

Our ref: 09-06-2021

09-06-2021

By email: cre.wilsonlam@hkirts.com

Binnies Hong Kong Limited
Unit No. 2507-2509, 25/F, The Octagon,
No. 6 Sha Tsui Road,
Tsuen Wan, N.T.
(Attn: Wilson Lam)

Dear Mr. Lam,

Re: Contract No. CM 10/2018

Independent environmental checker services for inter-reservoirs transfer scheme (IRTS)

– water tunnel between Kowloon byewash reservoir and lower shing mun reservoir

23rd Monthly EM&A Report (Rev. 1)

Reference is made to the submission of the 23rd Monthly EM&A Report (Rev. 1) and provided to us via email dated on 08-6-2021 for our review and comment.

The ET Leader and ET are reminded that according to condition 2.2 of the Environmental Permit No. EP-345/2009/A the ET and the ET Leader shall be responsible for the implementation of the EM&A programme in accordance with the relevant EM&A requirements as contained in the EM&A Manual.

Please be informed that IEC has comments on the captioned submission. IEC would like to draw your attention on a long turnaround time (3-5 days) for the SS result again. This long time lap may affect any immediate remedial measures if there is exceedance due to the construction works. Similar comments have been provided in the verification letters of 13th and 15th Monthly EM&A Report. This is the third gentle reminder for your kind consideration. IEC would like to clarify that IEC did not endorse the current procedure of investigating SS-induced exceedance (Please see enclosed). IEC hereby writes to verify the captioned submission in accordance with Condition 2.1 of the Environmental Permit No. EP-345/2009/A.

Thank you very much for your attention and please feel free to contact the undersigned should you require further information.

Yours faithfully,

For and on behalf of

Ka Shing Management Consultant Limited

嘉誠管理顧問有限公司

Ka Shing management consultant Limited



Douglas Wong

Dr. Wong

Independent Environmental Checker

Encl. An email communication subjected as "IRTS_Notification of Exceedance_NOE023"

Unit 2, 13/F Kai Yue Commercial Building, 2C Argyle St, Mong Kok, Kowloon

九龍旺角亞皆老街 2C 號啟如商業大廈 13 樓 2 室

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網站: www.ka-shing.net



Re: IRTS_Notification of Exceedance_NOE023



From Ka Shing Management Consultant Ltd <iecteammate1@ka-shing.net>
To <klau@acuityhk.com>
Cc 'Irving Sze' <re.irvingsze@hkirts.com>, <drwong@ka-shing.net>, 'CHEUNG, Marcus (BTP)' <marcus.cheung@dragageshk.com>, 'Kevin Li' <kli@acuityhk.com>, <nicholashktsang@epd.gov.hk>, <tkkwok@epd.gov.hk>, 'Nelson Tsui' <ntsui@acuityhk.com>, 'Ceg Timho' <ceg.timho@hkirts.com>, 'Carmen Cheuk' <are.carmencheuk@hkirts.com>, 'Alvin LAU' <are.alvinlau@hkirts.com> [1 more...](#)
Date 2021-06-07 17:29

Dear ET,

Would you please provide which exact clause/section in the EM&A Manual that mentions "ET does not repeat the in-situ measurement to confirm findings and repeats measurement on next day after exceedance has been recorded, and the ET and the ET Leader shall not be responsible for the implementation of the EM&A programme in accordance with the relevant EM&A requirements as contained in the EM&A Manual after the procedure of investigating SS-induced exceedance was thoroughly discussed in the meetings"?

Regards

Zeto

klau@acuityhk.com 於 2021-06-02 18:29 寫到:

Dear All,

As per our discussion in the SSEMC Meeting yesterday (1/6), attached please find the updated IR023 that units were supplemented to the SS values.

Dear Zeto,

Attached please find the email record as per your request. Your reminder regarding water quality parameters monitored by **in-situ measurement** is noted.

The procedure of investigating SS-induced exceedance was thoroughly discussed in the past meetings. Kindly please communicate with the IEC regarding your concerns. Thank you.

Please advise if you have any further comments on the captioned exceedance investigation report. Thanks in advance.

Best regards,

Kelvin Lau

Acuity Sustainability Consulting Limited

O: 2698-9097 F: 2698-9383

From: Ka Shing Management Consultant Ltd <iecteammate1@ka-shing.net>

Sent: Tuesday, 1 June 2021 4:22 pm

To: klau@acuityhk.com

Cc: 'Irving Sze' <re.irvingsze@hkirts.com>; drwong@ka-shing.net; 'CHEUNG, Marcus (BTP)'

<marcus.cheung@dragageshk.com>; 'Kevin Li' <kli@acuityhk.com>; nicholashktsang@epd.gov.hk;

tkkwok@epd.gov.hk; 'Nelson Tsui' <ntsui@acuityhk.com>; 'Ceg Timho' <ceg.timho@hkirts.com>; 'Carmen Cheuk'

<are.carmencheuk@hkirts.com>; 'Alvin LAU' <are.alvinlau@hkirts.com>; iris.lai@dragageshk.com

Subject: Re: IRTS_Notification of Exceedance_NOE023

Dear ET,

Based on Table B-2 Event/ Action Plan for Water Quality Impact of EM&A Manual, ET repeats the in-situ measurement to confirm findings and repeats measurement on next day after exceedance has been recorded. Moreover, according to condition 2.2 of the Environmental Permit No. EP-345/2009/A, the ET and the ET Leader shall be responsible for the implementation of the EM&A programme in accordance with the relevant EM&A requirements as contained in the EM&A Manual.

The SS testing report can be issued in 1 working day for some of HOKLAS laboratories that ET can approach.

Would you please provide an email that stipulates exactly, as you claimed, that the procedure to investigate any SS-induced exceedance? Please kindly refer to our email conversation in July 2020: "Generally, as mentioned in the previous email, after an SS exceedance is observed, the next sampling results shall be examined to determine the follow up mitigation measures to be taken"?

Would you please provide which exact clause/section in the EM&A Manual that mentions "after an SS exceedance is observed, the next sampling results shall be examined to determine the follow up mitigation measures to be taken"?

Regards

Zeto

klau@acuityhk.com 於 2021-05-28 19:46 寫到:

Dear Zeto,

Please note that the parameter of suspended solids has triggered the exceedance, and which is not an in-situ measurement parameter.

About the procedure to investigate any SS-induced exceedance, please kindly refer to our email conversation in July 2020: "Generally, as mentioned in the previous email, after a SS exceedance is observed, the next sampling results shall be examined to determine the follow up mitigation measures to be taken."

Best regards,

Kelvin Lau

Acuity Sustainability Consulting Limited

O: 2698-9097 F: 2698-9383

From: Ka Shing Management Consultant Ltd <iecteammate1@ka-shing.net>

Sent: Friday, 28 May 2021 3:51 pm

To: Irving Sze <re.irvingsze@hkirts.com>

Cc: drwong@ka-shing.net; CHEUNG, Marcus (BTP) <marcus.cheung@dragageshk.com>; 'Kevin Li' <kli@acuityhk.com>; nicholashktsang@epd.gov.hk; tkkwok@epd.gov.hk; 'Nelson Tsui' <ntsui@acuityhk.com>; kcheung@acuityhk.com; Ceg Timho <ceg.timho@hkirts.com>; Carmen Cheuk <are.carmencheuk@hkirts.com>; Alvin LAU <are.alvinlau@hkirts.com>; ttse.acuityhk@gmail.com; iris.lai@dragageshk.com; klau@acuityhk.com

Subject: Re: IRTS_Notification of Exceedance_NOE023

Dear ET,

Based on Table B-2 Event/ Action Plan for Water Quality Impact of EM&A Manual, did ET repeat in-situ measurement to confirm findings and repeat measurement on next day of exceedance being recorded?

Regards

Zeto

Irving Sze 於 2021-05-28 09:51 寫到:

Dear IEC,

I would be grateful if you could advise if you have any further comments on the captioned exceedance investigation report. Thanks in advance.

Regards,

Irving Sze

Resident Engineer of Binnes Hong Kong Ltd.

Contract No. DC/2018/08 -Inter-reservoirs Transfer Scheme -

Water Tunnel between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir

Tel: 3959 7366 Mobile: 6652 8052

-----Original Message-----

From: klau@acuityhk.com <klau@acuityhk.com>

Sent: Monday, 24 May 2021 3:50 pm

To: drwong@ka-shing.net

Cc: CHEUNG, Marcus (BTP) <marcus.cheung@dragageshk.com>; Irving Sze

<re.irvingsze@hkirts.com>; 'Ka Shing Management Consultant Ltd' <info@ka-shing.net>; 'Kevin Li'

<kli@acuityhk.com>; nicholashktsang@epd.gov.hk; tkkwok@epd.gov.hk; 'Nelson Tsui'

<ntsui@acuityhk.com>; kcheung@acuityhk.com; Ceg Timho <ceg.timho@hkirts.com>; Carmen

Cheuk <are.carmencheuk@hkirts.com>; ttse@acuityhk.com; Alvin LAU <are.alvinlau@hkirts.com>;

ttse.acuityhk@gmail.com; iris.lai@dragageshk.com; philipchan@acuityhk.com

Subject: RE: IRTS_Notification of Exceedance_NOE023

Dear IEC,

Through this link:

<https://www.epd.gov.hk/eia/register/report-bc/eia070/far01.pdf> , please find the EIA Report of Hong Kong Cement/Concrete Batching Plant and Material Storage Facilities at North-West Tsing Yi Island.

In Section 5.5 of Volume 2 of the Final Assessment Report, the characteristics of wastewater from 2 concrete batching plants were presented in Table 5-2. Both have shown that the process of concrete batching yields effluent with high pH and SS.

With lack of relevant studies on the topic (wastewater characteristics from concrete batching/concreting) done more recently in Hong Kong, we would like to ask for IEC's suggestions to update the Investigation Report if the provided information cannot satisfy IEC's queries.

Best regards,
Kelvin Lau
Acuity Sustainability Consulting Limited
O: 2698-9097 F: 2698-9383

-----Original Message-----

From: drwong@ka-shing.net <drwong@ka-shing.net>

Sent: Friday, 21 May 2021 11:42 am

To: klau@acuityhk.com

Cc: 'CHEUNG, Marcus (HKIRTS)' <marcus.cheung@dragageshk.com>; 'Irving Sze'

<re.irvingsze@hkirts.com>; 'Ka Shing Management Consultant Ltd'

<info@ka-shing.net>; 'Kevin Li' <kli@acuityhk.com>; nicholashktsang@epd.gov.hk;

tkkwok@epd.gov.hk; 'Nelson Tsui'

<ntsui@acuityhk.com>; kcheung@acuityhk.com; 'Ceg Timho'

<ceg.timho@hkirts.com>; 'Carmen Cheuk' <are.carmencheuk@hkirts.com>; ttse@acuityhk.com;

'Alvin LAU' <are.alvinlau@hkirts.com>; ttse.acuityhk@gmail.com; iris.lai@dragageshk.com;

philipchan@acuityhk.com

Subject: Re: IRTS_Notification of Exceedance_NOE023

Dear ET,

It seems that ET's project reference is not appropriate for IRTS. Can you kindly provide project reference in construction site (better in Hong Kong) instead of Effluent from cement plant located in Nigeria?

Regards,
IEC

On 2021-05-18 18:24, klau@acuityhk.com wrote:

Dear IEC,

Thank you for your comments. As cement-water mixture is alkaline, the pH will be raised if there is any leakage into the water body. Also, considering the concrete grout to be a milky mixture after mixing with water, the turbidity will be raised if there is any leakage into the water body.

For reference, please find the relevant information through this link:

<https://www.tandfonline.com/doi/full/10.1080/23311843.2017.1319102>.

The study has found that "With respect to upstream, the levels of pH, nitrate, phosphate, total solid, total suspended solids, total dissolved solids, turbidity and biological oxygen demand at downstream were much high, arising from the influx of cement effluent."

Thank you.

Best regards,

Kelvin Lau

Acuity Sustainability Consulting Limited

O: 2698-9097 F: 2698-9383

-----Original Message-----

From: drwong@ka-shing.net <drwong@ka-shing.net>

Sent: Tuesday, 18 May 2021 4:55 pm

To: klau@acuityhk.com

Cc: 'CHEUNG, Marcus (HKIRTS)' <marcus.cheung@dragageshk.com>; 'Irving Sze' <re.irvingsze@hkirts.com>; 'Ka Shing Management Consultant Ltd' <info@ka-shing.net>; 'Kevin Li' <kli@acuityhk.com>;

nicholashktsang@epd.gov.hk; tkkwok@epd.gov.hk; 'Nelson Tsui' <ntsui@acuityhk.com>;

kcheung@acuityhk.com; 'Ceg Timho' <ceg.timho@hkirts.com>;

'Carmen Cheuk' <are.carmencheuk@hkirts.com>;

ttse@acuityhk.com; 'Alvin LAU' <are.alvinlau@hkirts.com>;

ttse.acuityhk@gmail.com; iris.lai@dragageshk.com;

philipchan@acuityhk.com

Subject: Re: IRTS_Notification of Exceedance_NOE023

Dear ET,

Can you kindly further elaborate your conclusion? Do you mean SS, pH and turbidity are 3 dependent water quality parameters? If the exceedance is due to concreting works, all three water quality parameters should not be in normal range. Can you kindly provide relevant reference to support your conclusion?

Regards,

IEC

On 2021-05-18 16:38, klau@acuityhk.com wrote:

Dear All,

Attached please find the Investigation Report regarding the

exceedance

of suspended solids in monitoring location D1b (KBR) on 4 May 2021.

Thank you for your attention.

Best regards,

Kelvin Lau

Acuity Sustainability Consulting Limited

O: 2698-9097 F: 2698-9383

From: klau@acuityhk.com <klau@acuityhk.com>

Sent: Tuesday, 11 May 2021 7:03 pm

To: 'CHEUNG, Marcus (HKIRTS)' <marcus.cheung@dragageshk.com>;

'Irving

Sze' <re.irvingsze@hkirts.com>; 'drwong@ka-shing.net'

drwong@ka-shing.net; 'Ka Shing Management Consultant Ltd'

info@ka-shing.net; 'Kevin Li' <kli@acuityhk.com>;

'nicholashktsang@epd.gov.hk' <nicholashktsang@epd.gov.hk>;

'tkkwok@epd.gov.hk' <tkkwok@epd.gov.hk>; 'Nelson Tsui'

<ntsui@acuityhk.com>; 'kcheung@acuityhk.com' <kcheung@acuityhk.com>;

'Ceg Timho' <ceg.timho@hkirts.com>; 'Carmen Cheuk'

<are.carmencheuk@hkirts.com>; 'ttse@acuityhk.com'

<ttse@acuityhk.com>;

'Alvin LAU' <are.alvinlau@hkirts.com>; 'ttse.acuityhk@gmail.com'

<ttse.acuityhk@gmail.com>; 'iris.lai@dragageshk.com'

<iris.lai@dragageshk.com>; 'philipchan@acuityhk.com'

<philipchan@acuityhk.com>

Subject: IRTS_Notification of Exceedance_NOE023

Dear All,

Attached please find the Notification of Exceedance regarding the monitoring results for suspended solids in monitoring location D1b (KBR) on 4 May 2021 for your information.

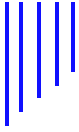
The exceedance is under investigation and we have informed the contractor to provide more information.

Thank you for your attention.

Best regards,

Kelvin Lau

Acuity Sustainability Consulting Limited



O: 2698-9097 F: 2698-9383



**CONTRACT NO. DC/2018/08 - INTER-RESERVOIRS TRANSFER SCHEME
- WATER TUNNEL BETWEEN KOWLOON BYEWASH RESERVOIR AND LOWER SHING MUN RESERVOIR
IEC's COMMENTS**

Document Title: IRTS 23rd Monthly EM&A Report (May 2021)

Document Ref. No.:

Date of Issue of Comments: 9/6/2021

ITEM NO.	REVIEWER'S COMMENT	ET'S RESPONSE	CLOSE DATE
1.	A long turnaround time (3-5 days) for the SS result again. This long time lap may affect any immediate remedial measures if there is exceedance due to the construction works. Similar comments have been provided in the verification letters of 13 th and 15 th Monthly EM&A Report. This is the third gentle reminder for your kind consideration. IEC would like to clarify that IEC did not endorse the current procedure of investigating SS-induced exceedance.	<p>IEC expressed their view that 3-5 days is considered a long turnaround time for the SS result. IEC considered that the SS test result shall be provided within 1 working day and IEC reminded that there is requirement for the test to be completed in one day according to APHA standard method. In view of IEC's comments, ET has enquired with 6 different laboratories. Issuance of testing result within 1 working day was advised to be available for one-off/ short period service, while none of the laboratories can guarantee all SS test result to be issued within 1 working day for a long period project with monitoring frequency of 3 days per week as needed for the Project, except for one of the laboratories which is willing to provide such service. On the other hand, ET was advised by the laboratory that according to APHA standard method, there is no strict requirement for the test should be completed in one day.</p> <p>SS test result were required to be provided within 5 working days as referred to EM&A Manuals from other contemporary EIA studies, including Desalination Plant at TKO, Sha Tau Kok Sewage Treatment Works, Outlying Islands Sewerage Stage 2 – South Lantau Sewerage Works, and Additional Gas-fired Generation Units Project at the Black Point Power Station. Construction methods and surrounding settings of these projects were found with multiple similarities to the IRTS Project, including the use of tunnel boring machine for construction of channels, the construction of temporary cofferdam, the adjacency of construction to ecological important region like Country Park or Marine Park, etc.</p> <p>Considering the above, SS test result was provided within 5 working days. ET has followed all EM&A requirements listed in the EM&A Manual of the Project and reported in the monthly EM&A reports.</p>	






23rd Monthly EM&A Report (Rev. 1)

May 2021

for

Inter-Reservoir Transfer Scheme – Water Tunnel Between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir (Contract No.: DC/2018/08)

	Prepared by:	Checked by:	Certified by:
Name	Kelvin LAU	Nelson TSUI	Kevin LI
Position	Environmental Team Member	Environmental Team Member	Environmental Team Leader
Signature			
Date	8 June 2021	8 June 2021	8 June 2021

Revision History

Rev.	Description	Date
1	Addressed IEC's comments and updated font size at Section 3.18 and updated Section 8.1	8 June 2021
0	1 st Submission for Comments	7 June 2021

EXECUTIVE SUMMARY

- E1. Acuity Sustainability Consulting Limited (ASCL) has been commissioned by Bouygues Travaux Publics to undertake the assignment as the Environmental Team (ET) for the Designated Project of West Kowloon Drainage Improvement – Inter-reservoirs Transfer Scheme (IRTS) (the Project), with Contract No. DC/2018/08.
- E2. This is the 23rd Monthly Environmental Monitoring and Audit (EM&A) Report presents EM&A works undertaken in the period of 1 to 31 May 2021. EM&A works were performed in accordance with the approved EM&A Manual and conditions stipulated in the amended Environmental Permit EP-345/2009/A.
- E3. According to the approved EM&A Manual, construction noise and water quality monitoring are required to be performed during the construction phase of the Project. Four (4) sessions of construction noise impact monitoring at NM1 and NM2 for daytime except general holidays and Sundays; five (5) sessions of construction noise impact monitoring at NM1 for daytime during general holidays and Sundays; four (4) sessions of construction noise impact monitoring at NM1 for all days during evening and four (4) sessions of construction noise impact monitoring at NM1 for all days during night time were conducted during the reporting period. Thirteen (13) sessions of impact water quality monitoring at all approved monitoring points were carried out in the reporting period.
- E4. The control points C1b and C2 were observed dried up on all monitoring days in May 2021. Insufficient water was available for sample collection.
- E5. Exceedance of Action Level for Suspended Solids was recorded for water monitoring location D1b on 4 May 2021. The exceedance was considered project unrelated after investigation.
- E6. No exceedance was recorded for noise monitoring in the reporting period.
- E7. Joint weekly site inspections were conducted by representative of ET, Contractor and Engineer on 4, 11, 18 and 25 May 2021. Details of the audit findings and implementation status are presented in Section 5.
- E8. No complaint regarding environmental issue was received in the reporting period.
- E9. No notification of summons nor prosecution have been received since the commencement of the Project.

E10. The variation of Environmental Permit was issued on 11 November 2020. The amendments incorporated into the Environmental Permit are summarized as follow:

- “Location of Designated Project” changed;
- Location of cofferdam changed;
- Content of earth bund added;
- More plant species of conservation importance added.

E11. Construction works undertaken in the reporting period include the following:

Works Area	Major Site Activities
Portion A & D	<ul style="list-style-type: none">• TBM excavation
Portion C	<ul style="list-style-type: none">• Intake structure construction• Maintenance walkway superstructure• Ground Treatment Works

E12. Construction works to be undertaken in the next reporting period include the following:

Works Area	Major Site Activities
Portion A & D	<ul style="list-style-type: none">• TBM excavation
Portion C	<ul style="list-style-type: none">• Intake structure construction• Maintenance walkway superstructure• Ground Treatment Works

E13. The Contractor was reminded that all works to be undertaken within the water gathering ground of Lower Shing Mun Reservoir (LSMR) and Kowloon Byewash Reservoir (KBR) must fulfill statutory environmental requirements, especially in watercourse protection.

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1. INTRODUCTION

- 1.1 Acuity Sustainability Consulting Limited (ASCL) has been commissioned by Bouygues Travaux Publics to undertake the assignment as the Environmental Team (ET) for the contract of West Kowloon Drainage Improvement – Inter-reservoirs Transfer Scheme (IRTS) (the Project), with Contract No. DC/2018/08. The Project comprises the following principal works elements:
- Construction of a new water tunnel, with about 2.8km in length and 3m in diameter, from KBR to LSMR;
 - Construction of an intake structure at KBR and an isolation system;
 - Construction of an outfall structure at LSMR with an energy dissipater; and
 - All associated civil, structural, geotechnical, electrical and mechanical works, including landscaping, permanent and temporary accesses as may be necessary for the completion of the works elements listed above.
- 1.2 The Project site consists of the intake site at KBR and the outfall site at the Lower Shing Mun Reservoir. The layout of the Project site is presented in **Appendix A**.
- 1.3 This project is a Designated Project under Part I of Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO). An Environmental Permit (EP), with Permit No. EP345/2009, was granted to the Water Supplies Department (WSD) for permitting the construction and operation of this Project. Subsequently, the EP was amended and a variation of EP, with Permit No. EP345/2009/A, was granted to the WSD on 11 November 2020.
- 1.4 The commencement date of construction of the Project was 12 July 2019. No major works except site clearance and preparation was performed before the commencement date of construction.
- 1.5 This is the 23rd Monthly Environmental Monitoring and Audit (EM&A) Report presenting results and findings of all EM&A work required in the approved EM&A Manual for the period of 1 to 31 May 2021.
- 1.6 All project information since the commencement of work under EP including Monthly EM&A Reports is made available to the public via internet access at the website: <https://www.epd.gov.hk/eia/register/permit/latest/vep5822020.htm>
- 1.7 As part of the EM&A programme, baseline monitoring is required for determining the ambient environmental conditions. Baseline monitoring including background noise and water quality were conducted in periods from 3 May 2019 to 22 June 2019 in accordance to the approved EM&A Manual before commencement of construction works. The

corresponding Baseline Monitoring Report has been compiled by the ET and verified by the Independent Environment Checker (IEC) prior submitting to the Environmental Protection Department.

