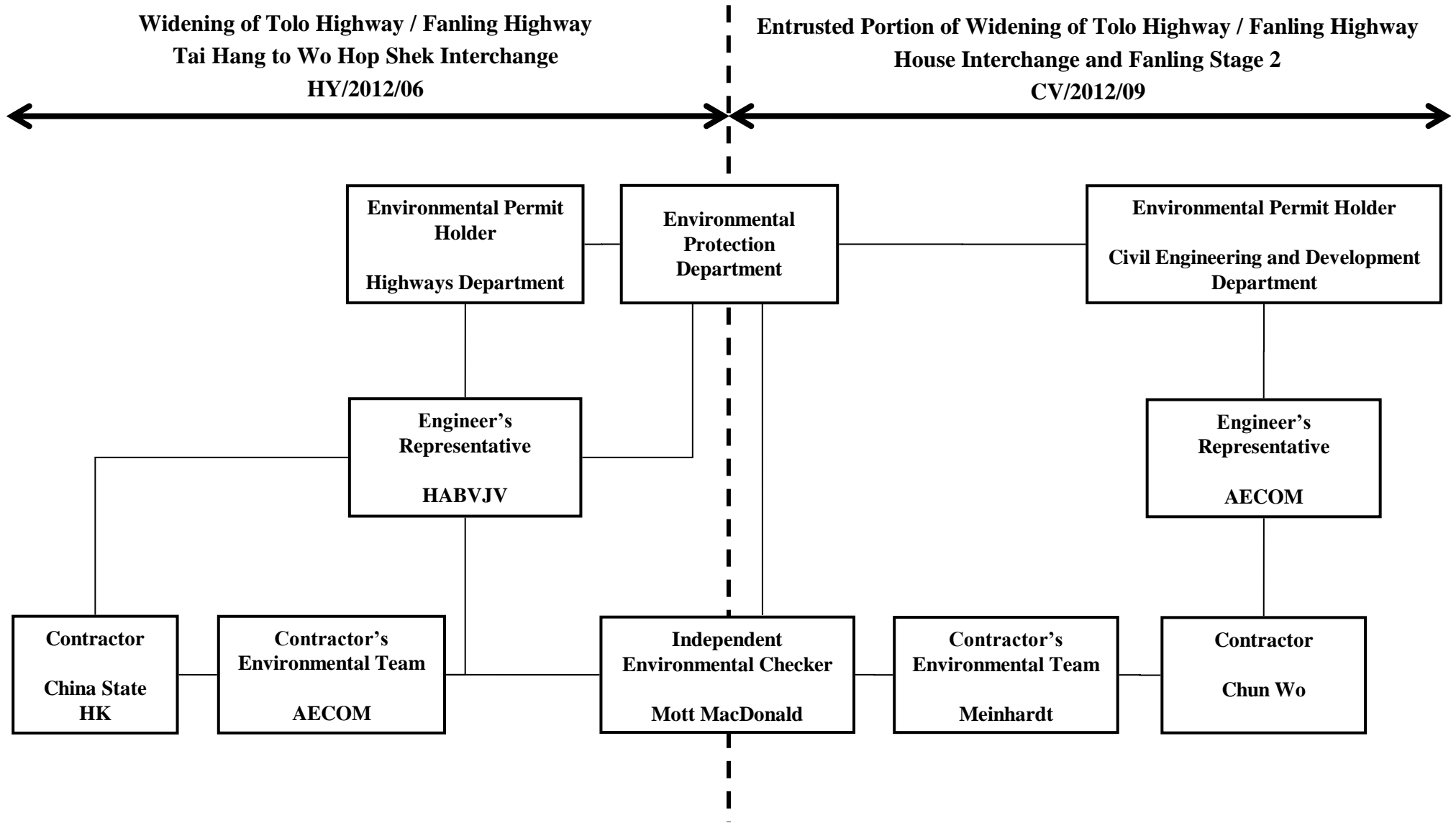
LAYOUT PLAN

Appendix A-2

Appendix A Construction Programme

Appendix B

Project Organization Structure



Appendix C

Summary of Metrological Condition

Extracted from HKO

Year 2019

In Hong Kong, with eleven out of the twelve months warmer than usual, 2019 was the warmest year since records began in 1884 with an annual mean temperature of 24.5 degrees, 1.2 degrees above the 1981-2010 normal (or 1.5 degrees above the 1961-1990 normal). The annual mean maximum temperature of 27.1 degrees and annual mean minimum temperature of 22.6 degrees were also the highest on record. In particular, the mean temperatures for winter (December 2018 to February 2019) and autumn (September to November 2019) respectively reached 19.1 degrees and 26.1 degrees, both ranking the highest on record. The highest temperature recorded at the Hong Kong Observatory in the year was 35.1 degrees on 9 August, the fourteenth highest on record. There were 46 Hot Nights and 33 Very Hot Days in Hong Kong in 2019, ranking the highest and one of the fourth highest on record respectively. The lowest temperature recorded at the Hong Kong Observatory in the year was 11.4 degrees on 1 January, the highest annual absolute minimum temperature on record. There was only one Cold Day^[4] in the year, which is 16.1 days less than the 1981-2010 normal and the fewest annual number of Cold Days since 1884.

Year 2020 (Jan to Oct)

With the northeast monsoon over southern China generally weaker than normal for most of the time in the month, January 2020 was much warmer than usual. The mean maximum temperature of 21.2 degrees and mean temperature of 18.6 degrees were respectively 2.6 degrees and 2.3 degrees above their corresponding normals and both were the highest on record for January. The mean minimum temperature of 16.8 degrees was 2.3 degrees above the normal and one of the second highest on record for January. The month was also drier than usual with 14.8 millimetres of rainfall recorded in the month, about 60 percent of the normal figure of 24.7 millimetres.

February 2020 was much warmer than usual. The monthly mean maximum temperature was 21.4 degrees, 2.5 degrees above the normal figure of 18.9 degrees and the sixth highest on record for February. The monthly mean temperature of 18.5 degrees and mean minimum temperature of 16.6 degrees were respectively 1.7 degrees and 1.6 degrees above their corresponding normal figures. Both were one of the eighth highest on record for February. Moreover, the winter from December 2019 to February 2020 was exceptionally warm in Hong Kong. The mean maximum temperature of 21.5 degrees was the highest on record for the same period. The mean temperature of 18.7 degrees and mean minimum temperature of 16.8 degrees were both the second highest on record for the same period. February 2020 was also wetter than normal with the monthly rainfall of 79.8 millimetres, about 47 percent above the normal of 54.4 millimetres. The accumulated rainfall recorded in the first two months of the year was 94.6 millimetres, about 20 percent above the normal figure of 79.1 millimetres for the same period.

With the northeast monsoon over southern China generally weaker than normal for most of the time in the month, March 2020 continued to be much warmer than usual in Hong Kong. The monthly mean temperature of 21.3 degrees and mean minimum temperature of 19.7 degrees were respectively 2.2 degrees and 2.5 degrees above their corresponding

normal figures and both were one of the second highest on record for March. The monthly mean maximum temperature was 23.8 degrees, 2.4 degrees above the normal figure and the fifth highest on record for March. The month was also drier than usual with a total rainfall of 41.3 millimetres, about half of the normal figure of 82.2 millimetres. The accumulated rainfall recorded in the first three months of the year was 135.9 millimetres, about 16 percent below the normal figure of 161.3 millimetres for the same period

Mainly attributing to the stronger than usual northeast monsoon over southern China, April 2020 was slightly cooler than usual with the mean temperature of 22.0 degrees, 0.6 degree below the normal figure of 22.6 degrees. With weaker southerlies and less moisture in the lower atmosphere over southern China, the month was also drier than usual in Hong Kong. The total rainfall in the month was 77.8 millimetres, about 55 percent below the normal figure of 174.7 millimetres. The accumulated rainfall recorded in the first four months of the year was 213.7 millimetres, about 36 percent below the normal figure of 336.1 millimetres for the same period.

May 2020 was characterized by generally fine and hot weather during the first part of the month and unsettled weather with outbreaks of heavy showers in the latter part. Overall, the month was much hotter than usual. The monthly mean minimum temperature was 25.9 degrees, 1.8 degrees above the normal figure and one of the second highest on record for May. The monthly mean temperature of 27.7 degrees and mean maximum temperature of 30.4 degrees were respectively 1.8 degrees and 2.0 degrees above their corresponding normal figures and both were the fifth highest on record for May. Moreover, the spring of this year from March to May was exceptionally warm. The mean minimum temperature of 21.9 degrees, mean temperature of 23.7 degrees and mean maximum temperature of 26.4 degrees were respectively the fourth, fifth and sixth highest on record for the same period. May 2020 was also wetter than usual. The monthly rainfall was 352.5 millimetres, about 16 percent above the normal figure of 304.7 millimetres. The accumulated rainfall recorded in the first five months of the year was 566.2 millimetres, about 12 percent below the normal figure of 640.8 millimetres for the same period.

June 2020 was much hotter than usual in Hong Kong. The monthly mean minimum temperature was 27.8 degrees, 1.6 degrees above the normal figure and the highest on record for June. The monthly mean temperature and monthly mean maximum temperature were 29.6 degrees and 32.3 degrees respectively, both were the second highest on record for June. With a total of 18 hot nights, June 2020 was on par with July 1993 as one of the highest record of number of hot nights in a month. The 12 consecutive hot nights that started from 19 June also set a new record for June. Moreover, the first half of this year was exceptionally warm. The mean maximum temperature of 25.7 degrees and mean temperature of 23.0 degrees were both the highest on record for the same period. The mean minimum temperature of 21.1 degrees was the third highest on record for the same period. June 2020 was also marked by sunny weather with the monthly total sunshine duration amounting to 192.5 hours, about 32 percent above the

normal of 146.1 hours. Despite the heavy rain episode on 6 – 8 June, the monthly total rainfall was only 397.2 millimetres, about 13 percent below the normal figure of 456.1 millimetres. The accumulated rainfall for the first half of the year of 963.4 millimetres was about 12 percent below the normal figure of 1096.9 millimetres.

July 2020 became the hottest month in Hong Kong since records began in 1884. The monthly mean maximum temperature of 33.3 degrees, monthly mean temperature of 30.2 degrees and monthly mean minimum temperature of 28.3 degrees were 1.9 degrees, 1.4 degrees and 1.5 degrees above their corresponding normals and all of them were the highest of the correspondingly monthly mean values on record. With a total of 21 hot nights, July 2020 was the month with the highest number of hot nights on record and the 11 consecutive hot nights that started from 5 July also set a new record for July. Moreover, there were 20 very hot days in the month, the highest number of very hot days in a month on record. With long spell sunny weather, the month was also much drier than usual. The total monthly rainfall was only 125.4 millimetres, about 33 percent of the normal figure of 376.5 millimetres. The accumulated rainfall for the first seven months of the year was 1088.8 millimetres, about 26 percent below the normal figure of 1473.3 millimetres.

August 2020 was hotter than usual in Hong Kong. The monthly mean temperature of 29.0 degrees was 0.4 degree above the normal figure of 28.6 degrees. Together with the extremely high temperature weather in June and July, Hong Kong experienced the hottest summer on record from June to August 2020. The mean temperature of 29.6 degrees, mean minimum temperature of 27.7 degrees and mean maximum temperature of 32.6 degrees for June to August 2020 were all the highest on record for the same period. There were 16 very hot days in August 2020, the highest number of very hot days on record for August. Moreover, from January to August, the annual number of very hot days in 2020 already reached 43, which is 32.8 days above the annual normal and broke the previous highest record of 38 days set in 2016. The number of hot nights up to August 2020 also reached 46, on par with the highest record in 2019. The monthly rainfall was 448.4 millimetres, about 4 percent above the normal figure of 432.2 millimetres. The accumulated rainfall recorded in the first eight months of the year was 1537.2 millimetres, about 19 percent below the normal figure of 1905.5 millimetres for the same period.

September 2020 was hotter than usual in Hong Kong. The monthly mean temperature of 28.4 degrees was 0.7 degree above the normal figure of 27.7 degrees. With more than usual low-level moisture supply from the south over southern China, the month was also much cloudier and wetter than usual. The monthly total rainfall was 708.8 millimetres, about 116 percent above the normal figure of 327.6 millimetres and the sixth highest on record for September. The mean amount of cloud in the month was 78 percent, 12 percent above the normal of 66 percent and one of the third highest on record for September. The

duration of bright sunshine in the month was only 131.3 hours, about 24 percent lower than the normal figure of 172.3 hours and the fifth lowest on record for September. The accumulated rainfall up to September this year was 2246.0 millimetres, slightly more than the normal figure of 2233.1 millimetres for the same period.

The mean temperature for October 2020 was 25.6 degrees, close to the normal figure of 25.5 degrees. Mainly attributing to the heavy downpour on 5 October, the month was wetter than usual with the monthly rainfall of 142.4 millimeters, about 41 percent above the normal of 100.9 millimetres. The accumulated rainfall this year up to October was 2388.4 millimetres, about 2 percent above the normal figure of 2334.0 millimetres for the same period.

Appendix D

Air Quality Monitoring Results and their Graphical Presentation

Appendix D
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	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	Remarks*
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate							
5-Nov-13	Cloudy	026046	2.7344	2.8817	0.1473	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	70.8	170.3	260.0	<5	N	NA
11-Nov-13	Cloudy	026047	2.7294	2.8564	0.1270	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	61.1	170.3	260.0	<5	N	NA
16-Nov-13	Fine	205789	2.7214	3.1790	0.4576	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	220.0	170.3	260.0	<5	N	Exceedances was project non-related.
22-Nov-13	Fine	205791	2.7471	3.1275	0.3804	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	182.9	170.3	260.0	<5	N	Exceedances was project non-related.
28-Nov-13	Fine	205792	2.5360	3.1228	0.5868	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	282.2	170.3	260.0	<5	N	Exceedances was project non-related.
4-Dec-13	Fine	205793	2.7256	3.1940	0.4684	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	225.2	170.3	260.0	<5	N	Exceedances was project non-related.
10-Dec-13	Fine	205794	2.5920	3.3377	0.7457	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	358.6	170.3	260.0	<5	N	Exceedances was project non-related.
16-Dec-13	Rainy	205831	2.7374	2.7867	0.0493	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	23.7	170.3	260.0	<5	N	NA
21-Dec-13	Fine	205832	2.7435	3.1737	0.4302	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	206.9	170.3	260.0	<5	N	Exceedances was project non-related.
27-Dec-13	Sunny	205833	2.7321	3.2491	0.5170	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	248.6	170.3	260.0	<5	N	Exceedances was project non-related.
2-Jan-14	Sunny	205834	2.6667	3.0836	0.4169	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	200.5	170.3	260.0	<5	N	Exceedances was project non-related.
8-Jan-14	Fine	205904	2.8976	3.3749	0.4773	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	229.5	170.3	260.0	<5	N	Exceedances was project non-related.
14-Jan-14	Fine	205835	2.7456	3.1824	0.4368	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	210.0	170.3	260.0	<5	N	Exceedances was project non-related.
20-Jan-14	Fine	205836	2.7541	3.4253	0.6712	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	322.8	170.3	260.0	<5	N	Exceedances was project non-related.
25-Jan-14	Sunny	205837	2.7496	3.1072	0.3576	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	172.0	170.3	260.0	<5	N	Exceedances was project non-related.
30-Jan-14	Fine	205838	2.7561	3.1216	0.3655	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	175.8	170.3	260.0	<5	N	Exceedances was project non-related.
5-Feb-14	Fine	205839	2.7351	2.8805	0.1454	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	69.9	170.3	260.0	<5	N	NA
11-Feb-14	Cloudy	205840	2.7582	3.0589	0.3007	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	144.6	170.3	260.0	<5	N	NA
17-Feb-14	Fine	205907	2.9323	3.2644	0.3321	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	159.7	170.3	260.0	<5	N	NA
22-Feb-14	Fine	1	2.6884	3.0733	0.3849	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	185.1	170.3	260.0	<5	N	Exceedances was project non-related.
28-Feb-14	Fine	2	2.6782	3.1388	0.4606	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	221.5	170.3	260.0	<5	N	Exceedances was project non-related.
6-Mar-14	Cloudy	3	2.7216	3.0258	0.3042	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	146.3	170.3	260.0	<5	N	NA
12-Mar-14	Cloudy	6	2.7007	3.0468	0.3461	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	166.4	170.3	260.0	<5	N	NA
18-Mar-14	Fine	7	2.7102	2.9790	0.2688	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	129.3	170.3	260.0	<5	N	NA
24-Mar-14	Fine	8	2.6925	3.0836	0.3911	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	188.1	170.3	260.0	<5	N	Exceedances was project non-related.
29-Mar-14	Rainy	9	2.6958	2.8354	0.1396	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	67.1	170.3	260.0	<5	N	NA
4-Apr-14	Cloudy	10	2.6869	2.8690	0.1821	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	87.6	170.3	260.0	<5	N	NA
10-Apr-14	Fine	11	2.6915	2.9070	0.2155	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.6	170.3	260.0	<5	N	NA
16-Apr-14	Sunny	12	2.7313	3.0336	0.3023	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	145.4	170.3	260.0	<5	N	NA
22-Apr-14	Sunny	13	2.7088	2.9072	0.1984	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	95.4	170.3	260.0	<5	N	NA
28-Apr-14	Sunny	14	2.6694	2.8877	0.2183	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	105.0	170.3	260.0	<5	N	NA
3-May-14	Fine	15	2.7172	3.0659	0.3487	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	167.7	170.3	260.0	<5	N	NA
9-May-14	Rainy	21	2.7012	2.7317	0.0305	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	14.7	170.3	260.0	<5	N	NA
15-May-14	Cloudy	212	2.7112	2.9339	0.2227	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	107.1	170.3	260.0	<5	N	NA
21-May-14	Rainy	22	2.7506	2.8765	0.1259	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	60.5	170.3	260.0	<5	N	NA
27-May-14	Fine	23	2.7061	3.1128	0.4067	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	195.6	170.3	260.0	<5	N	Exceedances was project non-related.
31-May-14	Fine	24	2.6975	2.9550	0.2575	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	123.8	170.3	260.0	<5	N	NA
6-Jun-14	Cloudy	41	2.6798	2.8375	0.1577	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	75.8	170.3	260.0	<5	N	NA
12-Jun-14	Fine	50	2.6908	2.9028	0.2120	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	101.9	170.3	260.0	<5	N	NA
18-Jun-14	Cloudy	44	2.7198	2.8389	0.1191	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	57.3	170.3	260.0	<5	N	NA
24-Jun-14	Rainy	46	2.6996	2.7792	0.0796	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	38.3	170.3	260.0	<5	N	NA
30-Jun-14	Rainy	47	2.7035	2.7728	0.0693	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	33.3	170.3	260.0	<5	N	NA
5-Jul-14	Rainy	50	2.7048	2.8380	0.1332	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	64.1	170.3	260.0	<5	N	NA
11-Jul-14	Fine	51	2.7072	2.8157	0.1085	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	52.2	170.3	260.0	<5	N	NA
17-Jul-14	Fine	53	2.7005	2.8421	0.1416	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.1	170.3	260.0	<5	N	NA
23-Jul-14	Fine	57	2.6795	3.5157	0.8362	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	402.1	170.3	260.0	<5	N	Exceedances was project non-related.
29-Jul-14	Fine	59	2.6703	2.8783	0.1710	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	82.2	170.3	260.0	<5	N	NA
4-Aug-14	Sunny	72	2.6718	2.8402	0.1684	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	81.0	170.3	260.0	<5	N	NA
9-Aug-14	Fine	62	2.7200	2.9037	0.1837	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.3	170.3	260.0	<5	N	NA
15-Aug-14	Fine	64	2.7060	2.8683	0.1623	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	78.0	170.3	260.0	<5	N	NA
21-Aug-14	Fine	69	2.6983	2.8733	0.1750	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	84.2	170.3	260.0	<5	N	NA
27-Aug-14	Sunny	68	2.6756	2.8903	0.2147	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.2	170.3	260.0	<5	N	NA
2-Sep-14	Fine	66	2.7036	3.1984	0.4948	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	237.9	170.3	260.0	<5	N	Exceedances was project non-related.
8-Sep-14	Sunny	85	2.7183	2.8161	0.0978	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	47.0	170.3	260.0	<5	N	NA
13-Sep-14	Sunny	84	2.7229	2.8078	0.0849	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	40.8	170.3	260.0	<5	N	NA
19-Sep-14	Fine	87	2.7231	3.1784	0.4553	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	218.9	170.3	260.0	<5	N	Exceedances was project non-related.
25-Sep-14	Sunny	89	2.7889	3.0289	0.2400	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	115.4	170.3	260.0	<5	N	NA
30-Sep-14	Fine	91	2.7064	2.9570	0.2506	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	120.5	170.3	260.0	<5	N	NA
6-Oct-14	Fine	93																			

Appendix D
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	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	Remarks*
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate							
22-Jan-15	Fine	B8	2.7922	2.8423	0.1501	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	72.2	170.3	260.0	<5	N	NA
28-Jan-15	Fine	B7	2.7973	2.9697	0.1724	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	82.9	170.3	260.0	<5	N	NA
3-Feb-15	Fine	B31	2.7855	3.0177	0.2322	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	111.7	170.3	260.0	<5	N	NA
9-Feb-15	Fine	B32	2.7691	3.0114	0.2423	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	116.5	170.3	260.0	<5	N	NA
14-Feb-15	Fine	B18	2.8089	3.0760	0.2671	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	128.4	170.3	260.0	<5	N	NA
17-Feb-15	Cloudy	B19	2.8076	2.9909	0.1833	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.1	170.3	260.0	<5	N	NA
24-Feb-15	Cloudy	B35	2.8219	3.0347	0.2128	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	102.3	170.3	260.0	<5	N	NA
2-Mar-15	Cloudy	B34	2.8219	2.9347	0.1128	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	54.2	170.3	260.0	<5	N	NA
7-Mar-15	Cloudy	B37	2.8120	2.9511	0.1391	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	66.9	170.3	260.0	<5	N	NA
13-Mar-15	Fine	B39	2.7991	3.0880	0.2889	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	138.9	170.3	260.0	<5	N	NA
19-Mar-15	Fine	B41	2.8002	3.0637	0.2635	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	126.7	170.3	260.0	<5	N	NA
25-Mar-15	Cloudy	B43	2.7841	2.9911	0.2070	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	99.5	170.3	260.0	<5	N	NA
31-Mar-15	Sunny	B65	2.8170	2.9321	0.1151	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	55.3	170.3	260.0	<5	N	NA
8-Apr-15	Rainy	B67	2.8111	3.0118	0.2007	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	96.5	170.3	260.0	<5	N	NA
14-Apr-15	Fine	B69	2.8093	2.9508	0.1415	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.0	170.3	260.0	<5	N	NA
20-Apr-15	Cloudy	B60	2.8015	2.9910	0.1895	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	91.1	170.3	260.0	<5	N	NA
25-Apr-15	Fine	B62	2.8018	3.0129	0.2111	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	101.5	170.3	260.0	<5	N	NA
30-Apr-15	Fine	B64	2.7936	3.0513	0.2577	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	123.9	170.3	260.0	<5	N	NA
6-May-15	Fine	B82	2.8026	3.0111	0.2085	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	100.3	170.3	260.0	<5	N	NA
12-May-15	Fine	B84	2.8111	3.1060	0.2949	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	141.8	170.3	260.0	<5	N	NA
18-May-15	Rainy	B86	2.7942	2.9001	0.1059	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	50.9	170.3	260.0	<5	N	NA
23-May-15	Rainy	B88	2.8311	2.9271	0.0960	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	46.2	170.3	260.0	<5	N	NA
29-May-15	Fine	B90	2.8238	2.9894	0.1656	0.00	24.00	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	79.6	170.3	260.0	<5	N	NA
4-Jun-15	Fine	B92	2.8016	3.0071	0.2055	3243.80	3267.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	98.8	170.3	260.0	<5	N	NA
10-Jun-15	Fine	B94	2.7811	3.0894	0.3083	3270.80	3294.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	148.3	170.3	260.0	<5	N	NA
16-Jun-15	Fine	B96	2.8004	3.0890	0.2886	3297.80	3321.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	138.8	170.3	260.0	<5	N	NA
22-Jun-15	Rainy	B98	2.8211	3.0080	0.1869	3324.80	3348.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	89.9	170.3	260.0	<5	N	NA
27-Jun-15	Fine	B100	2.8226	3.0061	0.1835	3351.80	3375.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.2	170.3	260.0	<5	N	NA
3-Jul-15	Fine	B102	2.8212	3.0193	0.1981	3378.80	3402.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	95.3	170.3	260.0	<5	N	NA
9-Jul-15	Rainy	B104	2.8164	3.0063	0.1899	3405.80	3429.80	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	91.3	170.3	260.0	<5	N	NA
15-Jul-15	Sunny	B106	2.8206	2.9081	0.0875	3442.67	3466.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	42.1	170.3	260.0	<5	N	NA
21-Jul-15	Rainy	B108	2.8131	2.9036	0.0905	3469.67	3493.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	43.5	170.3	260.0	<5	N	NA
27-Jul-15	Sunny	C11	2.7974	2.9401	0.1427	3496.67	3520.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.6	170.3	260.0	<5	N	NA
1-Aug-15	Sunny	C13	2.7791	2.9010	0.1219	3523.67	3547.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	58.6	170.3	260.0	<5	N	NA
7-Aug-15	Sunny	C15	2.7864	2.9105	0.1241	3550.67	3574.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	59.7	170.3	260.0	<5	N	NA
13-Aug-15	Cloudy	C17	2.7866	2.8756	0.0890	3577.67	3601.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	42.8	170.3	260.0	<5	N	NA
19-Aug-15	Sunny	C19	2.8097	2.9219	0.1122	3604.67	3628.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	54.0	170.3	260.0	<5	N	NA
25-Aug-15	Sunny	C21	2.7797	2.9987	0.2190	3631.67	3655.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	105.3	170.3	260.0	<5	N	NA
31-Aug-15	Cloudy	C23	2.9073	3.0880	0.1807	3658.67	3682.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	86.9	170.3	260.0	<5	N	NA
5-Sep-15	Sunny	C25	2.8059	3.0090	0.2031	3685.67	3709.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	97.7	170.3	260.0	<5	N	NA
11-Sep-15	Sunny	C27	2.8112	3.0207	0.2095	3712.67	3736.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	100.7	170.3	260.0	<5	N	NA
17-Sep-15	Sunny	C29	2.7911	3.0111	0.2200	3739.67	3763.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	105.8	170.3	260.0	<5	N	NA
23-Sep-15	Sunny	C31	2.8004	3.0189	0.2185	3766.67	3790.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	105.1	170.3	260.0	<5	N	NA
29-Sep-15	Sunny	C33	2.8055	3.0212	0.2157	3793.67	3817.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.7	170.3	260.0	<5	N	NA
5-Oct-15	Rainy	C35	2.7998	3.0091	0.2093	3820.67	3844.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	100.6	170.3	260.0	<5	N	NA
10-Oct-15	Sunny	C37	2.8525	2.9801	0.1276	3847.67	3871.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	61.4	170.3	260.0	<5	N	NA
16-Oct-15	Sunny	C39	2.9101	3.0880	0.1779	3874.67	3898.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	85.5	170.3	260.0	<5	N	NA
22-Oct-15	Sunny	C41	2.9102	3.0704	0.1602	3901.67	3925.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	77.0	170.3	260.0	<5	N	NA
28-Oct-15	Sunny	C43	2.8786	3.0851	0.2065	3928.67	3952.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	99.3	170.3	260.0	<5	N	NA
3-Nov-15	Sunny	C45	2.8536	3.0312	0.1776	3955.67	3979.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	85.4	170.3	260.0	<5	N	NA
9-Nov-15	Sunny	C47	2.8249	3.0149	0.1900	3982.67	4006.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	91.4	170.3	260.0	<5	N	NA
14-Nov-15	Sunny	C49	2.8308	2.9677	0.1369	4009.67	4033.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	65.8	170.3	260.0	<5	N	NA
20-Nov-15	Sunny	C51	2.8297	2.9801	0.1504	4036.67	4060.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	72.3	170.3	260.0	<5	N	NA
26-Nov-15	Sunny	C53	2.8091	2.9342	0.1251	4063.67	4087.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	60.2	170.3	260.0	<5	N	NA
2-Dec-15	Fine	C134	2.8113	2.9383	0.1270	4090.67	4114.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	61.1	170.3	260.0	<5	N	NA
8-Dec-15	Fine	C136	2.8206	2.9561	0.1355	4117.67	4141.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	65.2	170.3	260.0	<5	N	NA
14-Dec-15	Cloudy	C138	2.8111	2.9542	0.1431	4144.67	4168.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.8	170.3	260.0	<5	N	NA
19-Dec-15	Sunny	C140	2.8013	2.9862	0.1849	4171.67	4195.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.9	170.3	260.0	<5	N	NA
24-Dec-15	Sunny	C142	2.8005	3.0887	0.																

Appendix D
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

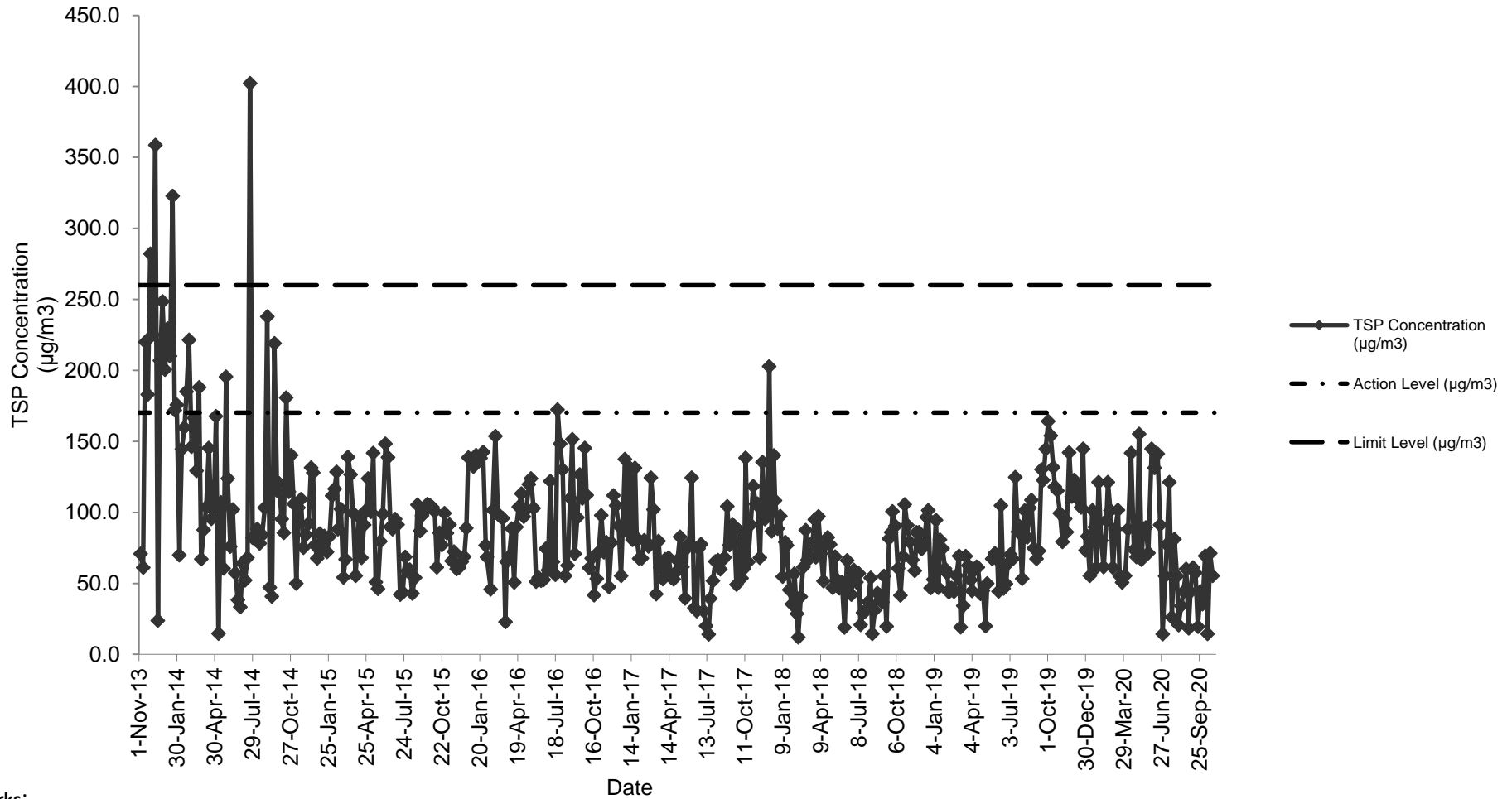
Sampling Date	Weather Condition	Paper No.	Wt. of paper (g)			Elapse Time			Flow Rate (CFM)			Flow Rate (m ³ /min)			Total Volume (m ³)	TSP Concentration (µg/m ³)	Action Level (µg/m ³)	Limit Level (µg/m ³)	Wind speed m/s	Wind direction	Remarks*
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate							
28-Apr-16	Fine	C184	2.8314	3.0668	0.2354	4792.67	4816.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	113.2	170.3	260.0	<5	N	NA
4-May-16	Sunny	C186	2.8361	3.0376	0.2015	4819.67	4843.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	96.9	170.3	260.0	<5	N	NA
10-May-16	Rainy	C188	2.8169	3.0288	0.2119	4846.67	4870.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	101.9	170.3	260.0	<5	N	NA
16-May-16	Sunny	C190	2.8311	3.0801	0.2490	4873.67	4897.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	119.7	170.3	260.0	<5	N	NA
21-May-16	Sunny	C192	2.7936	3.0511	0.2575	4900.67	4924.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	123.8	170.3	260.0	<5	N	NA
27-May-16	Cloudy	C194	2.7982	3.0123	0.2141	4927.67	4951.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	103.0	170.3	260.0	<5	N	NA
2-Jun-16	Sunny	196	2.7699	2.8763	0.1064	4819.67	4843.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	51.2	170.3	260.0	<5	N	NA
8-Jun-16	Sunny	198	2.7741	2.8863	0.1122	4846.67	4870.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	54.0	170.3	260.0	<5	N	NA
14-Jun-16	Cloudy	200	2.7839	2.8919	0.1080	4873.67	4897.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	51.9	170.3	260.0	<5	N	NA
20-Jun-16	Sunny	202	2.7754	2.8846	0.1092	4900.67	4924.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	52.5	170.3	260.0	<5	N	NA
25-Jun-16	Sunny	204	2.7900	2.9446	0.1546	4927.67	4951.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	74.3	170.3	260.0	<5	N	NA
30-Jun-16	Sunny	206	2.7794	2.9026	0.1232	4954.67	4978.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	59.2	170.3	260.0	<5	N	NA
6-Jul-16	Cloudy	208	2.7836	3.0371	0.2535	4981.67	5005.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	121.9	170.3	260.0	<5	N	NA
12-Jul-16	Cloudy	210	2.7744	2.9102	0.1358	5008.67	5032.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	65.3	170.3	260.0	<5	N	NA
18-Jul-16	Cloudy	212	2.8308	2.9474	0.1166	5035.67	5059.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	56.1	170.3	260.0	<5	N	NA
23-Jul-16	Sunny	214	2.8593	3.2177	0.3584	5062.67	5086.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	172.3	170.3	260.0	<5	N	Exceedances was project non- related.
29-Jul-16	Sunny	216	2.8346	3.1431	0.3085	5089.67	5113.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	148.3	170.3	260.0	<5	N	NA
4-Aug-16	Rainy	218	2.7565	3.0271	0.2706	5116.67	5140.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	130.1	170.3	260.0	<5	N	NA
10-Aug-16	Rainy	220	2.8429	2.9579	0.1150	5143.67	5167.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	55.3	170.3	260.0	<5	N	NA
16-Aug-16	Rainy	222	2.8216	2.9516	0.1300	5170.67	5194.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	62.5	170.3	260.0	<5	N	NA
22-Aug-16	Sunny	224	2.8165	3.0451	0.2286	5197.67	5221.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	109.9	170.3	260.0	<5	N	NA
27-Aug-16	Sunny	226	2.8566	3.1717	0.3151	5224.67	5248.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	151.5	170.3	260.0	<5	N	NA
2-Sep-16	Cloudy	228	2.8419	2.9891	0.1472	5251.67	5275.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	70.8	170.3	260.0	<5	N	NA
8-Sep-16	Rainy	230	2.8694	3.0697	0.2003	5278.67	5302.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	96.3	170.3	260.0	<5	N	NA
14-Sep-16	Sunny	232	2.8445	3.1080	0.2635	5305.67	5329.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	126.7	170.3	260.0	<5	N	NA
20-Sep-16	Rainy	234	2.8320	3.0604	0.2284	5332.67	5356.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	109.8	170.3	260.0	<5	N	NA
26-Sep-16	Fine	236	2.8447	3.1470	0.3023	5359.67	5383.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	145.4	170.3	260.0	<5	N	NA
30-Sep-16	Fine	238	2.8243	3.0574	0.2331	5386.67	5410.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	112.1	170.3	260.0	<5	N	NA
6-Oct-16	Fine	240	2.8401	2.9667	0.1266	5413.67	5437.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	60.9	170.3	260.0	<5	N	NA
12-Oct-16	Sunny	242	2.8534	2.9939	0.1405	5440.67	5464.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	67.6	170.3	260.0	<5	N	NA
18-Oct-16	Rainy	244	2.9016	2.9885	0.0869	5467.67	5491.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	41.8	170.3	260.0	<5	N	NA
24-Oct-16	Sunny	246	2.8571	2.9678	0.1107	5494.67	5518.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	53.2	170.3	260.0	<5	N	NA
29-Oct-16	Fine	248	2.8900	3.0403	0.1503	5521.67	5545.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	72.3	170.3	260.0	<5	N	NA
4-Nov-16	Sunny	250	2.8834	3.0870	0.2036	5548.67	5572.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	97.9	170.3	260.0	<5	N	NA
10-Nov-16	Cloud	252	2.9190	3.0686	0.1496	5575.67	5599.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	71.9	170.3	260.0	<5	N	NA
16-Nov-16	Sunny	254	2.8624	3.0267	0.1643	5602.67	5626.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	79.0	170.3	260.0	<5	N	NA
22-Nov-16	Rainy	256	2.8370	2.9359	0.0989	5629.67	5653.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	47.6	170.3	260.0	<5	N	NA
28-Nov-16	Sunny	258	2.8753	3.0388	0.1635	5656.67	5680.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	78.6	170.3	260.0	<5	N	NA
3-Dec-16	Sunny	260	2.8577	3.0903	0.2326	5683.67	5707.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	111.8	170.3	260.0	<5	N	NA
9-Dec-16	Fine	262	2.8545	3.0725	0.2180	5710.67	5734.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	104.8	170.3	260.0	<5	N	NA
15-Dec-16	Sunny	264	2.8553	3.0441	0.1888	5737.67	5761.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	90.8	170.3	260.0	<5	N	NA
21-Dec-16	Cloudy	266	2.8910	3.0062	0.1152	5764.67	5788.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	55.4	170.3	260.0	<5	N	NA
30-Dec-16	Cloudy	270	2.8749	3.1608	0.2859	5818.67	5842.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	137.5	170.3	260.0	<5	N	NA
5-Jan-17	Cloudy	272	2.9021	3.0813	0.1792	5845.67	5869.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	86.2	170.3	260.0	<5	N	NA
11-Jan-17	Cloudy	274	2.9053	3.1785	0.2732	5872.67	5896.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	131.4	170.3	260.0	<5	N	NA
17-Jan-17	Cloudy	276	2.8730	3.0408	0.1678	5899.67	5923.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	80.7	170.3	260.0	<5	N	NA
23-Jan-17	Sunny	278	2.9053	3.1785	0.2732	5926.67	5950.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	131.4	170.3	260.0	<5	N	NA
27-Jan-17	Cloudy	CC5	2.8708	3.0409	0.1701	5953.67	5977.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	81.8	170.3	260.0	<5	N	NA
2-Feb-17	Fine	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	NA
8-Feb-17	Fine	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	NA
14-Feb-17	Sunny	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	NA
20-Feb-17	Sunny	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	NA
24-Feb-17	Cloudy	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	NA
2-Mar-17	Sunny	CC16	2.8606	3.1194	0.2588	6115.67	6139.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	124.4	170.3	260.0	<5	N	NA
8-Mar-17	Fine	CC18	2.8936	3.1055	0.2119	6142.67	6166.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	101.9	170.3	260.0	<5	N	NA
14-Mar-17	Cloudy	CC20	2.9093	2.9976	0.0883	6169.67	6193.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	42.5	170.3	260.0	<5	N	NA
20-Mar-17	Sunny	CC22	2.9181	3.0841	0.1660	6196.67	6220.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	79.8	170.3	260.0	<5	N	NA
24-Mar-17	Sunny	CC24	2.9002	3.0277	0.1275	6223.67	6247.														