1.8 Project organization structure is presented in Figure 1.1.

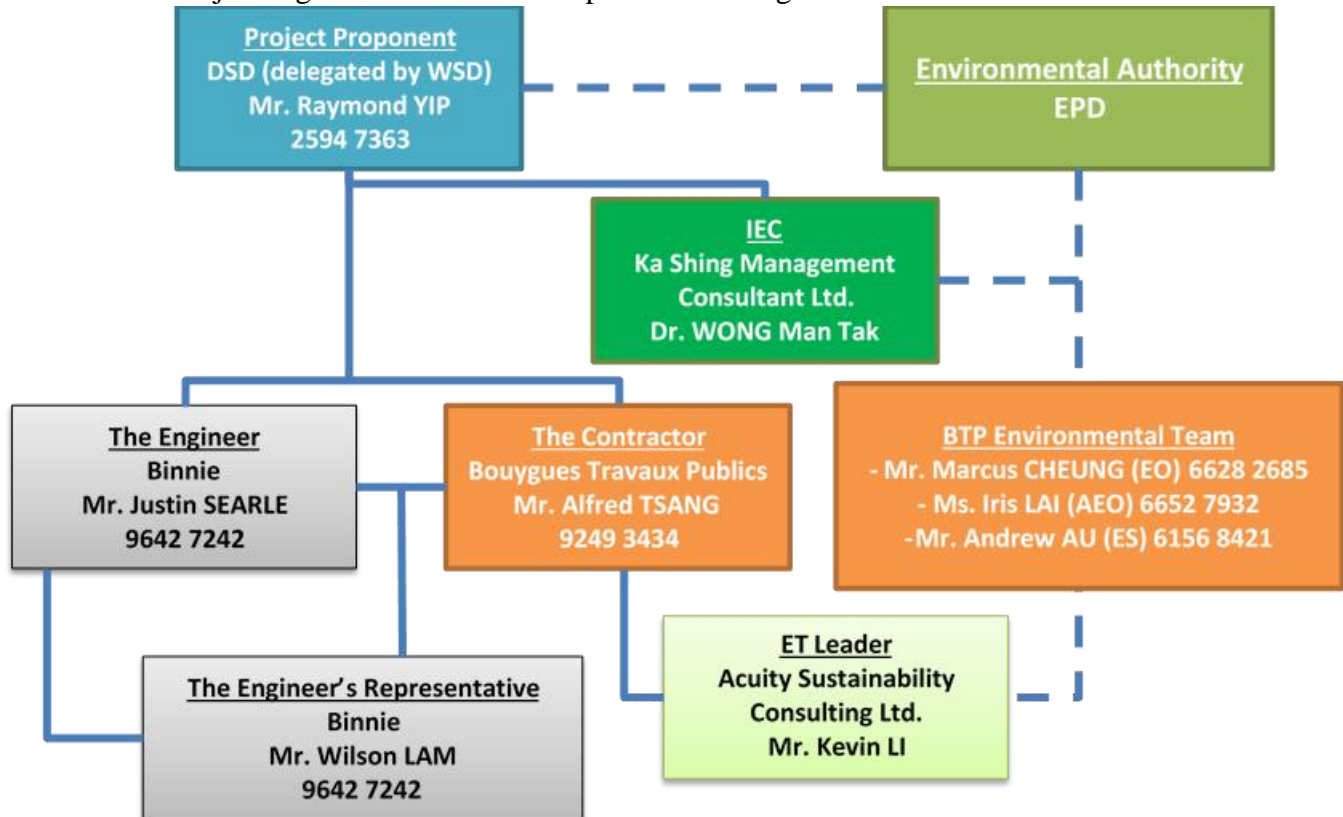


Figure 1.1 Project Organization Chart

1.9 Contact details of key personnel are presented in Table 1.1 below.

Table 1.1 Contact Details of Key Personnel

Party	Position	Name	Contact No.
Bouygues Travaux Publics	Site Agent	Mr. Alfred Tsang	3959 7317
Acuity Sustainability Consulting Limited	Environmental Team Leader	Mr. Kevin Li	2698 6833
Ka Shing Management Consultant Limited	Independent Environment Checker	Dr. Douglas Wong	2618 2166

1.10 Details of major construction activities undertaken in this reporting period are shown in Table 1.2 below. The construction programme is presented in **Appendix B**.

Table 1.2 Summary of Construction Activities Undertaken in the Reporting Period

Works Area	Major Site Activities
Portion A & D	<ul style="list-style-type: none"> • TBM excavation
Portion C	<ul style="list-style-type: none"> • Intake structure construction • Maintenance walkway superstructure • Ground Treatment Works

- 1.11 A summary of status of environmental legislations related licences, permits and/or notifications is presented in Table 1.3.

Table 1.3 Summary of Environmental Licences and Permits of the Project

Type of Permit / License	Date of Application	Reference Number	Status	Duration
Variation of Environmental Permit	15-Oct-2020	EP-345/2009/A	Valid	Along project
Chemical Waste Producer	22-Feb-2019	WPN5218-733-B2557-01	Approved.	Along project
Notification of The Air Pollution Control (Construction Dust) Regulation	1-Mar-2019	442711	Completed (No approval required)	Along project
Billing Account of Trip Ticket System	25-Feb-2019	703344617	Approved on 13 March 2019	Along project
Effluent Discharge License for LSMR	4-Apr-2019	WT00034164-2019	Approved	Until 31-Jul-2024
Effluent Discharge License for KBR	30-Sep-2019	WT00035821-2020	Approved	Until 31-May-2025
Construction Noise Permit for 24-hr TBM assembly at Portion A & D	6-Jan-2021	GW-RN0244-21	Approved	06-May-2021 to 05 Aug-2021
Construction Noise Permit for works at Portion C.	20-May-2020	GW-RN0849-20	Approved	14-Dec-2020 to 13-Jun-2021
Construction Noise Permit for works at Tai Po Road	21-Apr-2020	GW-RN0255-21	Approved	13-May-2021 to 12-Nov-2021

Remark: Information for table 1.3 will be updated by the Contractor.

- 1.12 Contract documents required under conditions stipulated in the amended Environmental Permit are summarized in Table 1.4.

Table 1.4 Documents Submission Required in the amended Environmental Permit

Document	EP Condition No.	Timeframe	Status	Remarks
Landscape Plan	2.4 & 2.5	Submission of document shall be done no later than 6 months after commencement of construction.	The document was submitted to EPD on 9 January 2020.	Submission date to be updated with DSD.
Condition Survey Report for Historic Structures	2.6	Document shall be deposited to the authority before commencement of construction.	The document was deposited to EPD on 3 June 2019.	N.A.
Baseline Monitoring Report	4.2	Submission of document shall be done at least two weeks before commencement of construction.	The document was submitted to EPD on 28 June 2019.	1 st Revision was submitted to EPD on 6 August 2019.

2. ENVIRONMENTAL MONITORING REQUIREMENTS AND PROGRAMME

2.1 The Environmental Monitoring and Audit requirements are set out in the approved EM&A Manual. Construction noise and water quality were identified as key environmental issues during the construction phase. A summary of the requirements for conducting impact noise and water quality monitoring is presented in the sub-sections below.

Monitoring Parameters, Time and Frequency

2.2 Impact monitoring parameters are summarized in Table 2.1 below.

Table 2.1 – Summary of Impact Monitoring Parameters

Environmental Aspect	Parameters	Frequency
Noise	<ul style="list-style-type: none"> • 1 no. of $L_{eq}(30min)$ noise measurements between 0700-1900 hours on any normal weekdays • 3 nos. of consecutive $L_{eq}(5min)$ noise measurement between 0700-1900 hours on general holidays or Sunday (if works are undertaken) • 3 nos. of consecutive $L_{eq}(5min)$ noise measurement between 1900-2300 hours (if evening works are undertaken) • 3 nos. of consecutive $L_{eq}(5min)$ noise measurement between 2300-0700 hours (if nighttime works are undertaken) 	<ul style="list-style-type: none"> • Once per week
Water Quality	<ul style="list-style-type: none"> • Dissolved Oxygen (mg/L) • Dissolved Oxygen Saturation (%) • pH Value • Turbidity (NTU) • Temperature ($^{\circ}C$) • Suspended Solids (mg/L) 	<ul style="list-style-type: none"> • 3 times per week • Interval between two sets of monitoring shall not be less than 36 hours

Monitoring Locations

Noise

- 2.3 According to Section 4.4 of the approved EM&A Manual, the two most representative and affected noise sensitive receivers (NSRs) were designated as monitoring stations. Details regarding the two noise monitoring stations are shown in Table 2.2. Layout plans showing the monitoring locations are presented in **Appendix C**.

Table 2.2 – Designated Noise Monitoring Location

Location ID (ID in EM&A Manual)	Type of NSR	Location	Description
NM1 (LG)	Residential	Tower 1, Lakeview Garden	The closest NSR to the Outfall Site (LSMR)
NM2 (VH)	Residential	4 ½ Milestone, Tai Po Road	The closest NSR to the Intake Site (KBR)

Water Quality

- 2.4 According to Section 5.4 of the approved EM&A Manual, water quality monitoring should be performed at designated monitoring stations. Details regarding the four designated water quality monitoring stations are shown in Table 2.3.

Table 2.3 – Original Water Quality Monitoring Location

ID	Description	Location
C1	Control Point near Intake Site	Stepped channel by-passing KBR
D1	Impact Monitoring Point near Intake Site	Junction of stepped channel and overflow channel of KBR
C2	Control Point near Outfall Site	Natural Stream directing to Lower Shing Mun Reservoir
D2	Impact Monitoring Point near Outfall Site	Overflow channel of Lower Shing Mun Reservoir

- 2.5 As conditions of designated water quality monitoring locations have been changed since the issuing of the approved EM&A Manual, location C1, D1 and D2 are no longer feasible for conducting water quality monitoring. Therefore, the three locations were proposed to relocating to alternative monitoring locations. The proposal of alternative monitoring location was approved by EPD on 20 May 2019. Details regarding the approved water quality monitoring stations are shown in Table 2.4. Layout plans showing the original and approved monitoring locations are attached in **Appendix C**.

Table 2.4 – Approved Water Quality Monitoring Location

ID	Description	Location
C1b	Control Point near Intake Site	Overflow channel of Kowloon Reception Reservoir (KRR)
D1b	Impact Monitoring Point near Intake Site	KBR
C2	Control Point near Outfall Site	Natural Stream directing to LSMR
D2a	Impact Monitoring Point near Outfall Site	LSMR

Monitoring Equipment

Noise

- 2.6 As referenced to the Technical Memorandum (TM) issued under the Noise Control Ordinance (NCO), sound level meters in compliance with the International Electrical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specifications shall be used for carrying out the noise monitoring.
- 2.7 Immediately prior to and following each noise measurement the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements may be accepted as valid only if the calibration level from before and after the noise measurement agrees to within 1.0dB. The acoustic calibrator to be used shall meet IEC 942, 1988 Class 1 specifications. Annual calibration of all sound level meters and acoustic calibrators shall be conducted by a laboratory in Hong Kong or the manufacturer in compliance with national standards as recommended by the manufacturer of the sound level meter and acoustic calibrator.

Water Quality

- 2.8 DO and water temperature should be measured in-situ by a DO/temperature meter. The equipment should be portable and weather proof using a DC power source. It should have a membrane electrode with automatic temperature compensation complete with a cable. The equipment should be capable of measuring:
- A DO level in the range of 0-20 mg/l and 0-200% saturation; and
 - A temperature of between 0 and 45 degree Celsius.
- 2.9 A portable pH meter capable of measuring a range between 0.0 and 14.0 should be provided to measure pH under the specified conditions (e.g. Orion Model 250A or an approved similar instrument) accordingly to the Standard Methods, APHA.
- 2.10 Turbidity should be measured in situ by the nephelometric method. The instrument should be portable and weatherproof using a DC power source complete with cable, sensor and comprehensive operation manuals. The equipment should be capable of measuring turbidity between 0-1000 NTU.

- 2.11 A water sampler, consisting of a transparent PVC or glass cylinder of a capacity of not less than two litres which can be effectively sealed with cups at both ends should be used. If water at sampling location is too shallow or not applicable for use of water sampler, a water bucket made of inert material (e.g. plastic) should be used instead.
- 2.12 In-situ monitoring instruments should be checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals.

Environmental Quality Performance Limits (Action/Limit Levels)

- 2.13 The baseline results form basis for determining the environmental acceptance criteria for the impact monitoring. Derived Action/Limit Levels for noise and water quality are summarised in Table 2.5 and 2.6 respectively.

Table 2.5 – Action / Limit Levels for Construction Noise Monitoring

Time Period	Action Level	Limit Level, dB(A)
Daytime (0700-1900) except general holidays and Sunday <i>*Measurements in L_{eq} (30min)</i>	When one documented compliant is received	75
Daytime (0700-1900) during general holidays and Sundays and all days during Evening (1900-2300 hrs) <i>*Measurements in L_{eq} (5min)</i>		60
Night-time (2300 – 0700 hrs) <i>*Measurements in L_{eq} (5min)</i>		45

Table 2.6 – Action/Limit Levels for Water Quality Monitoring

Parameter	Performance Criteria	Monitoring Location	
		D1b	D2a
Dissolved Oxygen (mg/L)	Action Level	6.1	6.3
	Limit Level	5.8	6.1
pH Value	Action Level	8.8	9.0
	Limit Level	≤ 6.5 OR ≥ 8.9	≤ 6.5 OR ≥ 9.2
Turbidity (NTU)	Action Level	19.5	13.1
		OR 120% of upstream control station of the same day	
	Limit Level	23.4	18.9
		OR 130% of upstream control station of the same day	
Suspended Solids (mg/L)	Action Level	9.0	22.0
		OR 120% of upstream control station of the same day	
	Limit Level	13.0	25.0
		OR 130% of upstream control station of the same day	

Remarks:

1. Non-compliance occurs when monitoring result of Dissolved Oxygen is lower than the limits.
2. Non-compliance occurs when monitoring result of pH value is higher than the Action Levels or when the result does not fall into the pH range of the Limit Levels.
3. Non-compliance occurs when monitoring results of Turbidity and Suspended Solids is higher than the limits.

Event / Action Plan

- 2.14 Should there be any triggering of Action Levels, or exceedance of Limit Levels, the Event / Action Plan established in the approved EM&A Manual should be followed. The Event / Action Plan is attached in **Appendix H**.

3. IMPACT MONITORING METHODOLOGY AND RESULTS

Equipment Used

- 3.1 Equipment used in impact noise and water quality monitoring during the reporting period is summarized in Table 3.1 below. Calibration certificates of equipment used are attached in **Appendix D**.

Table 3.1 – Equipment Used in the Reporting Period

Environmental Aspect	Equipment	Model
Noise	Sound Level Meter	Svantek 731
	Sound Level Meter	XL2
	Calibrator	Pulsar 105
	Portable Anemometer	Kestrel 1000
Water Quality	Multifunctional Meter	HORIBA U-53 Multiparameter Water Quality Meter
		YSI ProDSS

Monitoring Procedure

Noise

- 3.2 Field measurement procedures for each set of the noise level measurement are as followed:
- i. Record the field condition including weather conditions and any other potential source of interference;
 - ii. Turn the power of sound level meter on;
 - iii. Check the general condition of the sound level meter and the battery status;
 - iv. Mount the sound level meter onto a tripod of 1.2 m height;
 - v. Check the distance of the probe from closest facade;
 - vi. Adjust the orientation of probe so that it is facing the project site;
 - vii. Calibrate the sound level meter by using acoustic calibrator;
 - viii. Select the period of measurement to be 30 minutes;
 - ix. Select the appropriate displaying unit, dB(A);
 - x. Collect and record the sampled data;
 - xi. Calibrate the sound level meter by using acoustic calibrator. Repeat procedure ii. to xi. if the difference in calibration level is more than 1.0 dB.
- 3.3 All noise measurements were performed in the absence of fog, rain and wind with a speed exceeding 5m/s or wind with gusts exceeding 10m/s. Wind speed was checked with portable wind speed meter.

Water Quality

- 3.4 Field measurement procedures for each set of the water quality measurement are as followed:
- i. The DO probe of the multifunctional meter is checked by wet bulb method; the pH and turbidity probes are checked against standard solutions. Record the checking result;
 - ii. Record the field condition including weather conditions and any other potential source of interference;
 - iii. Lower the sampler into water body and rinse it with water in the target water body;
 - iv. Fill the sampler until adequate sample is collected. Replicate sample at each monitoring location is required;
 - v. Rinse the bottles by the sample before transferring samples into containing bottles;
 - vi. Rinse the probe of multimeter with distilled water;
 - vii. Measure and record temperature, turbidity, pH value and DO of each bottle of sample;
 - viii. Bottles containing sample is stored temporarily in insulation box with ice until reaching the laboratory;
- 3.5 Analysis of SS was carried out in a HOKLAS accredited laboratory. Standard test method, APHA 2540 D, in accordance to American Public Health Association: Standard Methods for the Examination of Water and Wastewater APHA 21 ed was adopted.

Data Management and QA/QC

- 3.6 The monitoring data were handled by the ET's in-house data recording and management system. Laboratory responsible for laboratory analysis would follow QA/QC requirements as set out under HOKLAS scheme.
- 3.7 The in-situ monitoring data measured in the equipment were recorded by both field operators and by the equipment itself. Laboratory analysis results were directly issued by the designated laboratory. All data were then input into a computerized database which is properly maintained by the ET. Cross checking between results was performed by other personnel.

Noise Monitoring Result

- 3.8 Construction noise monitoring was performed at during the reporting period. No work was conducted during restricted hours at KBR as confirmed by the Contractor, therefore no noise monitoring was performed during restricted hours at NM2 in the reporting period.
- 3.9 Evening time construction work has been conducted since 25 March 2020. Evening time monitoring was conducted on 7, 13, 20 and 27 May 2021 at NM1. The evening time construction noise monitoring data is presented in Table 3.2

Table 3.2 Summary of Evening Time Noise Monitoring Result

Monitoring Location	Time Period	Leq(5min), dB(A)			Limit Level, dB(A)
		Mean	Max	Min	
NM1	All days during Evening (1900-2300)	43.8	44.9	41.2	60

3.10 Night time construction work has been conducted since 6 April 2020. Night time monitoring was conducted 7, 13, 20 and 27 May 2021. The night time construction noise monitoring data is presented in Table 3.3

Table 3.3 Summary of Night Time Noise Monitoring Result

Monitoring Location	Time Period	Leq(5min), dB(A)			Limit Level, dB(A)
		Measured	Baseline	Corrected ⁽¹⁾	
NM1	All days during Night (2300-0700)	40.1-43.8	51.9	Below Baseline	45

(1) When applicable, the measured noise levels are corrected against the baseline noise levels by using the formula:

$$10 \log\left(10^{\frac{\text{measured level}}{10}} - 10^{\frac{\text{baseline level}}{10}}\right)$$

3.11 Daytime during general holidays and Sundays construction work had conducted on 2, 9, 16, 23 and 30 May 2021 at NM1. Construction noise monitoring was also conducted in the same day. The daytime during general holidays and Sundays construction noise monitoring data is presented in Table 3.4.

Table 3.4 Summary of Daytime during General Holidays and Sundays Noise Monitoring Result

Monitoring Location	Time Period	Leq(5min), dB(A)			Limit Level, dB(A)
		Mean	Max	Min	
NM1	Daytime (0700-1900) during general holidays and Sundays	45.1	47.1	42.4	60

3.12 Four (4) sessions of construction noise impact monitoring at NM1 and NM2 for daytime except general holidays and Sundays. The noise monitoring data is presented in **Appendix E** and results are summarized in Table 3.5.

Table 3.5 Summary of Construction Noise Monitoring Results

Monitoring Location	Time Period	L _{eq} (30min), dB(A)			Limit Level, dB(A)
		Mean	Max	Min	
NM1	Daytime (0700 – 1900) except general holidays and Sunday	45.4	46.1	44.6	75
NM2		46.8	50.3	43.5	

3.13 No construction noise related complaint was received in the reporting period. There was no Action / Limit Levels exceedance of construction noise recorded in the reporting period.

3.14 Weather conditions during monitoring were mainly cloudy with sunny intervals. Summary of meteorological data is presented in **Appendix G**.

Water Quality Monitoring Result

3.15 Water quality monitoring was performed at approved monitoring locations, i.e. C1b, D1b, C2 and D2a, during the reporting period.

3.16 Thirteen (13) sessions of water quality monitoring were performed at each of the approved monitoring locations. The water quality monitoring data is presented in **Appendix F** and results are summarized in Table 3.6.



Table 3.6 Summary of Water Quality Monitoring Results

Parameters		C1b	D1b	C2	D2a
Dissolved Oxygen (mg/L)	Min	-	8.5	-	8.4
	Max	-	23.0	-	18.3
	Mean	-	11.2	-	10.6
Dissolved Oxygen Saturation (%)	Min	-	116.0	-	115.9
	Max	-	303.1	-	241.6
	Mean	-	150.1	-	142.7
pH Value	Min	-	6.6	-	6.6
	Max	-	8.6	-	8.6
	Mean	-	7.3	-	7.5
Turbidity (NTU)	Min	-	0.2	-	0.5
	Max	-	8.5	-	9.4
	Mean	-	3.1	-	3.6
Suspended Solids ¹ (mg/L)	Min	-	2.5	-	2.5
	Max	-	12.1	-	19.2
	Mean	-	4.3	-	4.9

Remarks:

1. Lower detection limit of Suspended Solids is 2.5. Data lower than such limit is regarded as 2.5 in result presentation.

- 3.17 The control points C1b and C2 were observed dried up on all monitoring days in May 2021. Insufficient water was available for sample collection.
- 3.18 Shallow water and break up into sections of the stream were observed at control points (C1 and C2), which are located at the natural stream directing to the construction site and Kowloon Byewash Reservoir and Lower Shing Mun Reservoir, during water monitoring event in May 2021; and the natural stream where C1b and C2 located were found dried up during water monitoring event in May 2021. The abnormal stream conditions for the natural stream where C1b and C2 located were considered due to lack of precipitation in this period of time. Trace amount of or no water from the natural streams where C1b and C2 located were observed flowing through the impact monitoring point (D1b and D2a) near the construction site at Kowloon Byewash Reservoir and Lower Shing Mun Reservoir in May 2021. Low water level of Kowloon Byewash Reservoir Lower Shing Mun Reservoir was also observed as a result of lack of precipitation and/or WSD assistance in drawing off the reservoir water. The actual sampling location of D2a is subject to the actual water level of the reservoir and was determined on-site at locations close to the site.

C1b	C2
	
<p>*Photo taken on 29 May 2021</p>	<p>*Photo taken on 29 May 2021</p>

- 3.19 As a result, some Action and Limit levels of water quality monitoring at D1b and D2a in May 2021 were referred only to the respective percentile of baseline data according to the Baseline Monitoring Report when insufficient water was available for sample collection.
- 3.20 Weather conditions during monitoring were mainly cloudy with sunny intervals. Summary of meteorological data is presented in Appendix G.

4. WASTE MANAGEMENT

4.1 An on-site environmental coordinator, i.e. Environmental Officer, has been employed by the Contractor to coordinate and supervise the project waste management works.

4.2 Waste arisen from the construction works are classified into the followings:

- Construction and demolition (C&D) material;
- Chemical waste; and
- General refuse.

4.3 Waste disposal record provided by the Contractor is summarized in Table 4.1.

Table 4.1 Summary of Waste Disposal

Reporting period	Quantity					
	Inert C&D Materials (in'000m ³)	Chemical Waste (in'000kg)	Non-inert C&D Materials			
			Others, e.g. General Refuse disposed at Landfill (in'000m ³)	Recycled materials		
				Paper/card board (in'000kg)	Plastics (in'000kg)	Metals (in'000kg)
May 2021	4.096	0	0.00769	0	0	0

4.4 The Monthly Summary Waste Flow Table is presented in **Appendix I**.

5. SITE INSPECTION

- 5.1 Joint weekly site inspections were conducted by representative of ET, Contractor and Engineer so as to monitoring the implementation of proper environmental pollution control and mitigation measures. Four (4) site inspections were performed in the reporting period.
- 5.2 One joint site inspection with IEC was also undertaken on 4 May 2021. Minor deficiencies were observed during weekly site inspection. Inspection findings are summarized in Table 5.1.

Table 5.1 Weekly Inspection Findings

Date	Location	Observation(s)	Follow-up Status
4 May 2021	LSMR	1. Stockpile of dusty materials shall be covered entirely by impervious sheeting.	1. All dusty materials were covered.
11 May 2021	KBR	2. The dead tree is to be removed.	1. T103 was removed on 12 May 2021.
18 May 2021	LSMR	1. Dusty materials on the carts shall be covered entirely by impervious sheeting. 2. A drip tray under the wetsep was found full which needs to be cleaned.	1. Dusty materials were used and covered. 2. Drip tray was cleaned.
25 May 2021	KBR	No environmental deficiency was observed.	N.A.

6. ENVIRONMENTAL COMPLAINT AND NON-COMPLIANCE

- 6.1 Exceedance of Action Level for Suspended Solids was recorded for water monitoring location D1b on 4 May 2021. The exceedance was considered project unrelated after investigation.
- 6.2 No exceedance was recorded for noise monitoring in the reporting period.
- 6.3 When the nature of exceedance event is considered not project-related after investigation, no further actions as listed in the event / action plan were required.
- 6.4 There was no environmental related complaint received in the reporting period.
- 6.5 There was no notification of summon and successful prosecution for breaches of current environmental protection/pollution control legislation in the reporting period.
- 6.6 The Cumulative statistics on complaints, notifications of summons and successful prosecutions is presented in **Appendix L**.

7. IMPLEMENTATION STATUS OF MITIGATION MEASURES

7.1 The Contractor has been implementing environmental mitigation measures set out in the approved EM&A Manual subject to the actual site condition. The implementation schedule is presented in **Appendix J**. Mitigation measures generally implemented by the Contractor in the reporting period are summarized in Table 7.1.

Table 7.1 Implemented Environmental Mitigation Measures in the Reporting Period

Environmental Aspect	Mitigation Measures Implemented
Air Quality	<ul style="list-style-type: none"> • Water spraying at works area before, during and after operation • Restricting heights from which materials were to be dropped • All vehicles were washed to remove dusty materials immediately before leaving the site • Erection of hoarding of not less than 2.4m in height • Covering dusty materials stockpile entirely with impervious tarpaulin • Spraying dusty materials with water immediately prior to any loading, unloading or transfer operation
Construction Noise	<ul style="list-style-type: none"> • The Contractor had been submitting method statement to the Engineer Representative for the approval of working method, equipment and noise mitigation measures to be used before commencing any work • Unused equipment was switched off • Regular maintenance of plants and equipment
Water Quality	<ul style="list-style-type: none"> • Provision of desilting facilities within works area capable of controlling discharge of SS to comply with WPCO/TM-DSS • Preparing of Contingency Plan which detailing the response and procedures when there was accidental spillage • Provision of channels, earth bunds and sand bags barriers for directing surface runoff to desilting facilities • Existing manholes were covered • Portable chemical toilets were provided on-site and licensed contractor was employed for the collection and disposal process • Two layers of silt curtain were deployed to separate the works area from water gathering ground • Oil and grease removal materials were provided • Exposed slopes were either shotcreted or covered by impervious tarpaulin

Waste Management	<ul style="list-style-type: none"> • Provision of on-site coordinator for waste management • Excavated material was reused on site as far as practicable to minimize off-site disposal • Sorting of waste materials into inert/non-inert type on-site • Trip Ticket System was implemented for control of C&D waste disposal • Covered bins were provided for the containment of general refuse • Toolbox talks were provided to workers for enhancing their awareness
Ecology	<ul style="list-style-type: none"> • Clear definition of site boundary was provided • <i>Pavetta hongkongensis</i> had been transplanted on-site • Eating, leaving food and feeding wildlife are forbidden in works area • Fishing was forbidden in works area • Litter was removed off-site regularly • Unused equipment was switched off
Landscape and Visual	<ul style="list-style-type: none"> • Retained trees were protected • Hoarding erected was compatible with surrounding setting
Cultural Heritage	<ul style="list-style-type: none"> • Condition survey was conducted prior to the commencement of construction • Vibration monitoring had been implemented in accordance with recommendations in the condition survey report

8. ENVIRONMENTAL FORECASTING

8.1 As advised by the Contractor, major construction works to be performed in the next reporting month, i.e. June 2021, include the followings:

Works Area	Major Site Activities
Portion A & D	<ul style="list-style-type: none">• TBM excavation
Portion C	<ul style="list-style-type: none">• Intake structure construction• Maintenance walkway superstructure• Ground Treatment Works

8.2 The Contractor is reminded to properly implement mitigation measures for each specified works. The Contractor should also carefully program the drainage diversion and TBM launching platform works so as to critically protect the water gathering ground of LSMR during construction.

8.3 Tentative schedule of impact construction noise and water quality monitoring for the next reporting month, i.e. June 2021, is presented in **Appendix K**. Monitoring will be performed at same locations presented in above sections.

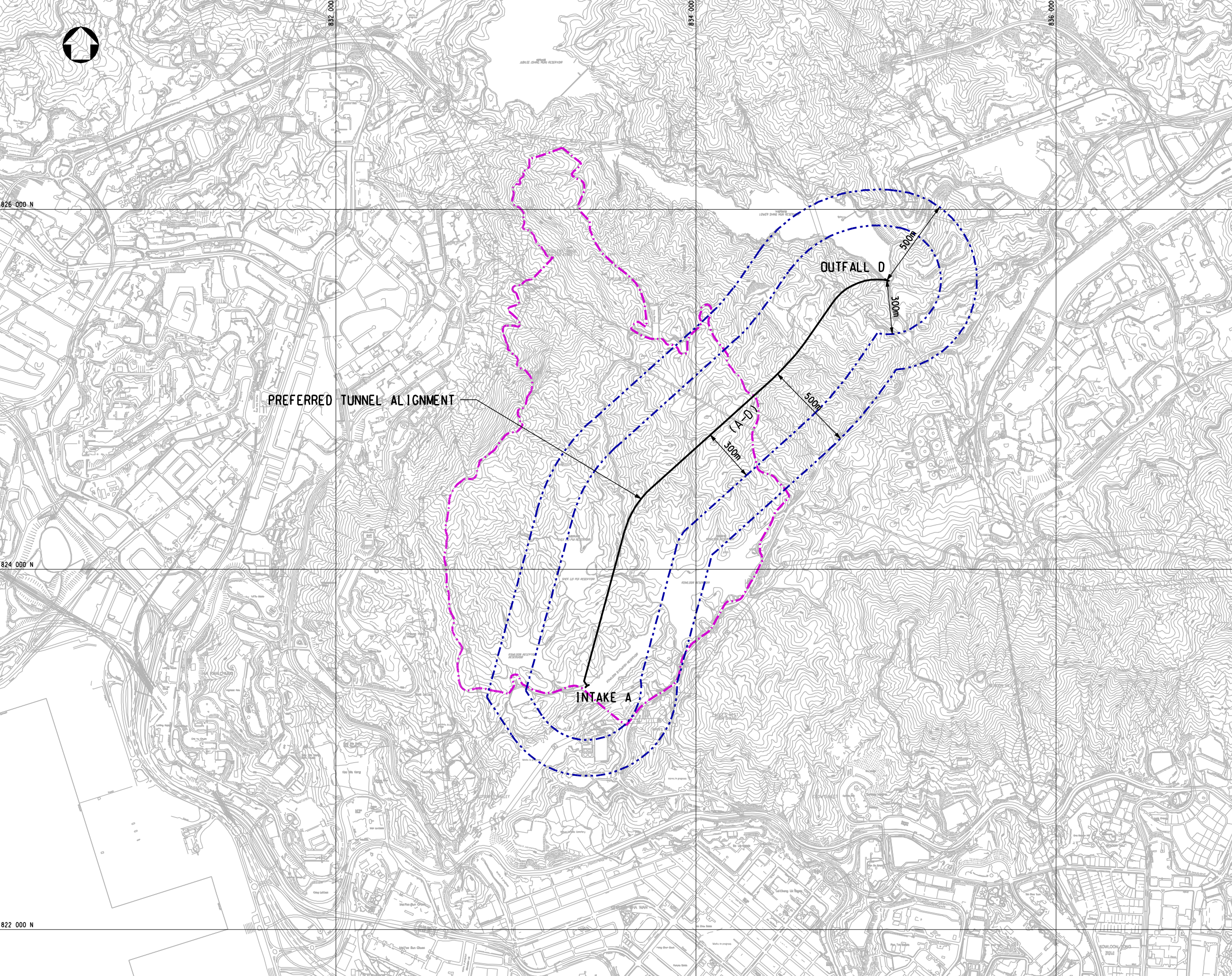
9. CONCLUSION AND RECOMMENDATIONS

- 9.1 This is the 23rd Monthly Environmental Monitoring and Audit (EM&A) Report presents EM&A works undertaken in the period of 1 to 31 May 2021. EM&A works were performed in accordance with the approved EM&A Manual and conditions stipulated in the amended Environmental Permit EP-345/2009/A.
- 9.2 Impact monitoring for construction noise and water quality were performed in the reporting period.
- 9.3 The control points C1b and C2 were observed dried up on all monitoring days in May 2021. Insufficient water was available for sample collection.
- 9.4 Similar to predictions from the EIA report, no project-related exceedance was identified from the EM&A programme of the reporting month.
- 9.5 Weekly site inspections were performed during the reporting period.
- 9.6 No complaint regarding environmental issue was received in the reporting period.
- 9.7 No notification of summons nor prosecution have been received since the commencement of the Project.
- 9.8 The Contractor is reminded that all works to be undertaken within the water gathering ground of LSMR and KBR must fulfill statutory environmental requirements, especially in watercourse protection.
- 9.9 Concrete Structures, which were not shown in the EIA Report (AEIAR-135/2009), were observed inside the site boundary at the KBR area. Such structures shall be included in the latest Landscape Plan for authorities' approval.


Appendix A
Project Site Layout Plan



LEGEND:
 - - - - - KAM SHAN COUNTRY PARK BOUNDARY
 - - - - - STUDY AREA



Rev	Date	Drawn/Description	Ch'kd/App'd

Client
 THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT

m Mott MacDonald
 Mott MacDonald Hong Kong Ltd
 7th Floor
 West Wing Office Building
 New World Centre
 20 Salisbury Road
 Tsim Sha Tsui, Kowloon
 Hong Kong
 Tel: 2828 5757
 Fax: 2827 1823
 Web: www.mottmac.com.hk

Project
 Agreement No. CE55/2006(EP)
 Inter-reservoirs Transfer Scheme (IRTS)
 Water Tunnel between Kowloon Byewash
 Reservoir and Lower Shing Mun Reservoir
 Environmental Impact Assessment
 Investigation

Title
 THE PREFERRED SCHEME

Designed	HN/PW	Eng.Chk.	PW
Drawn	VN	Coordination	PW
Dwg.Chk.	HN	Approved	AFK

Scale	1:10000@A1	Project	240564	Status	INF
Drawing No.	CAD File			Rev	

Appendix B

Latest Construction Programme

IRTS: 3 Month Rolling Programme (May 21 ~ Jul 21)

Layout : 4 - IRT-Rolling Y21M04D3(a)
 TASK filters: 3 Month Rolling, Level of Effort,
 Data Date : 30-Apr-21

Activity ID	Activity Name	Dur	Start	Finish	Apr 26	May 27	Jun 28	Jul 29	Aug 30
IRTS - Rolling Programme (Y21M04D3a-3R)									
Preliminaries and General Requirements									
Procurement of Consultants and Sub-Contractors									
Ph_Scon_1300-20	Subcontract Pipe Pile Wall and Grouting Works for Outfall Structure (Stage 2B)	46	07-Apr-21/A	07-Jun-21					
Ph_Scon_1400-10	Subcontract Supply & Installation of Stairing and Wiring System for Outfall Structure	76	07-Apr-21/A	06-Jun-21					
Ph_Scon_1700	Subcontract Enhancement works at Kam Shan Country park works (T3)	38	07-Jun-21	26-Jul-21					
TRF_GW-040	General Site Storage	891	02-Jul-19/A	19-Jul-22					
CSD Submission									
CSD 1 - Outfall Structure									
Design Submission									
CSD_FF_2070	DDA-Review & Acceptance	342	03-Oct-19/A	07-May-21					
CSD_FF_2080	Approval for Site Construction	0		07-May-21					
CSD 2 - Alternative Alignment & Intake Structure									
Alternative Works (Subject to approval of alternative tunnel alignment)									
CSD_FF_2210	Intake Structure Wall Construction	80	01-Apr-21/A	10-Jun-21					
CSD_FF_2210-05	Rock Pressure Gout	60	10-May-21	21-Jun-21					
CSD_FF_2210-20	Mixed Tunnel Construction (Stage 1 - 2.0m)	36	22-Jul-21	01-Sep-21					
CSD_FF_2225	Internal Staircase Construction	24	11-Jun-21	10-Jul-21					
CSD_FF_2230	ESM Installation	188	12-Jun-21	29-Jan-22					
Feasibility Study for Maintenance Walkway at KBR (CE-054)									
Design Submissions									
CSD_FF_3130	WSD's Comment & Approval	70	08-Jan-21/A	08-May-21					
CSD_FF_3180	Prepare DDA for Decking for Maintenance Walkway	91	18-Jan-21/A	15-May-21					
CSD_FF_3180	DDA Comment/Approval for Decking for Maintenance Walkway	24	17-May-21	15-Jun-21					
CSD_FF_3200	Prepare DDA for Extension of Spillage Drainage Channel	116	02-Jan-21/A	31-May-21					
CSD_FF_3210	DDA Comment/Approval for Extension of Spillage Drainage Channel	24	01-Jun-21	29-Jun-21					
CSD_FF_3220	Prepare DDA for Slope Upgrading Works for Feature no. 11NWAC593	73	08-Dec-20/A	07-May-21					
CSD_FF_3230	DDA & GEO's Comment/Approval for Slope Upgrading Works for Feature	24	08-May-21	05-Jun-21					
CSD_FF_3230	Prepare DDA for Vertical Ladder & Intermediate Platform at Intake Structure	103	18-Jan-21/A	31-May-21					
CSD_FF_3270	DDA Comment/Approval for Ladder & Platform at Intake Structure	28	01-Jun-21	05-Jul-21					
CSD_FF_3280	Design Review of the Intake Structure-Amendment	35	18-Jan-21/A	15-May-21					
CSD_FF_3290	Ready for Procurement	0		05-Jul-21					
Tunneling Works									
Design Submission									
Mined Tunnel Temporary Works Design									
KBR Mined Tunnel									

Contract No. DC/2018/08 : Inter-Reservoirs Transfer Scheme
 Water Tunnel Between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir

1 of 3

Actual Level of Effort █

Actual Work █

Remaining Work █

Critical Remaining Work ◆

Milestone ◆

Checked/Approved

A. Tsang

IRTS: 3 Month Rolling Programme (May 21 ~ Jul 21)

Layout : 4 -IRT-Rolling Y21M04D3a
 TASK filters: 3 Month Rolling, Level of Effort,
 Data Date : 30-Apr-21

Activity ID	Activity Name	Dur	Start	Finish	2021				
					Apr 26	May 27	Jun 28	Jul 29	
MTD_KB_1000	1st Submission - Mined Tunnel Design Preparation & Submission	85	25-Jun-21A	15-May-21					Aug 30
MTD_KB_2000	Review and Comments (GEO)	18	17-May-21	07-Jun-21					
MTD_KB_3000	2nd Submission - Mined Tunnel Design Preparation & Submission with ICE	28	08-Jun-21	12-Jul-21					
MTD_KB_4000	Review and Acceptance (GEO)	18	13-Jul-21	02-Aug-21					
Mined Tunnel Permanent Works Design									
MTD_KB_4010	1st Submission - Mined Tunnel Design Preparation & Submission	29	25-Apr-21A	31-May-21					
MTD_KB_4020	Review and Comments	18	01-Jun-21	22-Jun-21					
MTD_KB_4030	2nd Submission - Mined Tunnel Design Preparation & Submission with ICE	28	23-Jun-21	28-Jul-21					
MTD_KB_4040	Review and Acceptance	18	27-Jul-21	16-Aug-21					
Lining Module Procurement, Manufacture and Delivery									
TBM_Ln_1500	2nd Batch, Segment Fabrication, 1570 rings	315	11-Jun-20A	10-Jul-21					
TBM_Ln_1510	Segment Delivery to Site	308	30-Jun-20A	17-Jul-21					
Site Works									
LSMR (North Portal) & TBM									
LSMR - TBM Tunnel Excavation									
TBM_Exc_2100	F4 (CH1757 to CH1972)	12	05-May-21	19-May-21					
TBM_Exc_2150	Grouting for F4 at CH1972	3	20-May-21	22-May-21					
TBM_Exc_2400	P7 (CH1972 to CH2345)	23	24-May-21	18-Jun-21					
TBM_Exc_2450	Grouting for P7 at CH2345	2	19-Jun-21	21-Jun-21					
TBM_Exc_2500	P8 (CH2345 to CH2886)	21	22-Jun-21	15-Jul-21					
TBM_Exc_2550	Grouting for P8 at CH2886	2	16-Jul-21	17-Jul-21					
TBM_Exc_2800	CH2886 to CH2951 to CH2972.75	16	19-Jul-21	05-Aug-21					
TBM Dismantling									
TB_Dk_1000	P4 Back Gentries 1-15 & noise Enclosure Removal	18	06-Aug-21	29-Aug-21					
Intake Structure at Kowloon Byewash Reservoir									
KBR Intake : EAM Design of Automatic Flow Control System & Others									
KBR_END_100	Review and Comments	28	02-Apr-21A	08-May-21					
KBR_END_200	2nd Submission - EAM Design Preparation & Submission with ICE	28	10-May-21	11-Jun-21					
KBR_END_300	Review and Acceptance	18	12-Jun-21	05-Jul-21					
KBR Intake : EAM Installation of Automatic Flow Control System & Others									
KB_ISW_3000	Supply and Delivery of EAM Materials / Equipments, "P" (P)	120	05-Jul-21	25-Nov-21					
KB_ISW_3010	Excavation Permit Application & Works for Power Supply Cables	77	10-May-21	10-Aug-21					
KBR Intake : EAM Installation of Electrical Actuated Penstocks									
KB_ISW_3010	Supply and Delivery of Penstock Materials / Equipments, "P" (P)	157	11-Dec-20A	23-Oct-21					
KBR Intake : EAM Design for Lifting Crane									
KBR_END_1000	1st Submission - Lifting Crane Design Preparation & Submission	130	15-Jan-21A	30-Jun-21					
KBR_END_1030	Review and Comments	16	02-Jul-21	20-Jul-21					
KBR_END_1070	2nd Submission - Lifting Crane Design Preparation & Submission with ICE	28	21-Jul-21	21-Aug-21					

Contract No. DC/2018/08 : Inter-Reservoirs Transfer Scheme
 Water Tunnel Between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir

2 of 3

Actual Level of Effort █ Critical Remaining Work

Actual Work █ Milestone

Remaining Work █

Date	Revision	Checked	Approved
30-Apr-21	Rolling Y21M05D07a	A. Tsang	

IRTS: 3 Month Rolling Programme (May 21 ~ Jul 21)

Layout : 4 -IRT-Rolling Y21M04D30a
 TASK filters: 3 Month Rolling, Level of Effort,
 Data Date : 30-Apr-21

Activity ID	Activity Name	Dur	Start	Finish	2021				
					Apr 26	May 27	Jun 28	Jul 29	Aug 30
Outfall Structure at Lower Shing Mun Reservoir (Conforming Design)									
LSMR Outfall : Design Submission									
LSM_OSD_1300	LSMR Outfall : Stage 2B Pipe Pile Wall for Outfall Review and Acceptance	63	13-Mar-21	31-May-21					
Landscaping Works									
Enhancement Works of Kam Shan Country Park Design									
KRF_EHW_1250	(4th) Revise & Submit Enhancement Facility Proposal at Kam Shan Country Park (P/c)	46	02-Apr-21	31-May-21					
KRF_EHW_1230	(4th) Review and Comment of Proposal	5	01-Jun-21	05-Jun-21					
KRF_EHW_1300	1st Submission Enhancement works at Kam Shan Country Park Design Preparation & Submission (P/c)	28	23-Jul-21	24-Aug-21*					

Date	Revision	Checked	Approved
30-Apr-21	Rolling Y21M05D07a	A. Tsang	

Contract No. DC/2018/08 : Inter-Reservoirs Transfer Scheme
 Water Tunnel Between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir

3 of 3


■ Actual Level of Effort ■ Critical Remaining Work
■ Actual Work ◆ Milestone
■ Remaining Work

Appendix C
Monitoring Locations



- LEGEND:**
- STUDY AREA BOUNDARY
 - PREFERRED TUNNEL ALIGNMENT
 - + NOISE SENSITIVE RECEIVER
 - C COMMERCIAL
 - CDA COMPREHENSIVE DEVELOPMENT AREA
 - G/IC GOVERNMENT/INSTITUTION/COMMUNITY
 - GB GREEN BELT
 - I INDUSTRIAL
 - O OPEN SPACE
 - OU OTHER SPECIFIED USES
 - RIA1 RESIDENTIAL (GROUP A)
 - RIA2 RESIDENTIAL (GROUP B)
 - RIA3 RESIDENTIAL (GROUP C)
 - RIA4 RESIDENTIAL (GROUP E)
 - V VILLAGE TYPE DEVELOPMENT

Rev	Date	Drawn/Description	Ch'kd/App'd

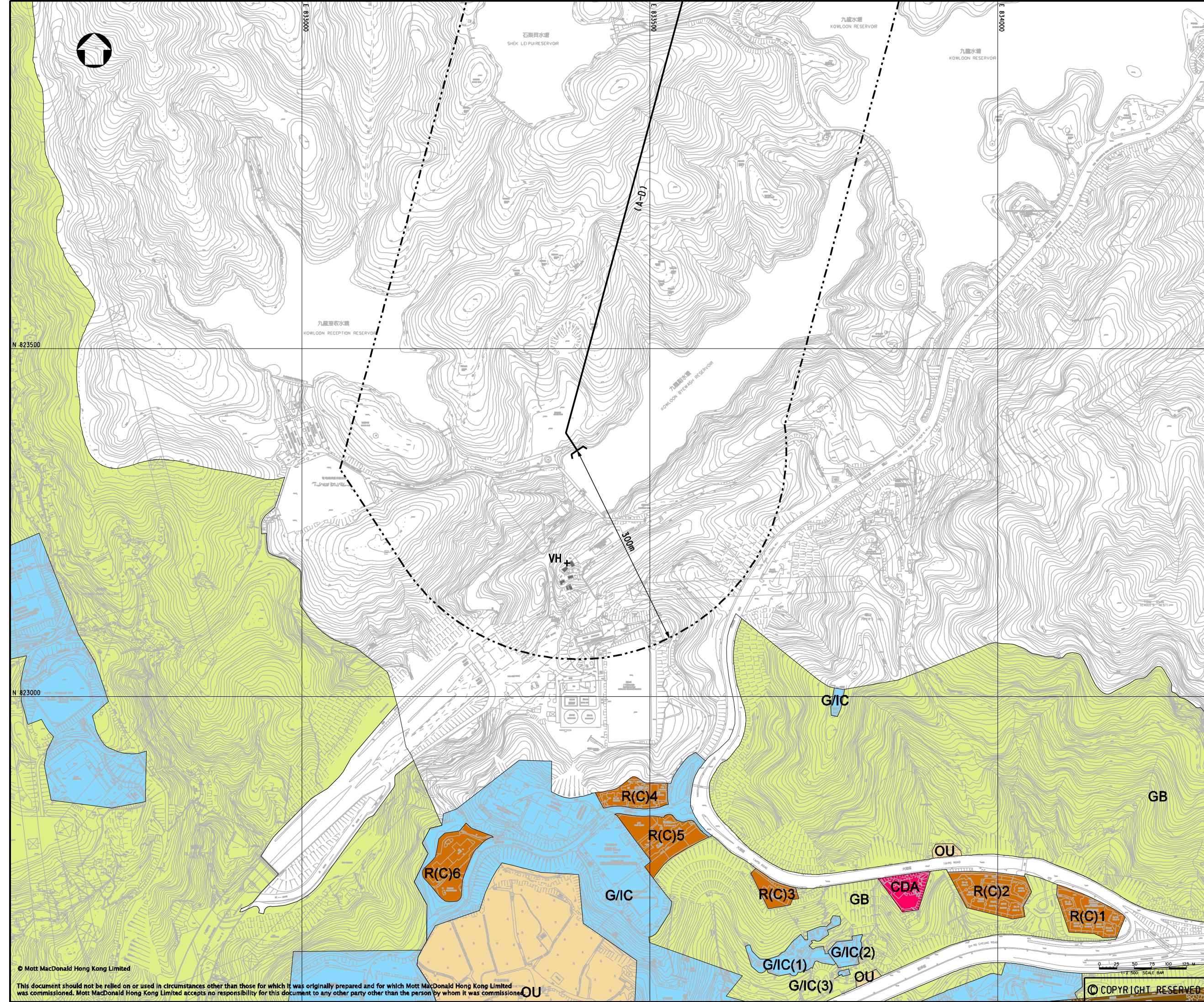
Client

**THE GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION
 WATER SUPPLIES DEPARTMENT**

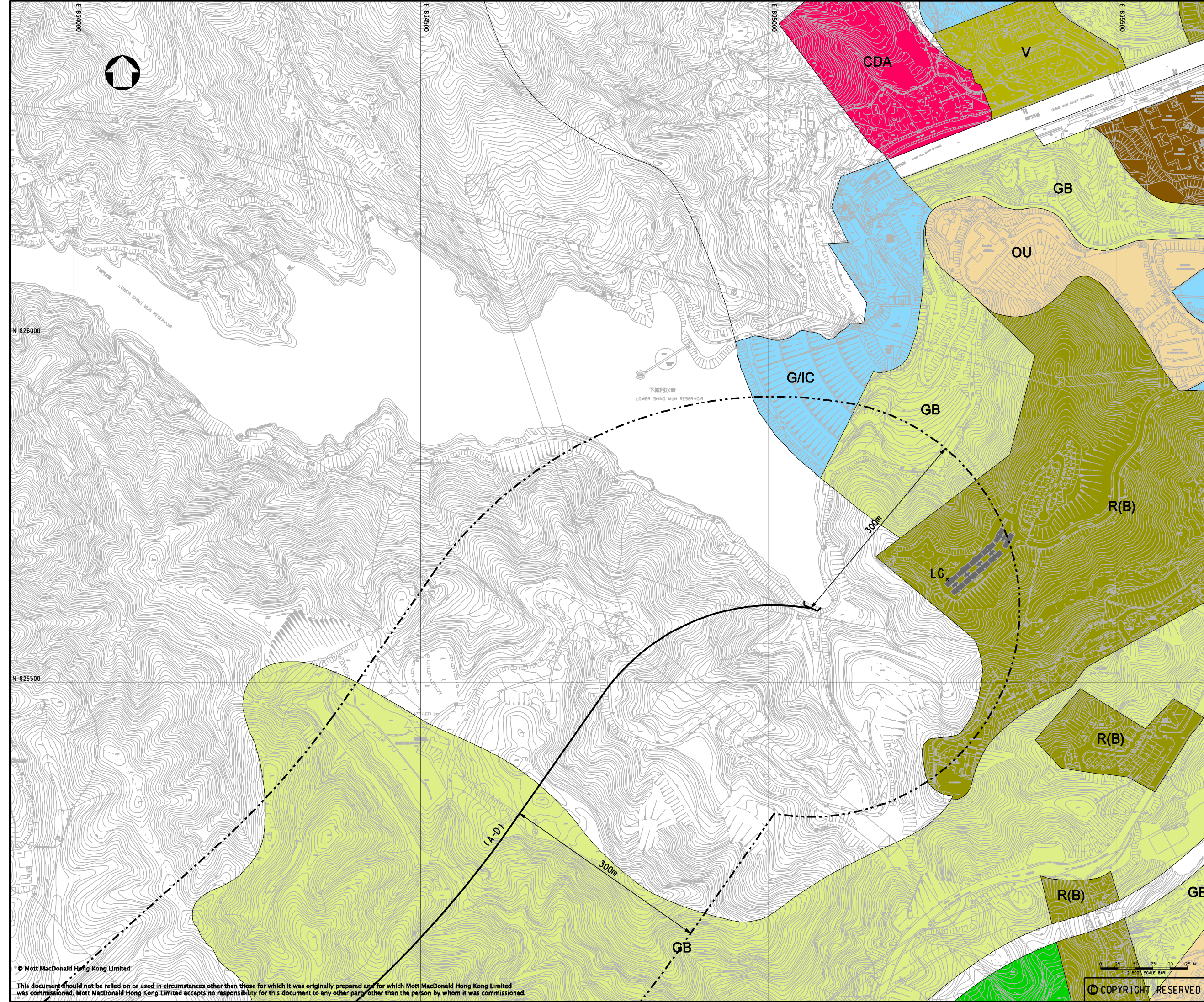
**m Mott
 MacDonald**
 Mott MacDonald Hong Kong Ltd
 7th Floor
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Project
 Agreement No. CE55/2006(EP)
 Inter-reservoirs Transfer Scheme (IRTS)
 Water Tunnel between Kowloon Byewash
 Reservoir and Lower Shing Mun Reservoir
 Environmental Impact Assessment
 Investigation