Appendix D
Air Quality Monitoring Results and their Graphical Presentation

24-Hour TSP Monitoring Result at Station: SR77

Sampling Date	Weather Condition	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	Remarks*
			Initial Wt.	Final Wt.	Wt. of Dust	Initial	Final	Sampling Hour	Initial	Final	Avg Flow Rate	Initial	Final	Avg Flow Rate							
27-Jul-17	Fine	CC70	2.8542	2.9617	0.1075	6844.67	6868.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	51.7	170.3	260.0	<5	N	NA
2-Aug-17	Fine	CC72	2.8640	3.0001	0.1361	6871.67	6895.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	65.4	170.3	260.0	<5	N	NA
8-Aug-17	Sunny	CC74	2.8523	2.9904	0.1381	6898.67	6922.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	66.4	170.3	260.0	<5	N	NA
14-Aug-17	Sunny	CC76	2.8575	2.9821	0.1246	6925.67	6949.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	59.9	170.3	260.0	<5	N	NA
18-Aug-17	Sunny	CC78	2.8599	2.9976	0.1377	6952.67	6976.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	66.2	170.3	260.0	<5	N	NA
24-Aug-17	Sunny	CC80	2.8262	2.9679	0.1417	6979.67	7003.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.1	170.3	260.0	<5	N	NA
30-Aug-17	Fine	CC82	2.8299	3.0465	0.2166	7006.67	7030.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	104.2	170.3	260.0	<5	N	NA
5-Sep-17	Fine	CC84	2.8574	3.0175	0.1601	7033.67	7057.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	77.0	170.3	260.0	<5	N	NA
11-Sep-17	Sunny	CC86	2.8448	3.0344	0.1896	7060.67	7084.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	91.2	170.3	260.0	<5	N	NA
15-Sep-17	Fine	CC88	2.8430	3.0316	0.1886	7087.67	7111.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	90.7	170.3	260.0	<5	N	NA
21-Sep-17	Fine	CC90	2.8425	2.9447	0.1022	7114.67	7138.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	49.1	170.3	260.0	<5	N	NA
27-Sep-17	Fine	CC92	2.8518	3.0328	0.1810	7141.67	7165.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	87.0	170.3	260.0	<5	N	NA
3-Oct-17	Sunny	CC94	2.8702	2.9916	0.1114	7168.67	7192.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	53.6	170.3	260.0	<5	N	NA
9-Oct-17	Cloudy	CC96	2.8471	2.9727	0.1256	7195.67	7219.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	60.4	170.3	260.0	<5	N	NA
13-Oct-17	Sunny	CC98	2.8352	3.0231	0.2879	7222.67	7246.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	138.4	170.3	260.0	<5	N	NA
19-Oct-17	Fine	CC100	2.8611	3.0131	0.1520	7249.67	7273.67	27.00	51	51	51.0	1.44	1.44	1.44	2339.54	65.0	170.3	260.0	<5	N	NA
25-Oct-17	Sunny	CC102	2.8584	3.0483	0.1899	7279.67	7303.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	91.3	170.3	260.0	<5	N	NA
31-Oct-17	Sunny	CC104	2.8589	3.1052	0.2463	7306.67	7330.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	118.4	170.3	260.0	<5	N	NA
6-Nov-17	Fine	CC106	2.8433	3.0634	0.2201	7333.67	7357.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	105.8	170.3	260.0	<5	N	NA
10-Nov-17	Sunny	CC108	2.8639	3.0845	0.2206	7360.67	7384.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	106.1	170.3	260.0	<5	N	NA
16-Nov-17	Cloudy	CC110	2.8717	3.0131	0.1414	7387.67	7411.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.0	170.3	260.0	<5	N	NA
22-Nov-17	Sunny	CC112	2.8452	3.1269	0.2817	7414.67	7438.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	135.5	170.3	260.0	<5	N	NA
28-Nov-17	Cloudy	CC114	2.8671	3.0651	0.1980	7441.67	7465.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	95.2	170.3	260.0	<5	N	NA
4-Dec-17	Sunny	CC116	2.8511	3.0573	0.2062	7468.67	7492.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	99.2	170.3	260.0	<5	N	NA
8-Dec-17	Fine	CC118	2.8344	3.2560	0.4216	7495.67	7519.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	202.7	170.3	260.0	<5	N	Exceedances was project non-related.
14-Dec-17	Fine	CC120	2.8357	3.0159	0.1802	7522.67	7546.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	86.7	170.3	260.0	<5	N	NA
19-Dec-17	Sunny	CC122	2.8565	3.1476	0.2911	7549.67	7573.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	140.0	170.3	260.0	<5	N	NA
22-Dec-17	Fine	CC124	2.8523	3.0776	0.2253	7575.67	7599.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	108.3	170.3	260.0	<5	N	NA
28-Dec-17	Cloudy	CC126	2.8578	3.0418	0.1840	7603.67	7627.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	88.5	170.3	260.0	<5	N	NA
3-Jan-18	Fine	CC128	2.8619	3.0643	0.2024	7630.67	7654.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	97.3	170.3	260.0	<5	N	NA
9-Jan-18	Cloudy	CC130	2.8888	3.0028	0.1140	7657.67	7681.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	54.8	170.3	260.0	<5	N	NA
15-Jan-18	Sunny	C484	2.8237	2.9882	0.1645	7684.67	7708.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	79.1	170.3	260.0	<5	N	NA
19-Jan-18	Fine	C486	2.8015	2.9612	0.1597	7711.67	7735.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	76.8	170.3	260.0	<5	N	NA
25-Jan-18	Fine	C488	2.8839	2.9784	0.0945	7738.67	7762.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	45.4	170.3	260.0	<5	N	NA
31-Jan-18	Cloudy	C490	2.8736	2.9470	0.0734	7765.67	7789.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	35.3	170.3	260.0	<5	N	NA
6-Feb-18	Sunny	C492	2.8634	2.9816	0.1182	7792.67	7816.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	56.8	170.3	260.0	<5	N	NA
12-Feb-18	Sunny	C494	2.8701	2.9297	0.0596	7819.67	7843.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	28.7	170.3	260.0	<5	N	NA
15-Feb-18	Fine	C496	2.7852	2.8103	0.0251	7846.67	7870.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	12.1	170.3	260.0	<5	N	NA
21-Feb-18	Cloudy	C498	2.8097	2.8940	0.0843	7873.67	7897.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	40.5	170.3	260.0	<5	N	NA
27-Feb-18	Sunny	C500	2.8026	2.9306	0.1280	7901.67	7925.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	61.6	170.3	260.0	<5	N	NA
5-Mar-18	Sunny	C502	2.8215	3.0035	0.1820	7928.67	7952.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	87.5	170.3	260.0	<5	N	NA
9-Mar-18	Sunny	C504	2.8085	2.9468	0.1383	7955.67	7979.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	66.5	170.3	260.0	<5	N	NA
15-Mar-18	Cloudy	C506	2.8086	2.9495	0.1409	7982.67	8006.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	67.8	170.3	260.0	<5	N	NA
21-Mar-18	Sunny	C508	2.8157	2.9796	0.1639	8009.67	8033.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	78.8	170.3	260.0	<5	N	NA
26-Mar-18	Cloudy	C510	2.8036	3.0009	0.1973	8036.67	8060.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	94.9	170.3	260.0	<5	N	NA
29-Mar-18	Sunny	C512	2.8105	2.9528	0.1423	8063.67	8087.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.4	170.3	260.0	<5	N	NA
4-Apr-18	Fine	C116	2.7865	2.9884	0.2019	8090.67	8114.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	97.1	170.3	260.0	<5	N	NA
10-Apr-18	Fine	C118	2.8056	2.9531	0.1475	8117.67	8141.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	70.9	170.3	260.0	<5	N	NA
16-Apr-18	Cloudy	C120	2.8095	2.9167	0.1072	8144.67	8168.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	51.5	170.3	260.0	<5	N	NA
20-Apr-18	Fine	C122	2.8115	2.9723	0.1608	8171.67	8195.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	77.3	170.3	260.0	<5	N	NA
26-Apr-18	Cloudy	C124	2.8095	2.9808	0.1713	8198.67	8222.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	82.4	170.3	260.0	<5	N	NA
2-May-18	Sunny	C126	2.8201	2.9809	0.1608	8225.67	8249.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	77.3	170.3	260.0	<5	N	NA
8-May-18	Cloudy	C128	2.8102	2.9076	0.0974	8252.67	8276.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	46.8	170.3	260.0	<5	N	NA
14-May-18	Sunny	C130	2.7900	2.9331	0.1431	8279.67	8303.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	68.8	170.3	260.0	<5	N	NA
18-May-18	Sunny	C132	2.8176	2.9269	0.1093	8307.67	8331.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	52.5	170.3	260.0	<5	N	NA
24-May-18	Sunny	C134	2.8369	2.9340	0.0971	8334.67	8358.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	46.6	170.3	260.0	<5	N	NA
30-May-18	Sunny	C136	2.8177	2.9233	0.1056	8361.67	8385.67	24.00	51	51	51.0	1.44	1.44	1.44	2079.59	50.8	170.3	260.0	<5	N	NA
5-Jun-18	Rainy	C138	2.8060	2.8453	0.0393	8388.67	8412.67														

24-Hour TSP Monitoring Result at Station: SR77 (November 2013 - October 2020)



Remarks:

In the above result , a total of 23 exceedance events were recorded which concluded which concluded that the exceedance was not related to the project works. No necessary remedial action will be taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.($\mu\text{g}/\text{m}^3$)			Action Level ($\mu\text{g}/\text{m}^3$)	Limit Level ($\mu\text{g}/\text{m}^3$)
					1 st Hour	2 nd Hour	3 rd Hour		
5-Nov-13	Cloudy	9:30	-	12:34	111.0	108.0	113.0	292.7	500.0
11-Nov-13	Cloudy	9:00	-	12:04	109.0	102.0	118.0	292.7	500.0
16-Nov-13	Fine	9:00	-	12:04	155.0	149.0	153.0	292.7	500.0
22-Nov-13	Fine	13:30	-	16:34	95.0	91.0	83.0	292.7	500.0
28-Nov-13	Fine	10:00	-	13:04	99.0	100.0	104.0	292.7	500.0
4-Dec-13	Fine	11:00	-	14:04	155.0	154.0	147.0	292.7	500.0
10-Dec-13	Fine	13:00	-	16:04	283.0	279.0	281.0	292.7	500.0
16-Dec-13	Rainy	10:00	-	13:04	222.0	231.0	216.0	292.7	500.0
21-Dec-13	Fine	8:00	-	11:04	156.0	153.0	191.0	292.7	500.0
27-Dec-13	Fine	11:30	-	14:34	188.0	187.0	173.0	292.7	500.0
2-Jan-14	Sunny	9:30	-	12:34	188.0	184.0	181.0	292.7	500.0
8-Jan-14	Fine	9:30	-	12:34	201.0	203.0	201.0	292.7	500.0
14-Jan-14	Fine	13:00	-	16:04	211.0	198.0	200.0	292.7	500.0
20-Jan-14	Fine	13:00	-	16:04	222.0	219.0	199.0	292.7	500.0
25-Jan-14	Sunny	9:00	-	12:04	178.0	177.0	169.0	292.7	500.0
30-Jan-14	Fine	14:00	-	17:04	212.0	219.0	189.0	292.7	500.0
5-Feb-14	Fine	9:00	-	12:04	166.0	192.0	150.0	292.7	500.0
11-Feb-14	Cloudy	10:00	-	13:04	147.0	155.0	149.0	292.7	500.0
17-Feb-14	Fine	10:30	-	13:34	202.0	211.0	188.0	292.7	500.0
22-Feb-14	Fine	9:00	-	12:04	189.0	166.0	198.0	292.7	500.0
28-Feb-14	Fine	10:45	-	13:49	221.0	187.0	211.0	292.7	500.0
6-Mar-14	Cloudy	11:00	-	14:04	211.0	218.0	197.0	292.7	500.0
12-Mar-14	Cloudy	11:00	-	14:04	197.0	199.0	232.0	292.7	500.0
18-Mar-14	Fine	14:00	-	17:04	212.0	216.0	203.0	292.7	500.0
24-Mar-14	Fine	11:00	-	14:04	199.0	198.0	221.0	292.7	500.0
29-Mar-14	Rainy	10:00	-	13:04	167.0	161.0	173.0	292.7	500.0
4-Apr-14	Cloudy	8:00	-	11:04	189.0	191.0	203.0	292.7	500.0
10-Apr-14	Fine	10:30	-	13:34	156.0	171.0	163.0	292.7	500.0
16-Apr-14	Sunny	11:01	-	14:05	144.0	147.0	151.0	292.7	500.0
22-Apr-14	Sunny	11:30	-	14:34	152.0	136.0	129.0	292.7	500.0
28-Apr-14	Sunny	11:00	-	14:04	163.0	166.0	139.0	292.7	500.0
3-May-14	Fine	10:30	-	13:34	144.0	141.0	157.0	292.7	500.0
9-May-14	Rainy	10:30	-	13:34	122.0	129.0	116.0	292.7	500.0
15-May-14	Cloudy	9:00	-	12:04	116.0	134.0	129.0	292.7	500.0
21-May-14	Rainy	14:30	-	17:34	112.0	153.0	117.0	292.7	500.0
27-May-14	Fine	10:30	-	13:34	137.0	124.0	121.0	292.7	500.0
31-May-14	Fine	10:30	-	13:34	116.0	117.0	136.0	292.7	500.0
6-Jun-14	Cloudy	14:30	-	17:34	166.0	173.0	158.0	292.7	500.0
12-Jun-14	Fine	9:00	-	12:04	178.9	161.6	130.4	292.7	500.0
18-Jun-14	Cloudy	9:00	-	12:00	58.9	61.2	54.2	292.7	500.0
24-Jun-14	Rainy	9:00	-	12:00	34.6	36.9	35.8	292.7	500.0
30-Jun-14	Rainy	9:00	-	12:00	35.8	34.6	38.1	292.7	500.0
5-Jul-14	Rainy	9:00	-	12:00	64.6	66.9	70.4	292.7	500.0
11-Jul-14	Fine	9:00	-	12:00	56.5	51.9	62.3	292.7	500.0
17-Jul-14	Fine	9:00	-	12:00	50.8	51.9	54.2	292.7	500.0
23-Jul-14	Fine	9:00	-	12:00	78.5	72.7	69.2	292.7	500.0
29-Jul-14	Fine	9:00	-	12:00	73.9	69.2	66.9	292.7	500.0
4-Aug-14	Sunny	9:00	-	12:00	65.8	57.7	68.1	292.7	500.0
9-Aug-14	Fine	9:00	-	12:00	84.2	78.5	79.6	292.7	500.0
15-Aug-14	Fine	9:00	-	12:00	69.2	65.8	65.8	292.7	500.0
21-Aug-14	Fine	9:00	-	12:00	81.9	75.0	86.6	292.7	500.0
27-Aug-14	Sunny	9:00	-	12:00	72.7	90.0	99.3	292.7	500.0
2-Sep-14	Fine	9:00	-	12:00	65.8	71.6	61.2	292.7	500.0
8-Sep-14	Sunny	9:00	-	12:00	43.9	47.3	41.5	292.7	500.0
13-Sep-14	Sunny	9:00	-	12:00	47.3	68.1	51.9	292.7	500.0
19-Sep-14	Fine	9:00	-	12:00	229.7	218.1	220.4	292.7	500.0
25-Sep-14	Sunny	9:00	-	12:00	93.5	90.0	87.7	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
30-Sep-14	Fine	9:00	-	12:00	86.6	80.8	84.2	292.7	500.0
6-Oct-14	Fine	9:00	-	12:00	84.2	78.5	86.6	292.7	500.0
11-Oct-14	Sunny	9:00	-	12:00	84.2	75.0	80.8	292.7	500.0
17-Oct-14	Sunny	9:00	-	12:00	160.4	161.6	163.9	292.7	500.0
23-Oct-14	Sunny	9:00	-	12:00	130.4	125.8	129.3	292.7	500.0
29-Oct-14	Fine	9:00	-	12:00	123.5	138.5	132.7	292.7	500.0
4-Nov-14	Fine	9:00	-	12:00	90.0	91.2	94.6	292.7	500.0
10-Nov-14	Cloudy	9:00	-	12:00	46.2	49.6	40.4	292.7	500.0
15-Nov-14	Fine	9:00	-	12:00	94.6	110.8	113.1	292.7	500.0
21-Nov-14	Fine	9:00	-	12:00	101.6	103.9	98.1	292.7	500.0
27-Nov-14	Cloudy	9:00	-	12:00	95.8	92.3	90.7	292.7	500.0
3-Dec-14	Cloudy	9:00	-	12:00	85.4	84.2	88.9	292.7	500.0
9-Dec-14	Fine	9:00	-	12:00	98.1	93.5	95.8	292.7	500.0
15-Dec-14	Fine	9:00	-	12:00	130.4	129.3	122.3	292.7	500.0
20-Dec-14	Fine	9:00	-	12:00	121.2	118.9	116.6	292.7	500.0
24-Dec-14	Fine	9:00	-	12:00	68.1	69.2	71.6	292.7	500.0
30-Dec-14	Fine	9:00	-	12:00	49.6	50.8	55.4	292.7	500.0
5-Jan-15	Fine	9:00	-	12:00	73.9	76.2	70.4	292.7	500.0
10-Jan-15	Fine	9:00	-	12:00	107.3	103.9	100.4	292.7	500.0
16-Jan-15	Fine	9:00	-	12:00	78.5	77.3	75.0	292.7	500.0
22-Jan-15	Fine	9:00	-	12:00	71.6	69.2	80.8	292.7	500.0
28-Jan-15	Fine	9:00	-	12:00	101.6	106.2	102.7	292.7	500.0
3-Feb-15	Fine	9:00	-	12:00	120.0	118.9	114.3	292.7	500.0
9-Feb-15	Fine	9:00	-	12:00	120.0	111.9	116.6	292.7	500.0
14-Feb-15	Fine	9:00	-	12:00	135.0	113.1	126.9	292.7	500.0
17-Feb-15	Cloudy	9:00	-	12:00	101.6	94.6	92.3	292.7	500.0
24-Feb-15	Cloudy	9:00	-	12:00	129.3	122.3	124.6	292.7	500.0
2-Mar-15	Cloudy	9:00	-	12:00	122.3	125.8	123.5	292.7	500.0
7-Mar-15	Cloudy	9:00	-	12:00	70.4	69.2	75.0	292.7	500.0
13-Mar-15	Fine	9:00	-	12:00	114.3	105.0	103.9	292.7	500.0
19-Mar-15	Fine	9:00	-	12:00	107.3	101.6	113.1	292.7	500.0
25-Mar-15	Cloudy	9:00	-	12:00	81.9	79.6	85.4	292.7	500.0
31-Mar-15	Sunny	9:00	-	12:00	138.5	137.3	145.4	292.7	500.0
8-Apr-15	Rainy	9:00	-	12:00	92.3	88.9	95.8	292.7	500.0
14-Apr-15	Fine	9:00	-	12:00	151.2	161.6	153.5	292.7	500.0
20-Apr-15	Cloudy	9:00	-	12:00	109.6	121.2	115.4	292.7	500.0
25-Apr-15	Fine	9:00	-	12:00	103.9	105.0	110.8	292.7	500.0
30-Apr-15	Fine	9:00	-	12:00	120.0	108.5	117.7	292.7	500.0
6-May-15	Fine	9:00	-	12:00	154.6	148.9	150.0	292.7	500.0
12-May-15	Fine	9:00	-	12:00	138.5	140.8	144.3	292.7	500.0
18-May-15	Rainy	9:00	-	12:00	142.0	136.2	148.9	292.7	500.0
23-May-15	Rainy	9:00	-	12:00	123.5	116.6	109.6	292.7	500.0
29-May-15	Fine	9:00	-	12:00	211.2	208.9	200.8	292.7	500.0
4-Jun-15	Fine	9:00	-	12:06	188.1	184.7	182.3	292.7	500.0
10-Jun-15	Fine	9:00	-	12:09	162.7	166.2	165.0	292.7	500.0
16-Jun-15	Fine	9:00	-	12:06	135.0	129.3	132.7	292.7	500.0
22-Jun-15	Rainy	9:00	-	12:07	94.6	92.3	96.9	292.7	500.0
27-Jun-15	Fine	9:00	-	12:07	169.6	160.4	157.0	292.7	500.0
3-Jul-15	Fine	9:00	-	12:06	120.0	125.8	126.9	292.7	500.0
9-Jul-15	Rainy	9:00	-	12:09	173.1	168.5	159.3	292.7	500.0
15-Jul-15	Sunny	9:00	-	12:06	211.2	203.1	200.8	292.7	500.0
21-Jul-15	Rainy	9:00	-	12:06	180.0	187.0	184.7	292.7	500.0
27-Jul-15	Sunny	9:00	-	12:09	66.9	69.2	71.6	292.7	500.0
1-Aug-15	Sunny	9:00	-	12:06	108.5	101.6	103.9	292.7	500.0
7-Aug-15	Sunny	9:00	-	12:06	118.9	115.4	109.6	292.7	500.0
13-Aug-15	Cloudy	9:00	-	12:06	136.2	133.9	136.2	292.7	500.0
19-Aug-15	Sunny	9:00	-	12:06	72.7	77.3	70.4	292.7	500.0
25-Aug-15	Sunny	9:00	-	12:06	110.8	115.4	118.9	292.7	500.0
31-Aug-15	Cloudy	9:00	-	12:07	105.0	109.6	107.3	292.7	500.0
5-Sep-15	Sunny	9:00	-	12:07	161.6	169.6	165.0	292.7	500.0
11-Sep-15	Sunny	9:00	-	12:06	150.0	142.0	144.3	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
17-Sep-15	Sunny	9:00	-	12:07	150.0	144.3	154.6	292.7	500.0
23-Sep-15	Sunny	9:00	-	12:07	155.8	148.9	146.6	292.7	500.0
29-Sep-15	Sunny	9:00	-	12:06	140.8	132.7	137.3	292.7	500.0
5-Oct-15	Rainy	9:00	-	12:07	133.9	140.8	135.0	292.7	500.0
10-Oct-15	Sunny	9:00	-	12:06	53.1	54.2	56.5	292.7	500.0
16-Oct-15	Sunny	9:00	-	12:06	133.9	131.6	138.5	292.7	500.0
22-Oct-15	Sunny	9:00	-	12:07	157.0	154.6	151.2	292.7	500.0
28-Oct-15	Sunny	9:00	-	12:06	147.7	145.4	154.6	292.7	500.0
3-Nov-15	Sunny	9:00	-	12:07	121.2	126.9	122.3	292.7	500.0
9-Nov-15	Sunny	9:00	-	12:07	133.9	131.6	139.6	292.7	500.0
14-Nov-15	Sunny	9:00	-	12:06	128.1	126.9	120.0	292.7	500.0
20-Nov-15	Sunny	9:00	-	12:07	132.7	137.3	133.9	292.7	500.0
26-Nov-15	Sunny	9:00	-	12:06	96.9	100.4	92.3	292.7	500.0
2-Dec-15	Sunny	9:00	-	12:07	148.9	151.2	147.7	292.7	500.0
8-Dec-15	Fine	9:00	-	12:07	132.7	131.6	137.3	292.7	500.0
14-Dec-15	Cloudy	9:00	-	12:06	132.7	136.2	130.4	292.7	500.0
19-Dec-15	Sunny	9:00	-	12:07	123.5	126.9	121.2	292.7	500.0
24-Dec-15	Sunny	9:00	-	12:08	155.8	154.6	152.3	292.7	500.0
30-Dec-15	Fine	9:00	-	12:06	148.9	145.4	146.6	292.7	500.0
5-Jan-16	Fine	9:00	-	12:07	174.3	170.8	176.6	292.7	500.0
11-Jan-16	Fine	9:00	-	12:06	159.3	154.6	153.5	292.7	500.0
16-Jan-16	Cloudy	9:00	-	12:06	159.3	153.5	160.4	292.7	500.0
22-Jan-16	Cloudy	9:00	-	12:07	153.5	158.1	151.2	292.7	500.0
28-Jan-16	Rainy	9:00	-	12:07	169.6	166.2	167.3	292.7	500.0
3-Feb-16	Cloudy	9:00	-	12:07	88.9	83.1	91.2	292.7	500.0
6-Feb-16	Cloudy	9:00	-	12:08	139.6	144.3	148.9	292.7	500.0
15-Feb-16	Cloudy	9:00	-	12:07	177.7	176.6	183.5	292.7	500.0
20-Feb-16	Cloudy	9:00	-	12:07	139.6	136.2	133.9	292.7	500.0
26-Feb-16	Fine	9:00	-	12:06	95.8	90.0	94.6	292.7	500.0
3-Mar-16	Sunny	9:00	-	12:07	108.5	105.0	101.6	292.7	500.0
9-Mar-16	Cloudy	9:00	-	12:06	86.6	83.1	81.9	292.7	500.0
15-Mar-16	Cloudy	9:00	-	12:08	150.0	147.7	151.2	292.7	500.0
21-Mar-16	Rainy	9:00	-	12:07	161.6	166.2	163.9	292.7	500.0
24-Mar-16	Rainy	9:00	-	12:06	152.3	159.3	147.7	292.7	500.0
30-Mar-16	Cloudy	9:00	-	12:06	162.7	159.3	161.6	292.7	500.0
5-Apr-16	Sunny	9:00	-	12:06	279.3	272.4	267.7	292.7	500.0
11-Apr-16	Cloudy	9:00	-	12:07	131.6	135.0	136.2	292.7	500.0
16-Apr-16	Cloudy	9:00	-	12:06	142.0	144.3	146.6	292.7	500.0
22-Apr-16	Cloudy	9:00	-	12:06	135.0	139.6	137.3	292.7	500.0
28-Apr-16	Fine	9:00	-	12:06	148.9	158.1	153.5	292.7	500.0
4-May-16	Sunny	9:00	-	12:07	159.3	165.0	158.1	292.7	500.0
10-May-16	Cloudy	9:00	-	12:07	140.8	148.9	152.3	292.7	500.0
16-May-16	Sunny	9:00	-	12:07	169.6	161.6	167.3	292.7	500.0
21-May-16	Sunny	9:00	-	12:07	188.1	183.5	180.0	292.7	500.0
27-May-16	Cloudy	9:00	-	12:07	137.3	138.5	130.4	292.7	500.0
2-Jun-16	Sunny	9:00	-	12:07	121.2	133.9	125.8	292.7	500.0
8-Jun-16	Sunny	9:00	-	12:08	152.3	148.9	150.0	292.7	500.0
14-Jun-16	Cloudy	9:00	-	12:07	153.5	155.8	150.0	292.7	500.0
20-Jun-16	Sunny	9:00	-	12:08	152.3	150.0	154.6	292.7	500.0
25-Jun-16	Sunny	9:00	-	12:08	125.8	132.7	128.1	292.7	500.0
30-Jun-16	Sunny	9:00	-	12:06	147.7	151.2	145.4	292.7	500.0
6-Jul-16	Rainy	9:00	-	12:07	159.3	153.5	158.1	292.7	500.0
12-Jul-16	Cloudy	9:00	-	12:07	114.3	116.6	117.7	292.7	500.0
18-Jul-16	Sunny	9:00	-	12:07	137.3	138.5	140.8	292.7	500.0
23-Jul-16	Sunny	9:00	-	12:07	115.4	118.9	114.3	292.7	500.0
29-Jul-16	Sunny	9:00	-	12:06	105.0	103.9	106.2	292.7	500.0
4-Aug-16	Rainy	9:00	-	12:07	161.6	146.6	158.1	292.7	500.0
10-Aug-16	Rainy	9:00	-	12:08	66.9	63.5	70.4	292.7	500.0
16-Aug-16	Rainy	9:00	-	12:07	61.2	60.0	58.9	292.7	500.0
22-Aug-16	Sunny	9:00	-	12:09	133.9	129.3	123.5	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
27-Aug-16	Sunny	9:00	-	12:08	157.0	158.1	154.6	292.7	500.0
2-Sep-16	Rainy	9:00	-	12:07	154.6	158.1	152.3	292.7	500.0
8-Sep-16	Cloudy	9:00	-	12:08	105.0	107.3	101.6	292.7	500.0
14-Sep-16	Sunny	9:00	-	12:08	142.0	148.9	138.5	292.7	500.0
20-Sep-16	Fine	9:00	-	12:09	145.4	147.7	138.5	292.7	500.0
26-Sep-16	Fine	9:00	-	12:08	142.0	147.7	144.3	292.7	500.0
30-Sep-16	Fine	9:00	-	12:08	94.6	98.1	96.9	292.7	500.0
6-Oct-16	Fine	9:00	-	12:07	133.9	131.6	137.3	292.7	500.0
12-Oct-16	Sunny	9:00	-	12:06	140.8	138.5	139.6	292.7	500.0
18-Oct-16	Rainy	9:00	-	12:07	157.0	154.6	153.5	292.7	500.0
24-Oct-16	Sunny	9:00	-	12:06	138.5	136.2	140.8	292.7	500.0
29-Oct-16	Fine	9:00	-	12:06	117.7	114.3	113.1	292.7	500.0
4-Nov-16	Sunny	9:00	-	12:06	148.9	147.7	146.6	292.7	500.0
10-Nov-16	Cloudy	9:00	-	12:07	83.1	87.7	84.2	292.7	500.0
16-Nov-16	Sunny	9:00	-	12:07	147.7	142.0	146.6	292.7	500.0
22-Nov-16	Rainy	9:00	-	12:06	113.1	118.9	115.4	292.7	500.0
28-Nov-16	Sunny	9:00	-	12:07	137.3	135.0	132.7	292.7	500.0
3-Dec-16	Sunny	9:00	-	12:07	155.8	154.6	151.2	292.7	500.0
9-Dec-16	Fine	9:00	-	12:06	155.8	151.2	153.5	292.7	500.0
15-Dec-16	Sunny	9:00	-	12:07	159.3	157.0	153.5	292.7	500.0
21-Dec-16	Cloudy	9:00	-	12:05	166.2	155.8	158.1	292.7	500.0
30-Dec-16	Cloudy	9:00	-	12:08	142.0	138.5	137.3	292.7	500.0
5-Jan-17	Cloudy	9:00	-	12:07	168.5	167.3	165.0	292.7	500.0
11-Jan-17	Cloudy	9:00	-	12:07	187.0	182.3	184.7	292.7	500.0
17-Jan-17	Cloudy	9:00	-	12:06	185.8	184.7	180.0	292.7	500.0
23-Jan-17	Sunny	9:00	-	12:06	187.0	181.2	175.4	292.7	500.0
27-Jan-17	Cloudy	9:00	-	12:07	199.7	187.0	193.9	292.7	500.0
2-Feb-17	Fine	9:00	-	12:09	152.3	158.1	154.6	292.7	500.0
8-Feb-17	Fine	9:00	-	12:06	163.9	160.4	157.0	292.7	500.0
14-Feb-17	Sunny	9:00	-	12:07	151.2	157.0	159.3	292.7	500.0
20-Feb-17	Sunny	9:00	-	12:06	175.4	173.1	172.0	292.7	500.0
24-Feb-17	Cloudy	9:00	-	12:06	162.7	173.1	169.6	292.7	500.0
2-Mar-17	Sunny	9:00	-	12:08	192.7	196.2	189.3	292.7	500.0
8-Mar-17	Fine	9:00	-	12:06	124.6	121.2	126.9	292.7	500.0
14-Mar-17	Cloudy	9:00	-	12:08	158.1	153.5	150.0	292.7	500.0
20-Mar-17	Sunny	9:00	-	12:06	190.4	196.2	191.6	292.7	500.0
24-Mar-17	Sunny	9:00	-	12:08	174.3	172.0	169.6	292.7	500.0
30-Mar-17	Sunny	9:00	-	12:06	227.4	217.0	207.7	292.7	500.0
5-Apr-17	Sunny	9:00	-	12:05	172.0	173.1	169.6	292.7	500.0
10-Apr-17	Fine	9:00	-	12:06	102.7	105.0	103.9	292.7	500.0
13-Apr-17	Cloudy	9:00	-	12:08	108.5	111.9	116.6	292.7	500.0
19-Apr-17	Sunny	9:00	-	12:08	100.4	106.2	105.0	292.7	500.0
25-Apr-17	Cloudy	9:00	-	12:08	108.5	107.3	109.6	292.7	500.0
28-Apr-17	Sunny	9:00	-	12:08	103.9	109.6	102.7	292.7	500.0
4-May-17	Rainy	9:00	-	12:06	117.7	111.9	113.1	292.7	500.0
10-May-17	Cloudy	9:00	-	12:08	197.3	195.0	188.1	292.7	500.0
16-May-17	Cloudy	9:00	-	12:09	193.9	196.2	198.5	292.7	500.0
22-May-17	Cloudy	9:00	-	12:07	117.7	115.4	118.9	292.7	500.0
26-May-17	Fine	9:00	-	12:09	124.6	120.0	126.9	292.7	500.0
1-Jun-17	Cloudy	9:00	-	12:06	155.8	151.2	150.0	292.7	500.0
7-Jun-17	Fine	9:00	-	12:08	208.9	206.6	210.0	292.7	500.0
13-Jun-17	Cloudy	9:00	-	12:07	180.4	150.0	210.0	292.7	500.0
19-Jun-17	Rainy	9:00	-	12:08	123.5	120.0	125.8	292.7	500.0
23-Jun-17	Fine	9:00	-	12:08	109.6	103.9	107.3	292.7	500.0
29-Jun-17	Fine	9:00	-	12:07	85.4	88.9	83.1	292.7	500.0
5-Jul-17	Cloudy	9:00	-	12:07	94.6	100.4	99.3	292.7	500.0
11-Jul-17	Cloudy	9:00	-	12:08	90.0	101.6	84.2	292.7	500.0
17-Jul-17	Rainy	9:00	-	12:08	83.1	78.5	86.6	292.7	500.0
21-Jul-17	Fine	9:00	-	12:07	92.3	86.6	87.7	292.7	500.0
27-Jul-17	Fine	9:00	-	12:08	113.1	120.0	116.6	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
2-Aug-17	Fine	9:00	-	12:07	114.3	121.2	117.7	292.7	500.0
8-Aug-17	Sunny	9:00	-	12:07	165.0	161.6	159.3	292.7	500.0
14-Aug-17	Sunny	9:00	-	12:08	160.4	167.3	158.1	292.7	500.0
18-Aug-17	Sunny	9:00	-	12:07	118.9	121.2	109.6	292.7	500.0
24-Aug-17	Sunny	9:00	-	12:05	96.9	91.2	102.7	292.7	500.0
30-Aug-17	Fine	9:00	-	12:07	151.2	147.7	152.3	292.7	500.0
5-Sep-17	Fine	9:00	-	12:07	114.3	117.7	100.4	292.7	500.0
11-Sep-17	Sunny	9:00	-	12:07	139.6	132.7	131.6	292.7	500.0
15-Sep-17	Fine	9:00	-	12:07	131.6	139.6	136.2	292.7	500.0
21-Sep-17	Fine	9:00	-	12:07	132.7	121.2	115.4	292.7	500.0
27-Sep-17	Fine	9:00	-	12:07	102.7	109.6	113.1	292.7	500.0
3-Oct-17	Sunny	9:00	-	12:07	105.0	107.3	94.6	292.7	500.0
9-Oct-17	Cloudy	9:00	-	12:06	167.3	153.5	163.9	292.7	500.0
13-Oct-17	Sunny	9:00	-	12:08	202.0	204.3	190.4	292.7	500.0
19-Oct-17	Fine	9:00	-	12:08	114.3	129.3	100.4	292.7	500.0
25-Oct-17	Sunny	9:00	-	12:08	158.1	173.1	166.2	292.7	500.0
31-Oct-17	Sunny	9:00	-	12:08	223.9	230.8	235.4	292.7	500.0
6-Nov-17	Fine	9:00	-	12:07	236.6	230.8	217.0	292.7	500.0
10-Nov-17	Sunny	9:00	-	12:07	182.3	184.7	191.6	292.7	500.0
16-Nov-17	Cloudy	9:00	-	12:08	131.6	125.8	130.4	292.7	500.0
22-Nov-17	Sunny	9:00	-	12:07	183.5	193.9	180.0	292.7	500.0
28-Nov-17	Cloudy	9:00	-	12:07	196.2	202.0	198.5	292.7	500.0
4-Dec-17	Sunny	9:00	-	12:08	212.3	208.9	205.4	292.7	500.0
8-Dec-17	Fine	9:00	-	12:07	212.3	210.0	205.4	292.7	500.0
14-Dec-17	Fine	9:00	-	12:07	184.7	173.1	168.5	292.7	500.0
19-Dec-17	Sunny	9:00	-	12:07	247.0	242.4	238.9	292.7	500.0
22-Dec-17	Fine	9:00	-	12:07	203.1	199.7	205.4	292.7	500.0
28-Dec-17	Cloudy	9:00	-	12:08	136.2	120.0	114.3	292.7	500.0
3-Jan-18	Fine	9:00	-	12:08	137.3	143.1	133.9	292.7	500.0
9-Jan-18	Cloudy	9:00	-	12:08	107.3	109.6	103.9	292.7	500.0
15-Jan-18	Sunny	9:00	-	12:08	136.2	128.1	132.7	292.7	500.0
19-Jan-18	Fine	9:00	-	12:08	101.6	107.3	103.9	292.7	500.0
25-Jan-18	Fine	9:00	-	12:08	136.2	132.7	124.6	292.7	500.0
31-Jan-18	Cloudy	9:00	-	12:08	84.2	101.6	95.8	292.7	500.0
6-Feb-18	Sunny	9:00	-	12:08	140.8	137.3	124.6	292.7	500.0
12-Feb-18	Sunny	9:00	-	12:08	130.4	124.6	121.2	292.7	500.0
15-Feb-18	Fine	9:00	-	12:08	91.2	93.5	102.7	292.7	500.0
21-Feb-18	Cloudy	9:00	-	12:09	95.8	107.3	91.2	292.7	500.0
27-Feb-18	Sunny	9:00	-	12:09	139.6	118.9	136.2	292.7	500.0
5-Mar-18	Sunny	9:00	-	12:08	160.4	178.9	155.8	292.7	500.0
9-Mar-18	Sunny	9:00	-	12:08	126.9	121.2	128.1	292.7	500.0
15-Mar-18	Cloudy	9:00	-	12:09	158.1	160.4	144.3	292.7	500.0
21-Mar-18	Sunny	9:00	-	12:08	177.7	172.0	170.8	292.7	500.0
26-Mar-18	Cloudy	9:00	-	12:08	190.4	196.2	193.9	292.7	500.0
29-Mar-18	Sunny	9:00	-	12:08	118.9	123.5	122.3	292.7	500.0
4-Apr-18	Fine	9:00	-	12:08	101.6	95.8	99.3	292.7	500.0
10-Apr-18	Fine	9:00	-	12:09	197.3	195.0	189.3	292.7	500.0
16-Apr-18	Cloudy	9:00	-	12:08	96.9	103.9	106.2	292.7	500.0
20-Apr-18	Fine	9:00	-	12:09	139.6	140.8	135.0	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
26-Apr-18	Cloudy	9:00	-	12:08	153.5	158.1	152.3	292.7	500.0
2-May-18	Sunny	9:00	-	12:08	133.9	129.3	145.4	292.7	500.0
8-May-18	Cloudy	9:00	-	12:07	143.1	154.6	155.8	292.7	500.0
14-May-18	Sunny	9:00	-	12:09	93.5	106.2	90.0	292.7	500.0
18-May-18	Sunny	9:00	-	12:07	123.5	117.7	114.3	292.7	500.0
24-May-18	Sunny	9:00	-	12:08	111.9	115.4	108.5	292.7	500.0
30-May-18	Sunny	9:00	-	12:09	76.2	128.1	124.6	292.7	500.0
5-Jun-18	Rainy	9:00	-	12:08	145.4	147.7	151.2	292.7	500.0
11-Jun-18	Sunny	9:00	-	12:09	103.9	108.5	107.3	292.7	500.0
15-Jun-18	Fine	9:00	-	12:08	109.6	111.1	115.4	292.7	500.0
21-Jun-18	Fine	9:00	-	12:08	101.6	95.8	98.1	292.7	500.0
27-Jun-18	Fine	9:00	-	12:08	111.9	115.4	110.8	292.7	500.0
3-Jul-18	Rainy	9:00	-	12:08	129.3	142.0	122.3	292.7	500.0
9-Jul-18	Fine	9:00	-	12:07	102.7	99.3	108.5	292.7	500.0
13-Jul-18	Rainy	9:00	-	12:08	77.3	90.0	75.0	292.7	500.0
19-Jul-18	Cloudy	9:00	-	12:08	79.6	90.0	76.2	292.7	500.0
25-Jul-18	Fine	9:00	-	12:08	93.5	85.4	94.6	292.7	500.0
31-Jul-18	Fine	9:00	-	12:08	103.9	105.0	84.2	292.7	500.0
6-Aug-18	Cloudy	9:00	-	12:08	132.7	123.5	125.8	292.7	500.0
10-Aug-18	Rainy	9:00	-	12:08	100.4	103.9	99.3	292.7	500.0
16-Aug-18	Rainy	9:00	-	12:11	68.1	84.2	79.6	292.7	500.0
22-Aug-18	Cloudy	9:00	-	12:08	86.6	107.3	94.6	292.7	500.0
28-Aug-18	Cloudy	9:00	-	12:11	94.6	96.9	92.3	292.7	500.0
3-Sep-18	Cloudy	9:00	-	12:08	73.9	83.1	84.2	292.7	500.0
7-Sep-18	Fine	9:00	-	12:08	84.2	87.7	83.1	292.7	500.0
13-Sep-18	Fine	9:00	-	12:08	93.5	88.9	95.8	292.7	500.0
19-Sep-18	Cloudy	9:00	-	12:07	145.4	150.0	144.3	292.7	500.0
24-Sep-18	Fine	9:00	-	12:08	138.5	133.9	135.0	292.7	500.0
27-Sep-18	Fine	9:00	-	12:08	125.8	120.0	122.3	292.7	500.0
4-Oct-18	Sunny	9:00	-	12:08	168.5	176.6	165.0	292.7	500.0
10-Oct-18	Cloudy	9:00	-	12:07	139.6	159.3	144.3	292.7	500.0
16-Oct-18	Cloudy	9:00	-	12:09	107.3	103.9	95.8	292.7	500.0
22-Oct-18	Cloudy	9:00	-	12:07	100.4	105.0	103.2	292.7	500.0
26-Oct-18	Sunny	9:00	-	12:08	90.0	101.6	107.3	292.7	500.0
1-Nov-18	Fine	9:00	-	12:08	190.4	185.5	196.2	292.7	500.0
7-Nov-18	Sunny	9:00	-	12:10	90.0	93.5	95.8	292.7	500.0
13-Nov-18	Fine	9:00	-	12:08	181.2	177.7	186.2	292.7	500.0
19-Nov-18	Sunny	9:00	-	12:11	176.6	163.9	170.8	292.7	500.0
23-Nov-18	Fine	9:00	-	12:09	188.1	182.3	191.6	292.7	500.0
29/Nov/18	Sunny	9:00	-	12:10	173.1	160.4	165.0	292.7	500.0
5/Dec/18	Fine	9:00	-	12:08	190.4	192.7	180.0	292.7	500.0
11/Dec/18	Sunny	9:00	-	12:07	122.3	117.7	123.5	292.7	500.0
17/Dec/18	Fine	9:00	-	12:08	150.0	144.3	146.6	292.7	500.0
21/Dec/18	Sunny	9:00	-	12:07	110.8	113.1	117.7	292.7	500.0
27/Dec/18	Fine	9:00	-	12:08	106.2	111.9	103.9	292.7	500.0
2/Jan/19	Cloudy	9:00	-	12:08	96.9	106.2	107.3	292.7	500.0
8/Jan/19	Cloudy	9:00	-	12:09	150.0	158.1	132.7	292.7	500.0
14/Jan/19	Cloudy	9:00	-	12:08	177.7	172.0	173.1	292.7	500.0
18/Jan/19	Cloudy	9:00	-	12:09	138.5	144.3	131.6	292.7	500.0
24/Jan/19	Sunny	9:00	-	12:09	169.6	168.5	161.6	292.7	500.0
30/Jan/19	Fine	9:00	-	12:08	202.0	199.7	198.5	292.7	500.0
4/Feb/19	Fine	9:00	-	12:08	180.0	184.7	181.2	292.7	500.0
8/Feb/19	Fine	9:00	-	12:09	192.7	198.5	190.4	292.7	500.0
14/Feb/19	Sunny	9:00	-	12:04	99.3	105.2	110.8	292.7	500.0
20/Feb/19	Cloudy	9:00	-	12:07	188.1	196.2	193.7	292.7	500.0
26/Feb/19	Cloudy	9:00	-	12:04	192.7	152.3	207.7	292.7	500.0
4-Mar-19	Cloudy	9:00	-	12:08	120.0	147.7	135.0	292.7	500.0
8-Mar-19	Rainy	9:00	-	12:08	97.0	88.9	78.5	292.7	500.0
14-Mar-19	Cloudy	9:00	-	12:08	184.7	193.9	189.3	292.7	500.0
20-Mar-19	Cloudy	9:00	-	12:08	219.3	211.2	199.7	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
26-Mar-19	Cloudy	9:00	-	12:08	175.4	182.3	189.3	292.7	500.0
1-Apr-19	Fine	9:00	-	12:08	213.5	204.3	197.3	292.7	500.0
4-Apr-19	Fine	9:00	-	12:09	123.5	140.8	138.5	292.7	500.0
9-Apr-19	Fine	9:00	-	12:08	85.4	79.6	83.1	292.7	500.0
15-Apr-19	Fine	9:00	-	12:07	154.6	160.4	165.0	292.7	500.0
18-Apr-19	Cloudy	9:00	-	12:09	162.7	161.6	167.3	292.7	500.0
24-Apr-19	Fine	9:00	-	12:08	89	91	83	292.7000	500.00
30-Apr-19	Cloudy	9:00	-	12:09	106	102	100	292.7000	500.00
6/May/19	Sunny	9:00	-	12:08	77.3	93.5	70.4	292.7	500.0
10/May/19	Sunny	9:00	-	12:08	81.9	85.4	87.7	292.7	500.0
16/May/19	No data was provided, due to the eletricity supply was suspended.								
22/May/19	Sunny	11:00	-	14:00	85.1	77.7	96.6	292.7	500.0
28/May/19	Sunny	11:00	-	14:00	90.1	85.2	89.9	292.7	500.0
3/Jun/19	Cloudy	9:45	-	12:45	64.2	54.7	55.8	292.7	500.0
6/Jun/19	Fine	9:00	-	12:00	44.3	43.2	38.7	292.7	500.0
12/Jun/19	Cloudy	9:00	-	12:00	95.2	81.9	77.5	292.7	500.0
18/Jun/19	Cloudy	9:00	-	12:00	57.5	69.7	64.2	292.7	500.0
24/Jun/19	Cloudy	9:00	-	12:00	79.8	74.3	72.1	292.7	500.0
28/Jun/19	Cloudy	9:00	-	12:00	76.4	86.3	75.3	292.7	500.0
4/Jul/19	Fine	9:45	-	12:45	104.1	111.1	100.3	292.7	500.0
10/Jul/19	Cloudy	9:00	-	12:00	113.2	108.8	121.2	292.7	500.0
16/Jul/19	Fine	9:00	-	12:00	185.1	181.8	191.4	292.7	500.0
22/Jul/19	Fine	9:00	-	12:00	127.5	129.0	118.2	292.7	500.0
26/Jul/19	Fine	9:00	-	12:00	116.2	109.3	112.6	292.7	500.0
1/Aug/19	Cloudy	9:30	-	12:30	66.4	71.7	68.2	292.7	500.0
7/Aug/19	Fine	9:30	-	12:30	155.4	151.3	160.4	292.7	500.0
13/Aug/19	Fine	9:30	-	12:30	94.2	91.7	98.6	292.7	500.0
19/Aug/19	Fine	8:30	-	11:30	178.4	171.7	172.8	292.7	500.0
23/Aug/19	Fine	9:30	-	12:30	192.2	189.7	183.5	292.7	500.0
29/Aug/19	Cloudy	9:30	-	12:30	91.3	94.5	90.9	292.7	500.0
4/Sep/19	Cloudy	9:00	-	12:00	66.1	70.3	71.3	292.7	500.0
10/Sep/19	Fine	9:30	-	12:30	88.4	91.5	82.3	292.7	500.0
16/Sep/19	Cloudy	9:00	-	12:00	131.5	134.2	138.1	292.7	500.0
20/Sep/19	Sunny	9:00	-	12:00	105.2	112.6	109.4	292.7	500.0
26/Sep/19	Fine	9:00	-	12:00	193.1	190.2	186.4	292.7	500.0
2/Oct/19	Fine	9:00	-	12:00	195.4	189.0	199.4	292.7	500.0
8/Oct/19	Fine	9:30	-	12:30	189.2	176.4	190.2	292.7	500.0
14/Oct/19	Cloudy	9:30	-	12:30	151.2	163.1	143.7	292.7	500.0
18/Oct/19	Cloudy	9:00	-	12:00	145.1	152.3	164.2	292.7	500.0
24/Oct/19	Fine	9:30	-	12:00	121.3	108.4	102.5	292.7	500.0
30/Oct/19	Fine	9:30	-	12:30	118.5	121.4	109.7	292.7	500.0
5/Nov/19	Sunny	9:30	-	12:30	136.8	128.2	122.4	292.7	500.0
11/Nov/19	Sunny	10:30	-	13:30	158.3	164.9	159.4	292.7	500.0
15/Nov/19	Sunny	11:00	-	13:00	137.2	162.7	154.9	292.7	500.0
21/Nov/19	Sunny	9:30	-	12:30	153.7	142.2	158.9	292.7	500.0
27/Nov/19	Sunny	10:30	-	13:30	127.1	130.2	129.1	292.7	500.0
3/Dec/19	Sunny	9:30	-	12:30	144.3	139.9	145.2	292.7	500.0
9/Dec/19	Sunny	9:30	-	12:30	174.3	140.6	133.4	292.7	500.0
13/Dec/19	Sunny	9:30	-	12:30	120.2	128.9	142.5	292.7	500.0
19/Dec/19	Cloudy	10:00	-	13:00	155.4	109.1	102.7	292.7	500.0
24/Dec/19	Sunny	9:30	-	12:30	184.4	172.8	189.0	292.7	500.0
30/Dec/19	Cloudy	9:30	-	12:30	101.1	99.3	94.4	292.7	500.0
3/Jan/20	Sunny	10:00	-	13:00	144.3	141.3	122.7	292.7	500.0
9/Jan/20	Fine	10:15	-	13:15	106.2	111.3	104.2	292.7	500.0
15/Jan/20	Fine	11:00	-	14:00	181.6	177.1	194.3	292.7	500.0
21/Jan/20	Fine	10:30	-	13:30	155.2	161.4	143.2	292.7	500.0
24/Jan/20	Fine	10:30	-	13:30	104.2	91.7	102.2	292.7	500.0
30/Jan/20	Fine	10:00	-	13:00	180.6	184.3	190.5	292.7	500.0
5/Feb/20	Cloudy	10:30	-	13:30	163.7	146.4	141.3	292.7	500.0
11/Feb/20	Cloudy	10:30	-	13:30	103.4	115.4	112.4	292.7	500.0
17/Feb/20	Fine	10:00	-	13:00	137.3	172.1	177.4	292.7	500.0
21/Feb/20	Fine	10:30	-	13:30	194.2	191.5	198.2	292.7	500.0
27/Feb/20	Fine	10:30	-	13:30	166.4	171.1	163.7	292.7	500.0
4/Mar/20	Cloudy	10:00	-	13:30	163.7	146.4	141.3	292.7	500.0
10/Mar/20	Sunny	10:30	-	13:30	103.4	115.4	112.4	292.7	500.0