Title
**THE STUDY AREA AND
 REPRESENTATIVE NSRs (INTAKE END)**

Designed	HN/PW	Eng.Chk.	PW
Drawn	VN	Coordination	PW
Dwg.Chk.	HN	Approved	AFK
Scale	Project	Status	
1:2500@A1	240564	INF	
Drawing No.	CAD File	Rev	
	\\1240564\REPORT\ENV\EMBA-082\FIGURE-4-1.dgn		





- LEGEND:**
- STUDY AREA BOUNDARY
 - PREFERRED TUNNEL ALIGNMENT
 - + NOISE SENSITIVE RECEIVER
 - C COMMERCIAL
 - CDA COMPREHENSIVE DEVELOPMENT AREA
 - G/IC GOVERNMENT/INSTITUTION/COMMUNITY
 - GB GREEN BELT
 - I INDUSTRIAL
 - O OPEN SPACE
 - OU OTHER SPECIFIED USES
 - R(A) RESIDENTIAL (GROUP A)
 - R(B) RESIDENTIAL (GROUP B)
 - R(C) RESIDENTIAL (GROUP C)
 - R(E) RESIDENTIAL (GROUP E)
 - V VILLAGE TYPE DEVELOPMENT

Rev	Date	Drawn/Description	Ch'kd/App'd

Client

THE GOVERNMENT OF THE HONG KONG
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Project

Agreement No. CE55/2006(EP)
Inter-reservoirs Transfer Scheme (IRTS)
Water Tunnel between Kowloon Byewash
Reservoir and Lower Shing Mun Reservoir
Environmental Impact Assessment
Investigation

Title

PROPOSED LOCATION OF NOISE
MONITORING STATION AT OUTFALL END

Designed	HN/PW	Eng.Chk.	PW
Drawn	VN	Coordination	PW
Dwg.Chk.	HN	Approved	AFK

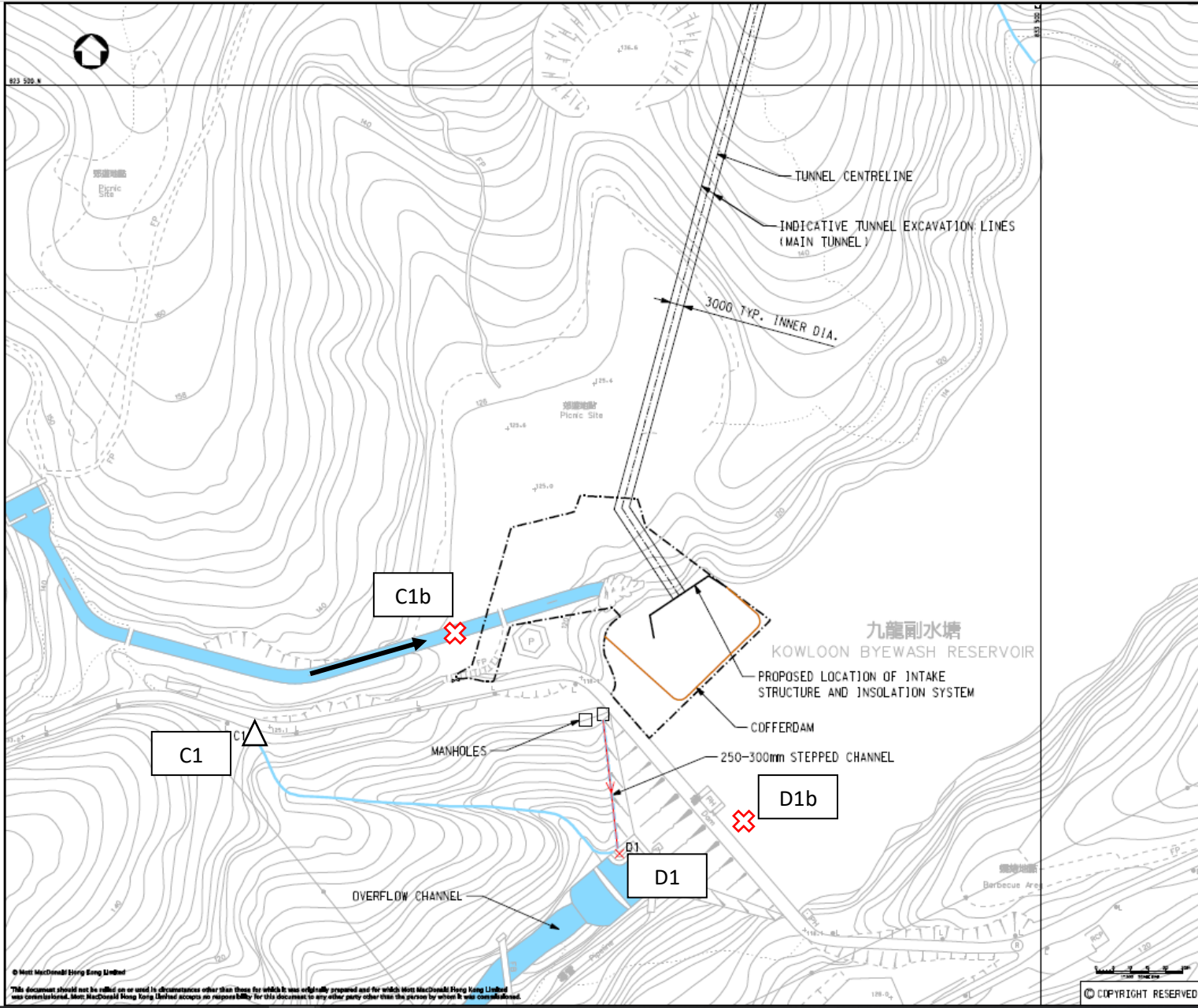
Scale

1:2500@A1

Project 240564

Status INF

Drawing No. FIGURE 4-2



NOTE:
DESIGN DETAILS OF THE COFFERDAM WILL BE DETERMINED BY THE CONTRACTOR.

- LEGEND:
- WORKSITE AREA
 - WATERCOURSE
 - INDICATIVE LOCATION OF COFFERDAM
 - FLOW PATH OF TREATED EFFLUENT
 - × POINT OF EFFLUENT DISCHARGE / MONITORING STATION D1
 - △ CONTROL STATION AT INTAKE SITE
 - ⊠ Proposed Alternative Water Monitoring Station

Rev	Desc	Drawn	Checked	Date
01	ISSUE FOR TENDER			20/04/2011
02	REVISED FOR DESIGN			22/04/2011
03	REVISED FOR DESIGN			22/04/2011
04	REVISED FOR DESIGN			22/04/2011

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Project:
Agreement No. CE55/2006 (EP)
Inter-reservoirs Transfer Scheme (IRTS)
Water Tunnel between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir
Environmental Impact Assessment Investigation

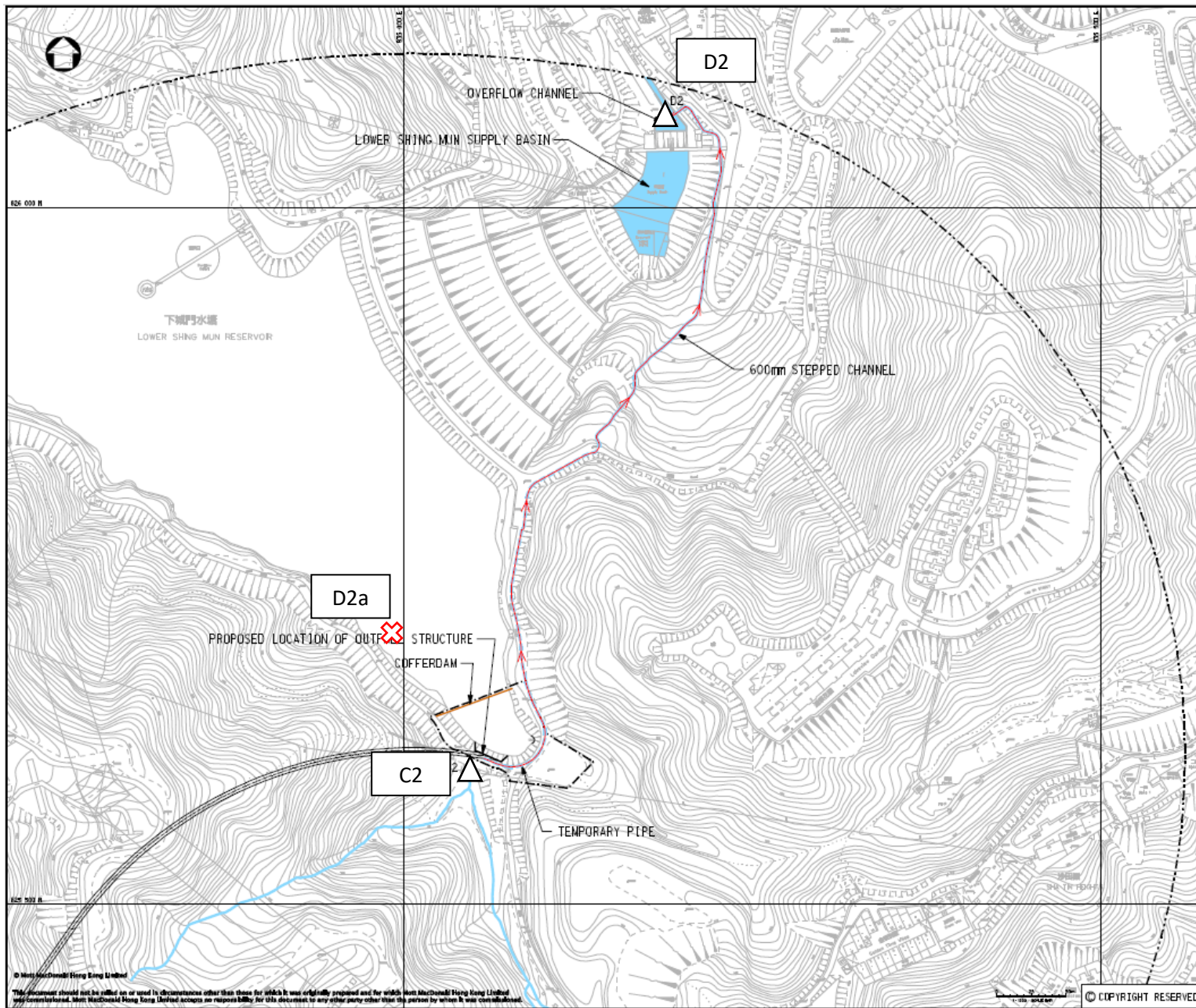
PROPOSED WATER QUALITY MONITORING STATION AT INTAKE END

Designed	FX	Checked	FX
Drawn	MDG	Approved	FX
Sup. Chk.	FX	Approved	FX

Scale: 1:500@A1
Date: 24/05/11
Drawing No. 21/2006/IRTS/EP/IMP/FIG-05-1

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FIGURE 5-1
P3

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NOTE:
DESIGN DETAILS OF THE COFFERDAM WILL BE DETERMINED BY THE CONTRACTOR.

LEGEND:

- STUDY AREA BOUNDARY
- WORKSITE AREA
- WATERCOURSE
- TEMPORARY PIPE
- INDICATIVE LOCATION OF COFFERDAM
- FLOW PATH OF TREATED EFFLUENT
- × POINT OF EFFLUENT DISCHARGE / MONITORING STATION C2
- △ CONTROL STATION AT OUTFALL SITE
- ⊗ Proposed Alternative Water Monitoring Station

FR	REV 01	NOV	NOV	NOV	NOV	NOV	NOV	NOV	NOV
FR	REV 02	NOV	NOV	NOV	NOV	NOV	NOV	NOV	NOV
FR	REV 03	NOV	NOV	NOV	NOV	NOV	NOV	NOV	NOV

THE GOVERNMENT OF THE HONG KONG
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Project:
Agreement No. CES5/2006 (EP)
Inter-Reservoirs Transfer Scheme (IRTS)
Water Tunnel between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir
Environmental Impact Assessment Investigation

PROPOSED WATER QUALITY MONITORING STATION AT OUTFALL END

Checked	FR	Checked	FR
Drawn	NOV	Checked	FR
Eng. OK	FR	Approved	FR

Scale: 1:125000
Date: 24/05/14
Drawing No: FIGURE 5-2
Sheet: P3

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Appendix D

Calibration Certificates of Equipment Used

Certificate of Calibration

for

Description: *Sound Level Meter*
Manufacturer: *NTi Audio*
Type No.: *XL2 (Serial No.: A2A-17638-E0)*
Microphone: *ACO 7052 (Serial No.:68746)*
Preamplifier: *NTi Audio M2211 MA220 (Serial No.:7014)*

Submitted by:

Customer: *Acuity Sustainability Consulting Limited*
Address: *Unit C, 11/F., Ford Glory Plaza, No. 37-39 Wing Hong Street,
Cheung Sha Wan, Kowloon*

Upon receipt for calibration, the instrument was found to be:

- Within**
 Outside

the allowable tolerance.

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory

Date of receipt: 22 March 2021

Date of calibration: 24 March 2021

Calibrated by: _____
Calibration Technician

Certified by: _____
Mr. Ng Yan Wa
Laboratory Manager

Date of issue: 24 March 2021

Certificate No.: APJ20-185-CC001



Page 1 of 4

1. Calibration Precaution:

- The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 24 hours, and switched on to warm up for over 10 minutes before the commencement of the test.
- The results presented are the mean of 3 measurements at each calibration point.

2. Calibration Conditions:

Air Temperature: 23.2 °C
 Air Pressure: 1006 hPa
 Relative Humidity: 57.6 %

3. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV200041	HOKLAS

4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB	
30-130	dBA SPL	Fast	94	1000	94.1	±0.4	

Linearity

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB	
30-130	dBA SPL	Fast	94	1000	94.1	Ref	
			104		104.1	±0.3	
			114		114.1	±0.3	

Time Weighting

Setting of Unit-under-test (UUT)				Applied value		UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB	
30-130	dBA SPL	Fast	94	1000	94.1	Ref	
		Slow			94.1	±0.3	

Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
30-130	dB	SPL	Fast	94	31.5	94.1	±2.0
					63	94.2	±1.5
					125	94.2	±1.5
					250	94.1	±1.4
					500	94.2	±1.4
					1000	94.1	Ref
					2000	94.3	±1.6
					4000	94.6	±1.6
					8000	92.8	+2.1; -3.1

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
30-130	dBA	SPL	Fast	94	31.5	54.7	-39.4±2.0
					63	68.0	-26.2±1.5
					125	78.1	-16.1±1.5
					250	85.5	-8.6±1.4
					500	91.0	-3.2±1.4
					1000	94.1	Ref
					2000	95.5	+1.2±1.6
					4000	95.6	+1.0±1.6
					8000	91.8	-1.1±2.1; -3.1

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading, dB	IEC 61672 Class 1 Specification, dB	
Range, dB	Freq. Weighting	Time Weighting	Level, dB	Frequency, Hz			
30-130	dBC	SPL	Fast	94	31.5	91.1	-3.0±2.0
					63	93.3	-0.8±1.5
					125	94.0	-0.2±1.5
					250	94.1	-0.0±1.4
					500	94.2	-0.0±1.4
					1000	94.1	Ref
					2000	94.1	-0.2±1.6
					4000	93.8	-0.8±1.6
					8000	89.8	-3.0 +2.1; -3.1

5. Calibration Results Applied

The results apply to the particular unit-under-test only. All calibration points are within manufacture's specification as IEC 61672 Class 1.

Uncertainties of Applied Value:

94 dB	31.5 Hz	± 0.10
	63 Hz	± 0.05
	125 Hz	± 0.05
	250 Hz	± 0.05
	500 Hz	± 0.05
	1000 Hz	± 0.05
	2000 Hz	± 0.05
	4000 Hz	± 0.05
	8000 Hz	± 0.10
104 dB	1000 Hz	± 0.05
114 dB	1000 Hz	± 0.05

The uncertainties are evaluated for a 95% confidence level.

Note:

The values given in this certification only related to the values measured at the time of the calibration and any uncertainties quoted will not allow for the equipment long-term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the calibration. (A+A)*L shall not be liable for any loss or damage resulting from the use of the equipment.

FACTORY CALIBRATION DATA OF THE SVAN 971 No. 103449

with preamplifier SVANTEK type SV18 No. 103808 and with microphone ACO type 7052E No. 79778

1. CALIBRATION* (acoustical)

LEVEL METER function; Range: Low; Reference frequency: 1000Hz; Sound Pressure Level: 114.00 dB

Characteristic	Correct value [dB]	Indication [dB]	Error [dB]
Z	114.00	114.06	0.06
A	114.00	114.06	0.06
C	114.00	114.06	0.06

Calibration measured with the microphone ACO type 7052E No. 79778. Calibration factor: 1.02 dB.

2. LINEARITY TEST* (electrical)

 LEVEL METER function; Range: Low; Characteristic: A; f_{in} = 31.5 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	83.0
Error [dB]	0.1	0.1	0.0	0.0	0.0	0.0	0.0	-0.0

 LEVEL METER function; Range: Low; Characteristic: A; f_{in} = 1000 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	123.0
Error [dB]	0.1	0.1	0.1	0.0	0.0	-0.0	-0.0	-0.0	0.0	-0.0

 LEVEL METER function; Range: Low; Characteristic: A; f_{in} = 8000 Hz

Nominal result LEQ [dB]	24.0	25.0	26.0	28.0	30.0	40.0	60.0	80.0	100.0	122.0
Error [dB]	0.1	0.0	0.0	0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.0

 LEVEL METER function; Range: High; Characteristic: A; f_{in} = 31.5 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	97.0
Error [dB]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

 LEVEL METER function; Range: High; Characteristic: A; f_{in} = 1000 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	137.0
Error [dB]	0.1	0.1	0.1	0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.0

 LEVEL METER function; Range: High; Characteristic: A; f_{in} = 8000 Hz

Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	136.0
Error [dB]	0.0	0.0	0.0	-0.0	-0.0	0.0	0.0	0.0	0.0	0.0

 1/3 OCTAVE (1kHz); Range: Low; f_{in} = 1000 Hz

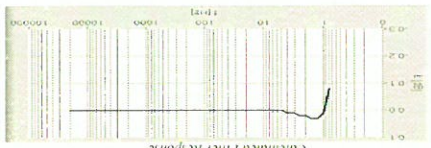
Nominal result [dB]	25.0	30.0	40.0	60.0	80.0	100.0	120.0	123.0
Error [dB]	0.1	0.1	0.0	-0.0	-0.0	0.0	-0.0	-0.0

3. TONE BURST RESPONSE*

 LEVEL METER function; Characteristic: A; f_{in} = 4000 Hz; Burst duration: 2s

Range: Low; Steady level nominal result = 120dB

Result	Detector	Duration [ms]	1000	500	200	100	50	20	10	5	2	1	0.5	0.25
MAX	Fast	Indication [dB]	120.0	119.9	119.0	117.4	115.1	111.7	108.8	105.9	101.9	98.9	95.9	92.8
		Error [dB]	0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.1	-0.1
	Slow	Indication [dB]	117.9	115.8	112.5	109.6	106.7	102.8	99.8	96.8	92.8	-	-	-
		Error [dB]	-0.1	-0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-	-	-
SEL	-	Indication [dB]	120.0	117.0	113.0	110.0	107.0	103.0	100.0	96.9	92.9	89.9	86.9	83.8
		Error [dB]	0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0	-0.1	-0.1



Measured Filter Response with Pre-amplifier SF18
(f=frequency, L=level)

f [Hz]	1 [dB]	f [Hz]	1 [dB]	f [Hz]	1 [dB]
10	-0.1	63	-0.0	4000	-0.0
15	-0.0	125	-0.0	8000	-0.0
16	-0.0	250	-0.0	16000	-0.0
20	0.0	500	-0.0	20000	0.0
25	0.0	1000	-0.0		
11.5	0.0	2000	-0.0		

All frequencies are nominal center values for the 1/3 octave bands

LEVEL METER function: Range: Low; Backlight - off; Calibration factor: (dB)

INTERNAL NOISE LEVEL (electrical - compensated)

LEVEL METER function: Characteristic: Z; Range: Low; Input signal = 120 dB;

4. FREQUENCY RESPONSE (electrical)

Result	Detector	Duration [ms]	Fast		Slow		Error [dB]
			Indication [dB]	Error [dB]	Indication [dB]	Error [dB]	
200	1000	500	44.9	0.0	40.8	-0.1	-0.1
500	1000	500	44.9	0.0	40.8	-0.1	-0.1
1000	1000	500	44.9	0.0	40.8	-0.1	-0.1
2000	1000	500	44.9	0.0	40.8	-0.1	-0.1

Range: High; Steady level nominal result = 45dB

Result	Detector	Duration [ms]	Fast		Slow		Error [dB]
			Indication [dB]	Error [dB]	Indication [dB]	Error [dB]	
50	1000	500	51.4	0.1	47.8	-0.1	0.1
100	1000	500	51.4	0.1	47.8	-0.1	0.1
200	1000	500	51.4	0.1	47.8	-0.1	0.1
500	1000	500	51.4	0.1	47.8	-0.1	0.1
1000	1000	500	51.4	0.1	47.8	-0.1	0.1
2000	1000	500	51.4	0.1	47.8	-0.1	0.1

Range: High; Steady level nominal result = 54dB

Result	Detector	Duration [ms]	Fast		Slow		Error [dB]
			Indication [dB]	Error [dB]	Indication [dB]	Error [dB]	
0.25	1000	500	131.4	0.0	126.5	-0.1	-0.1
0.5	1000	500	131.4	0.0	126.5	-0.1	-0.1
1	1000	500	131.4	0.0	126.5	-0.1	-0.1
2	1000	500	131.4	0.0	126.5	-0.1	-0.1
5	1000	500	131.4	0.0	126.5	-0.1	-0.1
10	1000	500	131.4	0.0	126.5	-0.1	-0.1
20	1000	500	131.4	0.0	126.5	-0.1	-0.1
50	1000	500	131.4	0.0	126.5	-0.1	-0.1
100	1000	500	131.4	0.0	126.5	-0.1	-0.1
200	1000	500	131.4	0.0	126.5	-0.1	-0.1
500	1000	500	131.4	0.0	126.5	-0.1	-0.1
1000	1000	500	131.4	0.0	126.5	-0.1	-0.1
2000	1000	500	131.4	0.0	126.5	-0.1	-0.1
5000	1000	500	131.4	0.0	126.5	-0.1	-0.1
10000	1000	500	131.4	0.0	126.5	-0.1	-0.1

Range: Low; Steady level nominal result = 35dB

Result	Detector	Duration [ms]	Fast		Slow		Error [dB]
			Indication [dB]	Error [dB]	Indication [dB]	Error [dB]	
200	1000	500	34.9	0.0	32.9	-0.1	0.0
500	1000	500	34.9	0.0	32.9	-0.1	0.0
1000	1000	500	34.9	0.0	32.9	-0.1	0.0
2000	1000	500	34.9	0.0	32.9	-0.1	0.0
5000	1000	500	34.9	0.0	32.9	-0.1	0.0
10000	1000	500	34.9	0.0	32.9	-0.1	0.0

Range: Low; Steady level nominal result = 60dB

Result	Detector	Duration [ms]	Fast		Slow		Error [dB]
			Indication [dB]	Error [dB]	Indication [dB]	Error [dB]	
0.5	1000	500	59.9	0.0	57.9	-0.1	-0.1
1	1000	500	59.9	0.0	57.9	-0.1	-0.1
2	1000	500	59.9	0.0	57.9	-0.1	-0.1
5	1000	500	59.9	0.0	57.9	-0.1	-0.1
10	1000	500	59.9	0.0	57.9	-0.1	-0.1
20	1000	500	59.9	0.0	57.9	-0.1	-0.1
50	1000	500	59.9	0.0	57.9	-0.1	-0.1
100	1000	500	59.9	0.0	57.9	-0.1	-0.1
200	1000	500	59.9	0.0	57.9	-0.1	-0.1
500	1000	500	59.9	0.0	57.9	-0.1	-0.1
1000	1000	500	59.9	0.0	57.9	-0.1	-0.1
2000	1000	500	59.9	0.0	57.9	-0.1	-0.1
5000	1000	500	59.9	0.0	57.9	-0.1	-0.1
10000	1000	500	59.9	0.0	57.9	-0.1	-0.1

6. INTERNAL NOISE LEVEL (acoustical - compensated)

LEVEL METER function: Characteristic: A; Backlight - off

Range	Indication [dB]	
	Low	High
≤15	Low	High
20.9	Low	High

Noise measured in special chamber, with reference microphone G.R.A.5 type 40AN No. 7421

ENVIRONMENTAL CONDITIONS

Temperature	21 °C
Relative humidity	24%
Ambient pressure	1002 hPa

TEST EQUIPMENT

Item	Manufacturer	Model	Serial no.	Description
1.	SVANTEK	SVAN 401	100	Signal generator
2.	SVANTEK	SVAN 912A	4369	Sound & Vibration Analyser
3.	RIGOL	DM3068	DM301551000773	Digital multimeter
4.	SVANTEK	SV33B	93171	Acoustic calibrator
5.	SVANTEK	ST02	-	Microphone equivalent electrical impedance (1kP)

CONFORMITY & TEST DECLARATION

1. Hereby Svantek company declares that this instrument has been calibrated and tested in compliance with the internal ISO9001 procedures and meets all specifications given in the Manual(s) or respective sound level calibrator type 4231 No 2292773.