Appendix E
Air Quality Monitoring Results and their Graphical Presentation

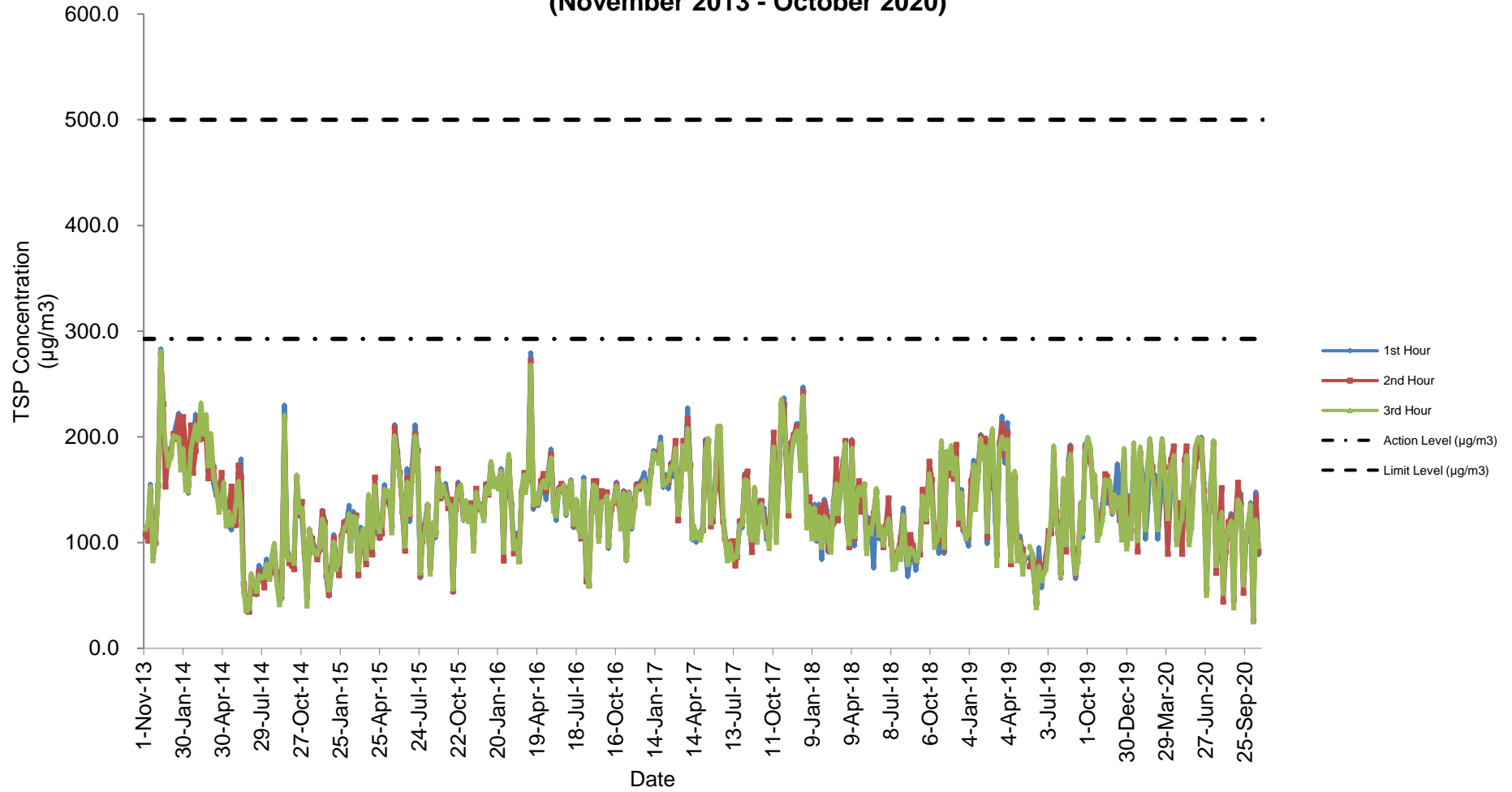
1-Hour TSP Monitoring Result at Station: SR77

Date	Weather Condition	Time			Conc.(µg/m ³)			Action Level (µg/m ³)	Limit Level (µg/m ³)
					1 st Hour	2 nd Hour	3 rd Hour		
16/Mar/20	Sunny	10:30	-	13:00	137.3	172.1	177.4	292.7	500.0
20/Mar/20	Fine	10:00	-	13:30	194.2	191.5	198.2	292.7	500.0
26/Mar/20	Cloudy	10:45	-	13:30	166.4	171.1	163.7	292.7	500.0
2/Apr/20	Cloudy	10:15	-	13:30	92.1	89.4	123.2	292.7	500.0
9/Apr/20	Fine	10:30	-	13:30	159.2	178.3	168.3	292.7	500.0
16/Apr/20	Sunny	10:00	-	13:00	188.1	191.3	182.4	292.7	500.0
23/Apr/20	Cloudy	10:30	-	13:30	101.4	103.7	98.4	292.7	500.0
29/Apr/20	Cloudy	10:00	-	13:30	122.3	137.3	115.2	292.7	500.0
5/May/20	Fine	10:45	-	13:45	92.1	89.4	123.2	292.7	500.0
11/May/20	Cloudy	10:45	-	13:45	159.2	178.3	168.3	292.7	500.0
15/May/20	Fine	10:30	-	13:30	188.1	191.3	182.4	292.7	500.0
21/May/20	Cloudy	10:20	-	13:20	101.4	103.7	98.4	292.7	500.0
27/May/20	Cloudy	10:30	-	13:30	122.3	137.3	115.2	292.7	500.0
4/Jun/20	Fine	10:30	-	13:30	187.3	172.3	190.6	292.7	500.0
11/Jun/20	Fine	10:00	-	13:00	192.4	183.6	199.3	292.7	500.0
18/Jun/20	Fine	10:45	-	13:45	199.4	196.6	197.8	292.7	500.0
24/Jun/20	Fine	10:15	-	13:15	156.3	149.4	140.3	292.7	500.0
30/Jun/20	Fine	10:45	-	13:45	60.1	55.9	50.5	292.7	500.0
6-Jul-20	Fine	10:15	-	13:15	125	129	122	292.7	500.0
10-Jul-20	Fine	10:45	-	13:45	143	154	158	292.7	500.0
16-Jul-20	Fine	10:15	-	13:15	189	194	196	292.7	500.0
22-Jul-20	Fine	10:45	-	13:45	76	71	79	292.7	500.0
28-Jul-20	Fine	10:15	-	13:15	93	107	106	292.7	500.0
3-Aug-20	Cloudy	10:15		13:15	148	151	129	292.7	500.0
7-Aug-20	Fine	10:45		13:45	51	44	52	292.7	500.0
13-Aug-20	Fine	10:15		13:15	104	92	102	292.7	500.0
19-Aug-20	Cloudy	11:45		14:45	105	119	113	292.7	500.0
25-Aug-20	Fine	10:00		13:00	127	124	120	292.7	500.0
31-Aug-20	Fine	10:00		13:00	44	46	39	292.7	500.0
4-Sep-20	Fine	10:20		13:20	115	119	104	292.7	500.0
10-Sep-20	Fine	10:10		13:10	136	157	140	292.7	500.0
16-Sep-20	Fine	10:00		13:00	146	137	135	292.7	500.0
22-Sep-20	Fine	10:45		13:35	56	53	60	292.7	500.0
28-Sep-20	Cloudy	10:30		13:00	101	105	103	292.7	500.0
3-Oct-20	Cloudy	10:15	-	13:15	101	116	120	292.7	500.0
9-Oct-20	Sunny	10:45	-	13:45	137	128	136	292.7	500.0
15-Oct-20	Sunny	10:00	-	13:00	32	27	25	292.7	500.0
21-Oct-20	Sunny	10:30	-	13:30	148	143	121	292.7	500.0
27-Oct-20	Sunny	10:00	-	13:00	89	92	97	292.7	500.0

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
 The electricity supply of HVS at AM1(SR77) was suspended from 16 May 2019 and was no longer available. In order to have a more secure electricity supply, an alternative Handheld TSP meter was proposed to use for the temporary monitoring of 24-Hr & 1-Hr air quality from 22 May 2019.

Summary For the Reporting Period (Nov 2013 - Oct 2020)	
Average	133.8
Minimum	25.4
Maximum	283.0

1-Hour TSP Monitoring Result at station: SR77 (November 2013 - October 2020)



Remarks:

From the above result, no exceedance event were recorded. No necessary remedial action will be taken.

Appendix E

Noise Monitoring Results and their Graphical Presentation

Appendix E
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)	Remarks#
				L10(30min)	L90(30min)	Leq(30min)					
2013/11/05	Cloudy	9:30	10:00	72.4	61.1	69.1	-	67.8	75.0	N	NA
2013/11/11	Cloudy	10:30	11:00	72.9	62.2	71.3	-	67.8	75.0	N	NA
2013/11/16	Fine	10:00	10:30	73.2	63.1	71.1	-	67.8	75.0	N	NA
2013/11/22	Fine	13:30	14:00	70.5	58.5	67.6	-	67.8	75.0	N	NA
2013/11/28	Fine	10:30	11:00	74.1	77.5	71.5	-	67.8	75.0	N	NA
2013/12/04	Fine	11:30	12:00	75.1	63.0	70.0	-	67.8	75.0	N	NA
2013/12/10	Fine	13:00	13:30	79.6	67.5	73.5	-	67.8	75.0	N	NA
2013/12/16	Rainy	10:00	10:30	71.6	77.1	67.5	-	67.8	75.0	N	NA
2013/12/21	Fine	8:00	8:30	68.6	74.1	62.5	-	67.8	75.0	N	NA
2013/12/27	Sunny	11:30	12:00	70.1	75.4	66.3	-	67.8	75.0	N	NA
2014/01/02	Sunny	9:30	10:00	70.8	72.3	62.0	-	67.8	75.0	N	NA
2014/01/08	Fine	9:30	10:00	71.2	76.1	61.6	-	67.8	75.0	N	NA
2014/01/14	Fine	13:00	13:30	70.4	74.5	63.1	-	67.8	75.0	N	NA
2014/01/20	Fine	13:00	13:30	76.8	72.1	57.8	-	67.8	75.0	N	NA
2014/01/30	Fine	14:00	14:30	70.8	72.9	60.3	-	67.8	75.0	N	NA
2014/02/05	Fine	14:30	15:00	61.3	64.7	54.5	-	67.8	75.0	N	NA
2014/02/11	Cloudy	10:00	10:30	67.4	71.3	58.6	-	67.8	75.0	N	NA
2014/02/17	Fine	10:30	11:00	69.4	72.1	61.9	-	67.8	75.0	N	NA
2014/02/28	Fine	10:45	11:15	71.6	75.5	65.5	-	67.8	75.0	N	NA
2014/03/06	Cloudy	11:00	11:30	70.8	76.1	64.9	-	67.8	75.0	N	NA
2014/03/12	Cloudy	11:00	11:30	71.8	88.1	66.1	-	67.8	75.0	N	NA
2014/03/18	Fine	14:00	14:30	74.2	89.1	66.9	-	67.8	75.0	N	NA
2014/03/24	Fine	11:00	11:30	71.8	83.3	61.6	-	67.8	75.0	N	NA
2014/04/04	Cloudy	8:00	8:30	70.5	72.5	63.5	-	67.8	75.0	N	NA
2014/04/10	Fine	10:30	11:00	68.5	71.3	62.1	-	67.8	75.0	N	NA
2014/04/16	Sunny	11:01	11:31	69.3	71.9	61.1	-	67.8	75.0	N	NA
2014/04/22	Sunny	11:30	12:00	70.1	71.8	60.2	-	67.8	75.0	N	NA
2014/04/28	Sunny	11:00	11:30	69.9	72.4	61.5	-	67.8	75.0	N	NA
2014/05/09	Rainy	10:30	11:00	66.6	71.9	60.8	-	67.8	75.0	N	NA
2014/05/15	Cloudy	9:00	9:30	65.5	70.5	58.5	-	67.8	75.0	N	NA
2014/05/21	Rainy	14:30	15:00	63.6	70.1	60.2	-	67.8	75.0	N	NA
2014/05/27	Fine	10:30	11:00	63.3	69.8	59.4	-	67.8	75.0	N	NA
2014/06/06	Cloudy	14:30	15:00	62.5	70.5	59.5	-	67.8	75.0	N	NA
2014/06/12	Fine	9:00	9:30	61.8	69.9	58.5	-	67.8	75.0	N	NA
2014/06/18	Cloudy	13:00	13:30	61.8	68.6	59.8	-	67.8	75.0	N	NA
2014/06/24	Rainy	11:00	11:30	62.4	70.6	58.8	-	67.8	75.0	N	NA
2014/06/30	Rainy	14:30	15:00	63.1	69.3	58.5	-	67.8	75.0	N	NA
2014/07/11	Fine	14:30	15:00	63.3	68.5	59.0	-	67.8	75.0	N	NA
2014/07/17	Fine	9:00	9:30	63.6	68.9	58.9	-	67.8	75.0	N	NA
2014/07/23	Fine	14:00	14:30	67.4	72.5	63.5	-	67.8	75.0	N	NA
2014/07/29	Fine	9:30	10:00	72.1	73.5	64.0	-	67.8	75.0	N	NA
2014/08/04	Sunny	10:00	10:30	73.7	63.4	71.7	-	67.8	75.0	N	NA
2014/08/15	Fine	15:00	15:30	73.5	63.0	69.5	-	67.8	75.0	N	NA
2014/08/21	Fine	14:30	15:00	72.4	62.0	67.9	-	67.8	75.0	N	NA
2014/08/27	Sunny	11:00	11:30	71.6	61.5	66.8	-	67.8	75.0	N	NA
2014/09/02	Fine	10:00	10:30	70.7	60.5	65.9	-	67.8	75.0	N	NA
2014/09/08	Sunny	10:00	10:30	71.5	61.0	66.5	-	67.8	75.0	N	NA
2014/09/19	Sunny	14:00	14:30	70.5	59.5	66.9	-	67.8	75.0	N	NA
2014/09/25	Fine	11:30	12:00	73.5	64.5	69.5	-	67.8	75.0	N	NA
2014/09/30	Sunny	14:30	15:00	73.0	61.0	69.2	-	67.8	75.0	N	NA
2014/10/06	Fine	11:00	11:30	73.0	61.5	69.9	-	67.8	75.0	N	NA
2014/10/17	Sunny	11:30	12:00	73.0	60.5	68.5	-	67.8	75.0	N	NA
2014/10/23	Sunny	11:30	12:00	76.0	63.5	71.5	-	67.8	75.0	N	NA
2014/10/29	Fine	10:30	11:00	74.0	65.0	71.2	-	67.8	75.0	N	NA
2014/11/04	Fine	10:30	11:00	78.0	63.5	70.5	-	67.8	75.0	N	NA
2014/11/10	Cloudy	15:00	15:30	77.0	64.0	71.0	-	67.8	75.0	N	NA
2014/11/21	Fine	14:00	14:30	77.5	64.5	71.5	-	67.8	75.0	N	NA
2014/11/27	Cloudy	14:30	15:00	78.5	58.5	66.5	-	67.8	75.0	N	NA
2014/12/03	Cloudy	15:00	15:30	72.5	60.5	63.0	-	67.8	75.0	N	NA
2014/12/09	Fine	10:20	10:50	74.0	61.5	70.5	-	67.8	75.0	N	NA
2014/12/15	Fine	14:00	14:30	76.0	63.0	66.0	-	67.8	75.0	N	NA
2014/12/24	Fine	11:00	11:30	74.5	60.0	71.0	-	67.8	75.0	N	NA
2014/12/30	Fine	16:00	16:30	78.5	64.0	74.0	-	67.8	75.0	N	NA
2015/01/05	Fine	15:30	16:00	76.5	62.0	71.0	-	67.8	75.0	N	NA
2015/01/16	Fine	14:00	14:30	75.0	65.0	72.0	-	67.8	75.0	N	NA
2015/01/22	Fine	14:30	15:00	76.5	62.5	72.5	-	67.8	75.0	N	NA
2015/01/28	Fine	14:00	14:30	78.5	63.5	72.0	-	67.8	75.0	N	NA

Appendix E
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)	Remarks#
				L10(30min)	L90(30min)	Leq(30min)					
2015/02/03	Fine	14:00	14:30	76.9	69.1	74.6	-	67.8	75.0	N	NA
2015/02/09	Fine	14:30	15:00	76.0	68.5	72.5	-	67.8	75.0	N	NA
2015/02/17	Fine	14:00	14:30	76.0	59.5	71.5	-	67.8	75.0	N	NA
2015/02/24	Cloudy	15:30	16:00	75.5	61.5	70.5	-	67.8	75.0	N	NA
2015/03/02	Cloudy	16:00	16:30	76.5	61.0	69.5	-	67.8	75.0	N	NA
2015/03/13	Fine	14:00	14:30	75.0	60.5	68.5	-	67.8	75.0	N	NA
2015/03/19	Fine	14:30	15:00	75.5	58.5	68.0	-	67.8	75.0	N	NA
2015/03/25	Cloudy	16:00	16:30	77.0	60.0	69.0	-	67.8	75.0	N	NA
2015/03/31	Sunny	11:00	11:30	78.0	61.0	72.8	-	67.8	75.0	N	NA
2015/04/08	Rainy	16:30	17:00	76.0	60.5	70.5	-	67.8	75.0	N	NA
2015/04/14	Fine	15:30	16:00	77.0	62.0	71.0	-	67.8	75.0	N	NA
2015/04/20	Cloudy	11:00	11:30	77.5	65.0	72.0	-	67.8	75.0	N	NA
2015/04/30	Fine	14:45	15:15	77.5	62.5	76.5	75.9	67.8	75.0	Y	Exceedances was project non- related.
2015/05/06	Fine	15:30	16:00	73.0	60.0	69.1	-	67.8	75.0	N	NA
2015/05/07	Fine	14:30	15:00	73.5	62.5	71.4	-	67.8	75.0	N	NA
2015/05/12	Fine	14:45	15:15	72.0	57.0	67.6	-	67.8	75.0	N	NA
2015/05/19	Rainy	14:00	14:30	76.0	63.5	72.0	-	67.8	75.0	N	NA
2015/05/29	Fine	14:30	15:00	76.5	64.0	71.0	-	67.8	75.0	N	NA
2015/06/04	Fine	13:30	14:00	75.5	59.5	71.5	-	67.8	75.0	N	NA
2015/06/10	Fine	14:00	14:30	80.0	58.5	71.0	-	67.8	75.0	N	NA
2015/06/16	Fine	14:00	14:30	78.0	57.0	71.0	-	67.8	75.0	N	NA
2015/06/22	Rainy	14:00	14:30	80.5	61.0	70.5	-	67.8	75.0	N	NA
2015/07/03	Fine	17:00	17:30	89.0	56.5	70.0	-	67.8	75.0	N	NA
2015/07/09	Fine	11:30	12:00	81.0	64.0	71.0	-	67.8	75.0	N	NA
2015/07/15	Sunny	15:00	15:30	85.0	54.0	68.5	-	67.8	75.0	N	NA
2015/07/21	Cloudy	15:30	16:00	85.0	58.5	68.0	-	67.8	75.0	N	NA
2015/07/27	Sunny	14:00	14:30	90.0	57.0	68.5	-	67.8	75.0	N	NA
2015/08/07	Sunny	13:30	14:00	85.0	54.5	67.0	-	67.8	75.0	N	NA
2015/08/13	Cloudy	14:00	14:30	86.0	53.5	66.0	-	67.8	75.0	N	NA
2015/08/19	Sunny	14:00	14:30	83.0	54.0	65.0	-	67.8	75.0	N	NA
2015/08/25	Sunny	14:00	14:30	82.0	54.0	64.5	-	67.8	75.0	N	NA
2015/08/31	Cloudy	13:30	14:00	84.0	55.5	65.5	-	67.8	75.0	N	NA
2015/09/11	Sunny	11:30	12:00	84.0	55.0	64.5	-	67.8	75.0	N	NA
2015/09/17	Sunny	11:30	12:00	86.0	50.0	62.0	-	67.8	75.0	N	NA
2015/09/23	Sunny	15:00	15:30	76.5	61.5	67.5	-	67.8	75.0	N	NA
2015/09/29	Sunny	14:00	14:30	78.0	61.0	66.0	-	67.8	75.0	N	NA
2015/10/07	Cloudy	14:00	14:30	88.0	52.0	66.0	-	67.8	75.0	N	NA
2015/10/16	Fine	14:30	15:00	90.0	51.0	66.5	-	67.8	75.0	N	NA
2015/10/22	Fine	14:30	15:00	75.0	55.0	63.5	-	67.8	75.0	N	NA
2015/10/28	Fine	14:00	14:30	91.0	55.0	66.0	-	67.8	75.0	N	NA
2015/11/03	Fine	14:00	14:30	81.5	56.0	65.5	-	67.8	75.0	N	NA
2015/11/09	Fine	16:30	17:00	86.0	53.5	68.0	-	67.8	75.0	N	NA
2015/11/20	Fine	16:00	16:30	90.0	54.0	68.5	-	67.8	75.0	N	NA
2015/11/26	Fine	15:30	16:00	87.0	63.0	65.5	-	67.8	75.0	N	NA
2015/12/02	Fine	14:00	14:30	87.0	51.0	65.0	-	67.8	75.0	N	NA
2015/12/08	Fine	15:00	15:30	90.0	58.5	65.5	-	67.8	75.0	N	NA
2015/12/14	Cloudy	15:00	15:30	89.0	57.5	67.0	-	67.8	75.0	N	NA
2015/12/24	Fine	14:30	15:00	86.5	60.0	68.0	-	67.8	75.0	N	NA
2015/12/30	Fine	14:00	14:30	73.0	58.0	62.0	-	67.8	75.0	N	NA
2016/01/05	Fine	15:00	15:30	87.0	57.5	65.5	-	67.8	75.0	N	NA
2016/01/11	Fine	14:30	15:00	87.0	57.0	63.5	-	67.8	75.0	N	NA
2016/01/23	Cloudy	11:00	11:30	76.0	63.0	67.0	-	67.8	75.0	N	NA
2016/01/29	Cloudy	15:00	15:30	85.5	57.5	62.5	-	67.8	75.0	N	NA
2016/02/03	Cloudy	14:30	15:00	90.0	57.5	64.5	-	67.8	75.0	N	NA
2016/02/15	Cloudy	15:00	15:30	87.0	56.5	64.0	-	67.8	75.0	N	NA
2016/02/26	Fine	15:30	16:00	96.0	57.0	62.5	-	67.8	75.0	N	NA
2016/03/03	Sunny	10:30	11:00	75.0	54.5	61.5	-	67.8	75.0	N	NA
2016/03/09	Cloudy	10:00	10:30	78.5	56.0	60.5	-	67.8	75.0	N	NA
2016/03/15	Cloudy	14:00	14:30	96.0	57.5	60.0	-	67.8	75.0	N	NA
2016/03/21	Rainy	14:30	15:00	69.0	53.5	61.0	-	67.8	75.0	N	NA
2016/03/30	Cloudy	15:30	16:00	77.5	65.5	68.5	-	67.8	75.0	N	NA
2016/04/05	Sunny	13:30	14:00	85.0	60.0	63.0	-	67.8	75.0	N	NA
2016/04/11	Cloudy	13:30	14:00	88.5	54.0	65.0	-	67.8	75.0	N	NA
2016/04/22	Cloudy	14:00	14:30	67.0	60.0	62.0	-	67.8	75.0	N	NA
2016/04/28	Fine	13:30	14:00	88.0	60.0	62.0	-	67.8	75.0	N	NA
2016/05/04	Sunny	13:30	14:00	90.0	55.0	63.5	-	67.8	75.0	N	NA
2016/05/10	Cloudy	13:30	14:00	87.0	61.5	66.0	-	67.8	75.0	N	NA

Appendix E
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)	Remarks#
				L10(30min)	L90(30min)	Leq(30min)					
2016/05/16	Sunny	16:30	17:00	86.5	58.5	76.5	75.9	67.8	75.0	Y	Exceedances was project non- related.
2016/05/27	Cloudy	11:30	12:00	94.0	52.0	59.5	-	67.8	75.0	N	NA
2016/06/02	Sunny	11:30	12:00	86.0	59.0	61.0	-	67.8	75.0	N	NA
2016/06/08	Sunny	11:30	12:00	85.5	53.0	59.5	-	67.8	75.0	N	NA
2016/06/14	Cloudy	11:30	12:00	97.0	54.5	61.5	-	67.8	75.0	N	NA
2016/06/20	Sunny	11:30	12:00	92.0	57.0	63.0	-	67.8	75.0	N	NA
2016/06/30	Sunny	11:30	12:00	85.0	54.0	61.0	-	67.8	75.0	N	NA
2016/07/06	Cloudy	11:30	12:00	86.0	53.5	61.5	-	67.8	75.0	N	NA
2016/07/12	Cloudy	11:00	11:30	85.0	55.0	64.0	-	67.8	75.0	N	NA
2016/07/18	Sunny	11:30	12:00	86.5	54.5	63.5	-	67.8	75.0	N	NA
2016/07/29	Sunny	13:00	13:30	88.5	61.5	64.0	-	67.8	75.0	N	NA
2016/08/05	Fine	13:30	14:00	90.5	61.5	66.0	-	67.8	75.0	N	NA
2016/08/10	Cloudy	14:00	14:30	91.0	61.5	63.5	-	67.8	75.0	N	NA
2016/08/16	Rainy	14:00	14:30	90.0	56.5	64.5	-	67.8	75.0	N	NA
2016/08/22	Sunny	13:30	14:00	88.5	57.0	65.5	-	67.8	75.0	N	NA
2016/09/02	Cloudy	14:00	14:30	91.0	62.0	65.5	-	67.8	75.0	N	NA
2016/09/08	Cloudy	13:30	14:00	88.5	62.0	64.5	-	67.8	75.0	N	NA
2016/09/14	Sunny	14:00	14:30	93.0	57.0	66.5	-	67.8	75.0	N	NA
2016/09/20	Fine	13:30	14:00	94.0	61.5	63.5	-	67.8	75.0	N	NA
2016/09/26	Fine	13:30	14:00	88.0	63.0	66.0	-	67.8	75.0	N	NA
2016/10/06	Fine	13:30	14:00	85.0	63.0	67.0	-	67.8	75.0	N	NA
2016/10/12	Sunny	11:30	12:00	91.0	63.0	68.0	-	67.8	75.0	N	NA
2016/10/20	Fine	10:30	11:00	86.5	62.0	68.5	-	67.8	75.0	N	NA
2016/10/24	Sunny	11:30	12:00	88.0	62.5	67.0	-	67.8	75.0	N	NA
2016/11/04	Sunny	11:30	12:00	92.0	59.5	66.0	-	67.8	75.0	N	NA
2016/11/10	Cloudy	11:30	12:00	92.0	62.0	66.0	-	67.8	75.0	N	NA
2016/11/16	Sunny	13:30	14:00	87.0	54.0	59.0	-	67.8	75.0	N	NA
2016/11/23	Rainy	16:30	17:00	91.0	63.0	66.0	-	67.8	75.0	N	NA
2016/11/28	Sunny	11:30	12:00	88.0	67.0	62.5	-	67.8	75.0	N	NA
2016/12/09	Fine	11:30	12:00	89.0	56.0	63.0	-	67.8	75.0	N	NA
2016/12/15	Sunny	11:30	12:00	95.0	57.0	66.5	-	67.8	75.0	N	NA
2016/12/21	Cloudy	11:30	12:00	86.0	65.0	68.0	-	67.8	75.0	N	NA
2016/12/30	Cloudy	11:30	12:00	90.0	60.5	65.5	-	67.8	75.0	N	NA
2017/01/05	Cloudy	11:30	12:00	90.5	54.0	66.0	-	67.8	75.0	N	NA
2017/01/11	Cloudy	11:30	12:00	90.0	63.5	66.5	-	67.8	75.0	N	NA
2017/01/17	Cloudy	11:30	12:00	85.5	66.5	67.5	-	67.8	75.0	N	NA
2017/01/23	Sunny	11:30	12:00	91.0	66.0	68.0	-	67.8	75.0	N	NA
2017/02/02	Fine	11:30	12:00	87.0	65.0	68.0	-	67.8	75.0	N	NA
2017/02/08	Fine	11:30	12:00	95.0	59.0	65.0	-	67.8	75.0	N	NA
2017/02/14	Sunny	11:30	12:00	98.0	61.0	68.0	-	67.8	75.0	N	NA
2017/02/20	Sunny	11:30	12:00	93.0	55.0	60.0	-	67.8	75.0	N	NA
2017/03/02	Sunny	11:30	12:00	93.0	61.0	69.0	-	67.8	75.0	N	NA
2017/03/08	Fine	11:30	12:00	97.0	65.0	70.0	-	67.8	75.0	N	NA
2017/03/14	Cloudy	11:30	12:00	95.0	62.0	66.0	-	67.8	75.0	N	NA
2017/03/20	Sunny	11:03	11:33	99.0	62.5	67.5	-	67.8	75.0	N	NA
2017/03/30	Sunny	11:30	12:00	97.0	58.0	65.5	-	67.8	75.0	N	NA
2017/04/05	Sunny	11:30	12:00	93.5	58.0	66.0	-	67.8	75.0	N	NA
2017/04/10	Fine	11:30	12:00	95.0	63.0	69.5	-	67.8	75.0	N	NA
2017/04/19	Sunny	11:30	12:00	98.0	65.0	68.0	-	67.8	75.0	N	NA
2017/04/25	Cloudy	11:30	12:00	89.0	59.0	69.0	-	67.8	75.0	N	NA
2017/05/04	Rainy	11:30	12:00	88.0	66.5	68.0	-	67.8	75.0	N	NA
2017/05/10	Cloudy	11:30	12:00	91.0	60.0	65.0	-	67.8	75.0	N	NA
2017/05/16	Cloudy	11:30	12:00	93.0	61.5	68.0	-	67.8	75.0	N	NA
2017/05/22	Cloudy	11:30	12:00	92.0	62.0	67.0	-	67.8	75.0	N	NA
2017/06/01	Cloudy	11:30	12:00	95.0	59.5	68.0	-	67.8	75.0	N	NA
2017/06/07	Fine	11:30	12:00	93.0	56.0	68.5	-	67.8	75.0	N	NA
2017/06/13	Cloudy	11:30	12:00	97.0	62.5	68.0	-	67.8	75.0	N	NA
2017/06/19	Rainy	11:30	12:00	93.5	58.0	66.5	-	67.8	75.0	N	NA
2017/06/29	Fine	11:30	12:00	89.0	57.5	66.0	-	67.8	75.0	N	NA
2017/07/05	Cloudy	11:30	12:00	89.0	57.0	68.0	-	67.8	75.0	N	NA
2017/07/11	Cloudy	11:30	12:00	90.0	62.0	66.0	-	67.8	75.0	N	NA
2017/07/17	Cloudy	11:30	12:00	93.0	60.0	66.0	-	67.8	75.0	N	NA
2017/07/27	Fine	11:30	12:00	93.5	57.0	67.0	-	67.8	75.0	N	NA
2017/08/02	Fine	11:30	12:00	97.0	61.0	68.5	-	67.8	75.0	N	NA
2017/08/08	Sunny	11:00	11:30	95.0	56.0	68.0	-	67.8	75.0	N	NA
2017/08/14	Sunny	11:30	12:00	95.0	55.0	64.0	-	67.8	75.0	N	NA
2017/08/24	Sunny	11:30	12:00	92.5	56.5	67.5	-	67.8	75.0	N	NA
2017/08/30	Fine	11:30	12:00	99.0	58.0	66.0	-	67.8	75.0	N	NA
2017/09/05	Fine	11:30	12:00	92.5	57.5	66.0	-	67.8	75.0	N	NA
2017/09/11	Sunny	11:30	12:00	91.0	55.0	64.5	-	67.8	75.0	N	NA
2017/09/21	Fine	11:30	12:00	92.0	57.0	66.5	-	67.8	75.0	N	NA
2017/09/27	Fine	11:30	12:00	76.0	62.0	70.0	-	67.8	75.0	N	NA
2017/10/03	Sunny	11:30	12:00	74.5	61.5	70.5	-	67.8	75.0	N	NA

Appendix E
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)	Remarks#
				L10(30min)	L90(30min)	Leq(30min)					
2017/10/09	Cloudy	11:30	12:00	89.0	64.5	73.0	-	67.8	75.0	N	NA
2017/10/19	Fine	11:30	12:00	93.5	62.0	73.5	-	67.8	75.0	N	NA
2017/10/25	Sunny	11:30	12:00	92.5	59.5	73.5	-	67.8	75.0	N	NA
2017/10/31	Sunny	11:30	12:00	93.0	59.0	74.0	-	67.8	75.0	N	NA
2017/11/06	Fine	11:00	11:30	91.0	62.5	70.0	-	67.8	75.0	N	NA
2017/11/16	Cloudy	11:00	11:30	93.5	56.5	73.5	-	67.8	75.0	N	NA
2017/11/22	Sunny	11:00	11:30	91.5	68.5	74.0	-	67.8	75.0	N	NA
2017/11/28	Cloudy	11:15	11:45	87.5	64.5	71.5	-	67.8	75.0	N	NA
2017/12/04	Sunny	11:15	11:45	92.0	62.0	69.5	-	67.8	75.0	N	NA
2017/12/14	Fine	11:30	12:00	96.0	65.0	73.0	-	67.8	75.0	N	NA
2017/12/19	Sunny	11:30	12:00	92.5	61.5	73.5	-	67.8	75.0	N	NA
2017/12/28	Cloudy	11:30	12:00	94.5	61.5	72.5	-	67.8	75.0	N	NA
2018/01/03	Fine	11:00	11:30	97.0	60.0	74.5	-	67.8	75.0	N	NA
2018/01/09	Cloudy	11:30	12:00	91.0	63.5	74.0	-	67.8	75.0	N	NA
2018/01/15	Sunny	11:30	12:00	93.0	61.0	73.5	-	67.8	75.0	N	NA
2018/01/25	Fine	11:30	12:00	91.5	60.5	74.5	-	67.8	75.0	N	NA
2018/01/31	Cloudy	11:30	12:00	90.0	65.0	74.0	-	67.8	75.0	N	NA
2018/02/06	Sunny	11:15	11:45	91.0	60.0	70.0	-	67.8	75.0	N	NA
2018/02/12	Sunny	11:30	12:00	90.0	57.5	72.5	-	67.8	75.0	N	NA
2018/02/21	Cloudy	11:30	12:00	95.5	57.5	73.5	-	67.8	75.0	N	NA
2018/02/27	Sunny	11:20	11:50	92.0	60.0	73.0	-	67.8	75.0	N	NA
2018/03/05	Sunny	16:15	16:45	89.0	58.5	72.0	-	67.8	75.0	N	NA
2018/03/15	Cloudy	11:30	12:00	91.5	59.0	72.5	-	67.8	75.0	N	NA
2018/03/21	Sunny	11:15	11:45	93.5	58.0	72.5	-	67.8	75.0	N	NA
2018/03/26	Cloudy	11:30	12:00	92.0	59.5	73.0	-	67.8	75.0	N	NA
2018/04/04	Sunny	11:15	11:45	92.0	58.0	65.5	-	67.8	75.0	N	NA
2018/04/10	Fine	11:30	12:00	76.5	62.5	66.0	-	67.8	75.0	N	NA
2018/04/16	Cloudy	11:30	12:00	75.5	65.5	69.5	-	67.8	75.0	N	NA
2018/04/26	Cloudy	11:30	12:00	89.5	65.0	68.0	-	67.8	75.0	N	NA
2018/05/02	Sunny	11:15	11:45	78.5	62.5	69.5	-	67.8	75.0	N	NA
2018/05/08	Cloudy	11:25	11:55	77.5	67.0	67.5	-	67.8	75.0	N	NA
2018/05/14	Sunny	11:25	11:55	85.0	63.0	71.0	-	67.8	75.0	N	NA
2018/05/24	Sunny	11:30	12:00	75.5	59.0	67.5	-	67.8	75.0	N	NA
2018/05/30	Sunny	11:30	12:00	75.4	66.0	70.0	-	67.8	75.0	N	NA
2018/06/05	Rainy	11:30	12:00	65.5	60.0	62.0	-	67.8	75.0	N	NA
2018/06/11	Sunny	11:30	12:00	75.5	62.5	69.5	-	67.8	75.0	N	NA
2018/06/21	Fine	11:30	12:00	75.0	64.5	68.5	-	67.8	75.0	N	NA
2018/06/27	Fine	11:30	12:00	80.5	63.5	72.0	-	67.8	75.0	N	NA
2018/07/03	Rainy	11:15	11:45	71.5	66.5	69.5	-	67.8	75.0	N	NA
2018/07/09	Fine	11:15	11:45	69.5	67.5	68.5	-	67.8	75.0	N	NA
2018/07/19	Cloudy	11:15	11:45	74.5	65.5	69.5	-	67.8	75.0	N	NA
2018/07/25	Fine	11:15	11:45	76.0	66.0	72.0	-	67.8	75.0	N	NA
2018/07/31	Fine	11:15	11:45	76.0	66.5	71.5	-	67.8	75.0	N	NA
2018/08/06	Cloudy	11:15	11:45	80.5	60.0	72.0	-	67.8	75.0	N	NA
2018/08/16	Rainy	16:00	16:30	86.0	60.5	73.0	-	67.8	75.0	N	NA
2018/08/22	Cloudy	11:30	12:00	82.0	64.0	72.0	-	67.8	75.0	N	NA
2018/08/28	Cloudy	11:30	12:00	77.5	64.5	69.5	-	67.8	75.0	N	NA
2018/09/03	Cloudy	11:15	11:45	75.0	66.5	70.5	-	67.8	75.0	N	NA
2018/09/13	Fine	11:15	11:45	78.5	66.0	73.5	-	67.8	75.0	N	NA
2018/09/19	Cloudy	11:15	11:45	75.5	74.0	74.5	-	67.8	75.0	N	NA
2018/09/24	Fine	11:30	12:00	82.0	64.5	74.0	-	67.8	75.0	N	NA
2018/10/04	Sunny	11:15	11:45	72.5	70.0	71.0	-	67.8	75.0	N	NA
2018/10/10	Cloudy	11:15	11:45	79.0	70.5	73.5	-	67.8	75.0	N	NA
2018/10/16	Cloudy	11:15	11:45	80.5	65.5	73.0	-	67.8	75.0	N	NA
2018/10/22	Cloudy	11:30	12:00	77.0	66.0	70.5	-	67.8	75.0	N	NA
2018/11/01	Fine	11:30	12:00	79.0	66.0	71.0	-	67.8	75.0	N	NA
2018/11/07	Sunny	11:30	12:00	69.5	51.5	65.5	-	67.8	75.0	N	NA
2018/11/13	Fine	11:30	12:00	70.0	54.0	65.0	-	67.8	75.0	N	NA
2018/11/19	Sunny	11:15	11:45	74.0	59.0	66.5	-	67.8	75.0	N	NA
2018/11/29	Sunny	11:30	12:00	71.0	56.0	64.5	-	67.8	75.0	N	NA
2018/12/05	Cloudy	11:30	12:00	79.0	66.0	69.0	-	67.8	75.0	N	NA
2018/12/11	Fine	11:30	12:00	78.5	63.5	68.5	-	67.8	75.0	N	NA
2018/12/17	Sunny	11:00	11:30	77.5	62.0	66.5	-	67.8	75.0	N	NA
2018/12/27	Fine	11:30	12:00	76.5	63.0	67.5	-	67.8	75.0	N	NA
2019/01/02	Cloudy	11:15	11:45	88.5	65.5	70.1	-	67.8	75.0	N	NA
2019/01/08	Cloudy	11:15	11:45	92.0	63.5	64.5	-	67.8	75.0	N	NA
2019/01/14	Cloudy	11:15	11:45	93.0	62.5	65.5	-	67.8	75.0	N	NA
2019/01/24	Sunny	11:30	12:00	88.5	64.5	66.0	-	67.8	75.0	N	NA
2019/01/30	Fine	11:05	11:35	96.0	63.0	69.0	-	67.8	75.0	N	NA
2019/02/04	Fine	11:15	11:45	93.5	62.5	68.0	-	67.8	75.0	N	NA

Appendix E
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)	Remarks#
				L10(30min)	L90(30min)	Leq(30min)					
2019/02/14	Sunny	11:15	11:45	90.5	61.0	65.5	-	67.8	75.0	N	NA
2019/02/20	Cloudy	11:15	11:45	86.5	61.5	66.5	-	67.8	75.0	N	NA
2019/02/26	Cloudy	11:30	12:00	92.5	61.5	63.5	-	67.8	75.0	N	NA
2019/03/04	Cloudy	11:15	11:45	105.0	67.0	67.0	-	67.8	75.0	N	NA
2019/03/14	Cloudy	11:30	12:00	94.0	67.0	67.0	-	67.8	75.0	N	NA
2019/03/20	Cloudy	11:15	12:00	91.0	65.5	65.5	-	67.8	75.0	N	NA
2019/03/26	Cloudy	11:30	12:00	98.5	61.5	67.5	-	67.8	75.0	N	NA
2019/04/01	Fine	11:15	11:45	91.0	60.5	66.5	-	67.8	75.0	N	NA
2019/04/09	Fine	11:15	11:45	104.0	61.5	68.0	-	67.8	75.0	N	NA
2019/04/15	Fine	11:15	11:45	92.5	62.5	64.0	-	67.8	75.0	N	NA
2019/04/24	Fine	11:15	11:45	89.0	61.5	67.0	-	67.8	75.0	N	NA
2019/04/30	Cloudy	11:30	12:00	92.0	63.5	65.5	-	67.8	75.0	N	NA
2019/04/01	Fine	11:15	11:45	91.0	60.5	66.5	-	67.8	75.0	N	NA
2019/04/09	Fine	11:15	11:45	104.0	61.5	68.0	-	67.8	75.0	N	NA
2019/04/15	Fine	11:15	11:45	92.5	62.5	64.0	-	67.8	75.0	N	NA
2019/04/24	Fine	11:15	11:45	89.0	61.5	67.0	-	67.8	75.0	N	NA
2019/04/30	Cloudy	11:30	12:00	92.0	63.5	65.5	-	67.8	75.0	N	NA
2019/05/06	Cloudy	11:15	11:45	92.0	63.5	65.0	-	67.8	75.0	N	NA
2019/05/16	Sunny	11:15	11:45	93.5	66.0	67.5	-	67.8	75.0	N	NA
2019/05/22	Fine	11:30	12:00	93.5	60.5	69.0	-	67.8	75.0	N	NA
2019/05/28	Sunny	11:30	12:00	85.5	56.0	65.5	-	67.8	75.0	N	NA
2019/06/03	Cloudy	11:15	11:45	97.0	58.0	63.5	-	67.8	75.0	N	NA
2019/06/12	Cloudy	11:15	11:45	99.0	56.5	69.0	-	67.8	75.0	N	NA
2019/06/18	Cloudy	11:15	11:45	91.5	56.0	65.0	-	67.8	75.0	N	NA
2019/06/24	Cloudy	11:15	11:45	98.5	56.5	66.5	-	67.8	75.0	N	NA
2019/07/04	Fine	11:15	11:45	97.5	58.5	64.5	-	67.8	75.0	N	NA
2019/07/10	Cloudy	11:15	11:45	100.0	60.0	63.5	-	67.8	75.0	N	NA
2019/07/16	Fine	11:15	11:45	94.5	61.0	66.5	-	67.8	75.0	N	NA
2019/07/22	Fine	11:15	11:45	103.5	56.0	65.0	-	67.8	75.0	N	NA
2019/07/26	Fine	11:15	11:45	106.5	57.0	68.0	-	67.8	75.0	N	NA
2019/08/01	Cloudy	12:15	12:45	94.5	60.5	65.5	-	67.8	75.0	N	NA
2019/08/07	Fine	12:15	12:45	85.5	55.5	64.5	-	67.8	75.0	N	NA
2019/08/13	Fine	12:15	12:45	90.5	57.5	63.5	-	67.8	75.0	N	NA
2019/08/19	Fine	12:15	12:45	98.5	56.5	65.0	-	67.8	75.0	N	NA
2019/08/29	Cloudy	12:15	12:45	105.0	56.5	63.5	-	67.8	75.0	N	NA
2019/09/04	Cloudy	11:15	11:45	96.0	58.0	65.0	-	67.8	75.0	N	NA
2019/09/10	Fine	11:15	11:45	100.5	55.5	64.0	-	67.8	75.0	N	NA
2019/09/16	Cloudy	11:15	11:45	90.5	56.0	63.5	-	67.8	75.0	N	NA
2019/09/26	Fine	11:15	11:45	102.0	58.5	63.5	-	67.8	75.0	N	NA
2019/10/02	Fine	11:15	11:45	96.0	60.0	64.5	-	67.8	75.0	N	NA
2019/10/08	Fine	11:15	11:45	95.0	56.0	65.0	-	67.8	75.0	N	NA
2019/10/14	Cloudy	11:15	11:45	101.0	58.0	63.5	-	67.8	75.0	N	NA
2019/10/24	Fine	11:15	11:45	104.0	57.5	63.0	-	67.8	75.0	N	NA
2019/10/30	Fine	11:15	11:45	97.5	55.5	65.0	-	67.8	75.0	N	NA
2019/11/05	Sunny	11:15	11:45	88.5	55.5	62.5	-	67.8	75.0	N	NA
2019/11/11	Sunny	11:15	11:45	93.5	56.0	63.5	-	67.8	75.0	N	NA
2019/11/21	Sunny	11:15	11:45	101.5	58.5	64.0	-	67.8	75.0	N	NA
2019/11/27	Sunny	11:15	11:45	87.0	59.0	62.5	-	67.8	75.0	N	NA
2019/12/03	Sunny	11:15	11:45	77.0	58.0	65.5	-	67.8	75.0	N	NA
2019/12/09	Sunny	11:15	11:45	76.0	55.5	63.5	-	67.8	75.0	N	NA
2019/12/19	Cloudy	11:15	11:45	75.0	54.5	63.5	-	67.8	75.0	N	NA
2019/12/24	Sunny	11:15	11:45	80.5	55.5	64.5	-	67.8	75.0	N	NA
2019/12/30	Cloudy	11:15	11:45	79.5	55.0	65.5	-	67.8	75.0	N	NA
2020/01/09	Cloudy	11:00	11:30	81.0	57.0	64.5	-	67.8	75.0	N	NA
2020/01/15	Fine	11:15	11:45	79.5	54.5	63.0	-	67.8	75.0	N	NA
2020/01/21	Fine	11:30	12:00	78.5	54.0	64.0	-	67.8	75.0	N	NA
2020/01/24	Fine	11:15	11:45	97.5	55.5	64.0	-	67.8	75.0	N	NA
2020/01/30	Fine	11:15	11:45	101.0	56.0	62.5	-	67.8	75.0	N	NA
2020/02/05	Cloudy	11:15	11:45	80.5	58.0	65.5	-	67.8	75.0	N	NA
2020/02/11	Cloudy	11:15	11:45	78.5	56.5	63.5	-	67.8	75.0	N	NA
2020/02/17	Fine	11:15	11:45	86.5	57.0	64.5	-	67.8	75.0	N	NA
2020/02/27	Fine	11:15	11:45	79.5	56.0	64.0	-	67.8	75.0	N	NA
2020/03/04	Cloudy	11:15	11:45	91.5	61.5	65.0	-	67.8	75.0	N	NA
2020/03/10	Sunny	11:15	11:45	92.0	58.5	63.5	-	67.8	75.0	N	NA
2020/03/16	Sunny	11:15	11:45	98.5	56.5	61.5	-	67.8	75.0	N	NA
2020/03/26	Cloudy	11:15	11:45	93.0	57.5	65.5	-	67.8	75.0	N	NA
2020/04/02	Cloudy	11:15	11:45	104.0	61.0	67.0	-	67.8	75.0	N	NA
2020/04/09	Fine	11:30	12:00	101.0	59.5	66.5	-	67.8	75.0	N	NA
2020/04/16	Sunny	11:00	11:30	92.0	55.5	61.5	-	67.8	75.0	N	NA
2020/04/23	Cloudy	11:15	11:45	95.0	57.5	64.5	-	67.8	75.0	N	NA
2020/04/29	Cloudy	11:15	11:45	94.5	54.5	64.0	-	67.8	75.0	N	NA
2020/05/05	Fine	11:15	11:45	97.0	58.5	62.5	-	67.8	75.0	N	NA
2020/05/11	Cloudy	11:15	11:45	101.0	56.5	67.5	-	67.8	75.0	N	NA
2020/05/21	Cloudy	11:15	11:45	92.5	63.0	66.5	-	67.8	75.0	N	NA
2020/05/27	Cloudy	11:15	11:45	102.0	60.0	64.0	-	67.8	75.0	N	NA
2020/06/04	Fine	11:30	12:00	97.5	60.0	64.0	-	67.8	75.0	N	NA
2020/06/11	Fine	11:00	11:30	98.5	57.5	63.0	-	67.8	75.0	N	NA
2020/06/18	Fine	11:45	12:15	76.0	58.0	64.5	-	67.8	75.0	N	NA
2020/06/24	Fine	11:15	11:45	78.5	59.5	65.0	-	67.8	75.0	N	NA
2020/06/30	Fine	11:15	11:45	77.5	57.5	65.5	-	67.8	75.0	N	NA
2020/07/06	Fine	11:15	11:45	68.0	60.0	62.5	-	67.8	75.0	N	NA
2020/07/16	Fine	11:15	11:45	77.5	58.0	67.0	-	67.8	75.0	N	NA
2020/07/22	Fine	11:45	12:15	75.5	64.0	66.0	-	67.8	75.0	N	NA
2020/07/28	Fine	11:15	11:45	74.0	57.5	65.5	-	67.8	75.0	N	NA
2020/08/03	Cloudy	11:15	11:45	72.0	59.5	64.0	-	67.8	75.0	N	NA
2020/08/13	Fine	11:15	11:45	73.0	59.5	66.0	-	67.8	75.0	N	NA
2020/08/19	Cloudy	11:45	12:15	75.5	54.5	62.5	-	67.8	75.0	N	NA
2020/08/25	Fine	11:15	11:45	70.5	57.0	63.5	-	67.8	75.0	N	NA
2020/08/31	Fine	11:15	11:45	78.0	57.0	68.5	-	67.8	75.0	N	NA
2020/09/10	Fine	11:10	11:40	79.5	57.0	64.5	-	67.8	75.0	N	NA
2020/09/16	Fine	11:00	11:30	78.0	58.5	64.0	-	67.8	75.0	N	NA
2020/09/22	Fine	11:45	12:15	75.0	54.5	62.5	-	67.8	75.0	N	NA
2020/09/28	Cloudy	11:30	12:00	75.0	57.0	65.0	-	67.8	75.0	N	NA
2020/10/03	Cloudy	11:15	11:45	75.5	59.0	64.5	-	67.8	75.0	N	NA
2020/10/09	Sunny	11:15	11:45	73.0	57.5	63.5	-	67.8	75.0	N	NA
2020/10/15	Sunny	11:15	11:45	79.5	56.0	62.5	-	67.8	75.0	N	NA
2020/10/21	Sunny	11:15	11:45	77.0	60.5	65.5	-	67.8	75.0	N	NA
2020/10/27	Sunny	11:15	11:45	73.5	57.5	65.5	-	67.8	75.0	N	NA

Notes:

* +3dB(A) Façade effect correction included

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

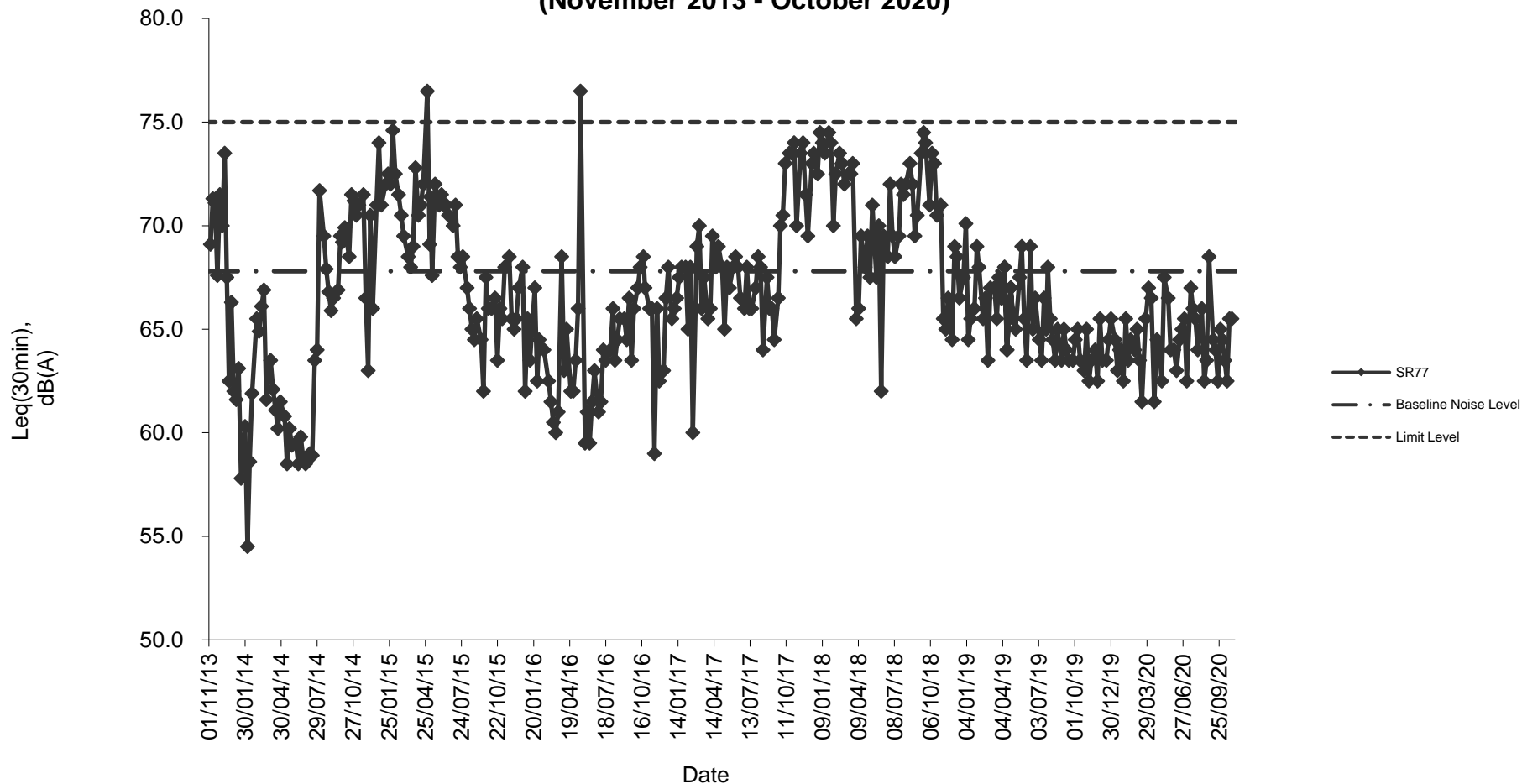
*** Data in **Underline** denotes exceedance of respective Limit Level

#Remarks:

Exceedances are project non- related and no necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

Summary For the Reporting Period (Nov 2013 - Oct 2020)	
Average	66.6
Minimum	54.5
Maximum	76.5

Noise monitoring result: SR77 (November 2013 - October 2020)



Remarks:

From the above result, total 2 exceedance events were recorded in the reporting period and the exceedance was concluded not related to the Project. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

Appendix F

Water Monitoring Results and their

Graphical Presentation

Appendix F
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 5/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:53	<0.5	24.1	24.1	7.6	7.6	7.0	7.0	83.7	83.7	13.6	12.9	0.1	0.1	8	8.5
			24.1		7.6		7.0		83.6		12.1		9			
C3b	10:41	<0.5	23.7	23.7	8.1	8.1	6.9	6.9	81.2	81.2	35	36.2	0.1	0.1	52	52
			23.7		8.1		6.9		81.2		37.3		52			
I5	10:24	<0.5	23.5	23.5	7.9	7.9	7.1	7.1	83.8	83.1	9.69	9.9	0.1	0.1	7	6.5
			23.5		7.9		7.0		82.3		10.1		6			

Date of Monitoring 7/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:53	<0.5	27.2	27.4	7.6	7.6	8.2	8.2	104.3	104.3	15.1	14.6	<0.1	<0.1	17	16.5
			27.4		7.6		8.2		104.2		14.1		16			
C3b	10:41	<0.5	25.7	25.7	8	8.0	7.4	7.4	90.6	90.6	29.2	29.0	<0.1	<0.1	37	37.5
			25.7		8		7.4		90.6		28.7		38			
I5	10:24	<0.5	26.1	26.1	7.8	7.8	7.7	7.7	95.4	95.4	32.5	31.2	<0.1	<0.1	32	31.5
			26.1		7.8		7.7		95.4		29.8		31			

Date of Monitoring 9/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:02	<0.5	27.2	27.2	7.6	7.6	6.4	6.4	80.3	80.2	21.8	22.0	<0.1	<0.1	24	24
			27.2		7.6		6.4		80.1		22.1		24			
C3b	10:50	<0.5	25.9	25.9	8	8.0	5.4	5.4	66.3	66.2	38.7	39.9	<0.1	<0.1	27	27
			25.9		8		5.4		66.1		41		27			
I5	10:33	<0.5	25.3	25.3	7.7	7.7	6.1	6.1	74.5	74.2	19.5	18.5	<0.1	<0.1	20	21
			25.3		7.7		6.1		73.9		17.5		22			

Date of Monitoring 11/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:46	<0.5	24.5	24.5	7.7	7.7	6.2	6.2	74.7	74.6	28.2	26.2	<0.1	<0.1	34	33.5
			24.5		7.7		6.2		74.4		24.2		33			
C3b	11:34	<0.5	24.1	24.1	8	8.0	6.8	6.8	81.3	81.4	87.3	88.5	<0.1	<0.1	130	133
			24.1		8		6.8		81.4		89.6		136			
I5	11:17	<0.5	24.4	24.4	7.8	7.8	7.0	7.0	84	84.0	17	17.0	<0.1	<0.1	12	13
			24.4		7.8		7.0		83.9		16.9		14			

Date of Monitoring 13/11/2013 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:38	<0.5	21.7	21.7	7.7	7.7	5.7	5.6	65	64.2	17.1	17.5	<0.1	<0.1	18	17.5
			21.7		7.7		5.6		63.3		17.9		17			
C3b	11:14	<0.5	20.9	20.9	7.9	7.9	6.9	7.0	77.7	78.7	60.1	60.2	<0.1	<0.1	88	86
			20.9		7.9		7.1		79.7		60.2		84			
I5	11:25	<0.5	21.2	21.2	7.8	7.8	7.1	7.1	79.3	79.4	23	22.4	<0.1	<0.1	20	20.5
			21.2		7.8		7.1		79.4		21.8		21			

Date of Monitoring 15/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:57	<0.5	25.5	25.5	7.7	7.7	8.2	8.1	99.6	99.6	36.5	36.0	<0.1	<0.1	25	25.5
			25.5		7.7		8.1		99.5		35.5		26			
C3b	11:21	<0.5	23.2	23.2	8	8.0	8.0	8.0	93.7	93.7	37.4	38.1	<0.1	<0.1	30	34
			23.2		8		8.0		93.6		38.7		38			
I5	11:34	<0.5	23.2	23.3	7.8	7.8	8.1	8.1	94.6	94.5	21	21.0	<0.1	<0.1	11	9.5
			23.3		7.8		8.1		94.3		21		8			

Date of Monitoring 18/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	17:39	<0.5	22.5	22.5	7.7	7.7	4.0	4.2	46.2	48.9	7.81	6.9	<0.1	<0.1	10	9.5
			22.5		7.7		4.5		51.6		5.98		9			
C3b	18:07	<0.5	21.4	21.4	8	8.0	5.8	5.8	65.6	65.6	31.6	31.4	<0.1	<0.1	32	32
			21.4		8		5.8		65.5		31.1		32			
I5	18:19	<0.5	21.3	21.3	7.8	7.8	4.5	4.4	50.2	50.2	26.8	25.4	<0.1	<0.1	18	18
			21.3		7.8		4.4		50.2		23.9		18			

Date of Monitoring 20/11/2013 Weather : Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	16:09	<0.5	22.1	22.1	7.7	7.7	5.7	5.7	65.3	65.2	14.8	14.0	<0.1	<0.1	10	9
			22.1		7.7		5.7		65		13.2		8			
C3b	15:45	<0.5	21.4	21.4	8	8.0	6.5	6.5	73.7	73.4	18.7	18.7	<0.1	<0.1	8	9
			21.4		8		6.5		73		18.6		10			
I5	15:15	<0.5	22.2	22.3	7.9	7.9	8.5	8.5	97.7	97.9	13.5	13.5	<0.1	<0.1	6	7
			22.3		7.9		8.5		98		13.4		8			

Date of Monitoring 22/11/2013 Weather : Fine

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:38	<0.5	25.5	25.5	7.7	7.7	7.4	7.7	90.6	94.0	12.2	12.2	<0.1	<0.1	6	5
			25.5		7.7		8.0		97.3		12.1		<0.1		4	
C3b	14:21	<0.5	23.8	23.8	8	8.0	8.1	8.1	95.7	95.8	60.3	59.7	<0.1	<0.1	35	35
			23.8		8		8.1		95.8		59		<0.1		35	
I5	14:07	<0.5	24.6	24.6	7.7	7.7	8.7	8.7	104.5	104.4	6.2	6.3	<0.1	<0.1	9	8.5
			24.6		7.7		8.7		104.3		6.32		<0.1		8	