3. The information appearing on this sheet has been compiled specifically for this instrument. This form is produced with advanced equipment & procedures which permit comprehensive quality assurance verification of all data supplied herein.

4. This calibration sheet shall not be reproduced except in full, without written permission of the SVANTEK Ltd.

Cy

Calibration specialist: Cezary Dardziński

Test date: 2021-02-17



CERTIFICATE OF CALIBRATION

Certificate No.: 20CA0803 01

Page: 1 of 2

Item tested

Description: Acoustical Calibrator (Class 1)
Manufacturer: Pulsar Instruments Ltd.
Type/Model No.: 105
Serial/Equipment No.: 63705
Adaptors used: -

Item submitted by

Customer: Acuity Sustainability Consulting Limited.
Address of Customer: -
Request No.: -
Date of receipt: 03-Aug-2020

Date of test: 06-Aug-2020

Reference equipment used in the calibration

Description:	Model:	Serial No.	Expiry Date:	Traceable to:
Lab standard microphone	B&K 4180	2341427	11-May-2021	SCL
Preamplifier	B&K 2673	2743150	03-Jun-2021	CEPREI
Measuring amplifier	B&K 2610	2346941	03-Jun-2021	CEPREI
Signal generator	DS 360	33873	19-May-2021	CEPREI
Digital multi-meter	34401A	US36087050	19-May-2021	CEPREI
Audio analyzer	8903B	GB41300350	18-May-2021	CEPREI
Universal counter	53132A	MY40003662	18-May-2021	CEPREI

Ambient conditions

Temperature: 22 ± 1 °C
Relative humidity: 55 ± 10 %
Air pressure: 1005 ± 5 hPa

Test specifications

- The Sound Calibrator has been calibrated in accordance with the requirements as specified in IEC 60942 1997 Annex B and the lab calibration procedure SMTP004-CA-156.
- The calibrator was tested with its axis vertical facing downwards at the specific frequency using insert voltage technique.
- The results are rounded to the nearest 0.01 dB and 0.1 Hz and have not been corrected for variations from a reference pressure of 1013.25 hectoPascals as the maker's information indicates that the instrument is insensitive to pressure changes.

Test results

This is to certify that the sound calibrator conforms to the requirements of annex B of IEC 60942: 1997 for the conditions under which the test was performed. This does not imply that the sound calibrator meets IEC 60942 under any other conditions.

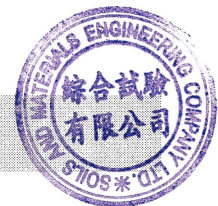
Details of the performed measurements are presented on page 2 of this certificate.

Approved Signatory:

Feng Junqi

Date: 07-Aug-2020

Company Chop:



Comments: The results reported in this certificate refer to the condition of the instrument on the date of calibration and carry no implication regarding the long-term stability of the instrument.



CERTIFICATE OF CALIBRATION

(Continuation Page)

Certificate No.: 20CA0803 01

Page: 2 of 2

1, Measured Sound Pressure Level

The output Sound Pressure Level in the calibrator head was measured at the setting and frequency shown using a calibrated laboratory standard microphone and insert voltage technique. The results are given in below with the estimated uncertainties.

(Output level in dB re 20 µPa)

Frequency Shown Hz	Output Sound Pressure Level Setting dB	Measured Output Sound Pressure Level dB	Estimated Expanded Uncertainty dB
1000	94.00	93.78	0.10

2, Sound Pressure Level Stability - Short Term Fluctuations

The Short Term Fluctuations was determined by measuring the maximum and minimum of the fast weighted DC output of the B&K 2610 measuring amplifier over a 20 second time interval as required in the standard. The Short Term Fluctuation was found to be:

At 1000 Hz STF = 0.027 dB

Estimated expanded uncertainty 0.005 dB

3, Actual Output Frequency

The determination of actual output frequency was made using a B&K 4180 microphone together with a B&K 2673 preamplifier connected to a B&K 2610 measuring amplifier. The AC output of the B&K 2610 was taken to an universal counter which was used to determine the frequency averaged over 20 second of operation as required by the standard. The actual output frequency at 1 KHz was:

At 1000 Hz Actual Frequency = 1000.3 Hz

Estimated expanded uncertainty 0.1 Hz Coverage factor k = 2.2

4, Total Noise and Distortion

For the Total Noise and Distortion measurement, the unfiltered AC output of the B&K 2610 measuring amplifier was connected to an Agilent Type 8903 B distortion analyser. The TND result at 1 KHz was:

At 1000 Hz TND = 0.6 %

Estimated expanded uncertainty 0.7 %

The expanded uncertainties have been calculated in accordance with the ISO Publication "Guide to the expression of uncertainty in measurement", and gives an interval estimated to have a level of confidence of 95%. A coverage factor of 2 is assumed unless explicitly stated.

- End -

Calibrated by:

Fung Chi Yik

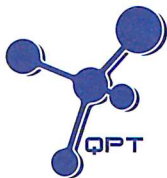
Date: 06-Aug-2020

Checked by:

Feng Junqi

Date: 07-Aug-2020

The standard(s) and equipment used in the calibration are traceable to national or international recognised standards and are calibrated on a schedule to maintain the required accuracy level.



專業化驗有限公司

QUALITY PRO TEST-CONSULT LIMITED

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

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA040094
Date of Issue : 27 April 2021
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment : Multi Water Quality Checker U-53
Manufacturer : Horiba
Serial Number : UHB5F2BB
Date of Received : Apr 20, 2021
Date of Calibration : Apr 26, 2021
Date of Next Calibration^(a) : Jul 25, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Parameter	Reference Method
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.
Oxidation-Reduction Potential	APHA 22e 2580 B

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.17	0.17	Satisfactory
7.42	7.27	-0.15	Satisfactory
10.01	9.83	-0.18	Satisfactory

Tolerance of pH should be less than ±0.20 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
12	12.55	0.55	Satisfactory
23	24.12	1.12	Satisfactory
41	40.24	-0.76	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

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


LEE Chun-ning, Desmond
Senior Chemist



REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA040094
Date of Issue : 27 April 2021
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.03	0.60	-0.43	Satisfactory
4.22	3.80	-0.42	Satisfactory
5.72	5.37	-0.35	Satisfactory
7.08	6.66	-0.42	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.53	-4.70	Satisfactory
20	18.60	-7.00	Satisfactory
30	32.04	6.80	Satisfactory

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

(5) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.81	--	Satisfactory
10	9.81	-1.9	Satisfactory
20	21.20	6.0	Satisfactory
100	96.8	-3.2	Satisfactory
800	750	-6.3	Satisfactory

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

(6) Oxidation-Reduction Potential

Expected Reading (mV)	Displayed Reading (mV)	Tolerance (mV) ^(g)	Results
229	229	0	Satisfactory

Tolerance limit of Oxidation-Reduction Potential should be less than ± 10 (mV)

~ END OF REPORT ~

Remark(s): -

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

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



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA030040
Date of Issue : 11 March 2021
Page No. : 1 of 2

PART A – CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit C, 11/F, Ford Glory Plaza
37-39 Wing Hong Street
Cheung Sha Wan, Kowloon, Hong Kong
Attn: Mr. Nelson TSUI

PART B – DESCRIPTION

Name of Equipment : Multi Water Quality Checker U-53
Manufacturer : Horiba
Serial Number : L20550GA
Date of Received : Mar 04, 2021
Date of Calibration : Mar 09, 2021
Date of Next Calibration^(a) : Jun 08, 2021

PART C – REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

<u>Parameter</u>	<u>Reference Method</u>
pH at 25°C	APHA 21e 4500-H ⁺ B
Dissolved Oxygen	APHA 21e 4500-O G
Salinity	APHA 21e 2520 B
Turbidity	APHA 21e 2130 B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

PART D – CALIBRATION RESULTS^(b,c)

(1) pH at 25°C

Target (pH unit)	Displayed Reading ^(d) (pH Unit)	Tolerance ^(e) (pH Unit)	Results
4.00	4.06	0.06	Satisfactory
7.42	7.38	-0.04	Satisfactory
10.01	10.11	0.10	Satisfactory

Tolerance of pH should be less than ± 0.20 (pH unit)

(2) Temperature


Reading of Ref. thermometer (°C)	Displayed Reading (°C)	Tolerance (°C)	Results
13	13.46	0.46	Satisfactory
25	24.23	-0.77	Satisfactory
38	37.65	-0.35	Satisfactory

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

~ CONTINUED ON NEXT PAGE ~

Remark(s): -

- ^(a) The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.
^(b) The results relate only to the calibrated equipment as received
^(c) The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.
^(d) "Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.
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LEE Chun-ning, Desmond
Senior Chemist



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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Report No. : BA030040
Date of Issue : 11 March 2021
Page No. : 2 of 2

PART D – CALIBRATION RESULTS (Cont'd)

(3) Dissolved Oxygen

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)	Results
1.50	1.23	-0.27	Satisfactory
4.66	4.21	-0.45	Satisfactory
7.04	6.75	-0.29	Satisfactory
8.48	8.28	-0.20	Satisfactory

Tolerance limit of dissolved oxygen should be less than ± 0.50 (mg/L)

(4) Salinity

Expected Reading (g/L)	Displayed Reading (g/L)	Tolerance (%)	Results
10	9.77	-2.30	Satisfactory
20	20.25	1.25	Satisfactory
30	30.90	3.00	Satisfactory

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

(5) Turbidity

Expected Reading (NTU)	Displayed Reading ^(f) (NTU)	Tolerance ^(g) (%)	Results
0	0.00	--	Satisfactory
10	10.9	9.0	Satisfactory
20	20.5	2.5	Satisfactory
100	101	1.0	Satisfactory
800	782	-2.3	Satisfactory

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

~ END OF REPORT ~

Remark(s): -

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

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

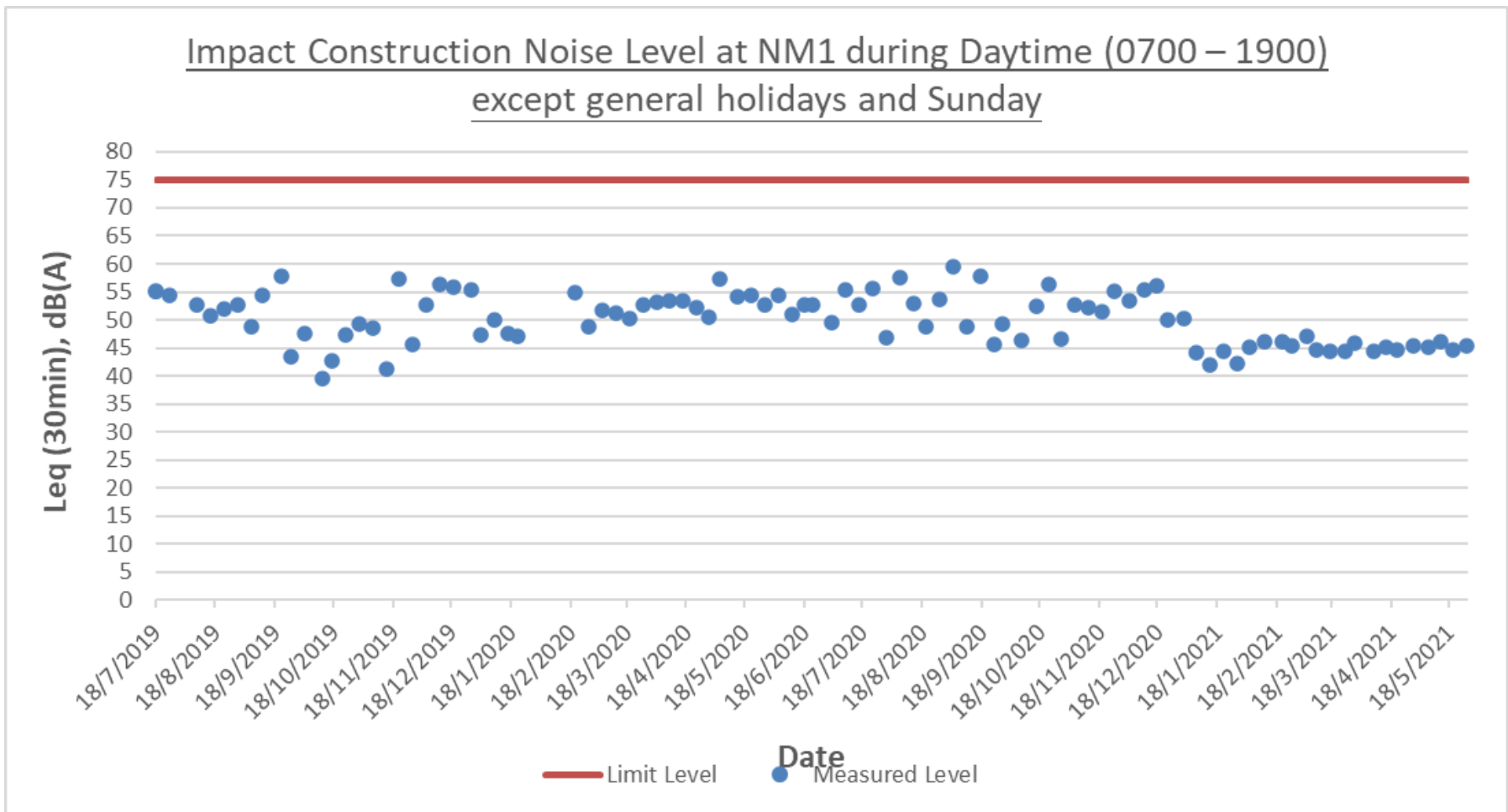
Appendix E
Impact Noise Monitoring Data

Impact Noise Monitoring Data

NM1 – Lakeview Garden

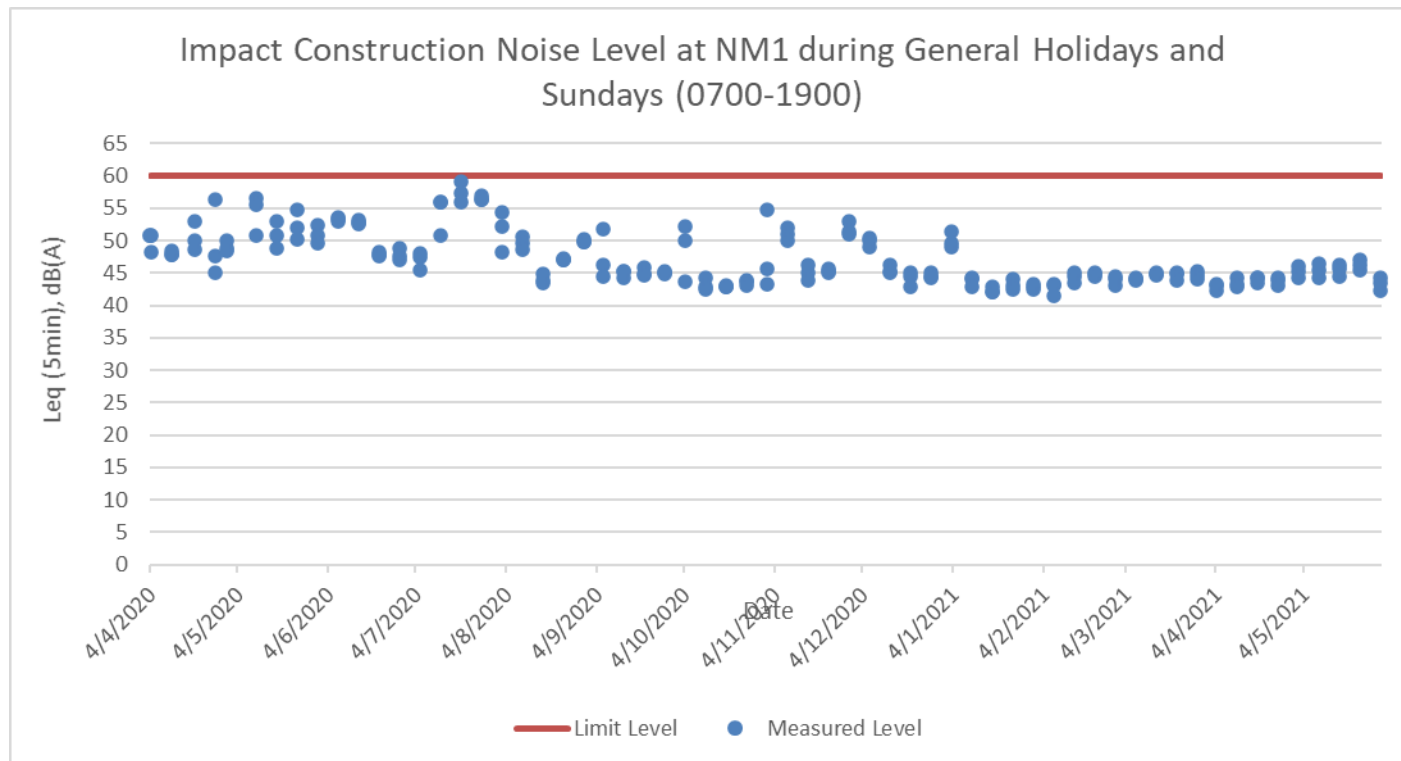
Daytime (0700 – 1900) except general holidays and Sunday

Date	Location	Time			Weather	L _{eq} (30min)	L ₁₀	L ₉₀	Remarks
7/5/2021	NM1	8:05	-	8:35	Fine	45.2	49.2	42.3	N.A.
13/5/2021	NM1	16:30	-	17:00	Fine	46.1	50.4	41.2	N.A.
20/5/2021	NM1	16:45	-	17:15	Fine	44.6	49.6	40.3	N.A.
27/5/2021	NM1	8:00	-	8:30	Sunny	45.5	51.3	41.3	N.A.



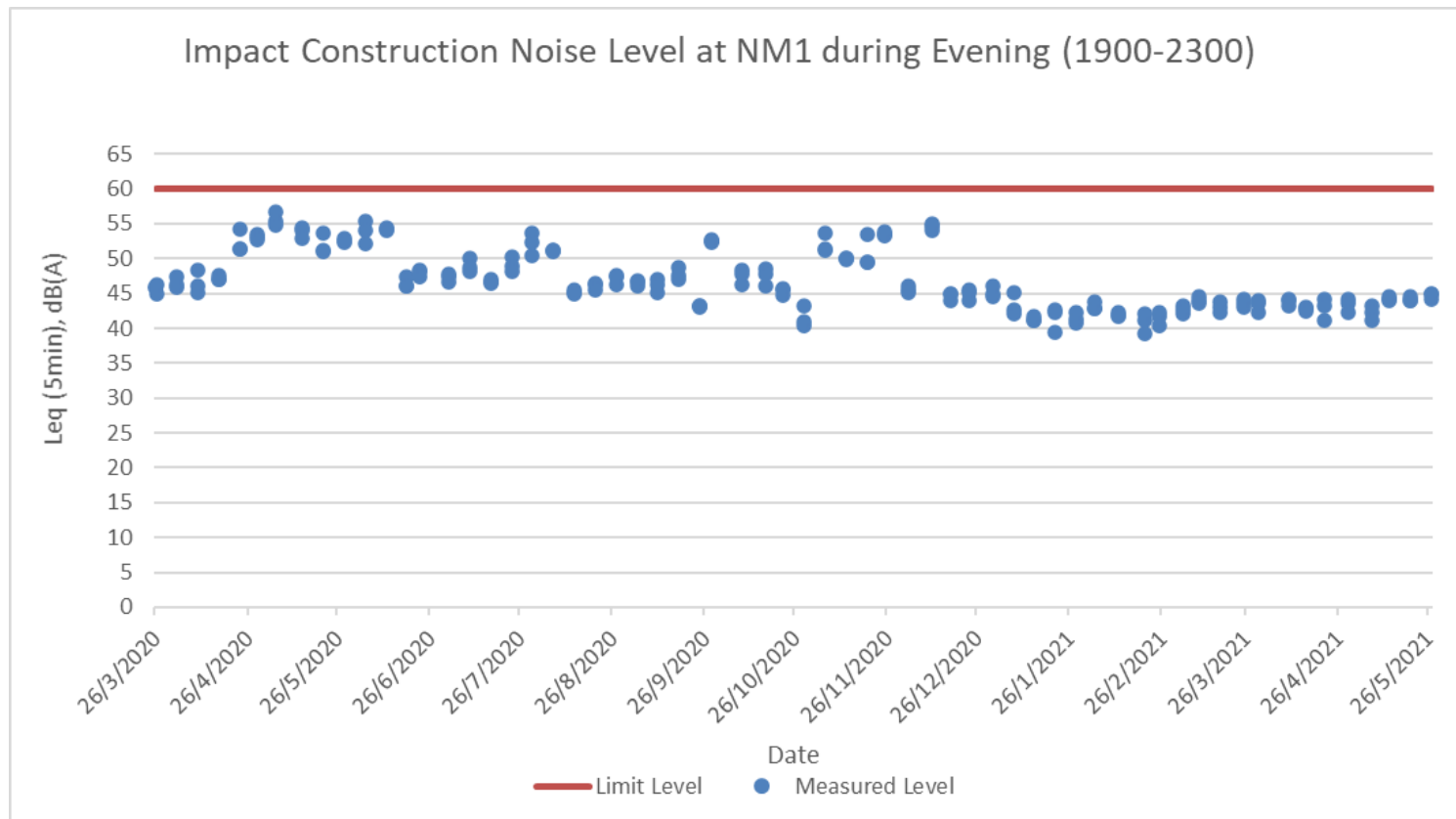
Daytime (0700-1900) during general holidays and Sundays

Date	Location	Time			Weather	L _{eq} (5min)	L ₁₀	L ₉₀	Remarks
2/5/2021	NM1	8:00	-	8:05	Fine	45.2	48.2	42.3	N.A.
2/5/2021	NM1	8:05	-	8:10	Fine	46.1	50.2	41.3	N.A.
2/5/2021	NM1	8:10	-	8:15	Fine	44.2	49.2	40.3	N.A.
9/5/2021	NM1	9:20	-	9:25	Fine	44.2	49.2	41.3	N.A.
9/5/2021	NM1	9:25	-	9:30	Fine	45.4	50.2	42.1	N.A.
9/5/2021	NM1	9:30	-	9:35	Fine	46.4	51.3	43.2	N.A.
16/5/2021	NM1	16:30	-	16:35	Fine	46.3	52.3	42.5	N.A.
16/5/2021	NM1	16:35	-	16:40	Fine	44.4	48.1	40.5	N.A.
16/5/2021	NM1	16:40	-	16:45	Fine	45.6	49.3	40.0	N.A.
23/5/2021	NM1	17:11	-	17:16	Fine	45.4	49.2	43.1	N.A.
23/5/2021	NM1	17:16	-	17:21	Fine	47.1	53.4	42.4	N.A.
23/5/2021	NM1	17:21	-	17:26	Fine	46.3	50.2	42.3	N.A.
30/5/2021	NM1	11:10	-	11:15	Fine	44.3	48.3	40.3	N.A.
30/5/2021	NM1	11:15	-	11:20	Fine	42.4	46.5	38.2	N.A.
30/5/2021	NM1	11:20	-	11:25	sunny	43.5	47.6	39.4	N.A.