Date of Monitoring 25/11/2013 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:32	<0.5	23.2	23.2	7.4	7.4	8.1	8.1	95.1	95.1	25.9	27.4	<0.1	<0.1	9	9.5
			23.2		7.38		8.1		95.1		28.8		<0.1		10	
C3b	11:19	<0.5	22.1	22.1	8.32	8.3	8.4	8.3	95.8	95.7	15.5	15.0	<0.1	<0.1	22	22.5
			22.1		8.32		8.3		95.5		14.4		<0.1		23	
I5	10:58	<0.5	21.7	21.7	7.45	7.5	8.7	8.7	99	98.8	24	24.3	<0.1	<0.1	18	18.5
			21.7		7.45		8.7		98.6		24.5		<0.1		19	

Date of Monitoring 27/11/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:11	<0.5	23.4	23.4	7.8	7.8	8.1	8.1	95.3	95.3	22.1	21.9	<0.1	<0.1	10	11
			23.4		7.8		8.1		95.3		21.6		<0.1		12	
C3b	10:26	<0.5	22.7	22.7	8	8.0	8.3	8.3	95.5	95.5	24.3	24.0	<0.1	<0.1	14	14
			22.7		8		8.3		95.5		23.7		<0.1		14	
I5	10:45	<0.5	23.2	23.2	7.7	7.7	8.7	8.7	98.7	98.7	20.5	20.1	<0.1	<0.1	8	9
			23.2		7.7		8.7		98.6		19.7		<0.1		10	

Date of Monitoring 29/11/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:24	<0.5	21.5	21.5	7.8	7.8	8.9	8.9	100.3	100.4	12.1	12.1	<0.1	<0.1	6	5
			21.5		7.8		8.9		100.4		12		<0.1		4	
C3b	14:05	<0.5	20.3	20.3	8	8.0	8.2	8.2	90.9	91.0	27.5	28.0	<0.1	<0.1	15	12.5
			20.3		8		8.2		91.1		28.5		<0.1		10	
I5	13:48	<0.5	21.4	21.4	7.6	7.6	9.5	9.5	107.7	107.0	15.8	15.9	<0.1	<0.1	15	12.5
			21.4		7.6		9.4		106.3		15.9		<0.1		10	

Date of Monitoring 2/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	15:13	<0.5	22.8	22.8	7.7	7.7	7.5	7.5	86.9	86.7	16.7	16.7	<0.1	<0.1	16	29.5
			22.8		7.7		7.4		86.4		16.6		<0.1		43	
C3b	14:47	<0.5	20.4	20.4	8	8.0	7.0	7.0	77.8	77.8	20.8	20.6	<0.1	<0.1	11	11
			20.4		8		7.0		77.8		20.4		<0.1		11	
I5	14:34	<0.5	22.9	22.9	7.6	7.6	7.4	7.4	86.9	86.9	21.1	20.6	<0.1	<0.1	14	13.5
			22.9		7.6		7.4		86.8		20.1		<0.1		13	

Date of Monitoring 4/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:23	<0.5	22.6	22.6	7.8	7.8	7.3	7.3	88.4	88.4	11.9	12.0	<0.1	<0.1	7	7.5
			22.6		7.8		7.3		88.3		12.1		<0.1		8	
C3b	13:04	<0.5	21.4	21.4	8	8.0	7.7	7.7	92.4	92.5	18.1	18.3	<0.1	<0.1	10	9.5
			21.4		8		7.7		92.5		18.4		<0.1		9	
I5	12:46	<0.5	21.9	21.9	7.6	7.6	7.9	7.9	95.2	94.9	18.5	18.1	<0.1	<0.1	8	7
			21.9		7.6		7.9		94.6		17.7		<0.1		6	

Date of Monitoring 6/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:25	<0.5	22.3	22.3	7.7	7.7	8.0	8.0	95.5	95.5	10.1	10.4	<0.1	<0.1	6	5
			22.3		7.7		8.0		95.5		10.6		<0.1		4	
C3b	13:59	<0.5	19.6	19.6	8	8.0	7.9	7.9	92.1	92.2	21.3	20.5	<0.1	<0.1	7	6.5
			19.6		8		7.9		92.2		19.6		<0.1		6	
I5	13:45	<0.5	21.3	21.3	7.6	7.6	8.0	8.0	91.7	91.6	20.8	20.1	<0.1	<0.1	8	8.5
			21.3		7.6		8.0		91.5		19.4		<0.1		9	

Date of Monitoring 9/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:43	<0.5	24.4	24.4	7.6	7.6	7.5	7.5	90.2	90.2	18	18.2	<0.1	<0.1	10	10
			24.4		7.6		7.5		90.2		18.3		<0.1		10	
C3b	14:18	<0.5	22.6	22.6	7.9	7.9	7.7	7.7	88.7	88.7	21.4	21.9	<0.1	<0.1	13	13.5
			22.6		7.9		7.7		88.7		22.4		<0.1		14	
I5	14:00	<0.5	25.1	25.1	7.5	7.5	8.7	8.7	105.2	105.2	19.2	19.1	<0.1	<0.1	8	7
			25.1		7.5		8.7		105.1		18.9		<0.1		6	

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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 11/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:41	<0.5	22.1	22.1	8.05	8.0	7.8	7.7	88.6	86.9	26.9	26.6	<0.1	<0.1	20	19.5
			22.1		8.04		7.5		85.2		26.3					
C3b	14:16	<0.5	21.2	21.2	8.16	8.2	8.4	8.4	94.3	94.3	24	24.4	<0.1	<0.1	17	16.5
			21.2		8.15		8.4		94.2		24.8					
I5	14:00	<0.5	22.2	22.2	8.18	8.2	7.6	7.6	87.8	87.3	20.2	19.6	<0.1	<0.1	6	5.5
			22.2		8.18		7.6		86.8		19					

Date of Monitoring 13/12/2013 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	9:49	<0.5	17.5	17.5	7.7	7.7	9.6	9.6	100.6	100.6	24.2	24.2	<0.1	<0.1	21	21
			17.5		7.7		9.6		100.6		24.1					
C3b	9:17	<0.5	17.3	17.3	8	8.0	9.5	9.5	96.2	96.2	12.9	12.9	<0.1	<0.1	3	2.5
			17.3		8		9.5		96.1		12.8					
I5	9:00	<0.5	17.3	17.3	7.2	7.2	8.8	8.8	99.2	99.2	13	13.0	<0.1	<0.1	2	2
			17.3		7.2		8.8		99.2		13					

Date of Monitoring 16/12/2013 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:48	<0.5	15.6	15.6	7.7	7.7	9.4	9.4	94.4	94.4	34.5	36.1	<0.1	<0.1	24	23.5
			15.6		7.7		9.4		94.4		37.7					
C3b	11:01	<0.5	16.2	16.2	8	8.0	9.0	9.0	92.1	92.1	28	27.0	<0.1	<0.1	10	9.5
			16.2		8		9.0		92.1		26					
I5	11:18	<0.5	15.3	15.3	7.3	7.3	9.0	9.0	89.7	89.8	39.9	41.2	<0.1	<0.1	20	19
			15.3		7.3		9.0		89.8		42.4					

Date of Monitoring 18/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:33	<0.5	18.6	18.6	7.7	7.7	8.8	8.8	91.1	91.1	20.5	21.0	<0.1	<0.1	15	14.5
			18.6		7.7		8.8		91.1		21.5					
C3b	13:17	<0.5	16.5	16.5	8.1	8.1	8.6	8.6	93.3	93.3	17.9	18.0	<0.1	<0.1	8	8
			16.5		8.1		8.5		93.3		18					
I5	12:55	<0.5	16.9	16.9	7.5	7.5	8.4	8.6	87.6	87.6	48.6	48.7	<0.1	<0.1	28	28
			16.9		7.5		8.8		87.6		48.7					

Date of Monitoring 20/12/2013 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:35	<0.5	20.4	20.4	7.7	7.7	7.7	7.5	85.2	83.0	30.1	29.8	<0.1	<0.1	30	29.5
			20.4		7.7		7.3		80.7		29.4					
C3b	13:16	<0.5	18.1	18.1	8.1	8.1	8.6	8.6	90.9	90.9	25.7	25.1	<0.1	<0.1	13	12.5
			18.1		8.1		8.6		90.8		24.4					
I5	12:49	<0.5	18.2	18.2	7.5	7.5	8.8	8.6	93.3	91.3	24.1	24.7	<0.1	<0.1	13	13.5
			18.2		7.5		8.4		89.3		25.3					

Date of Monitoring 23/12/2013 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:40	<0.5	18.2	18.2	7.7	7.7	9.5	9.3	96.7	95.0	42.9	43.5	<0.1	<0.1	32	32.5
			18.2		7.7		9.1		93.2		44.1					
C3b	11:21	<0.5	16.6	16.6	8	8.0	9.4	9.5	96.5	97.1	37.4	37.2	<0.1	<0.1	9	9
			16.6		8		9.5		97.7		36.9					
I5	11:03	<0.5	16.3	16.3	7.3	7.3	8.2	8.2	87.2	87.2	36.3	37.1	<0.1	<0.1	13	13.5
			16.3		7.3		8.2		87.1		37.8					

Date of Monitoring 24/12/2013 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:26	<0.5	15.3	15.3	7.6	7.6	8.5	8.4	85.2	84.3	42.8	42.0	<0.1	<0.1	62	60
			15.3		7.6		8.3		83.3		41.1					
C3b	10:07	<0.5	13.8	13.8	8	8.0	8.3	8.4	80.3	80.7	26.2	26.8	<0.1	<0.1	4	3.5
			13.8		8		8.4		81		27.3					
I5	9:51	<0.5	14.3	14.3	7.5	7.5	8.5	8.8	83.3	85.7	23.5	24.0	<0.1	<0.1	6	5.5
			14.3		7.5		9.0		88		24.5					

Date of Monitoring 27/12/2013 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:07	<0.5	15.2	15.2	7.6	7.6	8.5	8.6	84.6	85.0	20.1	20.2	<0.1	<0.1	9	9
			15.2		7.6		8.6		85.3		20.3					
C3b	10:44	<0.5	14	14.0	8	8.0	8.7	8.6	84.7	83.5	21.4	21.4	<0.1	<0.1	14	14
			14		8		8.5		82.2		21.4					
I5	10:30	<0.5	13.8	13.8	7.4	7.4	9.6	9.4	93.2	90.6	28.8	28.8	<0.1	<0.1	9	9
			13.8		7.4		9.1		87.9		28.8					

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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 30/12/2013 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:10	<0.5	16.7	16.7	7.6	7.6	8.2	8.3	84.3	85.1	52.1	52.0	<0.1	<0.1	58	57.5
			16.7		7.6		8.3		51.8		<0.1		57			
C3b	11:30	<0.5	14.4	14.4	8.1	8.1	9.1	9.0	88.9	87.5	26.9	26.6	<0.1	<0.1	16	17
			14.4		8.1		8.8		86		<0.1		18			
I5	11:44	<0.5	15.1	15.1	7.4	7.4	8.3	8.4	82.4	83.1	18.5	18.9	<0.1	<0.1	6	5.5
			15.1		7.4		8.4		83.7		<0.1		5			

Date of Monitoring 2/1/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:59	<0.5	17.2	17.2	7.7	7.7	8.4	8.4	87.7	87.7	18.6	18.9	<0.1	<0.1	17	17.5
			17.2		7.7		8.4		87.7		19.2		<0.1		18	
C3b	10:28	<0.5	15.9	15.9	8	8.0	8.5	8.6	86.4	86.8	25.7	25.9	<0.1	<0.1	21	21.5
			15.9		8		8.6		87.2		26.1		<0.1		22	
I5	10:44	<0.5	15.9	15.9	7.5	7.5	8.1	8.1	81.8	81.8	31.8	32.5	<0.1	<0.1	9	9
			15.9		7.5		8.1		81.8		33.1		<0.1		9	

Date of Monitoring 4/1/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:00	<0.5	16.4	16.4	7.7	7.7	8.5	8.5	86.7	86.7	36.1	36.2	<0.1	<0.1	18	19
			16.4		7.7		8.5		86.7		36.2		<0.1		20	
C3b	10:18	<0.5	16.8	16.8	8	8.0	8.8	8.8	90.4	90.4	33.4	34.8	<0.1	<0.1	6	6
			16.8		8		8.8		90.4		36.1		<0.1		6	
I5	10:29	<0.5	17.1	17.1	7.5	7.5	7.9	7.9	82.1	82.1	29.2	29.7	<0.1	<0.1	5	5.5
			17.1		7.5		7.9		82.1		30.2		<0.1		6	

Date of Monitoring 6/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:51	<0.5	18.7	18.7	7.6	7.6	7.1	7.1	75.8	75.8	26.1	25.6	<0.1	<0.1	22	21
			18.7		7.6		7.1		75.8		25.1		<0.1		20	
C3b	12:19	<0.5	18.1	18.1	8.1	8.1	8.2	8.2	86.7	86.7	15.4	15.7	<0.1	<0.1	9	9
			18.1		8.1		8.2		86.7		15.9		<0.1		9	
I5	12:33	<0.5	18.6	18.6	7.4	7.4	8.1	8.1	87.1	87.1	16.9	17.0	<0.1	<0.1	8	7.5
			18.6		7.4		8.1		87.1		17.1		<0.1		7	

Date of Monitoring 8/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:31	<0.5	20.2	20.2	7.6	7.6	7.9	7.9	86.8	86.8	41.8	41.5	<0.1	<0.1	36	35.5
			20.2		7.6		7.9		86.8		41.2		<0.1		35	
C3b	9:55	<0.5	20.4	20.4	8.1	8.1	7.8	7.8	86.3	86.3	41.6	41.4	<0.1	<0.1	9	9.5
			20.4		8.1		7.8		86.3		41.1		<0.1		10	
I5	10:13	<0.5	19.5	19.5	7.4	7.4	8.5	8.5	92.5	92.5	33.2	33.5	<0.1	<0.1	7	7
			19.5		7.4		8.5		92.5		33.7		<0.1		7	

Date of Monitoring 10/1/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:33	<0.5	17	17.0	7.7	7.7	7.6	7.6	78.4	78.4	25.5	25.5	<0.1	<0.1	14	14.5
			17		7.7		7.6		78.4		25.5		<0.1		15	
C3b	10:05	<0.5	16.6	16.6	8	8.0	8.6	8.6	88.1	88.1	16.8	16.8	<0.1	<0.1	4	4
			16.6		8		8.6		88.1		16.8		<0.1		4	
I5	10:16	<0.5	17	17.0	7.5	7.5	8.6	8.6	89	89.0	15.6	15.6	<0.1	<0.1	7	6.5
			17		7.5		8.6		89		15.6		<0.1		6	

Date of Monitoring 13/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:00	<0.5	14	14.0	7.1	7.1	10.3	10.3	99.8	99.8	17	17.5	<0.1	<0.1	4	4.5
			14		7.1		10.3		99.7		18		<0.1		5	
C3b	10:17	<0.5	14	14.0	7.8	7.8	10.0	10.1	97.3	97.5	18.1	17.6	<0.1	<0.1	5	4.5
			14		7.8		10.1		97.6		17.1		<0.1		4	
I5	9:40	<0.5	14.5	14.5	7.4	7.4	10.1	10.1	98.58	98.7	16	16.7	<0.1	<0.1	3	3
			14.5		7.4		10.1		98.8		17.3		<0.1		3	

Date of Monitoring 15/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:01	<0.5	20.4	20.4	7.1	7.1	7.5	7.6	82.8	84.2	16.9	17.4	<0.1	<0.1	7	7
			20.4		7.1		7.7		85.6		17.8		<0.1		7	
C3b	13:46	<0.5	18.5	18.5	7.8	7.8	8.5	8.6	90.7	91.4	20.8	21.9	<0.1	<0.1	5	5.5
			18.5		7.8		8.6		92		22.9		<0.1		6	
I5	13:30	<0.5	20	20.0	7.4	7.4	8.0	7.8	87.5	85.0	21.7	22.1	<0.1	<0.1	10	11
			20		7.4		7.5		82.5		22.5		<0.1		12	

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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 17/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:03	<0.5	19.5	19.5	7.7	7.7	7.9	7.8	85.6	84.9	25.6	25.4	<0.1	<0.1	9	9.5
			19.5		7.7		7.7		84.1		25.2		<0.1		10	
C3b	13:41	<0.5	19.5	19.5	8	8.0	8.4	8.4	91.1	91.1	21.2	20.8	<0.1	<0.1	4	3.5
			19.5		8		8.4		91.1		20.3		<0.1		3	
I5	13:27	<0.5	18.8	18.8	7.5	7.5	7.6	7.6	81.9	81.9	19	19.3	<0.1	<0.1	7	7
			18.8		7.5		7.6		81.9		19.5		<0.1		7	

Date of Monitoring 20/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:07	<0.5	21	21.0	7.1	7.1	7.5	7.5	84	84.0	22.8	22.7	<0.1	<0.1	9	9
			21		7.1		7.5		84		22.5		<0.1		9	
C3b	13:56	<0.5	19.9	19.9	7.8	7.8	7.3	7.3	80.3	80.3	12.7	12.8	<0.1	<0.1	5	5
			19.9		7.8		7.3		80.3		12.8		<0.1		5	
I5	13:53	<0.5	20.8	20.8	7.4	7.4	7.9	7.9	87.9	87.9	14.1	14.0	<0.1	<0.1	6	6
			20.8		7.4		7.9		87.9		13.8		<0.1		6	

Date of Monitoring 22/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:01	<0.5	19.3	19.3	7.7	7.7	8.7	8.7	94.2	94.2	22.9	22.3	<0.1	<0.1	6	6
			19.3		7.7		8.7		94.2		21.6		<0.1		6	
C3b	13:41	<0.5	18.1	18.1	8	8.0	8.4	8.4	89.4	89.4	23.8	23.5	<0.1	<0.1	6	6.5
			18.1		8		8.4		89.4		23.1		<0.1		7	
I5	13:33	<0.5	19.7	19.7	7.5	7.5	7.9	7.9	86.4	86.4	13.4	13.6	<0.1	<0.1	6	5.5
			19.7		7.5		7.9		86.4		13.7		<0.1		5	

Date of Monitoring 24/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:28	<0.5	21.5	21.5	7.7	7.7	7.2	7.2	81.7	81.7	15.7	15.9	<0.1	<0.1	4	4
			21.5		7.7		7.2		81.7		16		<0.1		4	
C3b	13:49	<0.5	19.8	19.8	8	8.0	8.2	8.2	89.8	89.8	28.8	29.4	<0.1	<0.1	7	6
			19.8		8		8.2		89.8		29.9		<0.1		5	
I5	13:33	<0.5	20.8	20.8	7.5	7.5	8.0	8.0	89	89.0	31	30.4	<0.1	<0.1	10	9.5
			20.8		7.5		8.0		89		29.7		<0.1		9	

Date of Monitoring 27/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:55	<0.5	21.1	21.1	7.7	7.7	7.4	7.4	83.8	83.8	22.1	22.2	<0.1	<0.1	7	6.5
			21.1		7.7		7.4		83.8		22.2		<0.1		6	
C3b	14:31	<0.5	20.9	20.9	8	8.0	7.4	7.4	82.7	82.7	26.1	26.1	<0.1	<0.1	9	9.5
			20.9		8		7.4		82.7		26		<0.1		10	
I5	14:11	<0.5	22.1	22.1	7.5	7.5	7.9	7.9	90.9	90.9	14.2	14.2	<0.1	<0.1	8	8
			22.1		7.5		7.9		90.9		14.1		<0.1		8	

Date of Monitoring 29/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:40	<0.5	23	23.0	7.7	7.7	7.4	7.4	86.3	86.3	24	23.8	<0.1	<0.1	3	3
			23		7.7		7.4		86.3		23.5		<0.1		3	
C3b	14:19	<0.5	21.9	21.9	8	8.0	7.4	7.4	84.4	84.4	22.7	22.7	<0.1	<0.1	4	4
			21.9		8		7.4		84.4		22.6		<0.1		4	
I5	14:32	<0.5	23.1	23.1	7.5	7.5	7.7	7.7	90.2	90.2	22.3	22.7	<0.1	<0.1	4	4.5
			23		7.5		7.7		90.2		23.1		<0.1		5	

Date of Monitoring 30/1/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:35	<0.5	23.1	23.1	7.7	7.7	6.9	6.9	81.3	81.3	29.9	29.5	<0.1	<0.1	5	5
			23.1		7.7		6.9		81.3		29		<0.1		5	
C3b	14:03	<0.5	22.9	22.9	8	8.0	7.5	7.7	87.9	89.9	22.7	22.8	<0.1	<0.1	5	4.5
			22.9		8		7.9		91.8		22.9		<0.1		4	
I5	14:17	<0.5	23.9	23.9	7.5	7.5	7.0	7.0	82.8	82.8	24.8	24.9	<0.1	<0.1	6	6
			23.9		7.5		7.0		82.8		24.9		<0.1		6	

Date of Monitoring 5/2/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:13	<0.5	21.9	21.9	7.8	7.8	7.3	7.3	83.4	83.4	23.3	22.8	<0.1	<0.1	9	9
			21.9		7.8		7.3		83.3		22.3		<0.1		9	
C3b	13:56	<0.5	20.6	20.6	7.9	7.9	7.7	7.7	85.2	85.1	23.5	23.4	<0.1	<0.1	6	5.5
			20.6		7.9		7.7		85		23.3		<0.1		5	
I5	13:47	<0.5	20.9	20.9	7.9	7.9	9.3	9.3	104.5	104.5	24.7	24.0	<0.1	<0.1	9	9.5
			20.9		7.9		9.3		104.4		23.3		<0.1		10	

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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 7/2/2014 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:19	<0.5	22.9	23.0	7.8	7.8	6.8	6.8	80.1	79.8	33.2	33.0	<0.1	<0.1	5	5.5
			23		7.8		6.9		79.4		32.8					
C3b	14:07	<0.5	22.1	22.1	7.8	7.9	7.6	7.6	87.2	87.3	38.6	40.1	<0.1	<0.1	4	4.5
			22.1		7.9		7.6		87.4		41.6					
I5	13:58	<0.5	22.5	22.6	7.7	7.8	9.2	9.1	105.6	105.5	33.8	35.5	<0.1	<0.1	9	9
			22.6		7.8		9.1		105.3		37.2					

Date of Monitoring 10/2/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:44	<0.5	13.2	13.2	7.8	7.8	8.6	8.7	82.2	83.2	48.8	48.8	<0.1	<0.1	68	67.5
			13.2		7.8		8.8		84.1		48.8					
C3b	11:29	<0.5	13	13.0	8	8.0	9.5	9.5	90	90.0	48.5	48.5	<0.1	<0.1	8	9
			13		8		9.5		90		48.4					
I5	11:16	<0.5	13.5	13.5	7.9	7.9	8.8	8.8	85	85.0	46.9	46.9	<0.1	<0.1	7	7
			13.5		7.9		8.8		85		46.9					

Date of Monitoring 12/2/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:56	<0.5	11.5	11.5	7.9	7.9	8.5	8.5	78.3	78.3	14.1	14.1	<0.1	<0.1	17	16
			11.5		7.9		8.5		78.3		14.1					
C3b	11:24	<0.5	11.8	11.8	8.1	8.1	9.8	9.8	90.6	90.6	13.1	13.1	<0.1	<0.1	7	6.5
			11.8		8.1		9.8		90.6		13.1					
I5	11:31	<0.5	11.6	11.6	7.9	7.9	8.9	8.9	82	82.0	11.1	11.1	<0.1	<0.1	4	4
			11.6		7.9		8.9		82		11					

Date of Monitoring 14/2/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:23	<0.5	11.7	11.7	7.8	7.8	9.2	9.2	84.6	84.6	24.3	24.3	<0.1	<0.1	3.7	3.9
			11.7		7.8		9.2		84.6		24.3					
C3b	9:47	<0.5	12	12.0	8	8.0	9.1	9.1	84.5	84.5	33.1	33.1	<0.1	<0.1	7.3	8.4
			12		8		9.1		84.5		33.1					
I5	10:05	<0.5	12.1	12.1	7.7	7.7	8.7	8.7	80.9	81.0	26.1	26.1	<0.1	<0.1	3.9	3.7
			12.1		7.7		8.7		81		26.1					

Date of Monitoring 17/2/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:29	<0.5	18.7	18.7	7.8	7.8	7.6	7.6	81.4	81.4	55.6	55.6	<0.1	<0.1	48	45
			18.7		7.8		7.6		81.4		55.6					
C3b	11:06	<0.5	19.9	19.9	8	8.1	8.0	8.0	88	88.0	70.3	70.3	<0.1	<0.1	21	23
			19.9		8.1		8.0		88		70.3					
I5	11:13	<0.5	19.8	19.8	7.7	7.7	7.7	7.7	84	84.0	68.9	68.9	<0.1	<0.1	41	38.5
			19.8		7.7		7.7		84		68.9					

Date of Monitoring 19/2/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	17:44	<0.5	13.1	13.1	7.8	7.8	9.2	9.2	87.1	87.2	13.6	13.6	<0.1	<0.1	<3	#DIV/0!
			13.1		7.8		9.2		87.2		13.5					
C3b	17:11	<0.5	13.4	13.4	8	8.1	8.9	8.9	85.1	85.1	28.4	28.4	<0.1	<0.1	16	16
			13.4		8.1		8.9		85.1		28.4					
I5	17:21	<0.5	13.4	13.4	7.7	7.7	8.4	8.4	80.5	80.5	25.3	25.3	<0.1	<0.1	5.3	5.2
			13.4		7.7		8.4		80.4		25.2					

Date of Monitoring 21/2/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:03	<0.5	16.1	16.1	7.8	7.8	7.9	7.9	80.6	80.6	26.5	26.5	<0.1	<0.1	15	13.5
			16.1		7.8		7.9		80.6		26.5					
C3b	10:31	<0.5	15.4	15.4	8	8.0	8.4	8.4	83.8	83.8	23.8	23.8	<0.1	<0.1	16	16
			15.4		8		8.4		83.8		23.8					
I5	10:42	<0.5	15.8	15.8	7.7	7.7	7.5	7.5	75.5	75.5	21.2	21.2	<0.1	<0.1	11	10.5
			15.8		7.7		7.5		75.5		21.2					

Date of Monitoring 24/2/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:34	<0.5	21.7	21.7	7.9	7.9	8.0	8.0	91.4	91.4	21.1	21.1	<0.1	<0.1	14	13.5
			21.7		7.9		8.0		91.4		21.1					
C3b	11:01	<0.5	20.4	20.4	8.1	8.1	7.5	7.5	83.6	83.6	26.6	26.6	<0.1	<0.1	7.8	7.2
			20.4		8.1		7.5		83.6		26.6					
I5	11:17	<0.5	20.1	20.1	7.7	7.7	7.6	7.6	83.5	83.5	28.1	28.1	<0.1	<0.1	6.5	6.5
			20.1		7.7		7.6		83.5		28.1					

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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 26/2/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:04	<0.5	20.2	20.2	7.8	7.8	7.7	7.8	85.2	85.9	17.2	17.2	<0.1	<0.1	15	17
			20.2		7.8		7.8		86.6		17.2					
C3b	10:31	<0.5	19.9	19.9	8	8.0	7.4	7.4	81.5	81.5	18.1	18.1	<0.1	<0.1	8.2	7.4
			19.9		8		7.4		81.5		18.1					
I5	10:47	<0.5	19.7	19.7	7.7	7.7	7.6	7.6	83.7	83.7	17.9	17.9	<0.1	<0.1	6.2	6.3
			19.7		7.7		7.6		83.7		17.9					

Date of Monitoring 28/2/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:48	<0.5	19.5	19.5	7.8	7.8	7.5	7.5	81.6	81.6	27.7	27.7	<0.1	<0.1	22	22.5
			19.5		7.8		7.5		81.6		27.7					
C3b	11:21	<0.5	19.2	19.2	8	8.0	7.6	7.7	82.2	83.1	33.4	33.4	<0.1	<0.1	14	19
			19.2		8		7.8		83.9		33.4					
I5	11:29	<0.5	18.9	18.9	7.7	7.7	7.9	7.9	84.7	84.7	30.1	30.1	<0.1	<0.1	9.8	10.9
			18.9		7.7		7.9		84.7		30.1					

Date of Monitoring 3/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:13	<0.5	17.7	17.7	7.18	7.2	8.3	8.3	87.1	87.2	27.8	27.8	<0.1	<0.1	29	30
			17.7		7.18		8.3		87.2		27.8					
C3b	10:56	<0.5	17.6	17.6	8.27	8.3	6.8	6.8	71.2	71.2	61.6	61.8	<0.1	<0.1	8	7.8
			17.6		8.27		6.8		71.2		61.9					
I5	10:45	<0.5	17.5	17.5	8.24	8.2	7.6	7.6	80	80.0	56.2	56.2	<0.1	<0.1	16	16
			17.5		8.24		7.6		80		56.1					

Date of Monitoring 5/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	9:41	<0.5	17.7	17.7	7.4	7.4	8.3	8.3	86.7	86.7	11	11.1	<0.1	<0.1	10	10
			17.7		7.4		8.3		86.7		11.1					
C3b	9:18	<0.5	17.5	17.5	8	8.0	8.2	8.2	85.7	85.7	8.7	8.7	<0.1	<0.1	4	4.2
			17.4		8		8.2		85.7		8.7					
I5	9:25	<0.5	17.4	17.6	7.4	7.4	7.6	7.6	79.9	79.9	11.4	11.5	<0.1	<0.1	6.8	6.9
			17.7		7.4		7.6		79.9		11.5					

Date of Monitoring 7/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	9:59	<0.5	16.4	16.4	7.6	7.6	7.9	7.9	81	81.0	13.6	13.7	<0.1	<0.1	22	22.5
			16.4		7.6		7.9		81		13.8					
C3b	9:30	<0.5	16.2	16.2	8	8.0	7.8	7.8	79.3	79.3	6.39	6.5	<0.1	<0.1	9.2	8.1
			16.2		8		7.8		79.3		6.55					
I5	9:41	<0.5	15.8	15.8	7.6	7.6	7.9	7.9	79.3	79.3	11	10.6	<0.1	<0.1	4.2	4.7
			15.8		7.6		7.9		79.3		10.1					

Date of Monitoring 10/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:29	<0.5	14.9	14.9	7.8	7.8	8.5	8.6	84.1	84.7	16.1	16.1	<0.1	<0.1	12	15.5
			14.9		7.8		8.6		85.3		16.1					
C3b	10:01	<0.5	15.1	15.1	8.3	8.3	8.7	8.7	86.4	86.4	9.88	9.9	<0.1	<0.1	6	6.4
			15.1		8.3		8.7		86.4		9.88					
I5	10:09	<0.5	14.7	14.7	8.1	8.1	7.8	7.8	77.2	76.4	16.4	16.4	<0.1	<0.1	17	18.5
			14.7		8.1		7.7		75.6		16.4					

Date of Monitoring 12/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:24	<0.5	16.8	16.8	7.5	7.5	8.2	8.2	78.1	78.1	8.2	8.2	<0.1	<0.1	9.6	9.8
			16.8		7.5		8.2		78.1		8.2					
C3b	10:01	<0.5	16.9	16.9	7.9	7.9	7.8	7.8	74.2	74.2	7.7	7.7	<0.1	<0.1	6.6	7
			16.9		7.9		7.8		74.2		7.7					
I5	10:09	<0.5	16.7	16.7	8	8.0	6.6	6.7	62.2	62.5	9.1	9.1	<0.1	<0.1	8.6	9
			16.7		8		6.7		62.7		9.1					

Date of Monitoring 14/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:23	<0.5	17.6	17.6	7.8	7.8	8.1	8.1	84.5	84.5	15.4	15.4	<0.1	<0.1	6.6	6.6
			17.6		7.8		8.1		84.5		15.4					
C3b	10:01	<0.5	17.4	17.4	8.1	8.1	8.4	8.4	87.6	87.6	33.1	33.1	<0.1	<0.1	22	22
			17.4		8.1		8.4		87.6		33.1					
I5	10:08	<0.5	17.9	17.9	7.9	7.9	8.0	8.0	84.2	84.2	19.4	19.4	<0.1	<0.1	12	12
			17.9		7.9		8.0		84.2		19.4					

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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 17/3/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:21	<0.5	22.1	22.1	7.8	7.8	7.1	7.1	81.8	81.8	7.6	7.6	<0.1	<0.1	5.8	5.8
			22.1		7.8		7.1		81.8		7.6					
C3b	14:00	<0.5	22.3	22.3	8.1	8.1	7.8	7.8	90.2	90.1	11.7	11.7	<0.1	<0.1	5.8	6.2
			22.3		8.1		7.8		89.9		11.7					
I5	14:07	<0.5	22.2	22.2	7.9	7.9	7.5	7.5	85.6	85.6	10	10.0	<0.1	<0.1	6	6.8
			22.2		7.9		7.5		85.6		10					

Date of Monitoring 19/3/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:39	<0.5	24.4	24.4	7.8	7.8	7.5	7.5	89.6	89.6	11.8	11.8	<0.1	<0.1	9.2	8.4
			24.4		7.8		7.5		89.6		11.8					
C3b	10:15	<0.5	23.9	23.9	8.1	8.1	6.6	6.6	78.8	78.8	10.6	10.6	<0.1	<0.1	4.3	4.6
			23.9		8.1		6.6		78.8		10.6					
I5	10:23	<0.5	23.4	23.4	7.9	7.9	7.2	7.2	84.2	84.2	9.4	9.4	<0.1	<0.1	8.4	7.5
			23.4		7.9		7.2		84.2		9.4					

Date of Monitoring 21/3/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:31	<0.5	18.2	18.2	7.8	7.8	7.6	7.6	80.1	80.1	43.4	43.4	<0.1	<0.1	8.2	8.4
			18.2		7.8		7.6		80.1		43.4					
C3b	10:15	<0.5	18	18.0	8.1	8.1	8.4	8.4	88.6	88.6	51.2	51.2	<0.1	<0.1	13	13
			18		8.1		8.4		88.6		51.2					
I5	10:06	<0.5	17.8	17.8	7.9	7.9	7.6	7.6	79.8	79.8	49.7	49.7	<0.1	<0.1	11	9.9
			17.8		7.9		7.6		79.8		49.7					

Date of Monitoring 24/3/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:34	<0.5	21	21.0	7.7	7.7	6.4	6.4	71.5	71.5	15.4	15.4	<0.1	<0.1	3.6	4.5
			21		7.7		6.4		71.5		15.4					
C3b	10:11	<0.5	21	21.0	7.8	7.8	7.7	7.7	86.3	86.3	14.8	14.8	<0.1	<0.1	4.1	4.1
			21		7.8		7.7		86.3		14.8					
I5	10:03	<0.5	20.3	20.3	7.9	7.9	8.6	8.6	95.3	95.3	12.3	12.3	<0.1	<0.1	13	11.3
			20.3		7.9		8.6		95.3		12.3					

Date of Monitoring 26/3/2014 Weather: Fine

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:39	<0.5	24.3	24.3	7.8	7.8	6.9	6.9	82.9	82.9	13.5	13.5	<0.1	<0.1	4.4	4.6
			24.3		7.8		6.9		82.9		13.5					
C3b	10:21	<0.5	24	24.0	8.1	8.1	6.6	6.6	78.1	78.1	9.81	9.8	<0.1	<0.1	3.2	4.9
			24		8.1		6.6		78.1		9.81					
I5	10:09	<0.5	24.4	24.4	7.9	7.9	6.7	6.7	80.4	80.4	14.4	14.4	<0.1	<0.1	13	13
			24.4		7.9		6.7		80.4		14.4					

Date of Monitoring 28/3/2014 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:47	<0.5	24.2	24.2	7.9	7.9	7.6	7.6	90.5	90.5	13.2	13.2	<0.1	<0.1	22	22
			24.2		7.9		7.6		90.5		13.2					
C3b	10:01	<0.5	22.8	22.8	8.1	8.1	6.9	6.9	80.7	80.7	4.85	4.9	<0.1	<0.1	4.7	4.5
			22.8		8.1		6.9		80.7		4.85					
I5	10:19	<0.5	23.4	23.4	7.9	7.9	6.8	6.8	79.5	79.5	13.3	13.3	<0.1	<0.1	10	9.7
			23.4		7.9		6.8		79.5		13.3					

Date of Monitoring 31/3/2014 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:31	<0.5	19.6	19.6	7.9	7.9	7.6	7.6	83.3	83.3	87.7	87.7	<0.1	<0.1	71	72
			19.6		7.9		7.6		83.3		87.7					
C3b	11:01	<0.5	19.5	19.5	7.9	7.9	8.0	8.0	87.4	87.4	90.3	90.3	<0.1	<0.1	77	75
			19.5		7.9		8.0		87.4		90.3					
I5	11:09	<0.5	19.3	19.3	7.3	7.3	7.4	7.4	80.5	80.5	86.7	86.7	<0.1	<0.1	73	72.5
			19.3		7.3		7.4		80.5		86.7					

Date of Monitoring 2/4/2014 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:13	<0.5	20	20.0	7.16	7.2	8.0	8.0	88.5	88.5	63.2	63.0	<0.1	<0.1	41	39
			20		7.16		8.0		88.5		62.8					
C3b	11:35	<0.5	19.8	19.8	7.26	7.3	7.2	7.3	78.9	79.6	65	64.6	<0.1	<0.1	41	42.5
			19.8		7.26		7.3		80.2		64.1					
I5	10:55	<0.5	19.8	19.8	7.52	7.5	7.5	7.5	82.3	82.3	73.1	72.0	<0.1	<0.1	46	47.5
			19.8		7.52		7.5		82.3		70.8					

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

Appendix F
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

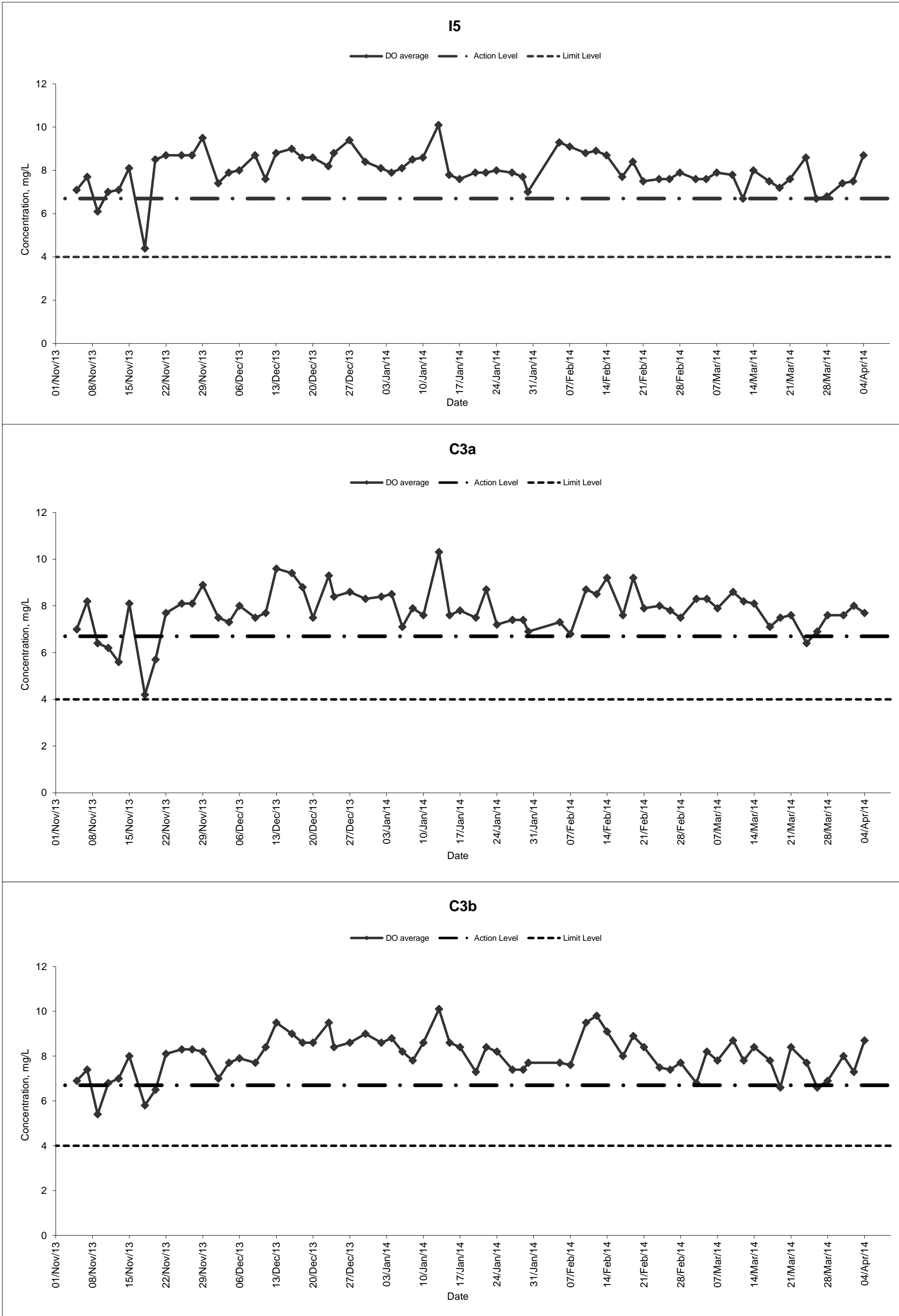
Date of Monitoring 4/4/2014

Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	8:58	<0.5	20.1	20.1	7.6	7.6	7.7	7.7	85.4	85.4	13.8	13.8	<0.1	<0.1	9	9
			20.1		7.6		7.7		85.4		13.7		<0.1		9	
C3b	8:41	<0.5	19.3	19.3	7.8	7.8	8.7	8.7	93.9	93.9	14.8	14.8	<0.1	<0.1	5	5
			19.3		7.8		8.7		93.9		14.8		<0.1		5	
I5	8:35	<0.5	19.6	19.6	8.1	8.1	8.7	8.7	94.4	94.4	14.3	14.3	<0.1	<0.1	5.6	5.7
			19.6		8.1		8.7		94.4		14.3		<0.1		5.8	

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

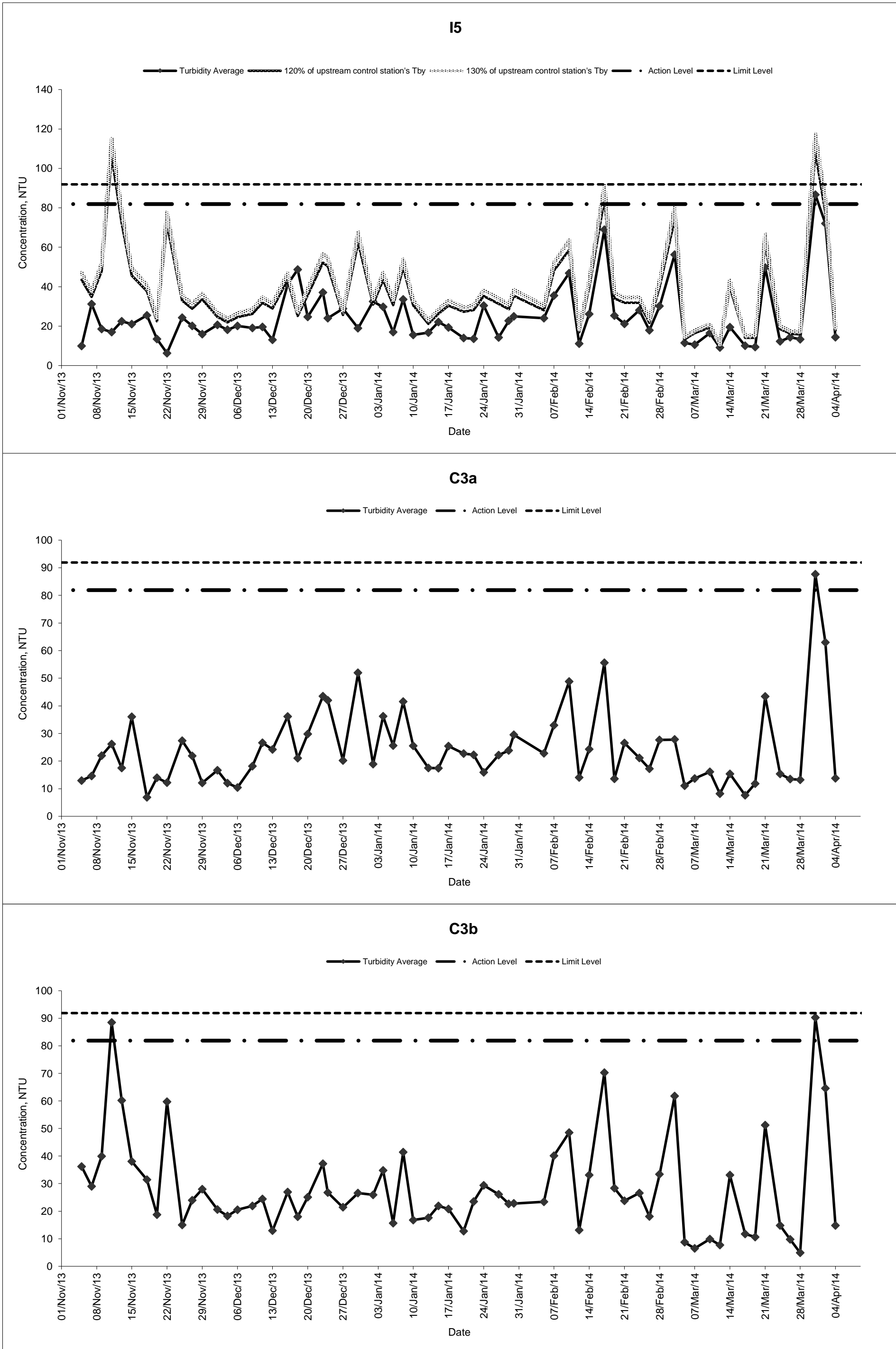
Dissolved Oxygen (November 2013 - April 2014)



Remarks:

In the above result, a total of 2 exceedance events were recorded which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

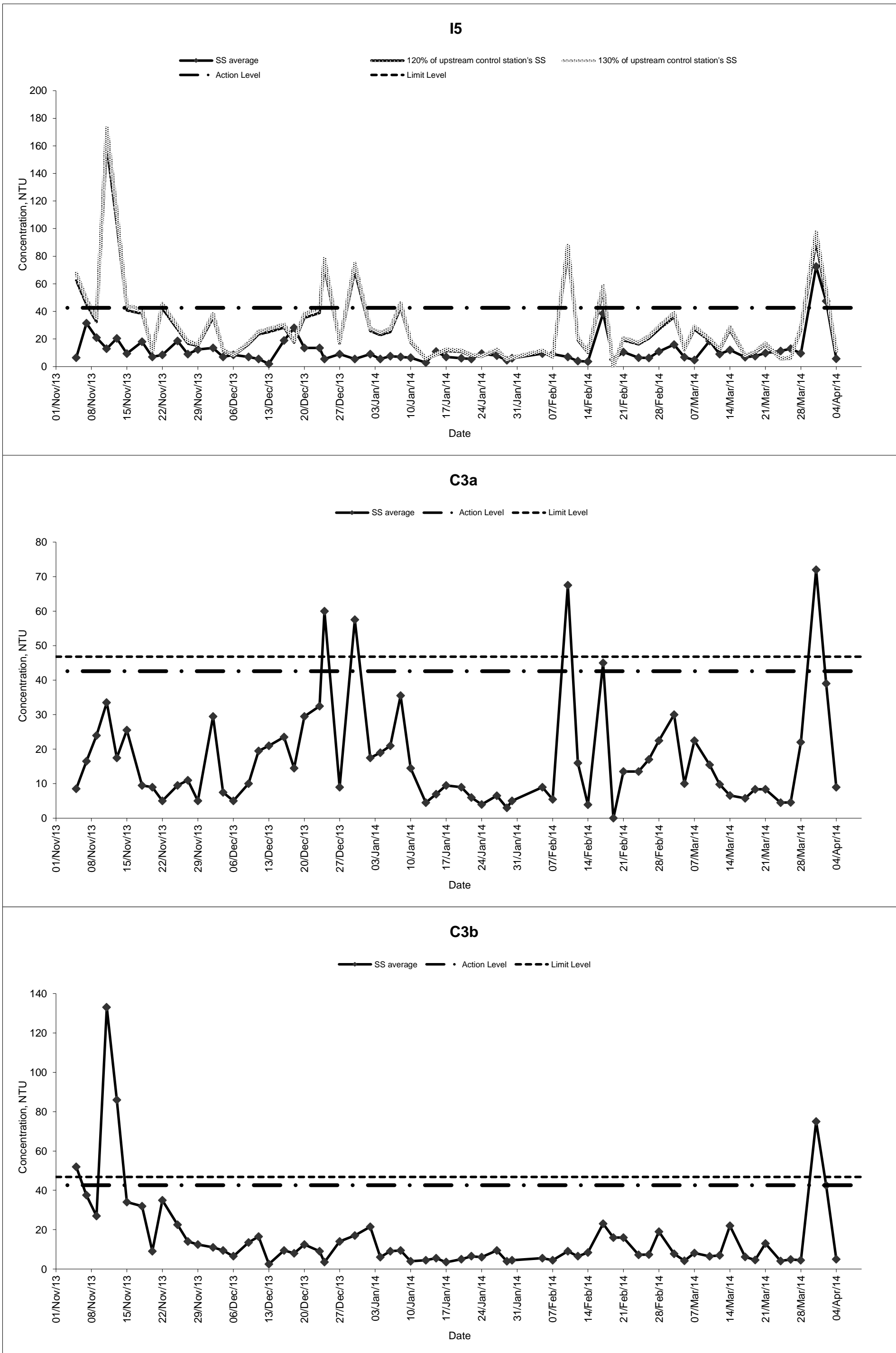
Turbidity (November 2013 - April 2014)



Remarks:

In the above result , a total of 4 exceedance events were recorded. Only 1 of the exceedances of Turbidity recorded on 18 December 2013 were concluded to be project related. The ET weekly visit was conducted on 18 December which identified the leakage of diverted river water through the concrete blocks at Box Culvert ID4 into the works site then downstream into the river with silt-laden site runoff. Necessary remedial actions have been taken and the exceedances have been rectified. The remaining 3 exceedance events were conducted which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

Suspended Solid (November 2013 - April 2014)



Remarks:

In the above result , a total of 9 exceedance events were recorded which concluded that one of the exceedance of SS recorded on 18 December 2013 was related to the project. The ET weekly visit was conducted on 18 December which identified the leakage of diverted river water through the concrete blocks at Box Culvert ID4 into the works site then downstream into the river with silt-laden site runoff. Necessary remedial actions have been taken and the exceedances have been rectified. The remaining 8 exceedance event were conducted which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

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 19-02-16 Weather : Cloudy

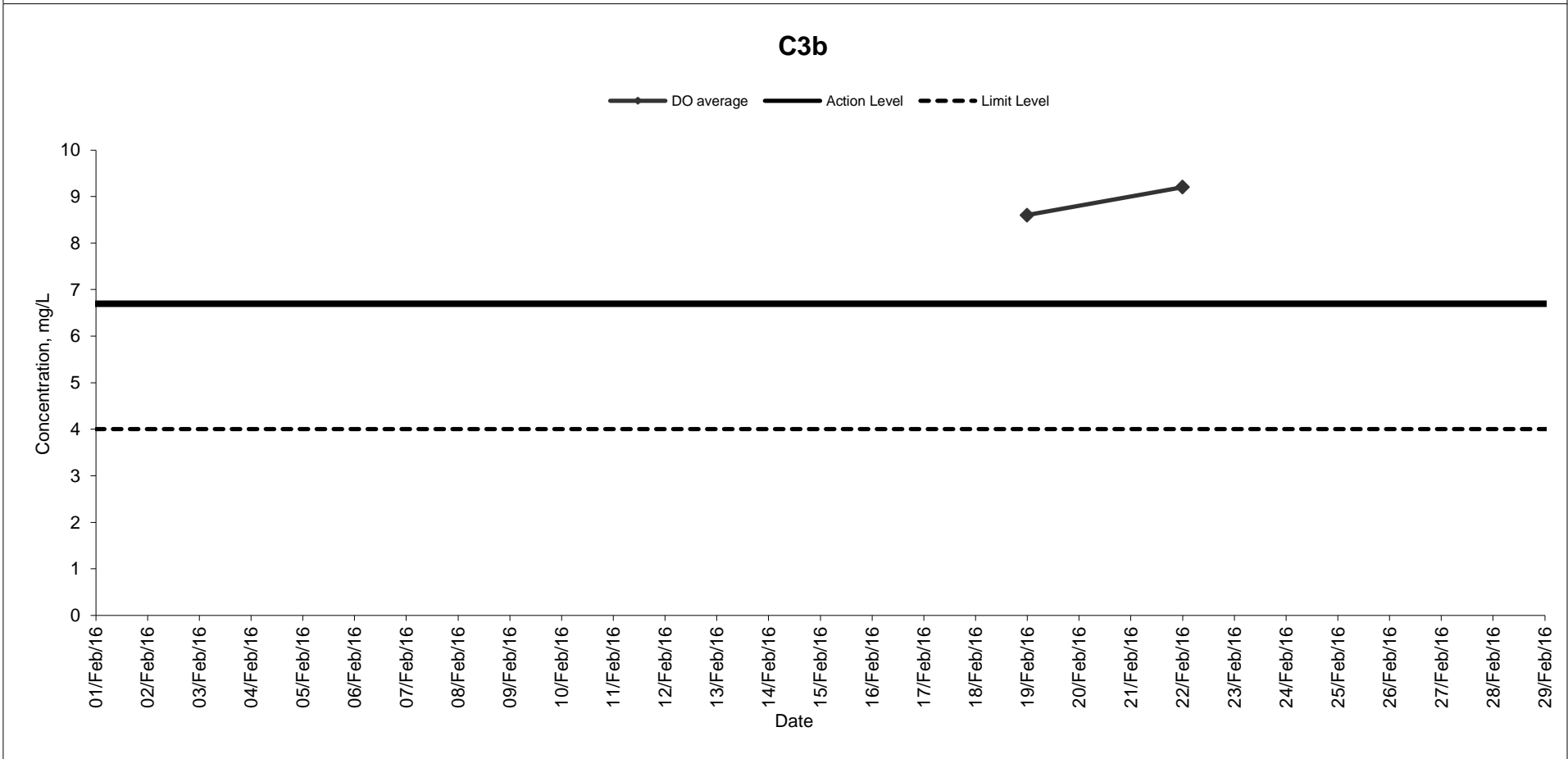
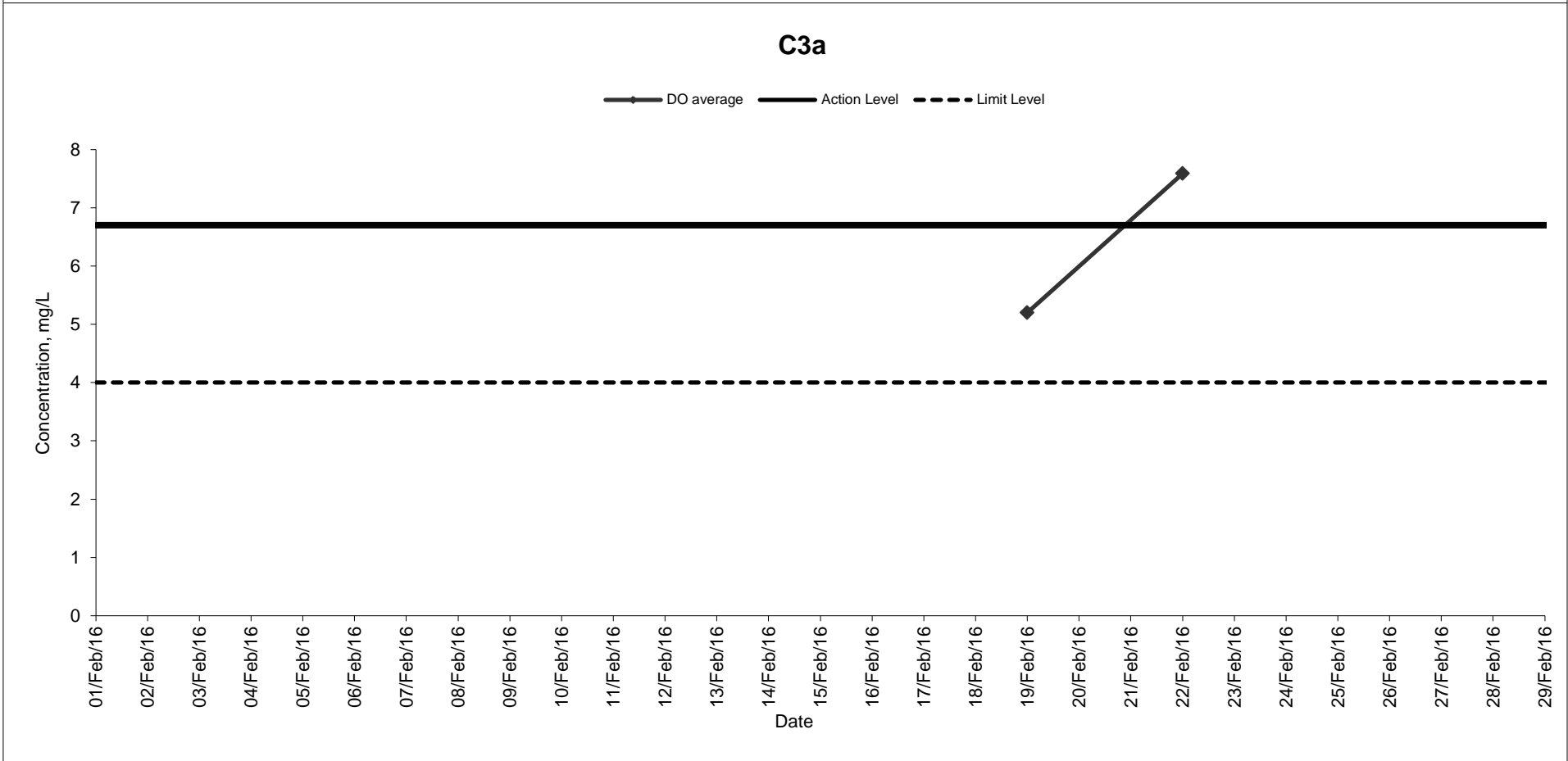
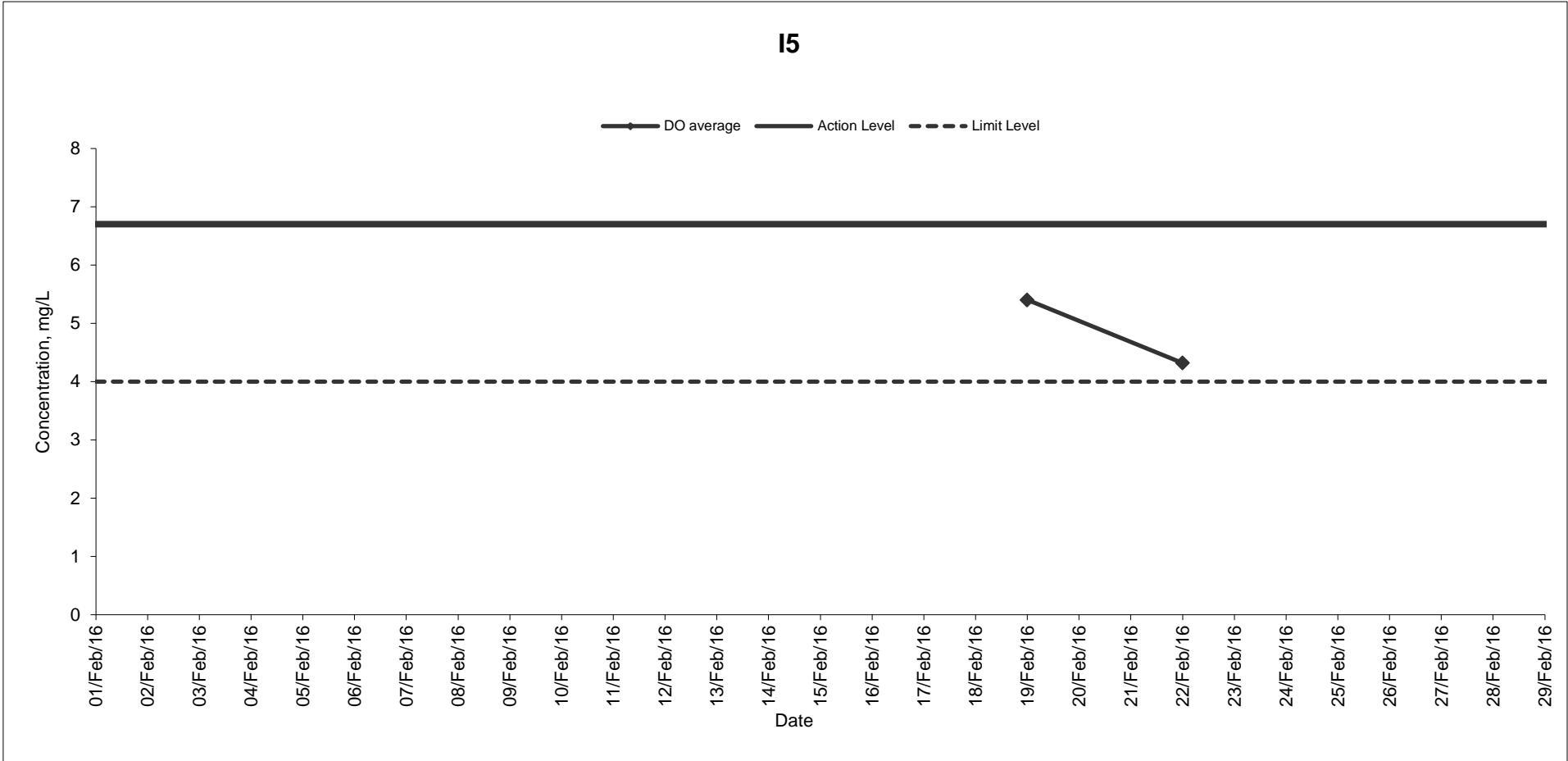
Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	14:53	<0.5	16.8	16.8	7.2	7.2	5.2	5.2	54.6	54.6	11.1	11.1	0.1	0.1	10.0	10.0
			16.8		7.2		5.2		54.6		11.1		0.1		10.0	
C3b	14:36	<0.5	15.7	15.7	7.3	7.3	8.6	8.6	87.0	87.0	46.9	46.9	<0.1	<0.1	26.0	27.5
			15.7		7.3		8.6		87.0		46.9		<0.1		29.0	
I5	14:26	<0.5	16.6	16.6	7.3	7.3	5.4	5.4	55.6	55.4	4.9	4.9	0.1	0.1	3.7	3.7
			16.6		7.3		5.4		55.2		4.9		0.1		3.6	

Date of Monitoring 22-02-16 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:09	<0.5	17.5	17.5	7.5	7.5	7.6	7.6	79.3	79.3	4.1	4.1	<0.1	<0.1	18.0	19.0
			17.5		7.5		7.6		79.3		4.1		<0.1		20.0	
C3b	11:25	<0.5	16.7	16.7	7.7	7.7	9.2	9.2	94.1	94.1	4.8	4.8	<0.1	<0.1	4.9	5.1
			16.7		7.7		9.2		94.1		4.8		<0.1		5.3	
I5	11:47	<0.5	17.5	17.5	7.2	7.2	4.3	4.3	45.2	45.2	17.7	17.7	<0.1	<0.1	3.1	3.2
			17.5		7.2		4.3		45.2		17.7		<0.1		3.2	

NOTE:
 Data in **Bold** denotes exceedance of respective Action Level
 Data in **Bold Underline** denotes exceedance of respective Limit Level

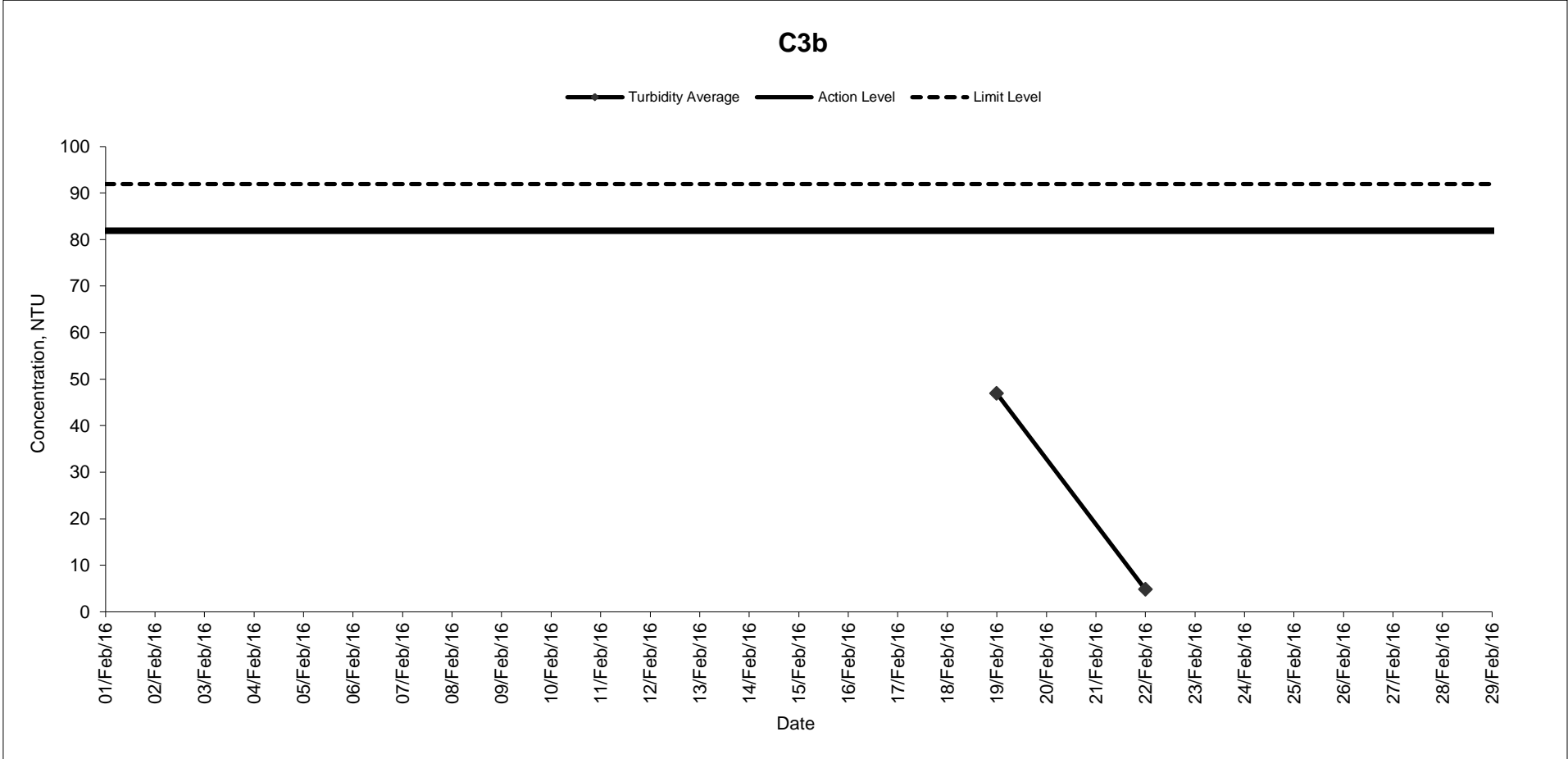
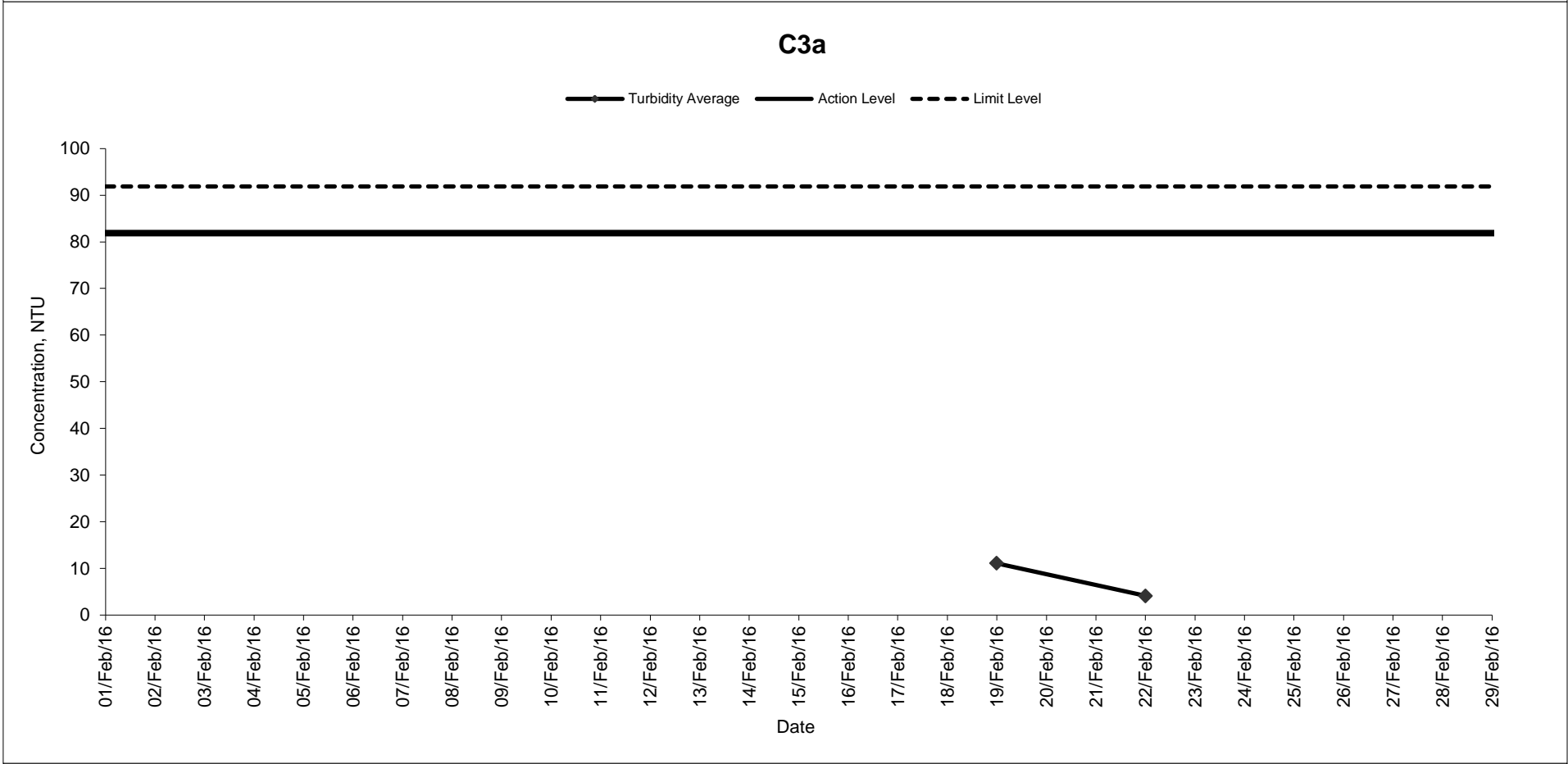
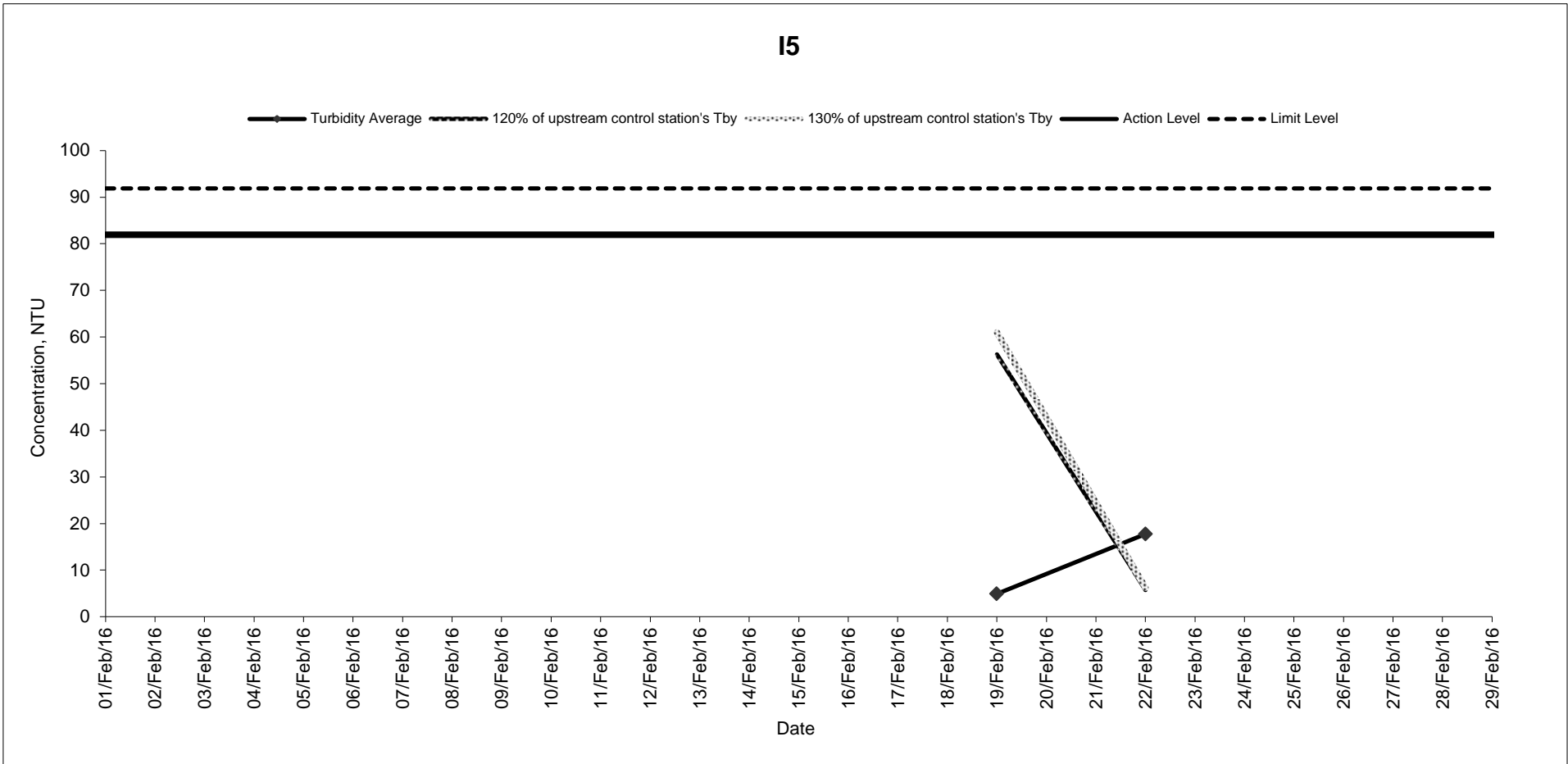
Dissolved Oxygen



Remarks:

In the above result , a total of 2 exceedance events were recorded which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