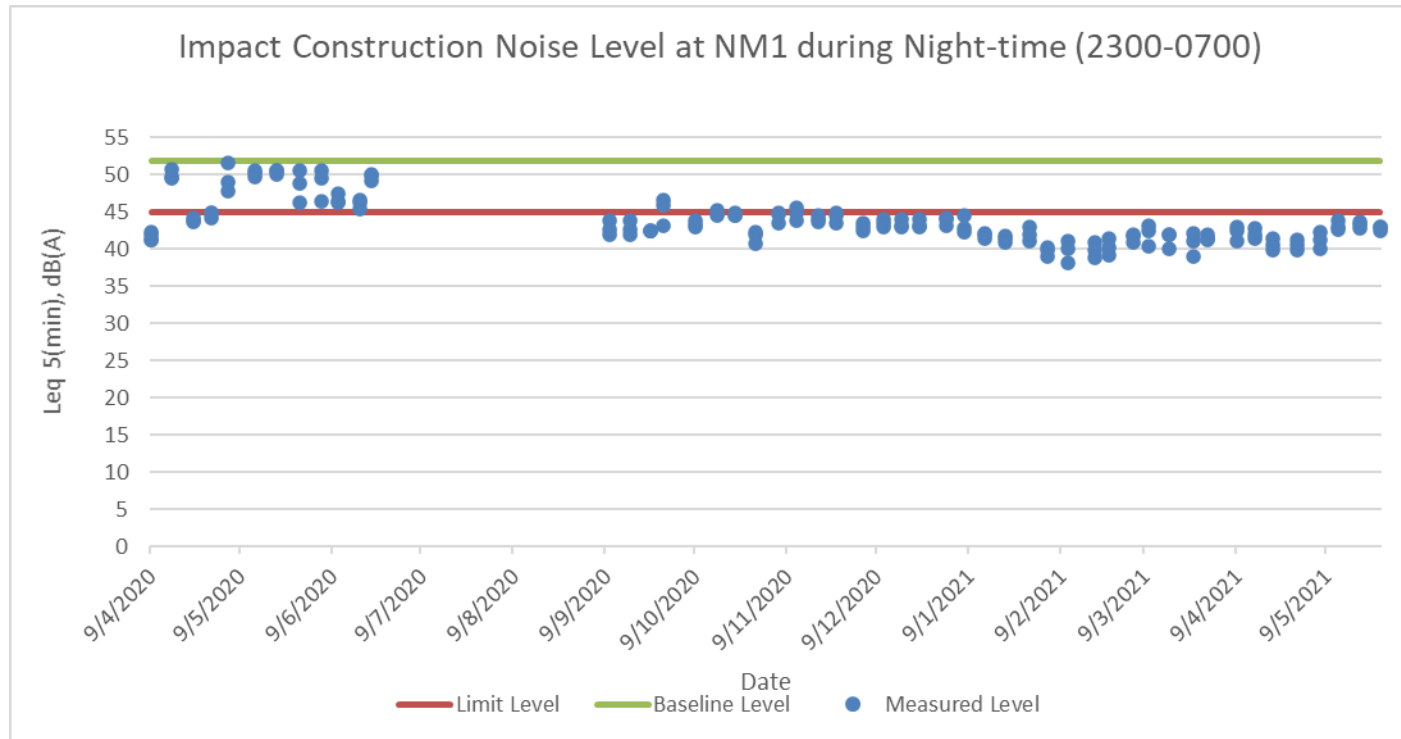
All days during Evening (1900-2300)

Date	Location	Time			Weather	Leq (5min)	L10	L90	Remarks
7/5/2021	NM1	22:32	-	22:37	Fine	43.2	46.2	40.1	N.A.
7/5/2021	NM1	22:37	-	22:42	Fine	42.3	45.8	38.4	N.A.
7/5/2021	NM1	22:42	-	22:47	Fine	41.2	45.2	37.5	N.A.
13/5/2021	NM1	22:36	-	22:41	Fine	43.9	47.3	40.5	N.A.
13/5/2021	NM1	22:41	-	22:46	Fine	44.1	48.3	39.5	N.A.
13/5/2021	NM1	22:46	-	22:51	Fine	44.5	49.2	40.4	N.A.
20/5/2021	NM1	22:25	-	22:30	Fine	44.5	49.1	41.5	N.A.
20/5/2021	NM1	22:30	-	22:35	Fine	43.9	47.2	39.0	N.A.
20/5/2021	NM1	22:35	-	22:40	Fine	44.0	49.1	39.1	N.A.
27/5/2021	NM1	22:25	-	22:30	Fine	44.9	49.4	40.3	N.A.
27/5/2021	NM1	22:30	-	22:35	Fine	44.2	48.3	41.5	N.A.
27/5/2021	NM1	22:35	-	22:40	Fine	44.9	49.2	39.5	N.A.



All days during Night-time (2300-0700)

Date	Location	Time			Weather	L _{eq} (5min)	L ₁₀	L ₉₀	Remarks
7/5/2021	NM1	23:11	-	23:16	Fine	40.1	43.2	38.3	N.A.
7/5/2021	NM1	23:16	-	23:21	Fine	42.3	45.3	39.2	N.A.
7/5/2021	NM1	23:21	-	23:26	Fine	41.3	47.3	37.5	N.A.
13/5/2021	NM1	23:03	-	23:08	Fine	42.9	46.9	39.2	N.A.
13/5/2021	NM1	23:08	-	23:13	Fine	43.8	48.1	40.1	N.A.
13/5/2021	NM1	23:13	-	23:18	Fine	42.7	46.7	39.1	N.A.
20/5/2021	NM1	23:05	-	23:10	Fine	43.6	47.1	40.1	N.A.
20/5/2021	NM1	23:10	-	23:15	Fine	42.8	46.3	38.2	N.A.
20/5/2021	NM1	23:15	-	23:20	Fine	43.4	46.8	39.8	N.A.
27/5/2021	NM1	23:05	-	23:10	Fine	42.4	46.3	37.3	N.A.
27/5/2021	NM1	23:10	-	23:15	Fine	43.0	48.1	38.2	N.A.
27/5/2021	NM1	23:15	-	23:20	Fine	42.9	47.5	39.1	N.A.

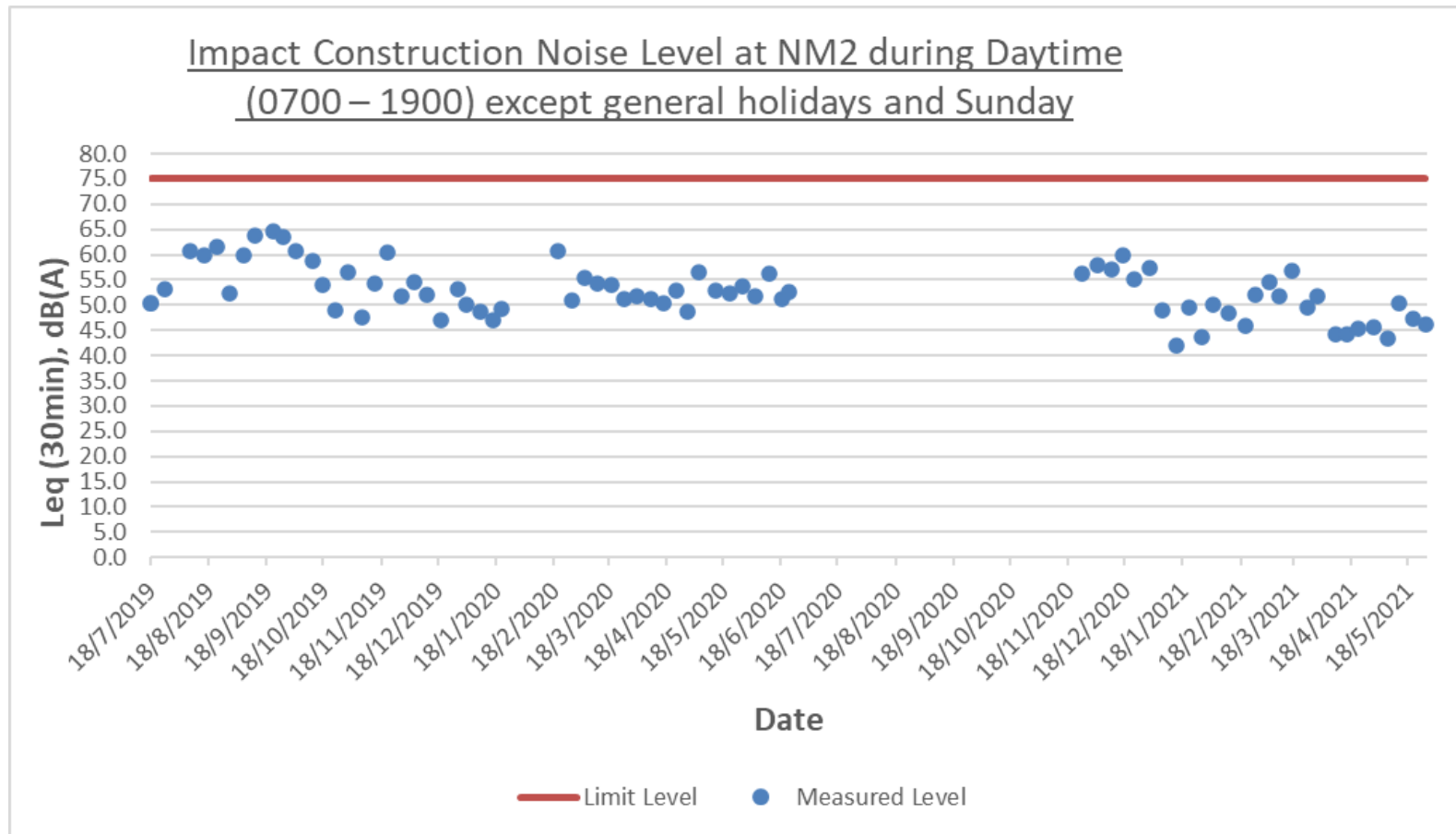


Impact Noise Monitoring Data

NM2 – 4 ½ Milestone, Tai Po Road

Daytime (0700 – 1900) except general holidays and Sunday

Date	Location	Time			Weather	L _{eq} (30min)	L ₁₀	L ₉₀	Remarks
7/5/2021	NM2	9:45	-	10:15	Fine	43.5	48.3	39.5	N.A.
13/5/2021	NM2	17:40	-	18:10	Fine	50.3	54.5	46.3	N.A.
20/5/2021	NM2	8:16	-	8:46	Fine	47.2	52.2	43.2	N.A.
27/5/2021	NM2	9:00	-	9:30	Sunny	46.2	53.4	42.5	N.A.



Note 1: Period without data implied that no works were conducted at the monitoring location and no noise monitoring was needed for the location.

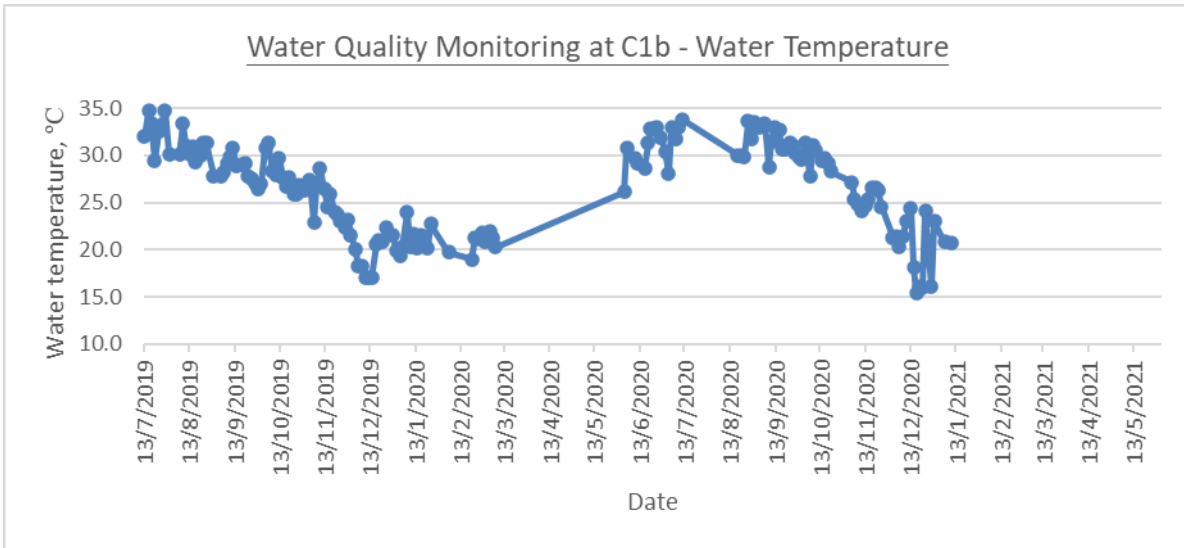
Appendix F

Impact Water Quality Monitoring Data

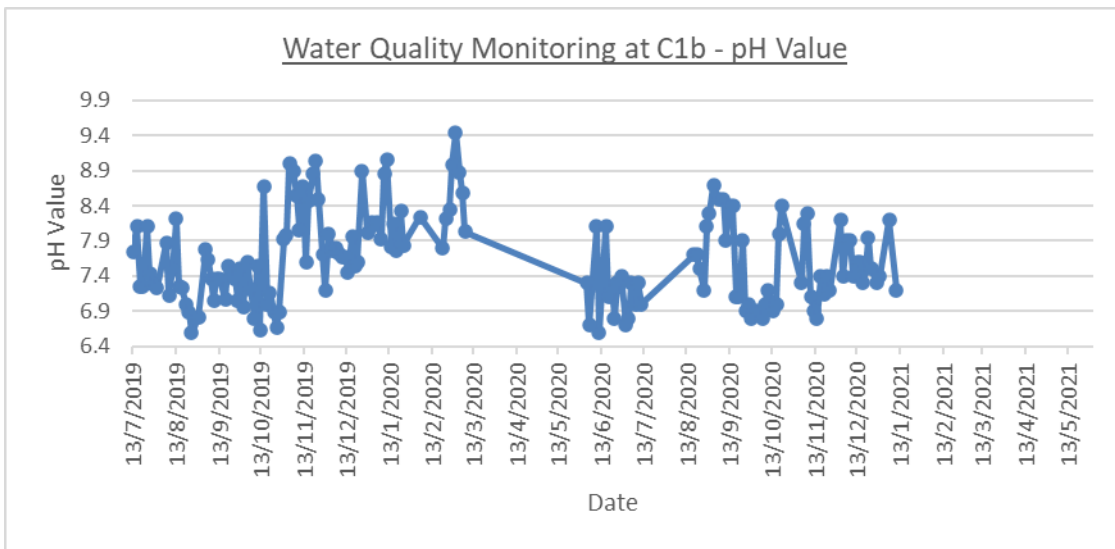
Location	Date	Sample ID	Time	Temp (°C)	pH	DO (mg/L)	DO%	Turbidity (NTU)	SS (mg/L)
C1b	1/5/2021	C1b	/	/	/	/	/	/	/
	1/5/2021	C1b#	/	/	/	/	/	/	/
	4/5/2021	C1b	/	/	/	/	/	/	/
	4/5/2021	C1b#	/	/	/	/	/	/	/
	7/5/2021	C1b	/	/	/	/	/	/	/
	7/5/2021	C1b#	/	/	/	/	/	/	/
	9/5/2021	C1b	/	/	/	/	/	/	/
	9/5/2021	C1b#	/	/	/	/	/	/	/
	11/5/2021	C1b	/	/	/	/	/	/	/
	11/5/2021	C1b#	/	/	/	/	/	/	/
	13/5/2021	C1b	/	/	/	/	/	/	/
	13/5/2021	C1b#	/	/	/	/	/	/	/
	15/5/2021	C1b	/	/	/	/	/	/	/
	15/5/2021	C1b#	/	/	/	/	/	/	/
	18/5/2021	C1b	/	/	/	/	/	/	/
	18/5/2021	C1b#	/	/	/	/	/	/	/
	20/5/2021	C1b	/	/	/	/	/	/	/
	20/5/2021	C1b#	/	/	/	/	/	/	/
	22/5/2021	C1b	/	/	/	/	/	/	/
	22/5/2021	C1b#	/	/	/	/	/	/	/
	25/5/2021	C1b	/	/	/	/	/	/	/
	25/5/2021	C1b#	/	/	/	/	/	/	/
	27/5/2021	C1b	/	/	/	/	/	/	/
	27/5/2021	C1b#	/	/	/	/	/	/	/
	29/5/2021	C1b	/	/	/	/	/	/	/
	29/5/2021	C1b#	/	/	/	/	/	/	/

Location	Date	Sample ID	Time	Temp (°C)	pH	DO (mg/L)	DO%	Turbidity (NTU)	SS (mg/L)
D1b	1/5/2021	D1b	17:06	31.8	7.1	8.5	116.0	1.4	3.3
	1/5/2021	D1b#	17:23	31.8	7.2	9.2	125.5	2.2	2.7
	4/5/2021	D1b	8:48	29.9	7.7	23.0	303.1	1.7	12.1
	4/5/2021	D1b#	8:52	29.9	7.6	22.2	292.7	1.7	11.9
	7/5/2021	D1b	10:14	30.7	6.6	9.3	124.4	2.9	4.6
	7/5/2021	D1b#	10:23	30.8	7.1	10.8	145.2	2.3	5.1
	9/5/2021	D1b	8:58	28.6	7.3	9.8	126.9	2.2	7.0
	9/5/2021	D1b#	9:01	28.5	6.7	10.5	135.0	3.2	3.0
	11/5/2021	D1b	9:59	32.2	6.7	10.3	140.8	1.1	2.5
	11/5/2021	D1b#	10:12	32.1	6.6	10.3	141.2	2.9	2.5
	13/5/2021	D1b	10:08	30.8	6.7	10.6	141.5	1.8	2.5
	13/5/2021	D1b#	10:17	31.0	6.6	9.3	125.3	0.9	9.0
	15/5/2021	D1b	10:08	32.9	8.1	10.6	147.7	0.4	2.5
	15/5/2021	D1b#	10:19	32.8	8.4	9.2	127.0	1.5	2.5
	18/5/2021	D1b	9:21	30.6	8.4	12.1	161.8	1.5	2.5
	18/5/2021	D1b#	9:24	30.5	8.6	11.3	150.4	4.7	2.5
	20/5/2021	D1b	9:14	29.5	7.4	11.4	149.6	0.2	2.5
	20/5/2021	D1b#	9:17	29.3	7.3	9.5	123.7	0.3	2.5
	22/5/2021	D1b	10:03	33.1	8.0	9.5	132.8	7.2	7.9
	22/5/2021	D1b#	10:00	33.0	8.2	10.7	149.2	8.5	4.9
	25/5/2021	D1b	9:13	31.4	6.8	10.0	135.7	6.6	2.5
	25/5/2021	D1b#	9:10	31.6	6.8	9.9	134.2	5.0	2.5
	27/5/2021	D1b	9:00	34.0	7.2	9.5	134.8	2.9	6.0
	27/5/2021	D1b#	9:03	33.9	7.3	10.2	143.8	2.8	2.5
	29/5/2021	D1b	9:07	26.6	6.7	11.9	147.7	7.3	2.5
	29/5/2021	D1b#	9:10	27.4	6.8	11.7	147.7	8.0	2.5

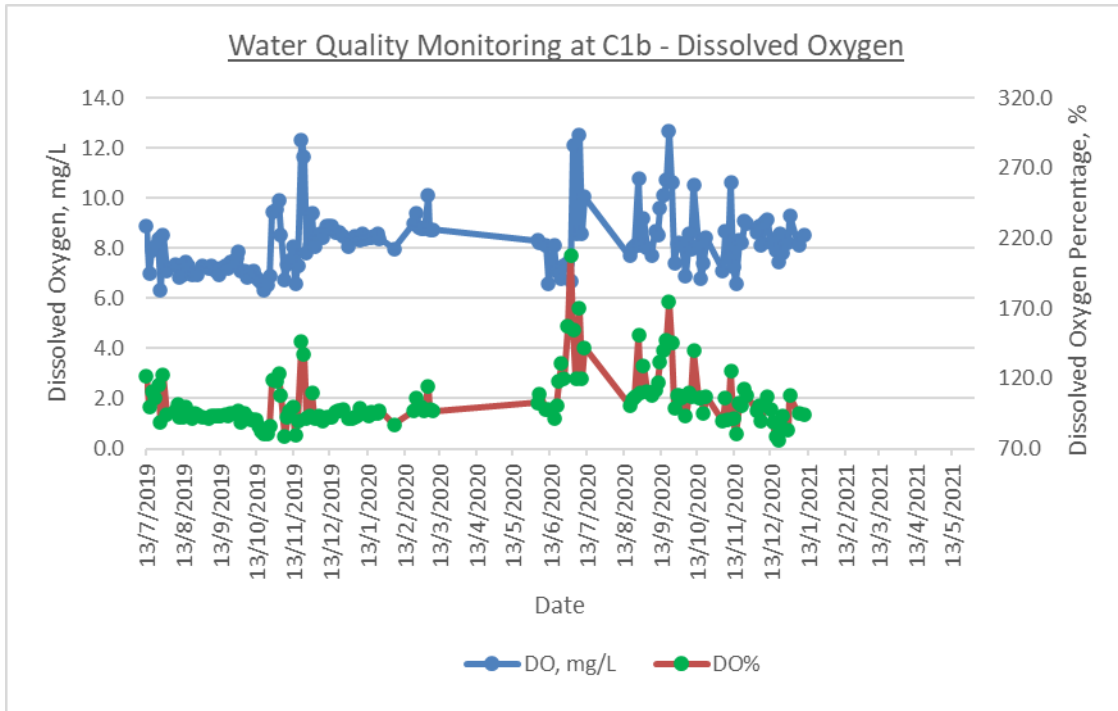
C1b



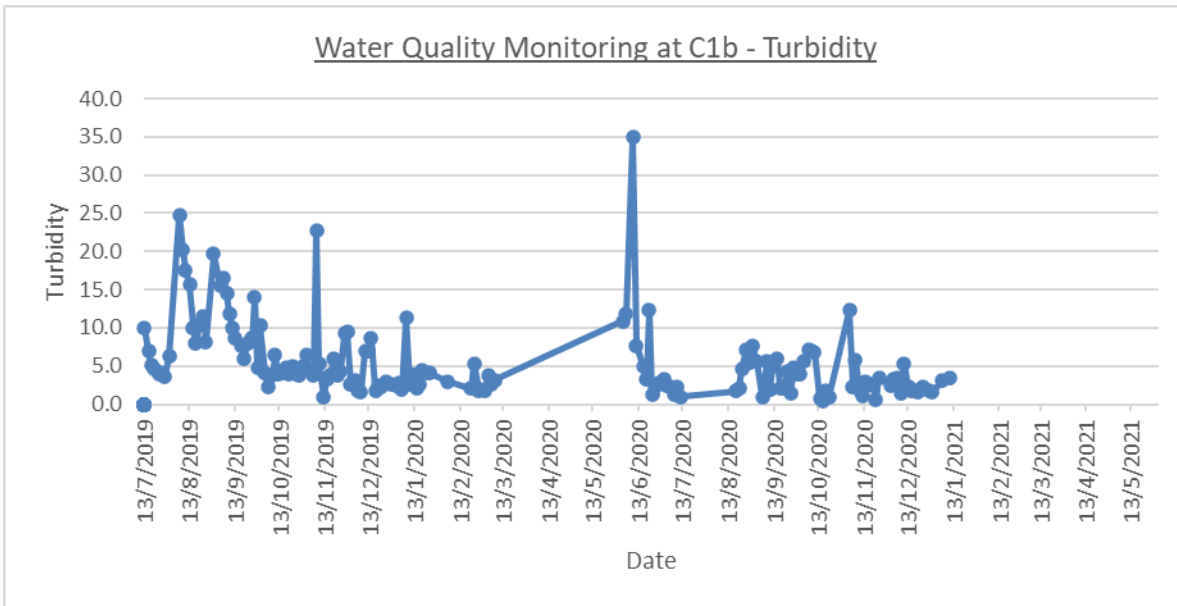
Note 1: Period without data implied that water in location C1b was dried up, insufficient water was available for sample collection