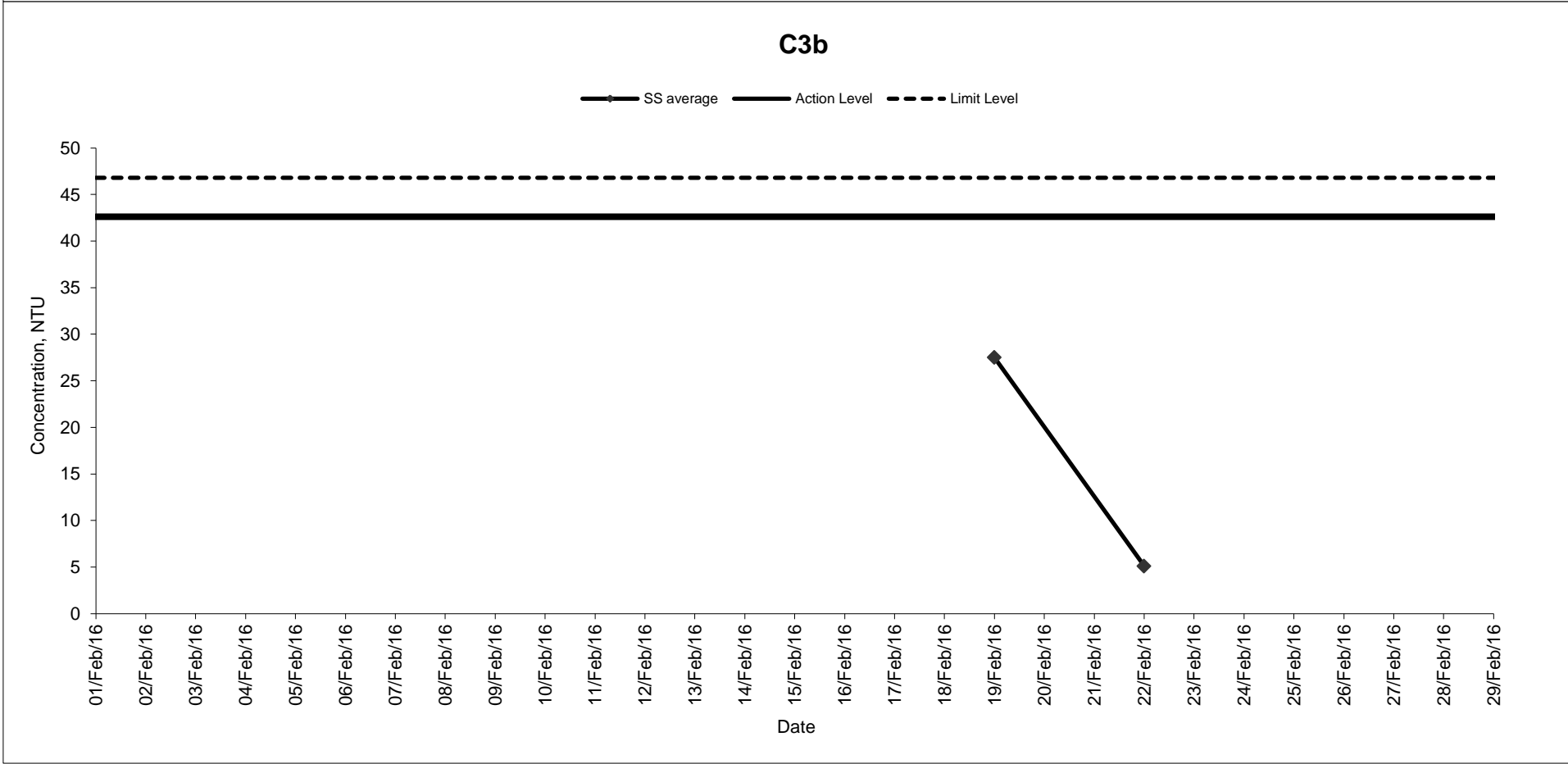
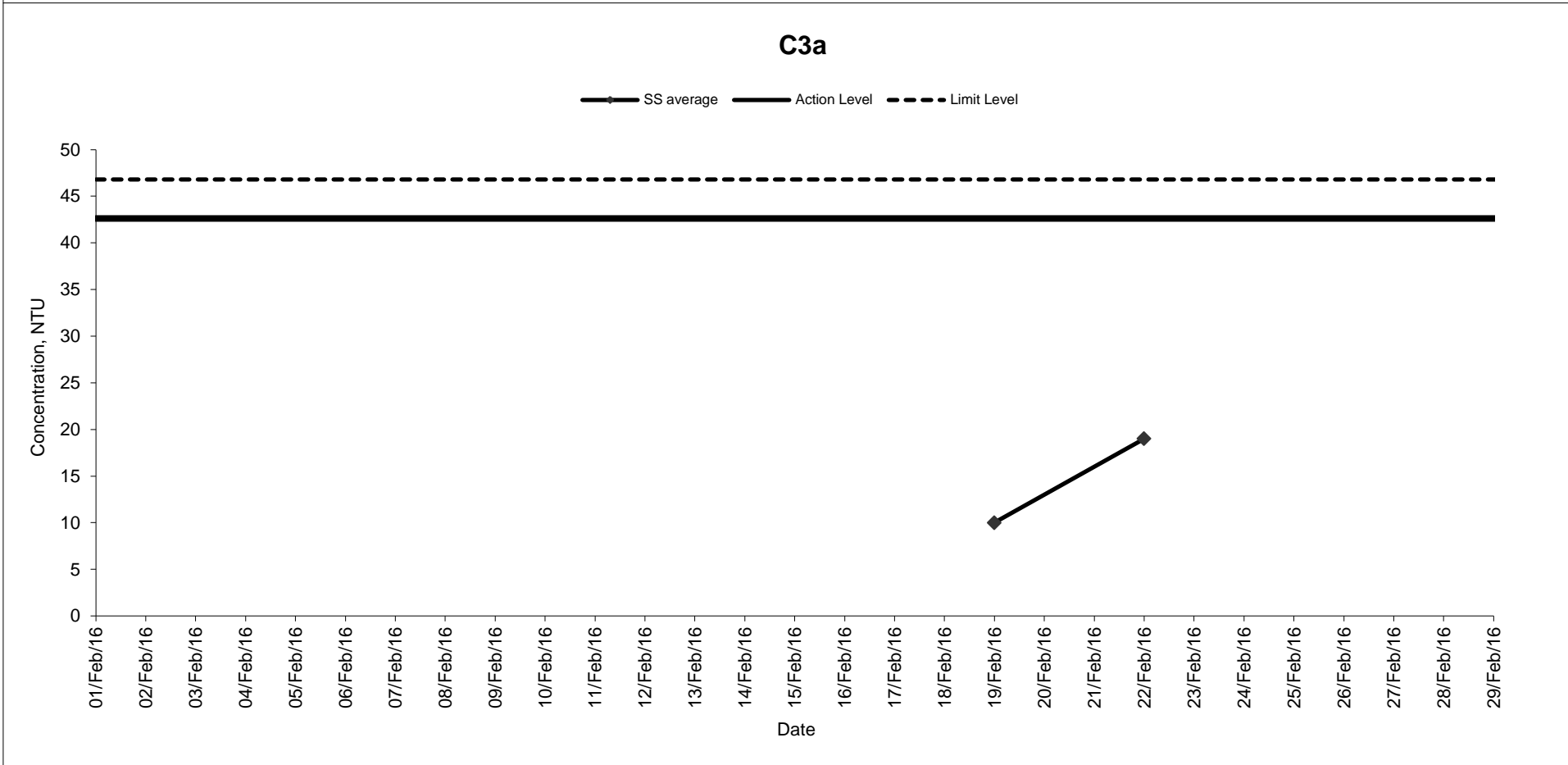
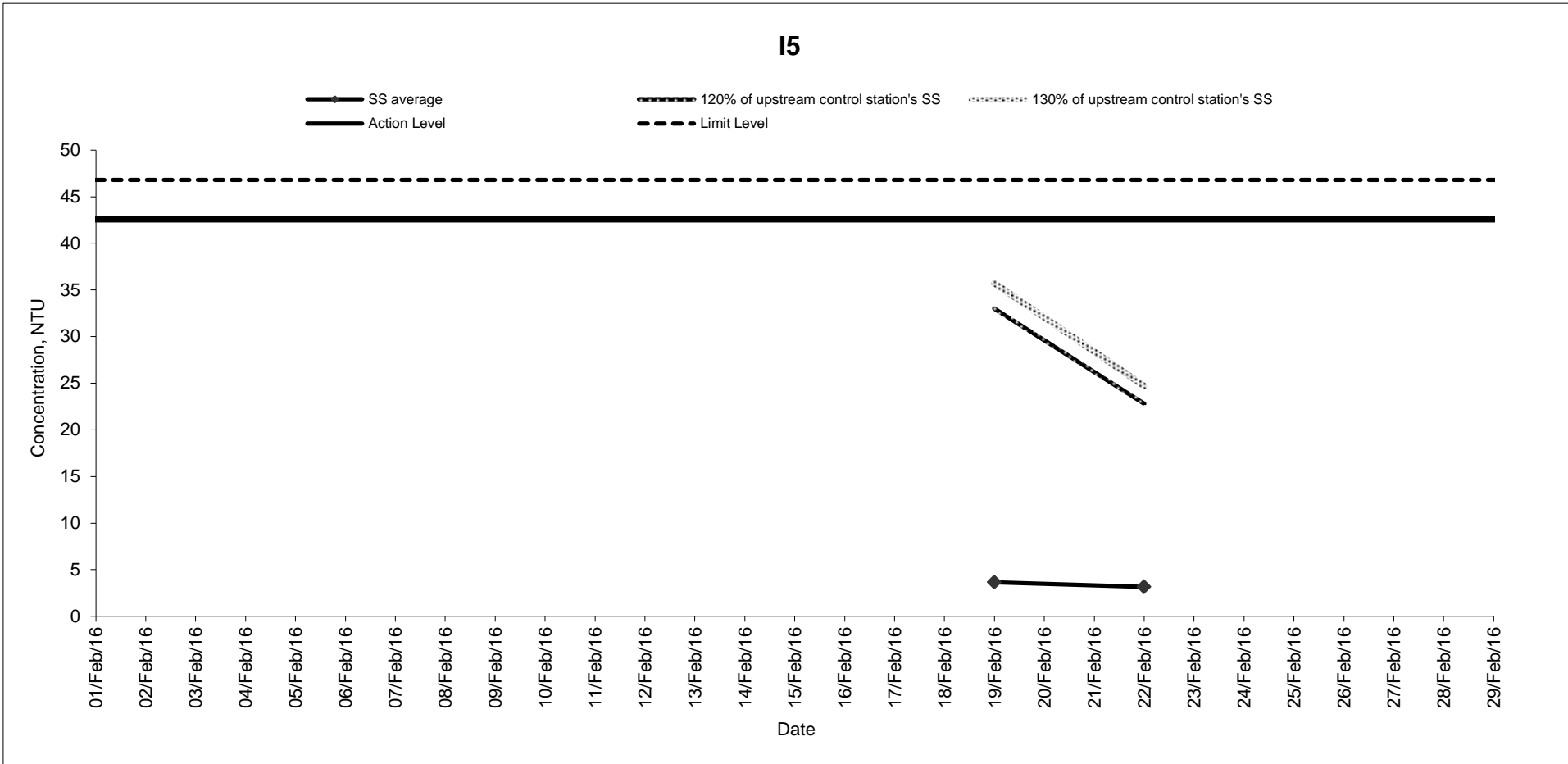
Turbidity



Remarks:

In the above result , a total of 1 exceedance event were recorded which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

Suspended Solid



In the above result ,no exceedance event were recorded and no necessary remedial action have been taken.

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: 01-03-17 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:19	<0.5	20.3	20.3	6.5	6.5	8.0	8.3	88.3	91.2	21.5	21.5	<0.1	<0.1	21.0	21.0
			20.3		6.5		8.5		94.0		21.5					
C3b	11:43	<0.5	19.4	19.4	6.9	6.9	8.6	8.6	94.1	93.9	10.1	10.1	<0.1	<0.1	7.7	9.4
			19.4		6.9		8.6		93.7		10.1					
I5	11:59	<0.5	19.9	19.9	7.1	7.1	7.9	8.1	87.3	89.0	15.2	15.2	<0.1	<0.1	8.9	8.6
			19.9		7.1		8.2		90.7		15.2					

Date of Monitoring: 03-03-17 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:08	<0.5	21.6	21.6	6.7	6.7	7.9	8.2	89.6	92.7	25.5	25.5	<0.1	<0.1	15	17.0
			21.6		6.7		8.4		95.8		25.5					
C3b	12:30	<0.5	19.8	19.8	6.9	6.9	8.2	8.5	90.2	93.0	7.6	7.6	<0.1	<0.1	7.5	7.4
			19.8		6.9		8.7		95.7		7.6					
I5	12:41	<0.5	21.3	21.3	7.1	7.1	7.4	7.8	83.9	88.0	22.5	22.5	<0.1	<0.1	15	15.5
			21.3		7.1		8.1		92.1		22.5					

Date of Monitoring: 06-03-17 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	15:11	<0.5	24.4	24.4	6.7	6.7	8.0	8.0	91.1	91.5	20.4	20.4	<0.1	<0.1	7.3	9.7
			24.4		6.7		8.0		91.8		20.4					
C3b	15:32	<0.5	21.9	21.9	6.9	6.9	8.1	8.1	92.6	92.9	9.1	9.1	<0.1	<0.1	4	4.0
			21.9		6.9		8.1		93.1		9.1					
I5	15:45	<0.5	23.3	23.3	7.1	7.1	7.9	7.9	88.6	88.2	16.4	16.4	<0.1	<0.1	11	11.0
			23.3		7.1		7.9		87.8		16.4					

Date of Monitoring: 08-03-17 Weather : Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:34	<0.5	18.2	18.2	6.8	6.8	8.6	9.0	91.1	95.3	43.5	43.5	<0.1	<0.1	29	28.0
			18.2		6.8		9.4		99.5		43.5					
C3b	11:55	<0.5	18.2	18.2	6.9	6.9	9.0	8.8	95.7	93.7	20.4	20.4	<0.1	<0.1	12	12.0
			18.2		6.9		8.6		91.7		20.4					
I5	12:10	<0.5	18.3	18.3	7.1	7.1	8.3	8.3	89.3	89.3	40.9	40.9	<0.1	<0.1	33	33.5
			18.3		7.1		8.3		89.3		40.9					

Date of Monitoring: 10-03-17 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:18	<0.5	19.6	19.6	6.4	6.4	8.9	8.8	102.1	100.2	22.1	22.1	<0.1	<0.1	16	16.0
			19.6		6.4		8.6		98.3		22.1					
C3b	11:43	<0.5	19.4	19.4	6.8	6.8	8.5	8.5	96.1	95.9	12.6	12.6	<0.1	<0.1	4.7	5.2
			19.4		6.8		8.5		95.6		12.6					
I5	11:58	<0.5	19.3	19.3	7.1	7.1	8.2	8.2	89.7	89.9	10.3	10.3	<0.1	<0.1	15	15.5
			19.3		7.1		8.2		90.1		10.3					

Date of Monitoring: 13-03-17 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:08	<0.5	22.7	22.7	6.4	6.4	8.8	8.8	102.3	102.1	30.9	30.9	<0.1	<0.1	19	18.5
			22.7		6.4		8.8		101.9		30.9					
C3b	11:34	<0.5	22.5	22.5	6.8	6.8	8.6	8.6	98.9	98.5	9.0	9.0	<0.1	<0.1	3.6	4.7
			22.5		6.8		8.6		98.1		9.0					
I5	11:47	<0.5	22.2	22.2	6.9	6.9	8.2	8.2	88.4	88.7	11.5	11.5	<0.1	<0.1	16	16.5
			22.2		6.9		8.2		88.9		11.5					

Date of Monitoring: 15-03-17 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:56	<0.5	19.0	19.0	7.9	7.9	6.9	6.9	73.9	73.9	38.4	38.4	<0.1	<0.1	5.8	7.3
			19.0		7.9		6.9		73.9		38.4					
C3b	12:17	<0.5	18.4	18.4	7.7	7.7	7.1	7.1	75.8	75.8	8.4	8.4	<0.1	<0.1	4.1	3.9
			18.4		7.7		7.1		75.8		8.4					
I5	12:28	<0.5	19.3	19.3	7.8	7.8	7.1	7.1	77.5	77.5	9.0	9.0	<0.1	<0.1	5.0	5.2
			19.3		7.8		7.1		77.5		9.0					

Date of Monitoring: 17-03-17 Weather : Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:41	<0.5	19.4	19.4	7.0	7.0	8.1	8.0	88.0	87.0	29.5	29.5	<0.1	<0.1	32.0	29.5
			19.4		7.0		7.9		86.0		29.5					
C3b	12:04	<0.5	19.3	19.3	7.3	7.3	8.8	8.8	95.7	95.3	3.6	3.6	<0.1	<0.1	4.9	5.4
			19.3		7.3		8.7		94.8		3.6					
I5	12:15	<0.5	19.4	19.4	7.6	7.6	8.8	8.4	96.2	92.1	2.0	2.0	<0.1	<0.1	3.2	3.1
			19.4		7.6		8.0		87.9		2.0					

Date of Monitoring: 20-03-17 Weather : Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (oC)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:49	<0.5	23.7	23.7	7.3	7.3	6.8	6.8	80.8	80.8	27.7	27.7	<0.1	<0.1	20.0	22.0
			23.7		7.3		6.8		80.8		27.7					
C3b	11:15	<0.5	23.0	23.0	7.3	7.3	6.3	6.3	73.8	73.8	5.5	5.5	<0.1	<0.1	5.3	5.0
			23.0		7.3		6.3		73.8		5.5					
I5	11:26	<0.5	24.6	24.6	7.4	7.4	7.9	7.9	95.3	95.3	5.0	5.0	<0.1	<0.1	3.9	3.5
			24.6		7.4		7.9		95.3		5.0					

Date of Monitoring: 22-03-17 Weather : Rainy

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

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

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:54	<0.5	19.9	19.9	7.3	7.3	5.5	5.5	60.1	60.1	27.7	27.7	<0.1	<0.1	30.0	34.0
			19.9		7.3		5.5		60.1		27.7		<0.1		38.0	
C3b	12:13	<0.5	19.9	19.9	7.3	7.3	6.5	6.5	71.4	71.4	4.2	4.2	<0.1	<0.1	4.2	4.5
			19.9		7.3		6.5		71.4		4.2		<0.1		4.7	
I5	12:22	<0.5	20.4	20.4	7.6	7.6	6.4	6.4	71.2	71.2	3.8	3.8	<0.1	<0.1	3.2	3.2
			20.4		7.6		6.4		71.2		3.8		<0.1		3.1	

Date of Monitoring: 24-03-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:37	<0.5	26.1	26.1	7.1	7.1	6.6	6.6	81.6	81.6	24.2	24.2	<0.1	<0.1	11.0	15.5
			26.1		7.1		6.6		81.6		24.2		<0.1		20.0	
C3b	12:01	<0.5	23.4	23.4	7.0	7.0	6.5	6.5	76.2	76.2	5.2	5.2	<0.1	<0.1	4.1	4.2
			23.4		7.0		6.5		76.2		5.2		<0.1		4.3	
I5	12:12	<0.5	26.9	26.9	7.3	7.3	10.2	10.2	128.0	128.0	3.9	3.9	<0.1	<0.1	4.2	4.1
			26.9		7.3		10.2		128.0		3.9		<0.1		4.0	

Date of Monitoring: 27-03-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:34	<0.5	23.7	23.7	6.5	6.5	7.2	7.2	84.9	84.9	15.8	15.8	<0.1	<0.1	9.4	11.2
			23.7		6.5		7.2		84.9		15.8		<0.1		13.0	
C3b	13:50	<0.5	20.8	20.8	6.9	6.9	6.8	6.8	76.4	76.4	6.8	6.8	<0.1	<0.1	6.2	6.9
			20.8		6.9		6.8		76.4		6.8		<0.1		7.5	
I5	14:00	<0.5	21.9	21.9	7.2	7.2	7.7	7.7	87.9	87.9	2.2	2.2	<0.1	<0.1	3.3	3.8
			21.9		7.2		7.7		87.9		2.2		<0.1		4.3	

Date of Monitoring: 29-03-17 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:16	<0.5	21.9	21.9	6.2	6.2	5.9	5.9	66.8	66.8	28.6	28.6	<0.1	<0.1	24.0	25.5
			21.9		6.2		5.9		66.8		28.6		<0.1		27.0	
C3b	11:28	<0.5	21.4	21.4	6.6	6.6	6.6	6.6	74.8	74.8	19.1	19.1	<0.1	<0.1	9.5	9.2
			21.4		6.6		6.6		74.8		19.1		<0.1		8.8	
I5	11:34	<0.5	21.8	21.8	6.9	6.9	6.3	6.3	71.5	71.5	18.4	18.4	<0.1	<0.1	16.0	15.5
			21.8		6.9		6.3		71.5		18.4		<0.1		15.0	

Date of Monitoring: 31-03-17 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:06	<0.5	22.2	22.2	6.3	6.3	5.5	5.5	63.4	63.4	78.7	78.7	<0.1	<0.1	20.0	30.0
			22.2		6.3		5.5		63.4		78.7		<0.1		40.0	
C3b	12:32	<0.5	22.2	22.2	6.4	6.4	6.4	6.4	73.1	73.1	34.6	34.6	<0.1	<0.1	13.0	13.5
			22.2		6.4		6.4		73.1		34.6		<0.1		14.0	
I5	12:42	<0.5	22.2	22.2	6.7	6.7	6.7	6.7	76.6	76.6	66.1	66.1	<0.1	<0.1	41.0	40.5
			22.2		6.7		6.7		76.6		66.1		<0.1		40.0	

Date of Monitoring: 03-04-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:19	<0.5	25.0	25.0	5.9	5.9	7.1	7.1	86.2	86.2	31.6	31.6	<0.1	<0.1	11.0	11.0
			25.0		5.9		7.1		86.2		31.6		<0.1		11.0	
C3b	12:43	<0.5	22.5	22.5	6.2	6.2	6.5	6.5	74.7	74.7	10.9	10.9	<0.1	<0.1	13.0	14.0
			22.5		6.2		6.5		74.7		10.9		<0.1		15.0	
I5	12:54	<0.5	23.8	23.8	6.7	6.7	8.5	8.5	100.0	100.0	12.7	12.7	<0.1	<0.1	6.2	6.0
			23.8		6.7		8.5		100.0		12.7		<0.1		5.7	

Date of Monitoring: 05-04-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:58	<0.5	27.2	27.2	6.2	6.2	6.5	6.5	82.4	82.4	24.6	24.6	<0.1	<0.1	13	15.0
			27.2		6.2		6.5		82.4		24.6		<0.1		17	
C3b	12:19	<0.5	24.7	24.7	6.4	6.4	6.1	6.1	73.5	73.5	9.9	9.9	<0.1	<0.1	6.3	5.8
			24.7		6.4		6.1		73.5		9.9		<0.1		5.3	
I5	12:28	<0.5	26.1	26.1	6.7	6.7	7.9	7.9	97.1	97.1	7.0	7.0	<0.1	<0.1	3.8	3.7
			26.1		6.7		7.9		97.1		7.0		<0.1		3.6	

Date of Monitoring: 07-04-17 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:43	<0.5	27.2	27.2	6.1	6.1	5.4	5.4	68.6	68.6	135.0	135.0	<0.1	<0.1	120	120.0
			27.2		6.1		5.4		68.6		135.0		<0.1		120	
C3b	13:00	<0.5	24.8	24.8	5.9	5.9	5.8	5.8	70.4	70.4	13.2	13.2	<0.1	<0.1	13	11.0
			24.8		5.9		5.8		70.4		13.2		<0.1		9	
I5	13:11	<0.5	25.6	25.6	6.6	6.6	7.8	7.8	95.9	95.9	7.0	7.0	<0.1	<0.1	3.9	5.0
			25.6		6.6		7.8		95.9		7.0		<0.1		6	

Date of Monitoring: 10-04-17 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:07	<0.5	25.6	25.6	6.0	6.0	5.1	5.1	62.3	62.3	67.5	67.5	<0.1	<0.1	74	78.0
			25.6		6.0		5.1		62.3		67.5		<0.1		82	
C3b	12:32	<0.5	24.6	24.6	6.2	6.2	5.4	5.4	65.2	65.2	10.2	10.2	<0.1	<0.1	6.6	6.5
			24.6		6.2		5.4		65.2		10.2		<0.1		6.3	
I5	12:45	<0.5	25.3	25.3	6.6	6.6	7.1	7.1	86.2	86.2	6.5	6.5	<0.1	<0.1	6	5.3
			25.3		6.6		7.1		86.2		6.5		<0.1		4.6	

Date of Monitoring: 12-04-17 Weather: Rainy

NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

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

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:30	<0.5	22.7	22.7	6.0	6.0	5.1	5.1	63.4	63.4	56.0	55.8	<0.1	<0.1	50	53.0
			22.7		6.0		5.1		63.4		55.5		56			
C3b	10:57	<0.5	21.1	21.1	6.9	6.9	5.6	5.6	66.7	66.7	26.3	26.6	<0.1	<0.1	28	30.0
			21.1		6.9		5.6		66.7		26.8		32			
I5	11:10	<0.5	21.3	21.3	7.3	7.3	7.2	7.2	87.9	87.9	9.9	9.7	<0.1	<0.1	5.7	5.9
			21.3		7.3		7.2		87.9		9.4		6.1			

Date of Monitoring: 18-04-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	12:40	<0.5	29.2	29.2	6.2	6.2	6.1	6.1	79.3	79.3	28.2	28.2	<0.1	<0.1	19	19.5
			29.2		6.2		6.1		79.3		28.2		20			
C3b	12:59	<0.5	26.8	26.8	6.6	6.6	5.8	5.8	72.2	72.2	15.2	15.2	<0.1	<0.1	6.1	7.3
			26.8		6.6		5.8		72.2		15.2		8.4			
I5	13:11	<0.5	27.7	27.7	6.8	6.8	6.7	6.7	85.3	85.3	6.9	6.9	<0.1	<0.1	2.5	3.1
			27.7		6.8		6.7		85.3		6.9		3.6			

Date of Monitoring: 20-04-17 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:41	<0.5	27.1	27.1	5.8	5.8	5.3	5.3	66.4	66.4	29.6	29.6	<0.1	<0.1	24.0	26.5
			27.1		5.8		5.3		66.4		29.6		29.0			
C3b	10:57	<0.5	25.9	25.9	6.5	6.5	5.5	5.5	67.3	67.3	18.6	18.6	<0.1	<0.1	18.0	17.0
			25.9		6.5		5.5		67.3		18.6		16.0			
I5	11:07	<0.5	26.3	26.3	6.7	6.7	5.9	5.9	73.3	73.3	8.3	8.3	<0.1	<0.1	5.7	5.6
			26.3		6.7		5.9		73.3		8.3		5.5			

Date of Monitoring: 22-04-17 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	10:26	<0.5	22.2	22.2	6.8	6.8	5.4	5.4	62.3	62.3	46.5	46.5	<0.1	<0.1	26.0	25.5
			22.2		6.8		5.4		62.3		46.5		25.0			
C3b	10:48	<0.5	21.6	21.6	6.8	6.8	6.8	6.8	77.6	77.6	49.8	49.8	<0.1	<0.1	23.0	24.0
			21.6		6.8		6.8		77.6		49.8		25.0			
I5	11:11	<0.5	19.6	19.6	6.9	6.9	8.6	8.6	93.6	93.6	31.2	31.2	<0.1	<0.1	19.0	19.5
			19.6		6.9		8.6		93.6		31.2		20.0			

Date of Monitoring: 24-04-17 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:06	<0.5	23.5	23.5	6.5	6.5	5.7	5.7	67.0	67.0	45.6	45.6	<0.1	<0.1	36.0	38.5
			23.5		6.5		5.7		67.0		45.6		41.0			
C3b	11:21	<0.5	22.4	22.4	7.1	7.1	6.9	6.9	79.8	79.8	25.2	25.2	<0.1	<0.1	12.0	12.0
			22.4		7.1		6.9		79.8		25.2		12.0			
I5	11:31	<0.5	22.6	22.6	7.1	7.1	6.0	6.0	69.1	69.1	16.9	16.9	<0.1	<0.1	14.0	13.5
			22.6		7.1		6.0		69.1		16.9		13.0			

Date of Monitoring: 26-04-17 Weather: Cloudy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:57	<0.5	24.9	24.9	8.0	8.0	5.5	5.5	66.1	66.1	37.2	37.2	<0.1	<0.1	21.0	19.5
			24.9		8.0		5.5		66.1		37.2		18.0			
C3b	12:14	<0.5	24.4	24.4	7.7	7.7	6.4	6.4	76.7	76.7	18.0	18.0	<0.1	<0.1	14.0	12.5
			24.4		7.7		6.4		76.7		18.0		11.0			
I5	12:24	<0.5	25.2	25.2	7.4	7.4	6.7	6.7	82.1	82.1	13.5	13.5	<0.1	<0.1	4.5	4.7
			25.2		7.4		6.7		82.1		13.5		4.9			

Date of Monitoring: 28-04-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:53	<0.5	25.1	25.1	6.5	6.5	6.4	6.4	73.1	73.1	22.7	22.7	<0.1	<0.1	21.0	20.0
			25.1		6.5		6.4		73.1		22.7		19.0			
C3b	12:19	<0.5	24.7	24.7	6.9	6.9	6.2	6.2	72.0	72.0	11.4	11.4	<0.1	<0.1	11.0	10.2
			24.7		6.9		6.2		72.0		11.4		9.4			
I5	12:30	<0.5	24.9	24.9	7.1	7.1	6.8	6.8	84.1	84.1	2.8	2.8	<0.1	<0.1	2.5	2.5
			24.9		7.1		6.8		84.1		2.8		<2.5			

Date of Monitoring: 27-03-17 Weather: Sunny

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	13:34	<0.5	23.7	23.7	6.5	6.5	7.2	7.2	84.9	84.9	15.8	15.8	<0.1	<0.1	9.4	11.2
			23.7		6.5		7.2		84.9		15.8		13.0			
C3b	13:50	<0.5	20.8	20.8	6.9	6.9	6.8	6.8	76.4	76.4	6.8	6.8	<0.1	<0.1	6.2	6.9
			20.8		6.9		6.8		76.4		6.8		7.5			
I5	14:00	<0.5	21.9	21.9	7.2	7.2	7.7	7.7	87.9	87.9	2.2	2.2	<0.1	<0.1	3.3	3.8
			21.9		7.2		7.7		87.9		2.2		4.3			

Date of Monitoring: 29-03-17 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average
C3a	11:16	<0.5	21.9	21.9	6.2	6.2	5.9	5.9	66.8	66.8	28.6	28.6	<0.1	<0.1	24.0	25.5
			21.9		6.2		5.9		66.8		28.6		27.0			
C3b	11:28	<0.5	21.4	21.4	6.6	6.6	6.6	6.6	74.8	74.8	19.1	19.1	<0.1	<0.1	9.5	9.2
			21.4		6.6		6.6		74.8		19.1		8.8			
I5	11:34	<0.5	21.8	21.8	6.9	6.9	6.3	6.3	71.5	71.5	18.4	18.4	<0.1	<0.1	16.0	15.5
			21.8		6.9		6.3		71.5		18.4		15.0			

Date of Monitoring: 31-03-17 Weather: Rainy

Monitoring Location	Time	Water Depth (m)	Temperature (°C)		pH		DO (mg/L)		DO (% saturation)		Turbidity (NTU)		Salinity (g/L)		SS (mg/L)	
			Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average

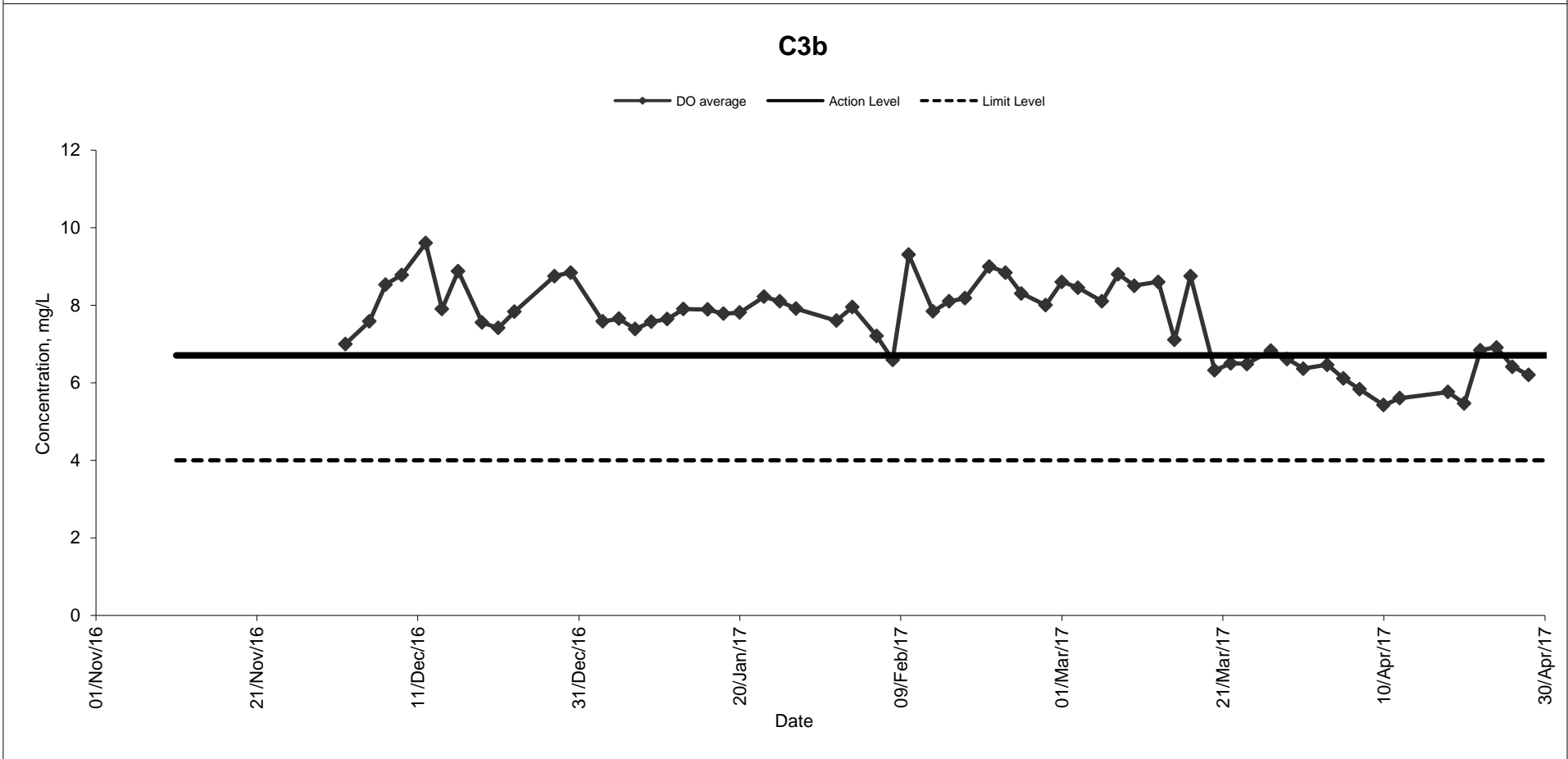
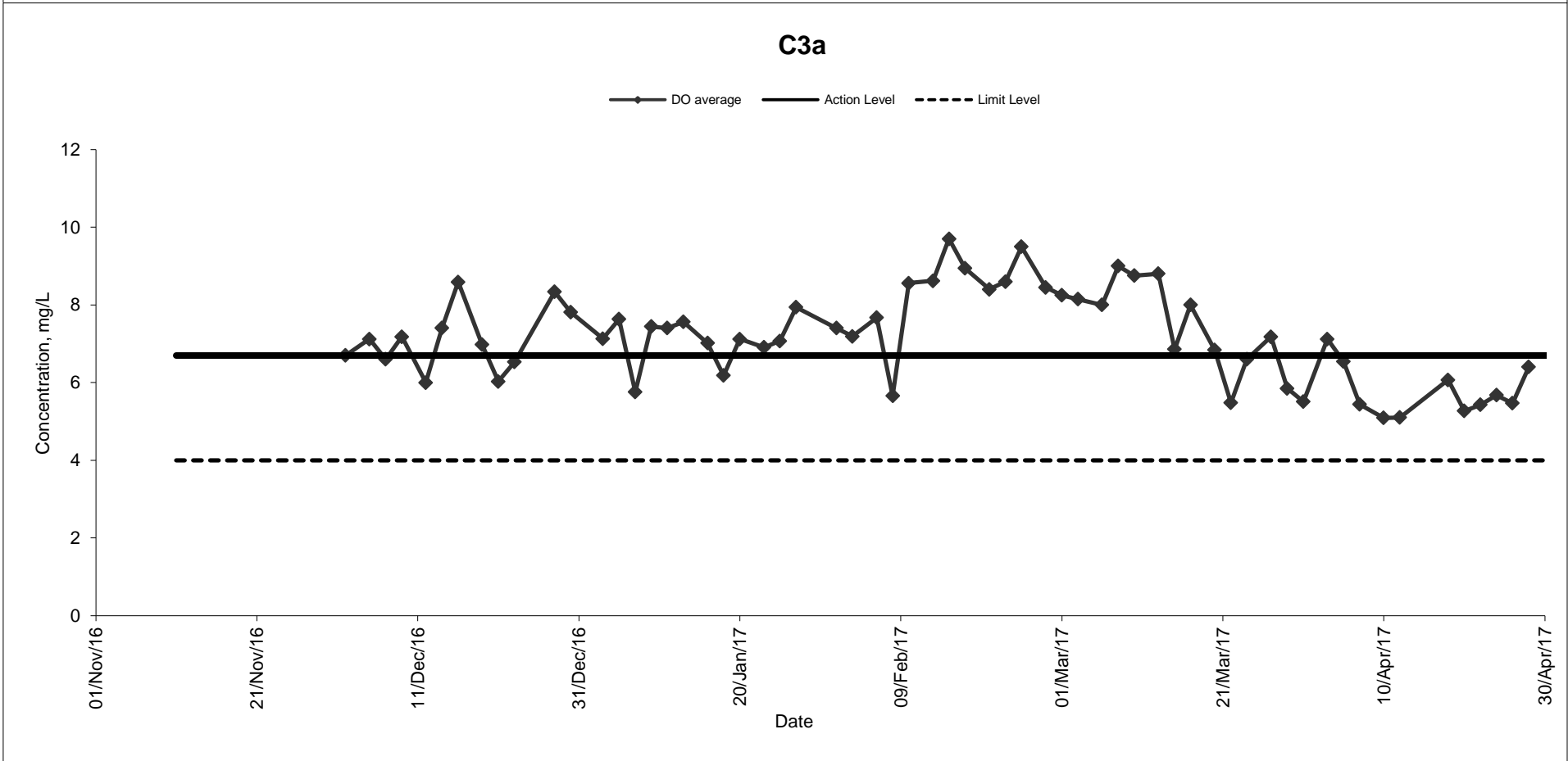
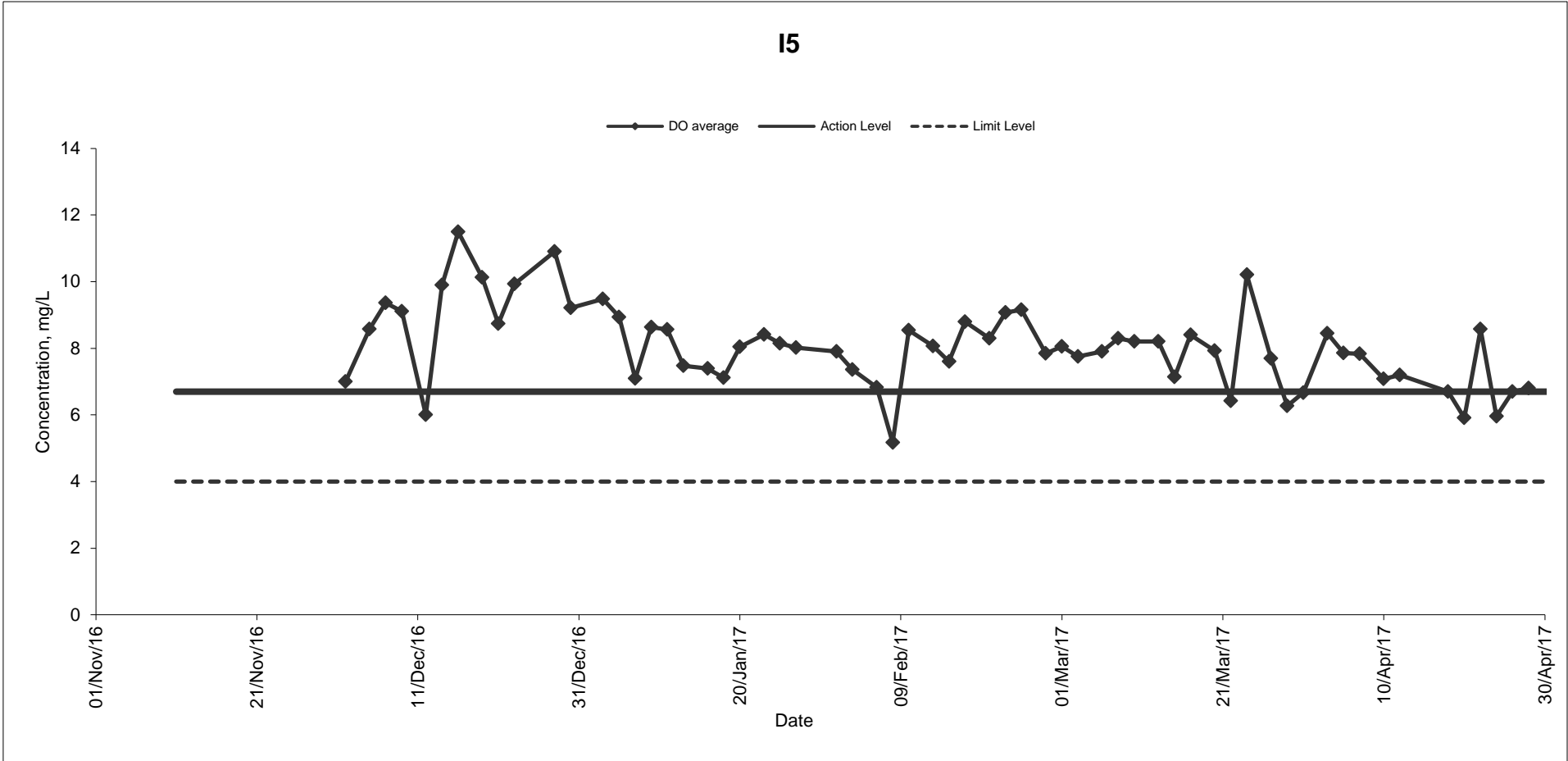
NOTE:
Data in **Bold** denotes exceedance of respective Action Level
Data in **Bold Underline** denotes exceedance of respective Limit Level