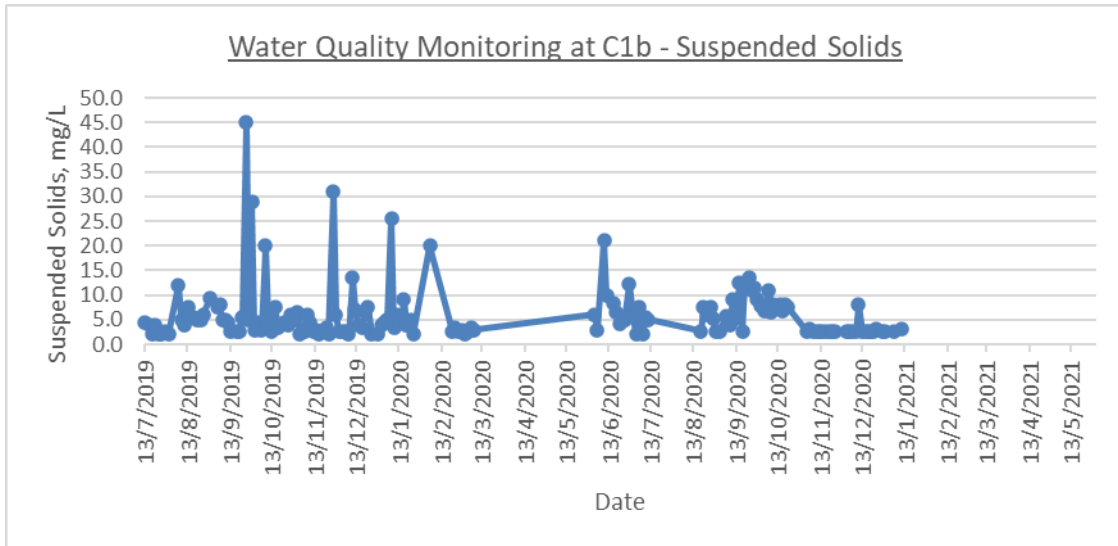
Note 1: Period without data implied that water in location C1b was dried up, insufficient water was available for sample collection



Note 1: Period without data implied that water in location C1b was dried up, insufficient water was available for sample collection

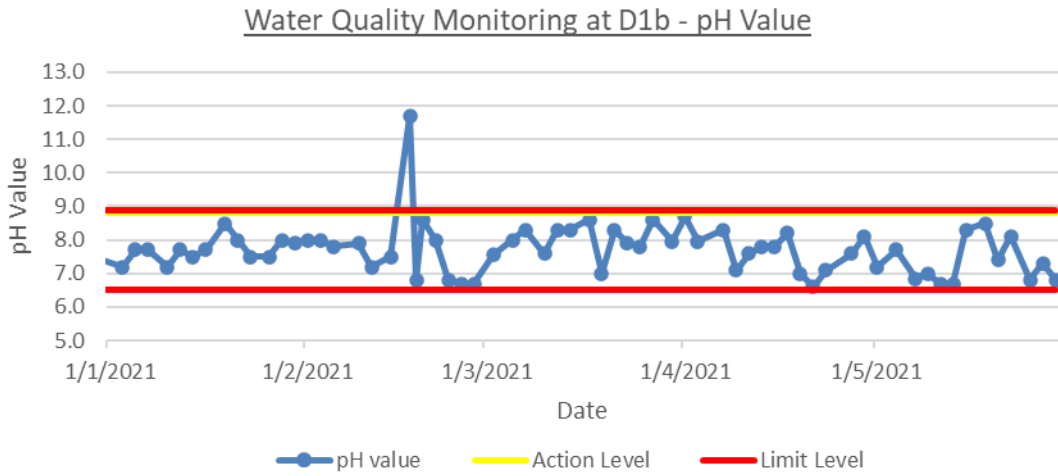
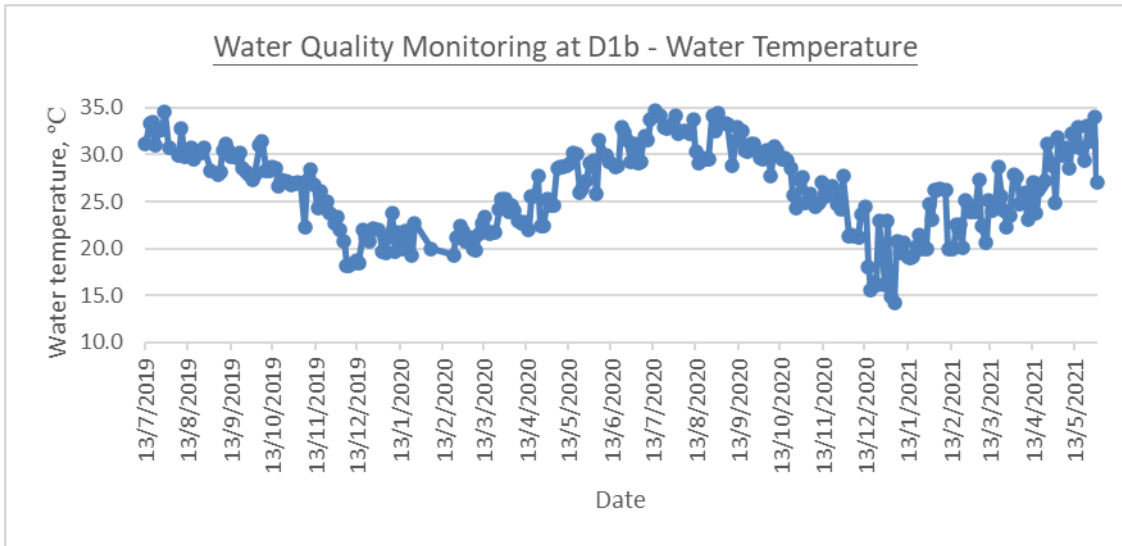


Note 1: Period without data implied that water in location C1b was dried up, insufficient water was available for sample collection

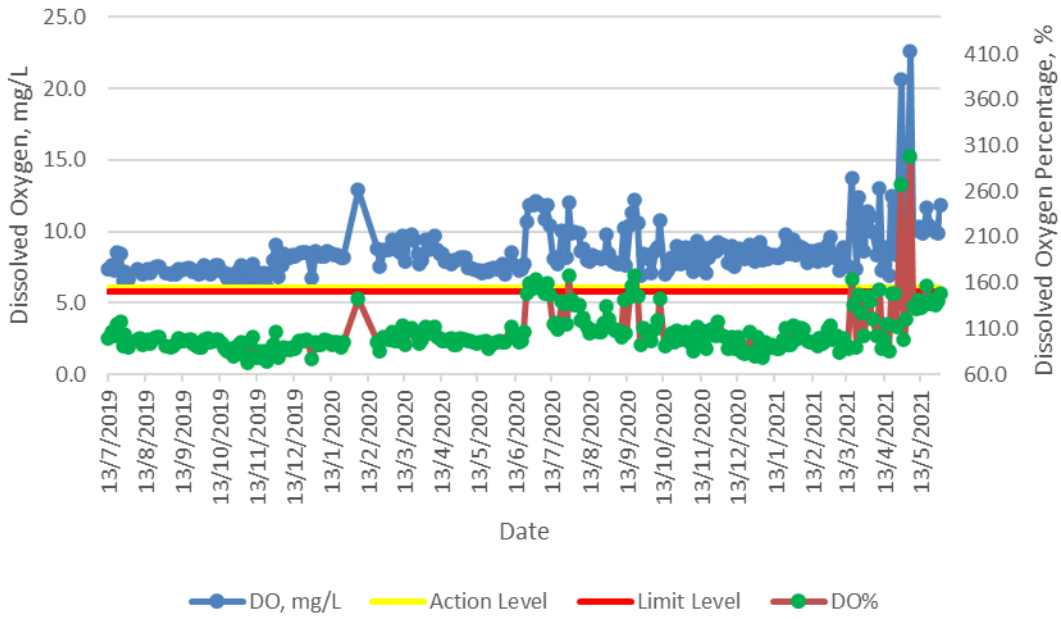


Note 1: Period without data implied that water in location C1b was dried up, insufficient water was available for sample collection

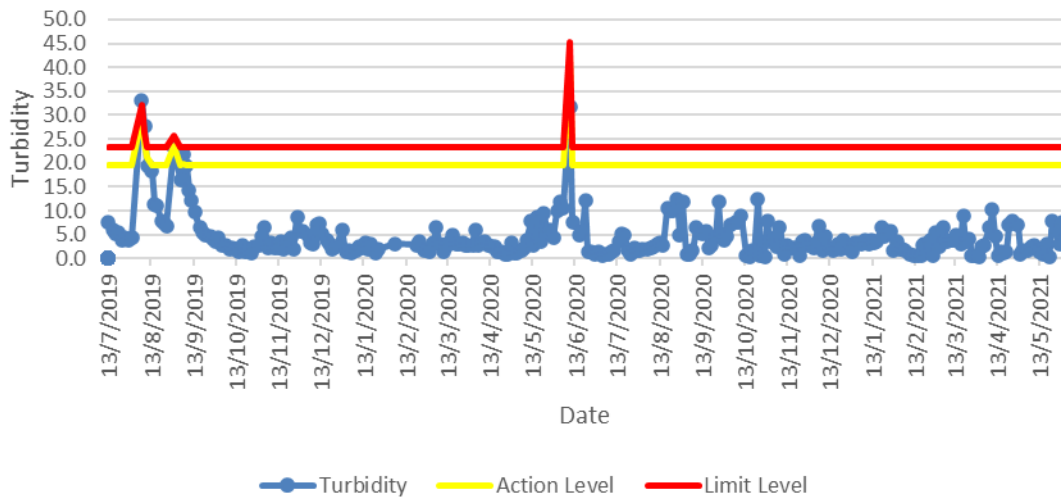
D1b



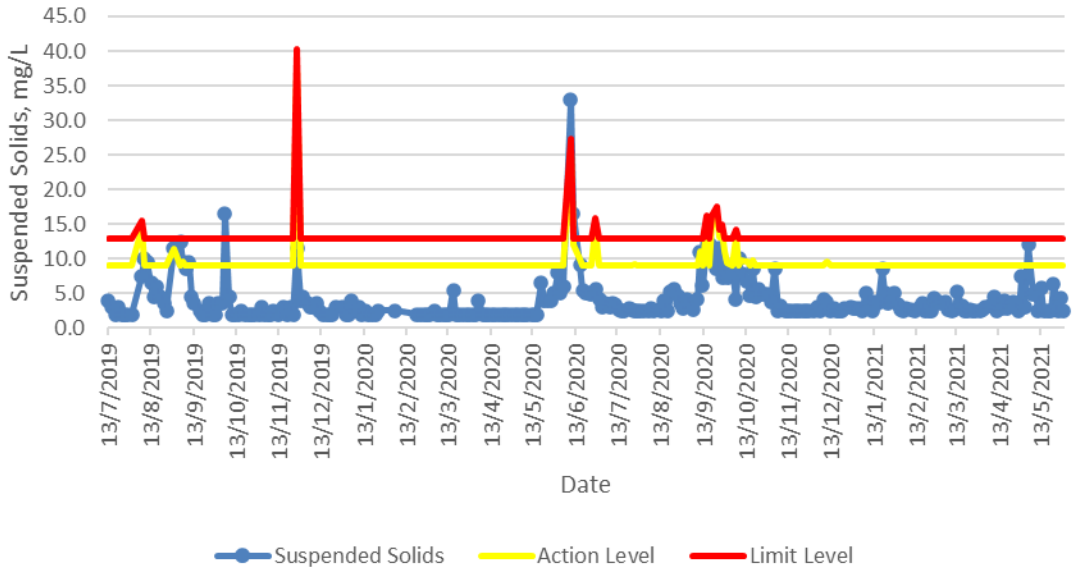
Water Quality Monitoring at D1b - Dissolved Oxygen



Water Quality Monitoring at D1b - Turbidity



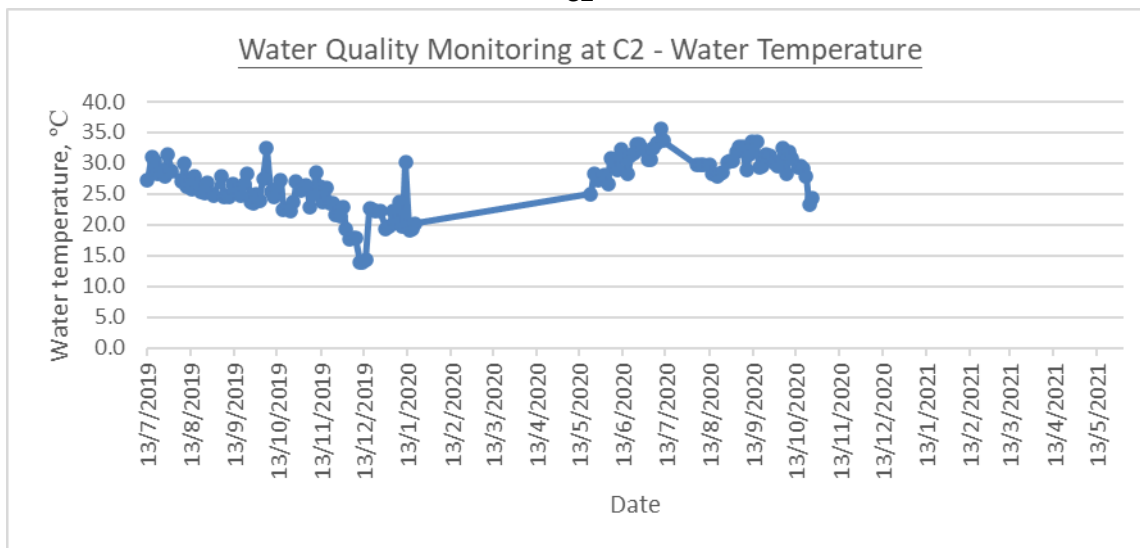
Water Quality Monitoring at D1b - Suspended Solids



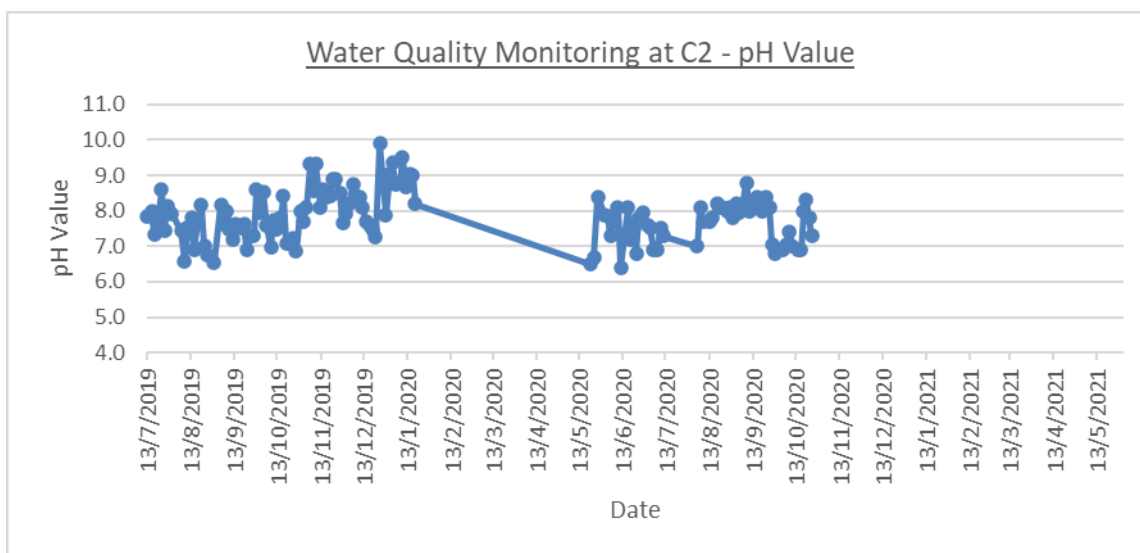
Location	Date	Sample ID	Time	Temp (°C)	pH	DO (mg/L)	DO%	Turbidity (NTU)	SS (mg/L)
C2	1/5/2021	C2	/	/	/	/	/	/	/
	1/5/2021	C2#	/	/	/	/	/	/	/
	4/5/2021	C2	/	/	/	/	/	/	/
	4/5/2021	C2#	/	/	/	/	/	/	/
	7/5/2021	C2	/	/	/	/	/	/	/
	7/5/2021	C2#	/	/	/	/	/	/	/
	9/5/2021	C2	/	/	/	/	/	/	/
	9/5/2021	C2#	/	/	/	/	/	/	/
	11/5/2021	C2	/	/	/	/	/	/	/
	11/5/2021	C2#	/	/	/	/	/	/	/
	13/5/2021	C2	/	/	/	/	/	/	/
	13/5/2021	C2#	/	/	/	/	/	/	/
	15/5/2021	C2	/	/	/	/	/	/	/
	15/5/2021	C2#	/	/	/	/	/	/	/
	18/5/2021	C2	/	/	/	/	/	/	/
	18/5/2021	C2#	/	/	/	/	/	/	/
	20/5/2021	C2	/	/	/	/	/	/	/
	20/5/2021	C2#	/	/	/	/	/	/	/
	22/5/2021	C2	/	/	/	/	/	/	/
	22/5/2021	C2#	/	/	/	/	/	/	/
	25/5/2021	C2	/	/	/	/	/	/	/
	25/5/2021	C2#	/	/	/	/	/	/	/
	27/5/2021	C2	/	/	/	/	/	/	/
	27/5/2021	C2#	/	/	/	/	/	/	/
	29/5/2021	C2	/	/	/	/	/	/	/
	29/5/2021	C2#	/	/	/	/	/	/	/

Location	Date	Sample ID	Time	Temp (°C)	pH	DO (mg/L)	DO%	Turbidity (NTU)	SS (mg/L)
D2a	1/5/2021	D2a	16:02	32.1	8.3	9.0	122.8	1.9	4.4
	1/5/2021	D2a#	16:11	32.1	7.9	11.0	150.8	1.7	2.7
	4/5/2021	D2a	8:02	29.7	7.8	14.6	191.5	1.0	19.2
	4/5/2021	D2a#	8:03	29.8	7.7	18.3	241.6	1.9	18.2
	7/5/2021	D2a	9:05	31.3	6.7	11.1	149.7	2.7	4.5
	7/5/2021	D2a#	9:08	31.5	6.7	10.9	148.0	2.2	2.5
	9/5/2021	D2a	8:24	29.4	7.7	9.6	125.6	7.1	3.4
	9/5/2021	D2a#	8:26	29.4	7.8	10.9	142.8	8.7	2.5
	11/5/2021	D2a	8:34	31.2	7.0	8.7	117.8	2.7	2.5
	11/5/2021	D2a#	8:50	32.1	6.9	9.5	130.2	1.2	2.5
	13/5/2021	D2a	8:15	29.5	6.8	8.8	115.9	0.7	6.6
	13/5/2021	D2a#	8:25	30.0	6.6	10.0	131.8	0.5	7.1
	15/5/2021	D2a	8:34	33.3	6.8	9.6	134.4	6.3	2.5
	15/5/2021	D2a#	8:54	33.2	7.8	10.1	140.5	1.0	2.5
	18/5/2021	D2a	8:15	30.9	8.5	11.3	151.3	6.3	2.5
	18/5/2021	D2a#	8:17	31.1	8.6	11.2	150.5	5.1	2.5
	20/5/2021	D2a	8:10	29.4	7.6	10.3	134.4	0.6	4.5
	20/5/2021	D2a#	8:12	30.0	7.1	10.6	137.3	0.7	6.8
	22/5/2021	D2a	8:53	33.1	8.0	12.5	174.7	5.8	4.8
	22/5/2021	D2a#	8:50	33.2	8.1	9.4	131.7	5.6	3.4
	25/5/2021	D2a	8:03	31.5	7.1	10.4	140.8	1.9	2.5
	25/5/2021	D2a#	8:00	31.6	7.2	10.5	143.2	3.1	2.5
	27/5/2021	D2a	8:07	33.9	7.5	9.1	129.1	3.3	9.0
	27/5/2021	D2a#	8:09	33.7	7.6	8.4	118.4	5.2	3.4
	29/5/2021	D2a	8:02	26.6	7.4	9.4	116.7	6.8	2.5
	29/5/2021	D2a#	8:00	26.6	7.9	11.1	138.0	9.4	2.5

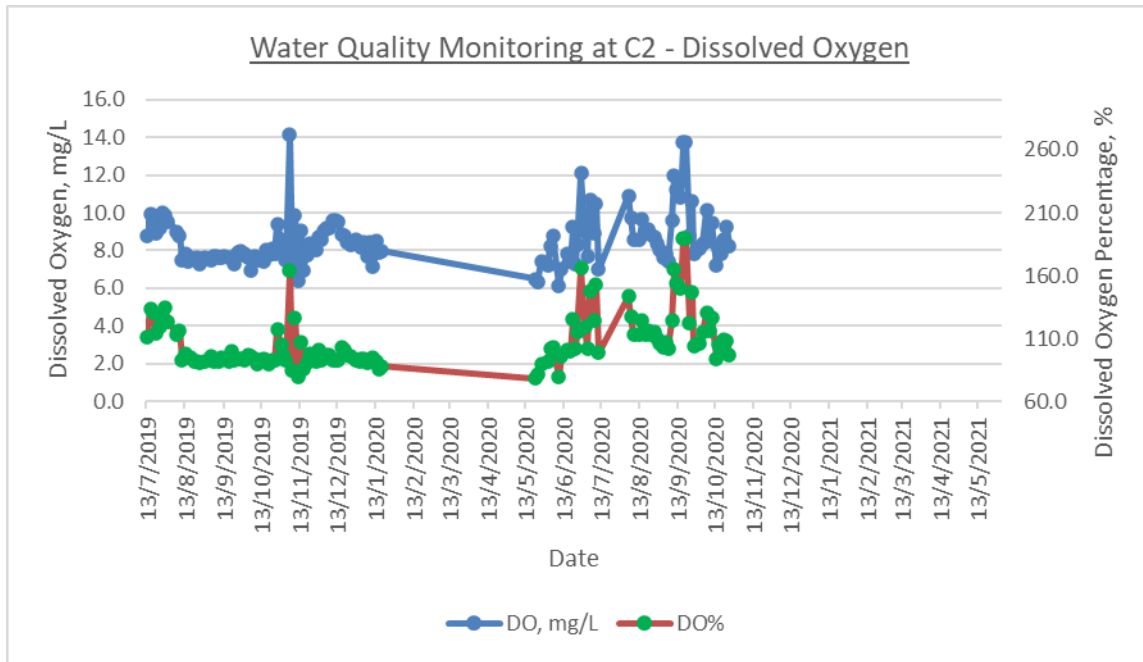
C2



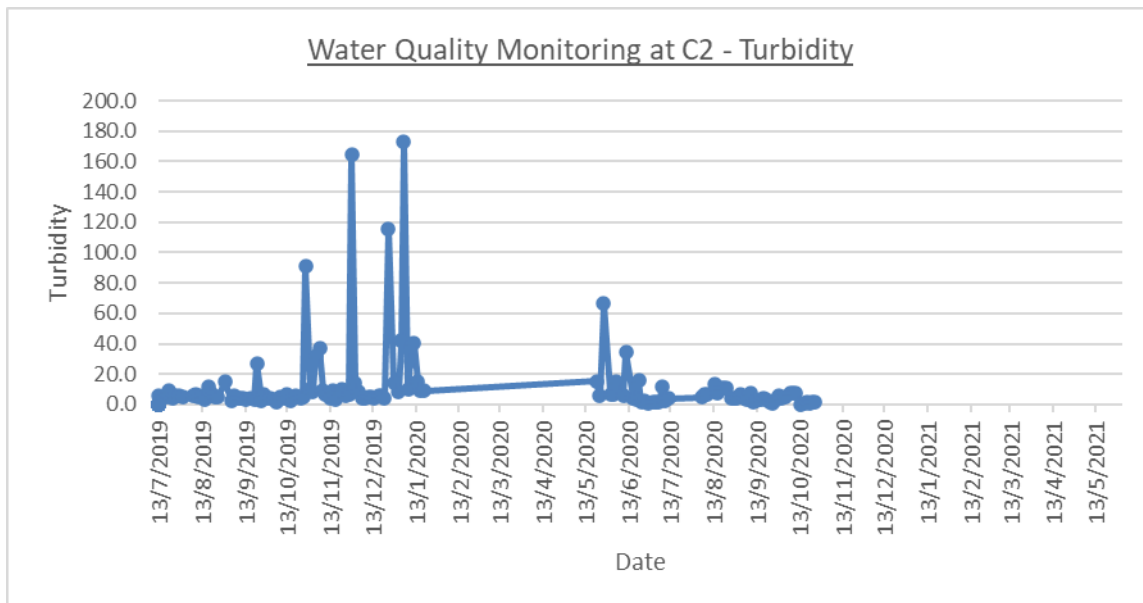
Note 1: Period without data implied that water in location C2 was dried up, insufficient water was available for sample collection