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

C3a	12:06	<0.5	22.2	22.2	6.3	6.3	5.5	5.5	63.4	63.4	78.7	78.7	<0.1	<0.1	20.0	30.0
			22.2		6.3		5.5		63.4		78.7		<0.1		40.0	
C3b	12:32	<0.5	22.2	22.2	6.4	6.4	6.4	6.4	73.1	73.1	34.6	34.6	<0.1	<0.1	13.0	13.5
			22.2		6.4		6.4		73.1		34.6		<0.1		14.0	
I5	12:42	<0.5	22.2	22.2	6.7	6.7	6.7	6.7	76.6	76.6	66.1	66.1	<0.1	<0.1	41.0	40.5
			22.2		6.7		6.7		76.6		66.1		<0.1		40.0	

NOTE:
 Data in **Bold** denotes exceedance of respective Action Level
 Data in **Bold Underline** denotes exceedance of respective Limit Level

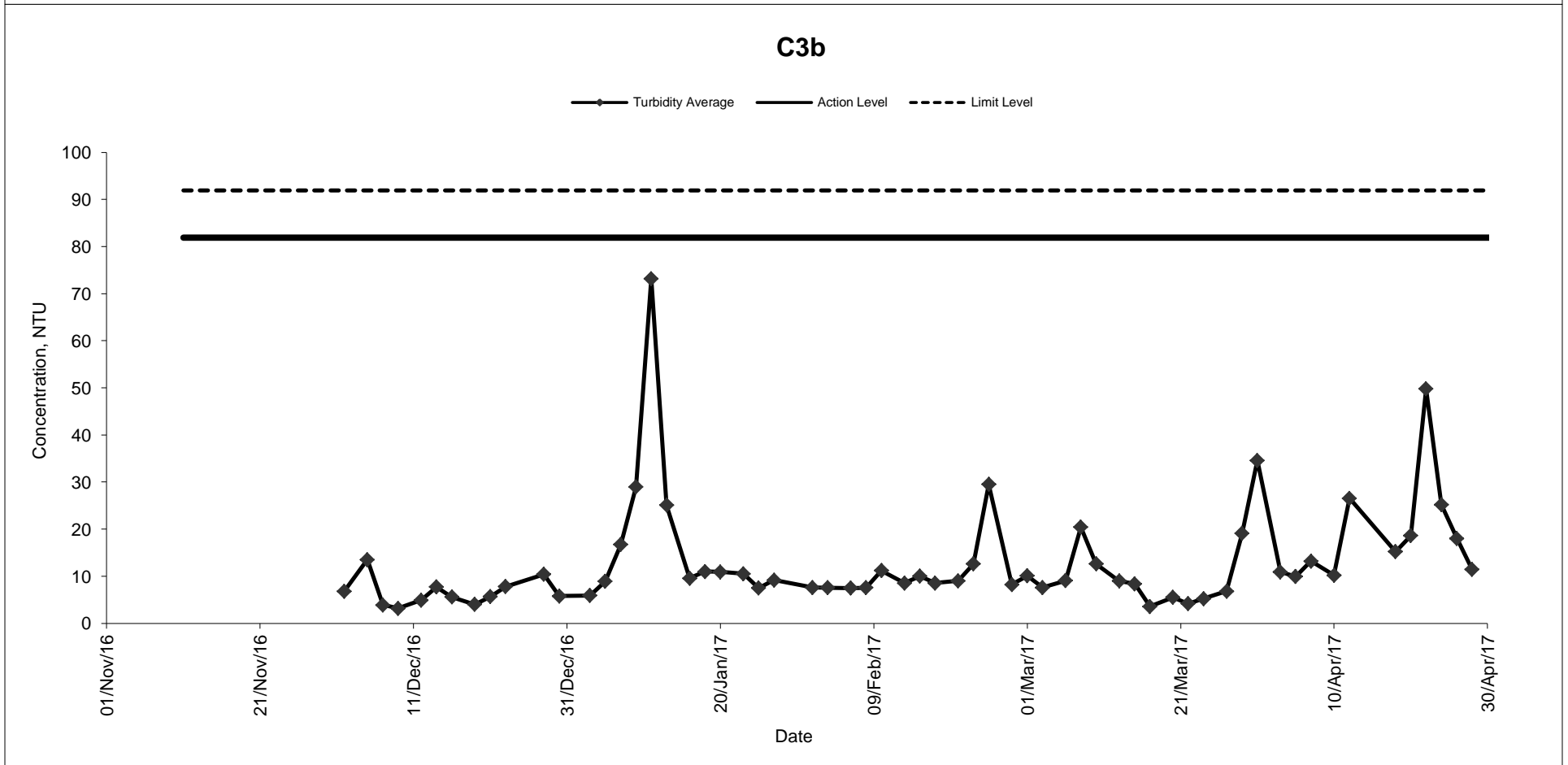
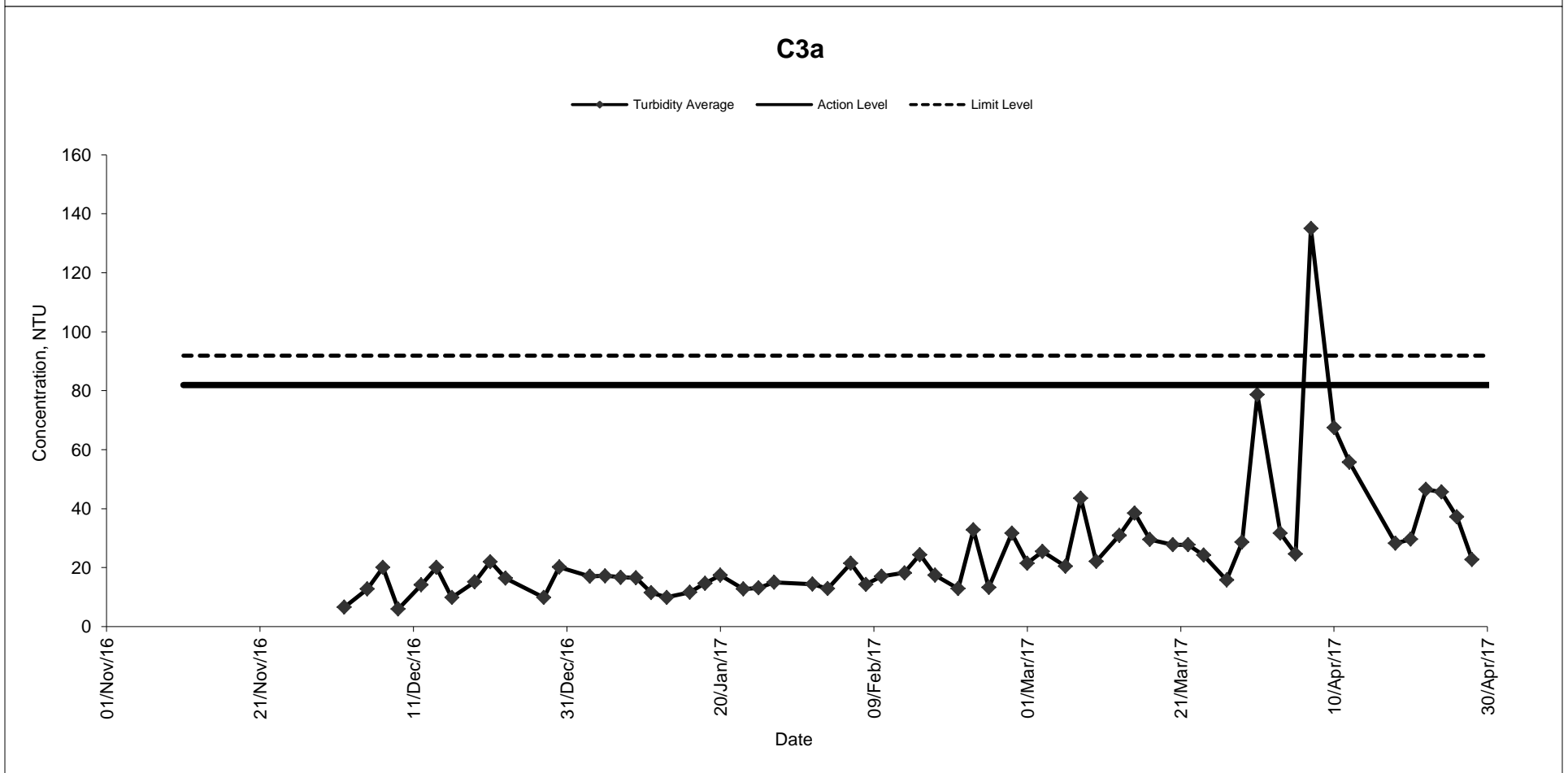
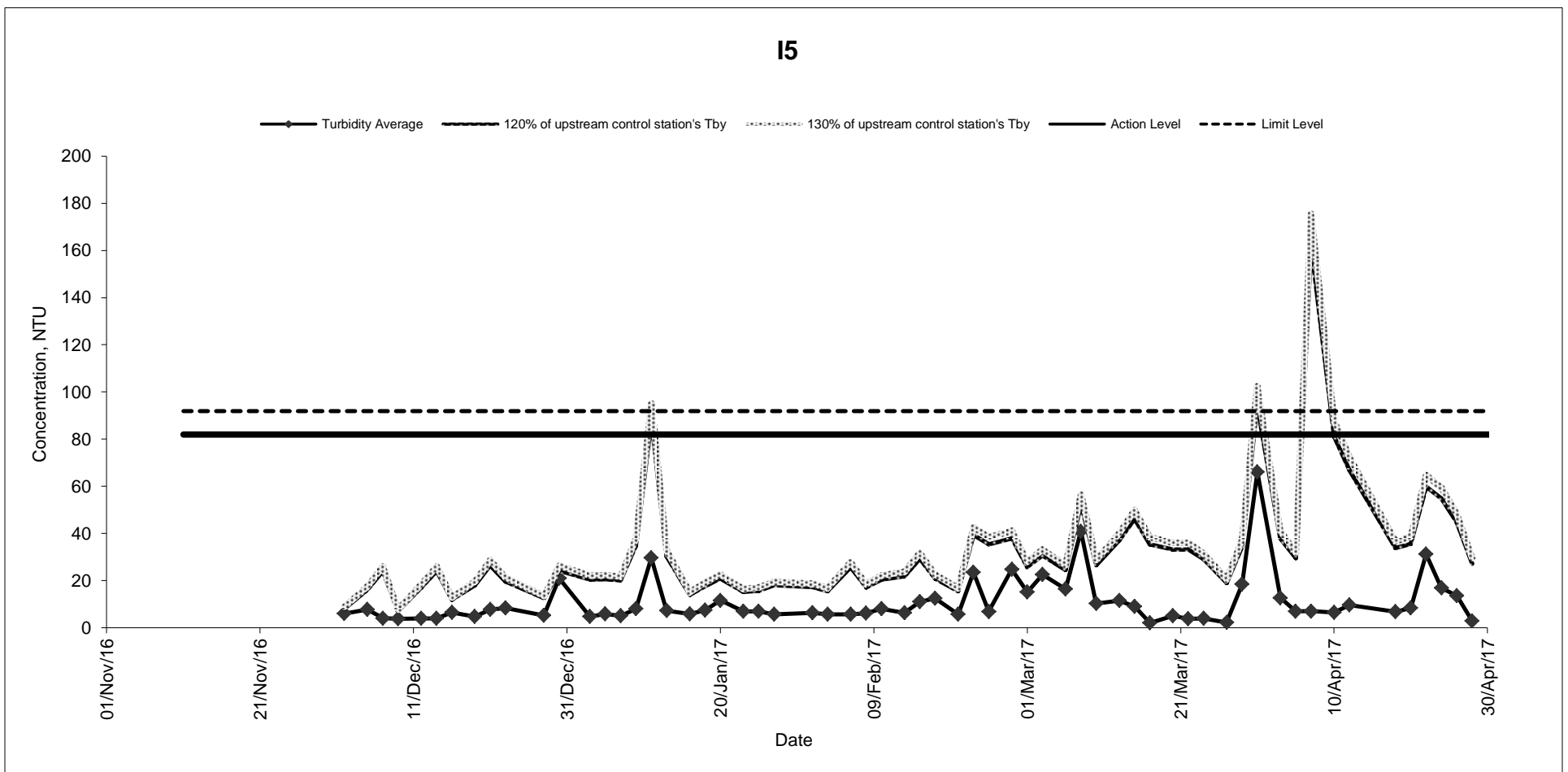
Dissolved Oxygen



Remarks:

In the above result , a total of 6 exceedance events were recorded which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

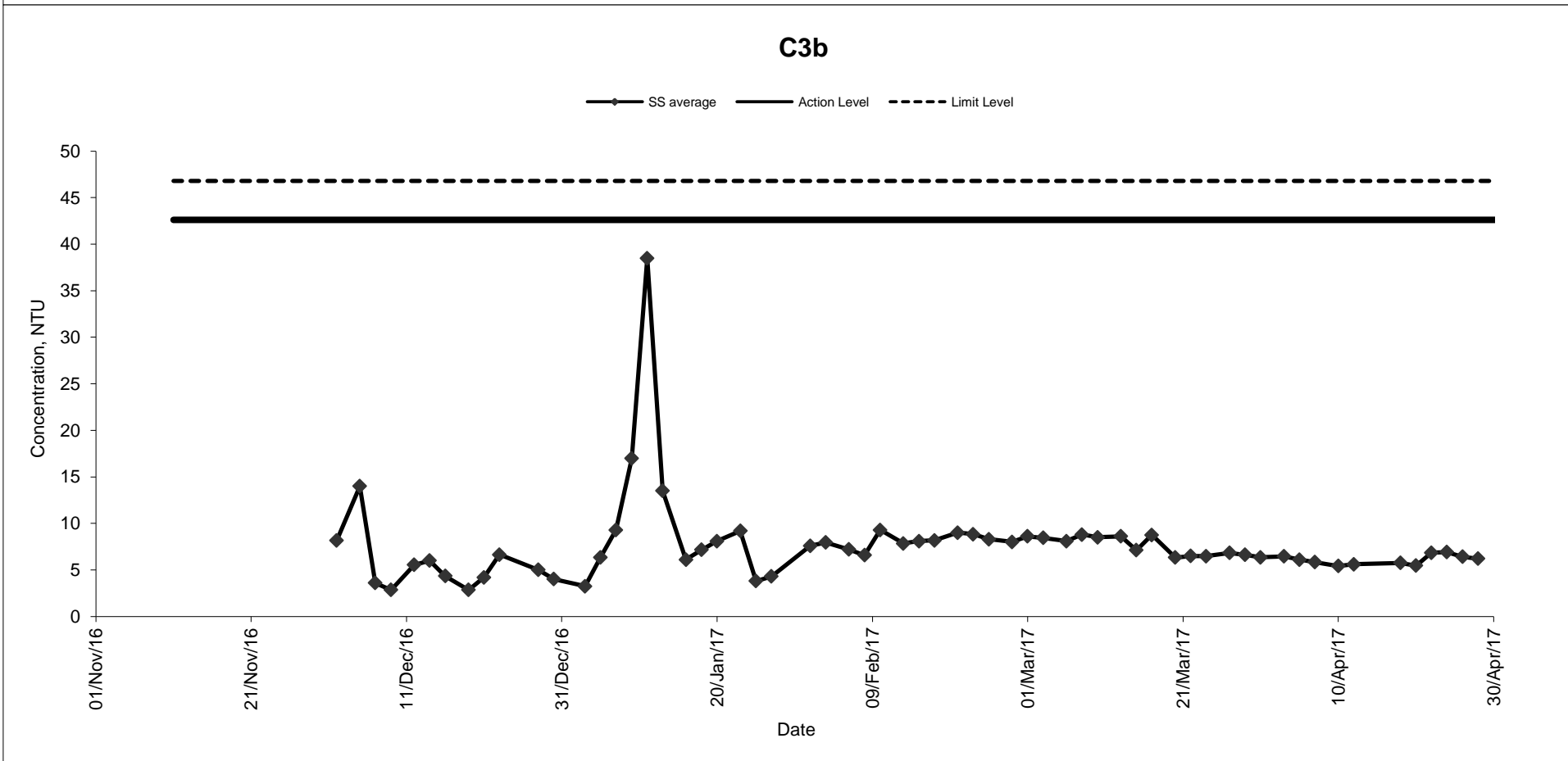
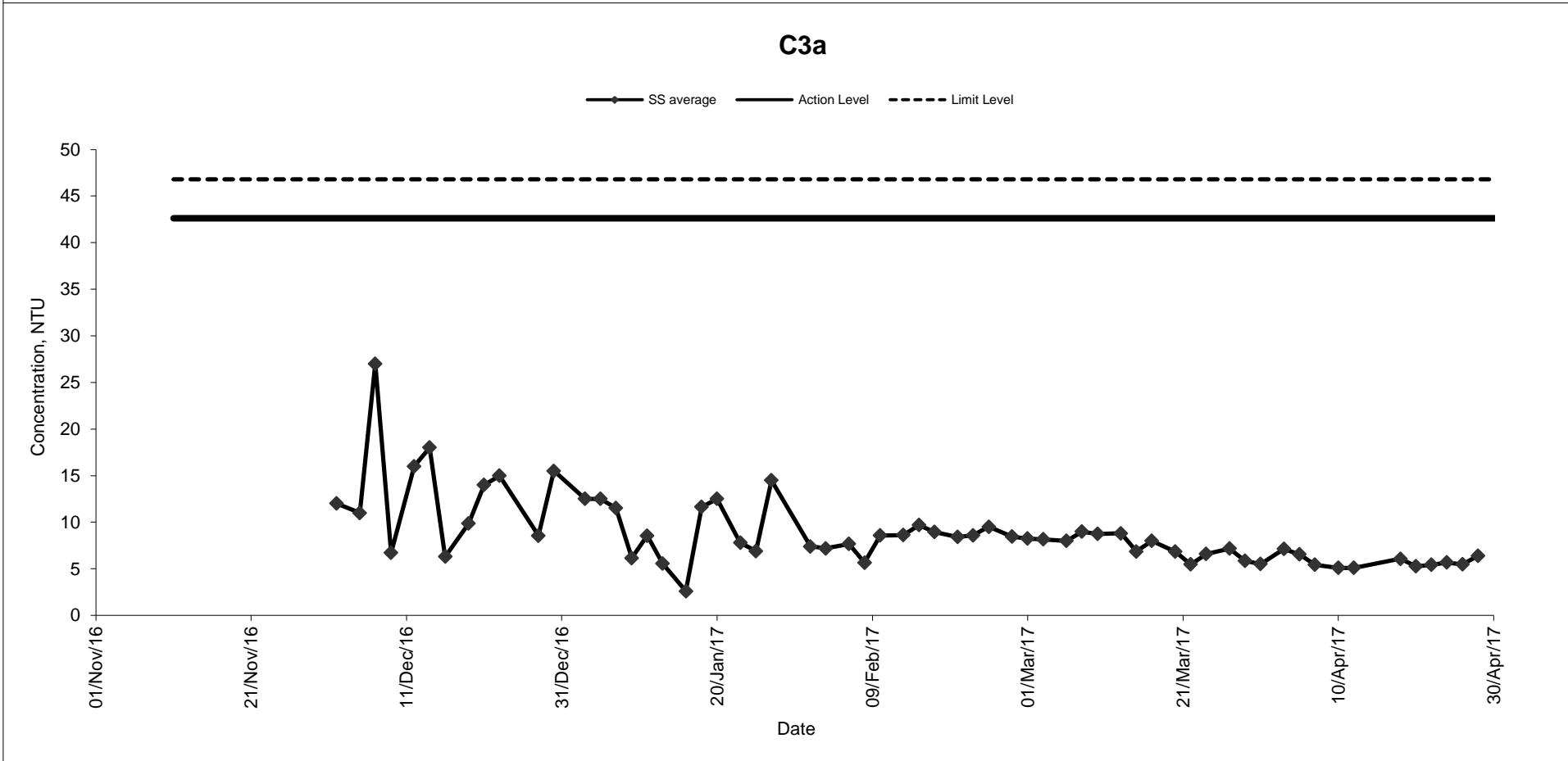
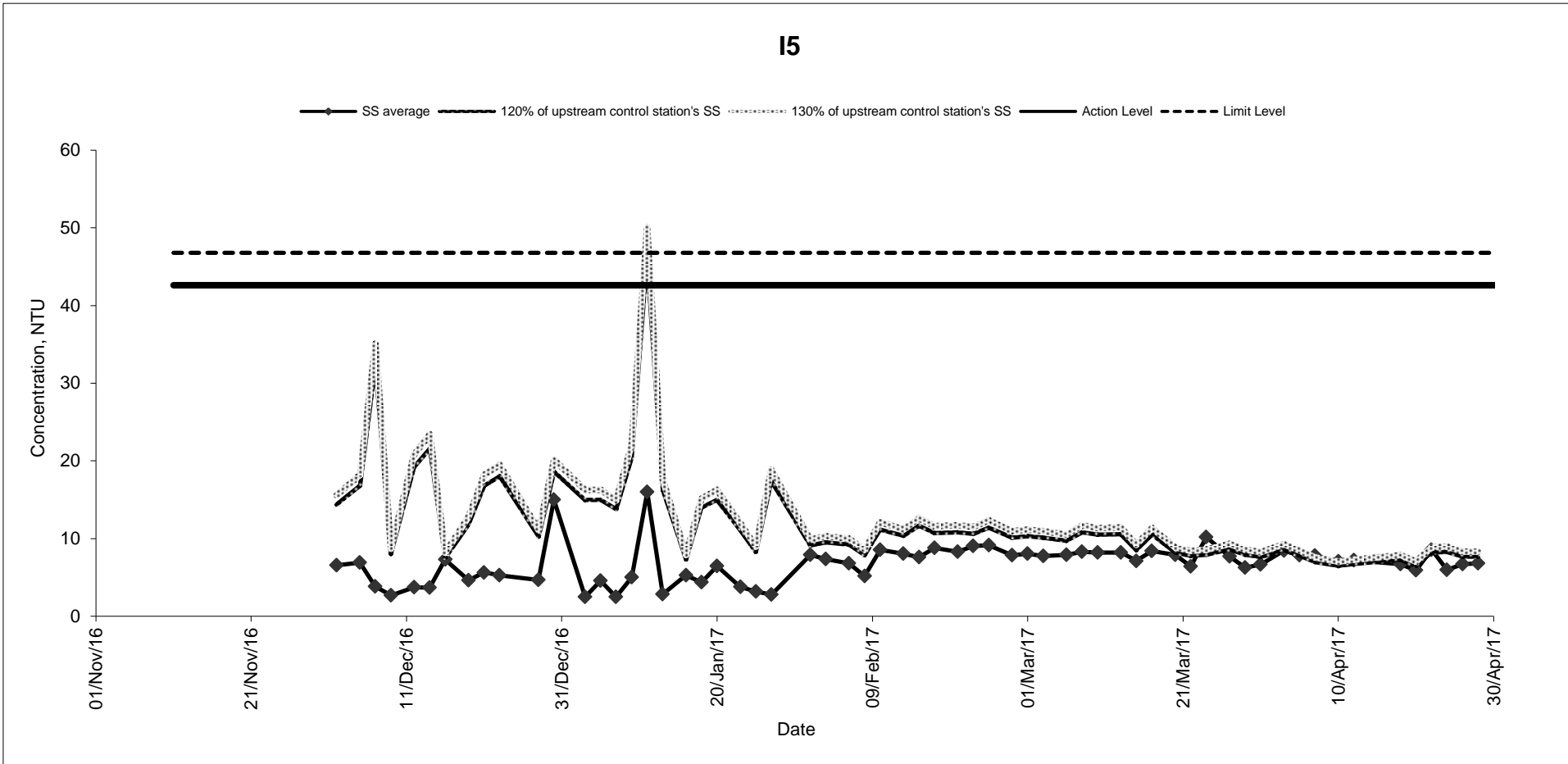
Turbidity



Remarks:

In the above result ,no exceedance event were recorded and no necessary remedial actions have been taken.

Suspended Solid



Remarks:

In the above result, a total of 1 exceedance event was recorded which concluded that the exceedance was not related to the project works. No necessary remedial actions have been taken. The respective investigation report has been presented in the respective Monthly EM&A Report.

Appendix G

Summary of Event & 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 Quality

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

Waste Flow Table

	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)
Sub -Total	(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)
2013	1.528	0.007	1.521	0.503	0	1.018	0.6	0	0	0	0	0.11
2014	42.3	3.291	39.009	9.816	0	29.193	6.173	0.002	0.000	0.040	0.070	1.675
2015	33.352115	2.033	31.320	10.901	0	20.419	4.475	0.006	0.000	0.055	2.340	1.130
2016	13.025	2.949	10.076	0.824	0	9.252	10.235	0.004	0.001	0.012	1.8	1.335
2017	20.614	3.798	16.816	1.668	0	15.148	6.268	0.7667	0	0.006	0.033	1.415
2018	22.36	3.938	18.422	3.132	0	15.29	3.755	0	0	0	0	1.455
2019	23.055	2.696	20.359	0	0	20.359	1.376	0	0	0	0	1.23
2020	1.323	0	1.323	0	0	1.323	0	0	0	0	0	0.115
2021	0.006	0	0.006	0	0	0.006	0	0	0	0	0	0.01
Total	157.563	18.712	138.852	26.844	0.000	112.008	32.882	0.779	0.001	0.113	4.243	8.475

Appendix I 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	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
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	✓ ✓
Noise during Operation	<ul style="list-style-type: none"> Various types of barriers of varying heights as shown in Figures 4a to 4e – Layout of Noise Barriers of the Environmental Permit. 	During Operation	Designer to implement during engineering design	✓
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	✓

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

	<ul style="list-style-type: none"> • Sand traps, oil interceptors and other pollution prevention installations should be provided, properly cleaned and maintained. 			✓
	<ul style="list-style-type: none"> • 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. 			✓ ✓ ✓ ✓ ✓ ✓
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	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
	<u>Demolition Wastes</u> <ul style="list-style-type: none"> • Segregation of materials to facilitate disposal. • Appropriate stockpile management. 	During Construction	Contractor	✓ ✓

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

	<p><u>Excavated Materials</u></p> <ul style="list-style-type: none"> • Segregation of materials to facilitate disposal / reuse. • Appropriate stockpile management. • Re-use of excavated material on or off site (where possible). • Special handling and disposal procedures in the event that contaminated materials are excavated. 	During Construction	Contractor	<p>✓</p> <p>✓</p> <p>✓</p> <p>N/A</p>
	<p><u>Construction Wastes</u></p> <ul style="list-style-type: none"> • Segregation of materials to facilitate recycling/reuse (within designated area in appropriate containers/stockpiles). • Appropriate stockpile management. • Planning to reduce over ordering and waste generation. • Recycling and re-use of materials where possible (e.g. metal, wood from formwork) • For material which cannot be re-used/recycled, collection should be carried out by an approved waste contractor for landfill disposal. 	During Construction	Contractor	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>
	<p><u>Bentonite Slurries</u></p> <ul style="list-style-type: none"> • Bentonite slurries should be reused as far as possible. • Disposal in accordance with Practice Note For Professional Persons ProPECC PN 1/94. <p><u>Chemical Wastes</u></p> <ul style="list-style-type: none"> • Storage within locked, covered and bunded area. • The storage area shall not be located adjacent to sensitive receivers e.g. drains. • Minimise waste production and recycle oils/solvents where possible. • 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. 	During Construction	Contractor	<p>N/A</p> <p>N/A</p>
		During Construction	Contractor	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>

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

	<ul style="list-style-type: none"> • 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	Contractor	✓ ✓
	<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. 			✓ ✓ ✓

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

	<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	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>
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	<p>Contractor (during construction) / LCSD* (during operation)</p> <p>(Note: * The division of vegetation planting and maintenance responsibilities shall follow the guidelines stipulated in ETWB TCW No. 2/2004.)</p>	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	<p>✓</p> <p>✓</p>
	<p><u>Temporary Works Areas</u></p> <ul style="list-style-type: none"> • 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. 	During Construction	Contractor	<p>✓</p>
	<p><u>Hoarding</u></p> <ul style="list-style-type: none"> • A hoarding would be erected where practicable in the most visually sensitive locations to screen the temporary construction works from the local VSRs. 	During Construction	Contractor	<p>✓</p>

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

	<p><u>Top Soils</u></p> <ul style="list-style-type: none"> 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><u>Protection of Important Landscape Features</u></p> <ul style="list-style-type: none"> Important features such as temples, Island House and kilns within the study area, although remote from the proposed works retained and adequately protected. 	During Construction	Contractor	N/A
		During Construction	Contractor	N/A
Landscape during Operation	<p><u>Compensatory Planting</u></p> <ul style="list-style-type: none"> The loss of existing vegetation would be a primary source of both the landscape and visual impacts. The road widening would be facilitated through the construction of extensions to the embankment and would have a soft finish. The embankments and cuttings would be planted with a mix of tree and shrub planting. Identifying a corridor separate from the utility corridors that impede landscape works. Tree and shrub screen planting including roadside and amenity planting. In certain locations, woodland planting would be appropriate with the species mix reflecting those affected with the eventual long-term objective of creating native woodland. Create a fast vegetative cover to ensure soil stability and quick visual effect for planting of disturbed areas. The long-term aim would be to allow native species to become dominant. Use of ornamental species in urban locations such as areas adjacent to the forward visibility splays allow. Robust plant species would be used which have a low maintenance requirement. Use of low the forward visibility splays allow. Robust plant species would be used which have a low maintenance requirement. w growing shrub planting in the central reserve of the highway where 	During Operation	Designer to implement during engineering design	N/A
		During Operation	Designer to implement during engineering design	N/A
		During Operation	Designer to implement during engineering design	N/A
		During Operation	Designer to implement during engineering Design	N/A
		During Operation	Designer to implement during engineering design	N/A

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

Appendix J

Confirmation Letter of Operation

Phase Noise Monitoring from

HY/2012/06

[]

By Fax



MEMO

From CE5/MW, MWPMO, HyD
 HYD MWO 11/2
Ref. (JY2H) in (HY/2012/06)/M45/110
Tel. No. 2762 4125
Fax. No. 2714 5298
Date 28 August 2019

To Strategic Assessment Group (6), EPD
 (Attn. : Ms. Candice W T CHUNG)
Your Ref. (38) in Ax(1) to EP 2/N5/A/23 Pt. 18
Dated 25 July 2019 **Fax No.** 2591 0558
Total Pages 1 page

Contract No. HY/2012/06
Widening of Fanling Highway – Tai Hang to Wo Hop Shek interchange
Environmental Permit EP-324/2008/E Operational Phase Noise Monitoring

We refer to your letter under reference regarding your comments on the Final EM&A Review Report (Rev. 0) of CEDD's Contract No. CV/2012/09.

2. We confirm that the operational phase noise monitoring of the Project to be carried out by the Environmental Team under HyD Contract No. HY/2012/06 in accordance with the EM&A Manual.
3. Should you have further queries, please contact the undersigned.

(Ivan Y T NG)
 for Chief Engineer 5/Major Works
 Major Works Project Management Office
 Highways Department

Encl.

c.c.

CEDD	(Attn: Mr. P. Y. LU)	Fax. 3547 1659
Meinhardt	(Attn: Mr. Fredick LEONG)	Fax. 2517 6107
AECOM	(Attn: Mr. Y. W. FUNG)	Fax. 3922 9797
Mott Macdonald	(Attn: Mr. Steven TANG)	Fax. 2827 1823
HABVJV (Hyder)	(Attn: Mr. James PENNY)	Fax. 2911 2002
HABVJV (BV)	(Attn: Mr. Justin SEARLE)	Fax. 2601 3988
HABVJV (Arup)	(Attn: Mr. K. Y. LEUNG)	Fax. 2268 3954
CRE/Tolo3	(Attn: Mr. Edwin CHUNG)	Fax: 2638 0950

Internal

E2/TOLO to note in file.

Date	29 AUG 2019		
Action	Info	Initial	Date
FL		A	29/8
BOD		JL	30/8
3/F	File		
PMF Registration			
<input type="checkbox"/>	Submission	<input type="checkbox"/>	Client Req
<input type="checkbox"/>	Des Change	<input type="checkbox"/>	Doc Rec'd
Reg. done by _____ (Initial)			

Appendix K

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>	
C171228	28 December, 2017	1823	Kau Lung Hang and Hong Lok Yuen	<p>Air quality issue nearby Kau Lung Hang and Hong Lok Yuen area. Stockpiling within the Project area was observed to be uncovered, causing dust dispersion within the area. (大埔九龍坑附近的空氣污染問題嚴重。吐露港公路蓮塘口岸隧道工程經常見到沙泥沒有覆蓋，導致沙土飛揚散佈九龍坑，康樂園一帶，造成極大困擾</p>	<p>The Environmental Team (ET) was informed of the complaint through Chun Wo and CEDD via 1823 online-enquiry/ complaint form received on 28 December 2017 at 9:04am. Investigation was triggered in accordance with the procedures as specified in Section 7.3 of the EM&A Manual. A joint investigation by the ET and the IEC was conducted on 28 December 2017.</p> <p>As advised by the Contractor, no construction works were carried out during the public holiday.</p> <p>No exceedance of TSP level at the air monitoring station under this Contract was recorded in the past six months except 8 December 2017.</p>	

Complaint Log No.	Date of Complaint	Received From and Received By	Location of Complainant	Nature of Complaint	Outcome	Status
				<p>與明顯健康風險。要求立即改善，懲罰相關建築商。附圖是該區狀況。昨日洗車，一日已經沙塵滿佈。)</p>	<p>Exceedance on 8 December 2017 was considered not project related as no major excavation works located close to the monitoring location at SR77.</p> <p>Based on the routine environmental site inspection and information provided by the Contractor, it is considered that dust suppression measures have been implemented to minimize dust nuisance arising from the works areas. Nonetheless, the ET and IEC will continue the auditing and reviewing of the Contractor's implementation of mitigation measures during the construction period.</p>	

Appendix L

Investigation Reports of Incident

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.: W131218_SS

Date	18 December 2013
Time	12:55
Monitoring Location	I5
Parameter	Suspended Solids
Action / Limit Levels	Action Level: 42.6 mg/L or 120% of upstream control station's SS of the same day (i.e. 17.4mg/L) Limit Level: 46.8 mg/L or 130% of upstream control station's SS of the same day (i.e. 18.8mg/L)
Measured Level	28mg/L (Limit level being exceeded – 130% of C3a)
Possible reason for the exceedance	The ET weekly visit was conducted on 18 December which identified the leakage of diverted river water through the concrete blocks at Box Culvert ID4 into the works site then downstream into the river with silt-laden site runoff.
Action taken / to be taken	Contractor has been advised to fill up the leakage and strengthen it to avoid leakage again. The ET weekly visit conducted on 23 December 2013 confirmed that the leakage of the diverted river water has been remedied. (Refer to the attached photo) The water quality monitoring conducted on 20 December 2013 showed the Suspended Solids level at I5 has dropped to below Action Limit. No further action(s) would be required.
Remarks	-



Water leakage has been remedied. No more river water enters the construction site. (Date: 23 December 2013)

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.: W131218_Tby

Date	18 December 2013
Time	12:55
Monitoring Location	I5
Parameter	Turbidity
Action / Limit Levels	81.9 NTU or 120% of upstream control station's Tby of the same day (i.e. 25.2NTU) 91.9 NTU or 130% of upstream control station's Tby of the same day (i.e. 27.3NTU)
Measured Level	48.7NTU (Limit level being exceeded – 130% of C3a)
Possible reason for the exceedance	The ET weekly visit was conducted on 18 December which identified the leakage of diverted river water through the concrete blocks at Box Culvert ID4 into the works site then downstream into the river with silt-laden site runoff.
Action taken / to be taken	Contractor has been advised to fill up the leakage and strengthen it to avoid leakage again. The ET weekly visit conducted on 23 December 2013 confirmed that the leakage of the diverted river water has been remedied. (Refer to the attached photo) The water quality monitoring conducted on 20 December 2013 showed the Turbidity level at I5 has dropped to below Action Limit. No further action(s) would be required.
Remarks	-



Water leakage has been remedied. No more river water enters the construction site. (Date: 23 December 2013)