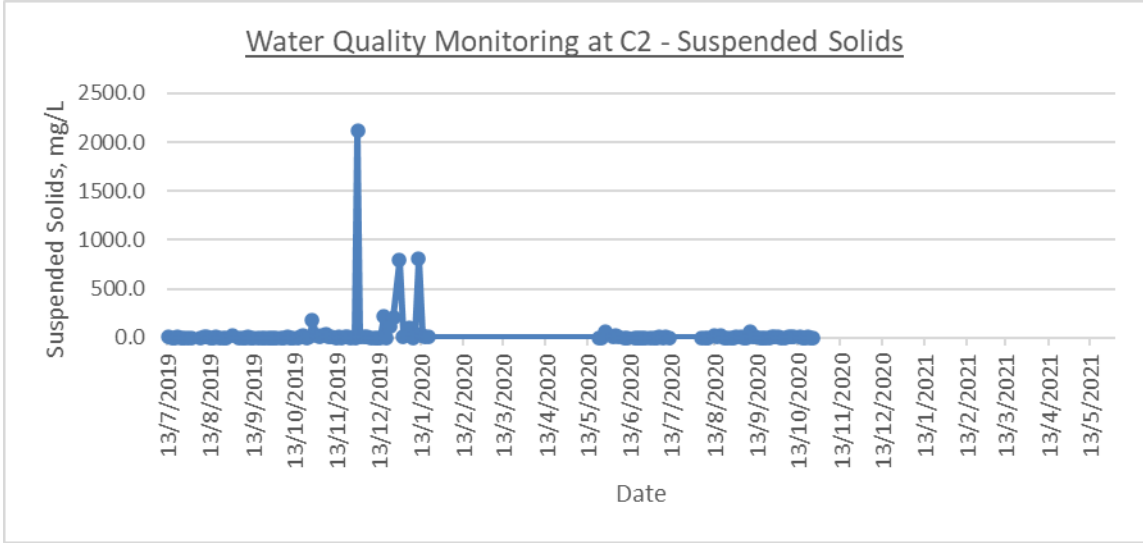
Note 1: Period without data implied that water in location C2 was dried up, insufficient water was available for sample collection



Note 1: Period without data implied that water in location C2 was dried up, insufficient water was available for sample collection

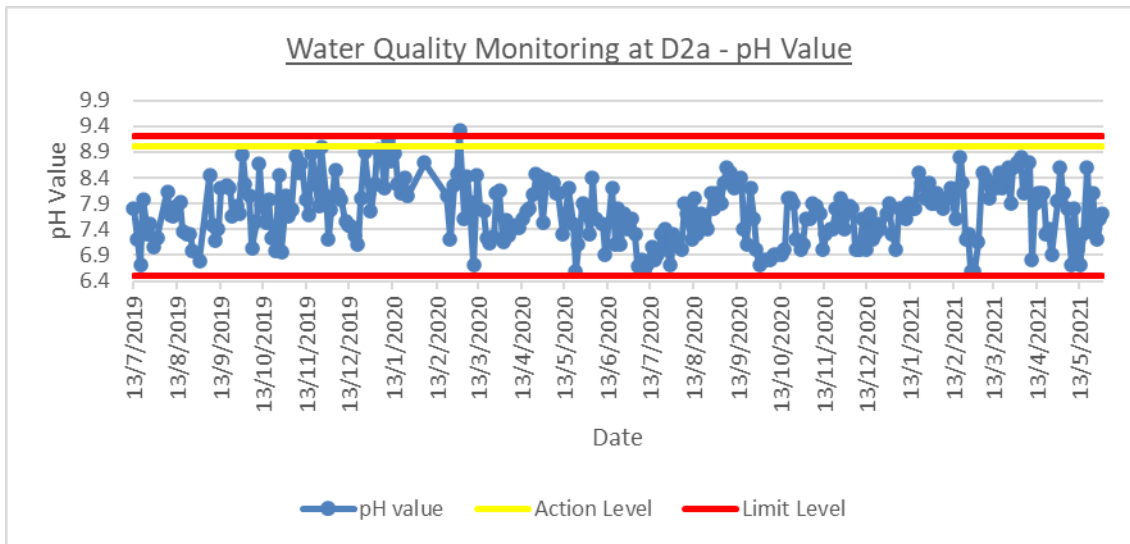
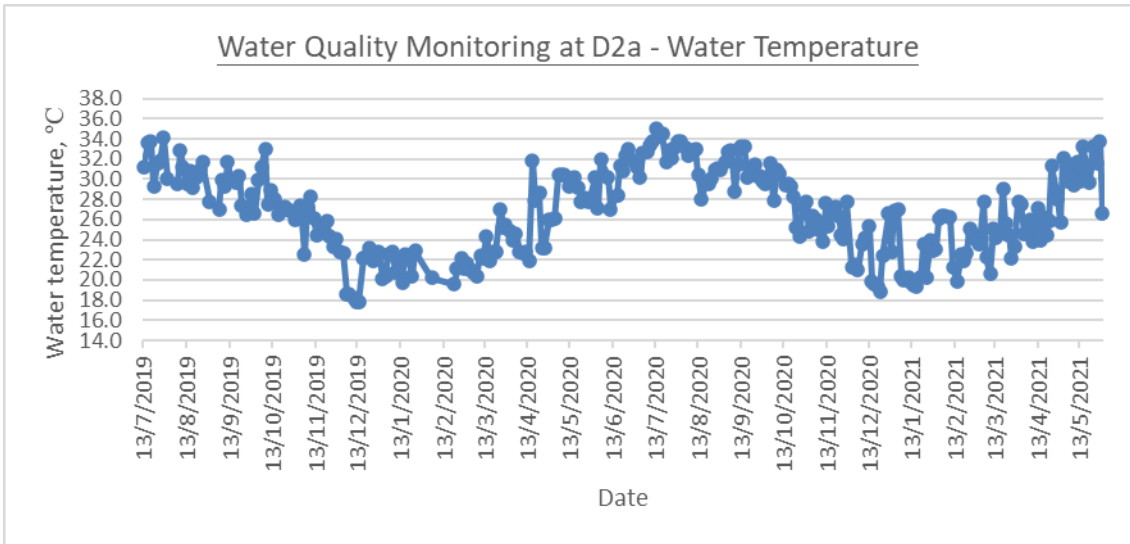


Note 1: Period without data implied that water in location C2 was dried up, insufficient water was available for sample collection

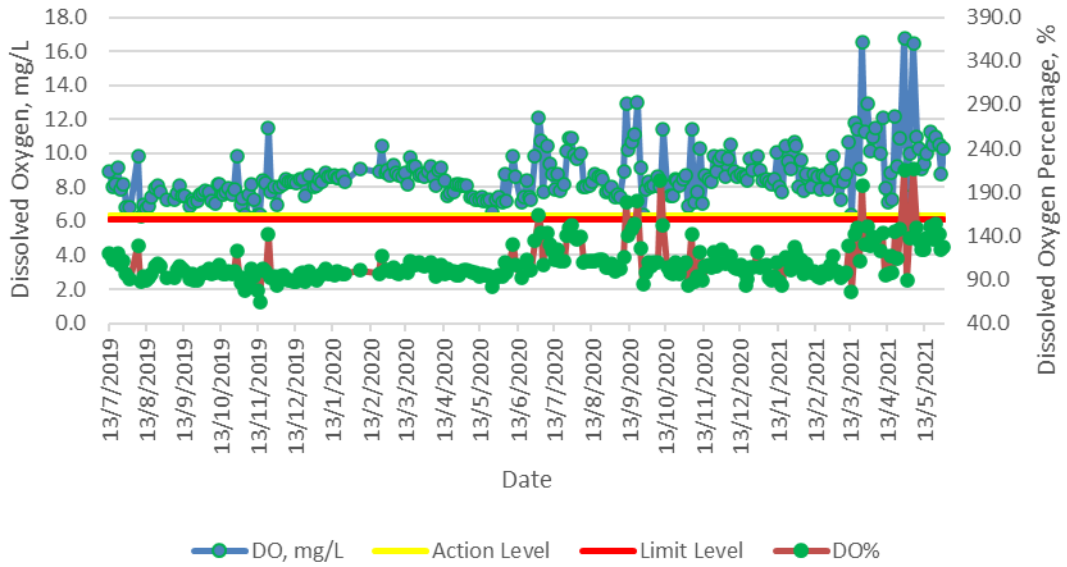


Note 1: Period without data implied that water in location C2 was dried up, insufficient water was available for sample collection

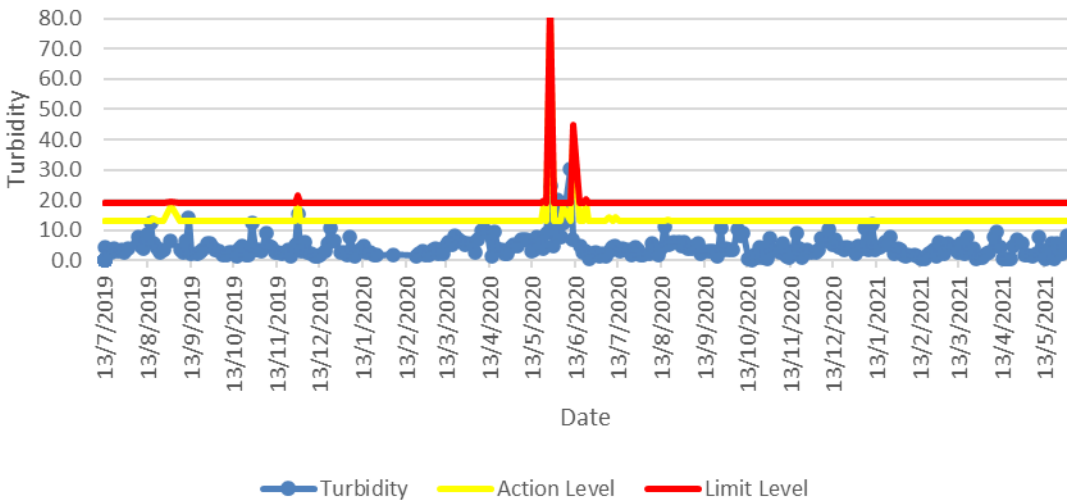
D2a



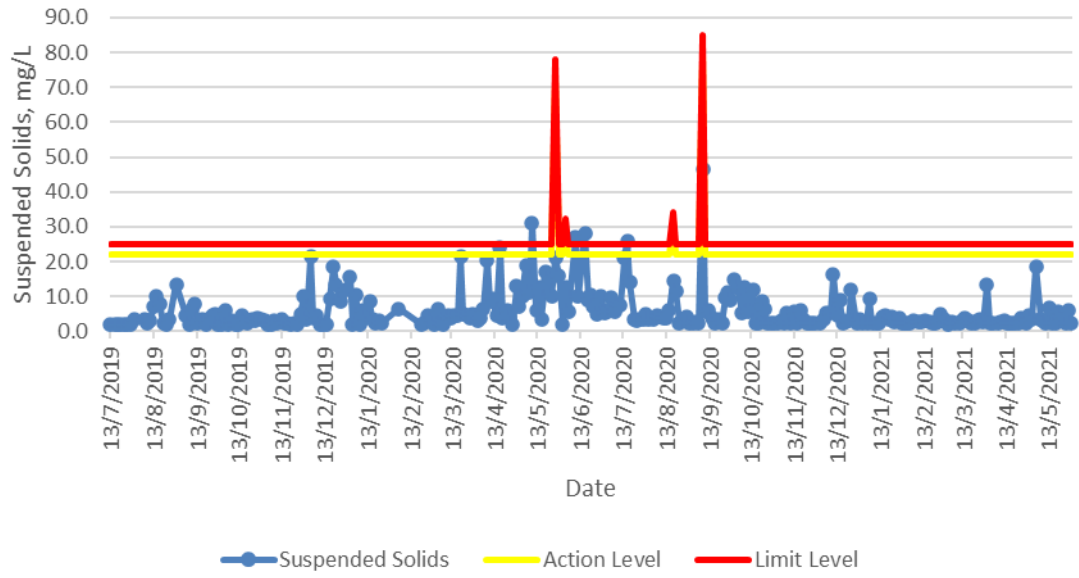
Water Quality Monitoring at D2a - Dissolved Oxygen



Water Quality Monitoring at D2a - Turbidity



Water Quality Monitoring at D2a - Suspended Solids



Appendix G
Supplementary Meteorological Data

**EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG,
MAY 2021 (Table 1)**

Date May	Mean Pressure (hPa)	Air Temperature			Mean Dew Point Temperature (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)				
1	1012.2	30.0	26.3	23.8	21.5	76	83	-
2	1013.0	30.8	26.5	24.5	23.2	82	82	1.2
3	1012.5	25.4	24.3	23.5	22.3	89	95	8.8
4	1011.1	31.3	26.6	23.1	23.5	84	82	12.5
5	1012.9	31.7	26.6	23.3	22.5	79	74	0.5
6	1015.4	28.6	25.2	23.4	21.2	79	75	Trace
7	1013.2	30.5	26.6	24.0	22.2	77	81	-
8	1009.8	30.9	27.7	25.4	23.6	79	52	-
9	1009.0	31.7	28.3	26.8	24.2	79	64	-
10	1008.8	31.8	28.4	26.4	23.7	76	66	-
11	1008.4	31.4	29.2	27.7	24.7	77	74	Trace
12	1008.3	32.1	29.6	28.2	25.3	78	80	Trace
13	1008.5	32.0	29.5	28.0	25.5	79	85	3.9
14	1009.0	34.0	30.0	28.1	25.4	77	70	-
15	1009.0	33.8	29.9	27.9	24.8	74	44	-
16	1009.1	33.5	30.2	28.2	25.0	74	58	Trace
17	1009.8	33.3	30.4	28.8	25.5	75	74	-
18	1009.2	32.5	30.2	28.3	25.5	76	78	1.3
19	1007.9	33.5	30.3	28.8	25.3	75	76	-
20	1008.1	33.3	30.5	29.2	25.4	75	86	-
21	1007.8	34.0	30.7	29.5	25.6	75	80	Trace
22	1007.0	34.3	30.5	27.8	25.8	77	71	2.6
23	1007.8	36.1	31.4	28.9	25.9	74	72	Trace
24	1009.6	31.5	29.8	27.6	26.1	81	83	15.7
25	1010.2	30.1	28.8	27.5	25.7	83	85	4.8
26	1009.4	33.5	30.1	27.8	25.5	77	67	4.0
27	1009.6	33.2	30.3	28.2	25.6	76	71	1.0
28	1009.6	33.6	30.6	28.5	25.9	77	71	-
29	1007.1	32.8	30.2	28.8	26.1	79	84	-
30	1005.1	32.3	30.3	29.2	26.7	81	84	Trace
31	1004.3	32.4	29.6	26.7	26.5	84	88	8.7
Mean/Total	1009.4	32.1	29.0	27.0	24.7	78	75	65.0
Climatological	1009.3	28.8	26.3	24.5	23.0	83	76	290.6

Normal(1991-2020)								
Climatological Normal(1981-2010)	1009.3	28.4	25.9	24.1	22.6	83	76	304.7
Station	Hong Kong Observatory							

**EXTRACT OF METEOROLOGICAL OBSERVATIONS FOR HONG KONG,
MAY 2021 (Table 2)**

Date May	Number of hours of Reduced Visibility [#] (hours)	Total Bright Sunshine (hours)	Daily Global Solar Radiation (MJ/m ²)	Total Evaporation (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
1	0	5.7	19.11	3.8	250	9.8
2	0	3.5	14.33	2.8	080	10.4
3	0	0.1	4.23	0.4	090	33.5
4	0	6.7	21.33	5.1	080	13.8
5	3	9.0	22.34	5.1	090	11.2
6	1	6.7	19.54	3.8	080	27.7
7	0	10.1	20.82	4.0	020	10.8
8	0	10.1	25.36	4.9	240	18.1
9	0	8.2	22.15	4.7	240	23.2
10	0	8.5	22.97	4.9	190	14.3
11	0	5.2	16.77	4.3	180	20.5
12	0	4.1	14.91	3.5	200	20.3
13	0	5.0	15.90	3.4	170	18.8
14	0	5.9	19.55	4.4	160	18.9
15	0	10.8	26.89	4.8	180	14.8
16	0	9.6	25.80	5.6	230	19.8
17	0	6.5	21.13	5.1	200	18.1
18	0	5.5	17.49	4.6	210	23.8
19	0	6.3	18.43	4.5	190	25.1
20	0	5.6	18.86	5.1	230	25.2
21	0	7.8	23.43	5.6	220	27.8
22	0	7.5	18.72	5.0	200	20.0
23	0	11.4	26.52	7.5	160	15.5
24	0	5.7	15.09	3.2	190	9.6
25	0	3.8	10.85	2.4	090	5.8
26	0	8.7	22.15	6.0	220	11.3
27	0	10.6	28.10	6.7	240	22.6

28	0	11.1	27.73	6.7	240	25.3
29	0	7.8	21.14	5.2	240	33.1
30	0	4.9	17.88	4.1	240	34.1
31	0	1.6	9.33	3.8	230	25.3
Mean/Total	4	214.0	19.64	141.0	230	19.6
Climatological Normal(1991-2020)	41.0 [§]	138.8	14.46	109.8	080	19.8
Climatological Normal(1981-2010)	41.0 [§]	140.4	14.19	110.7	080	19.7
Station	Hong Kong International Airport	King's Park			Waglan Island [^]	

The minimum pressure recorded at the Hong Kong Observatory was 1002.6 hectopascals at 1625 HKT on 31 May.

The maximum air temperature recorded at the Hong Kong Observatory was 36.1 degrees C at 1346 HKT on 23 May.

The minimum air temperature recorded at the Hong Kong Observatory was 23.1 degrees C at 2241 HKT on 4 May.

The maximum gust peak speed recorded at Waglan Island was 66 kilometres per hour from 250 degrees at 1349 HKT on 26 May.

The maximum 1-minute mean rainfall rate recorded at King's Park was 83 millimetres per hour at 2050 HKT on 4 May.

Reduced visibility refers to visibility below 8 kilometres when there is no fog, mist or precipitation.

- The visibility readings at the Hong Kong International Airport are based on hourly observations by professional meteorological observers in 2004 and before, and average readings over the 10-minute period before the clock hour of the visibility meter near the middle of the south runway from 2005 onwards. The change of the data source in 2005 is an improvement of the visibility assessment using instrumented observations following the international trend.

- Before 10 October 2007, the number of hours of reduced visibility at the Hong Kong International Airport in 2005 and thereafter displayed in this web page was based on hourly visibility observations by professional meteorological observers. Since 10 October 2007, the data have been revised using the average visibility readings over the 10-minute period before the clock hour, as recorded by the visibility meter near the middle of the south runway.

[^] In case the data are not available from Waglan Island, observations of Cheung Chau or other nearby weather stations will be incorporated in computing the Prevailing Wind Direction and Mean Wind Speed.

§ 1997-2020 Mean value

Appendix H
Event / Action Plans

Table B-1 Event/ Action Plan for Noise Impact

Event and Action Plan for Noise Impact				
Event	Action			
	ET Leader	IEC	ER	Contractor
Action Level is reached	<ol style="list-style-type: none"> 1. Notify IEC and Contractor 2. Carry out investigation 3. Report the results of the investigation to the IEC and Contractor 4. Discuss with the Contractor and formulate remedial measures 	<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 the 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 Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. Ensure remedial measures are properly implemented 5. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposal to IEC 2. Implement noise mitigation proposals
Limit Level is reached	<ol style="list-style-type: none"> 1. Notify IEC, ER, EPD and Contractor 2. Identify source 3. Repeat measurement to confirm findings 4. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented 5. Inform IEC, ER and EPD the causes & actions taken for the exceedances 6. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results 7. 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 the 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 Contractor 3. Require Contractor to propose remedial measures for the analyzed noise problem 4. Ensure remedial measures are properly implemented 5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion or 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 the ER until the exceedance is abated

Table B-2 Event/ Action Plan for Water Quality Impact

EVENT	ACTION			
	ET	IEC	ER	CONTRACTOR
Action level being exceeded by one sampling day	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm findings and repeat measurement on next day of exceedance being recorded; 2. Identify source(s) of impact; 3. Inform IEC, contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET and Contractor's working methods. 2. Discuss with ET and Contractor on possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing 2. Discuss with IEC, ET and Contractor on the proposed mitigation. 3. Request Contractor to view the working methods. 4. Ensure mitigation measures are properly implemented. 	<ol style="list-style-type: none"> 1. Inform the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; 4. Discuss with ET, IEC and ER and propose mitigation measures to ER and IEC within 3 working days; 5. Implement the agreed mitigation measures.
Limit level being exceeded by more than one consecutive sampling days	<ol style="list-style-type: none"> 1. Repeat in-situ measurement to confirm findings and repeat measurement on next day of exceedance being recorded; 2. Identify source(s) of impact; 3. Inform IEC, Contractor, ER and EPD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Discuss mitigation measures with IEC, ER and Contractor; 6. Ensure mitigation measures are implemented; 7. Increase the monitoring frequency 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET and Contractor's working methods. 2. Discuss with ET and Contractor on possible mitigation measures; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; 4. Supervise the implementation of mitigation measures. 	<ol style="list-style-type: none"> 1. Discuss with IEC, ET and 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 and 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. Discuss with ET, IEC and ER and propose mitigation measures to ER and IEC; 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.

	to daily until no exceedance of Limit level for two consecutive days.			
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Appendix I
Monthly Waste Flow Table



Name of Department: ArchSD/CEDD/DSD/EMSD/HyD/WSD

Contract No.: DC/2018/08

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	6.334	0	0	3.028	3.306	0	0	0	0	0.36	0.00847
Feb	4.008	0	0	1.461	2.547	0	0	0	0	1.26	0.01195
Mar	6.096	0	0	0	6.096	0	0	0	0	0	0.00638
Apr	4.013	0	0	0	4.013	0	0	0	0	3.78	0.00612
May	4.096	0	0	1.130	2.966	0	0	0	0	0	0.00769
June											
Sub-total	24.547	0	0	5.619	18.928	0	0	0	0	5.40	0.040641
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	24.547	0	0	5.619	18.928	0	0	0	0	5.40	0.040641

Remark: Use of conversion factors: density of inert C&D materials (2 ton/m³) and general refuse (1 ton/m³); density of chemical waste (0.9 kg/L)



Forecast of Total Quantities of C&D Materials to be Generated from the Contract*										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
37.523	37.2	0	0	5.92	0	0	0	0	4.8	0.323

- Notes:
- (1) The performance targets are given in PS Clause 1.104(14).
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

Appendix J
Implementation Schedule of
Recommended Mitigation Measures

Table A-1 Air Quality Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S.3.5.9	S.3.2.2	All the dust control measures as recommended in the Air Pollution Control (Construction Dust) Regulation, where applicable, should be implemented. Typical dust control measures include:	Air Quality (fugitive dust) Control during Construction Phase	Contractors	At all construction areas of the site during the entire construction period	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> The works area for site clearance shall be sprayed with water before, during and after the operation so as to maintain the entire surface wet 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> Restricting heights from which materials are to be dropped, as far as practicable to minimise the fugitive dust arising from unloading/ loading 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> Immediately before leaving a construction site, all vehicles shall be washed to remove any dusty materials from the bodies and wheels. However, all spraying of materials and surfaces should avoid excessive water usage 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> Where a vehicle leaving a construction site is carrying a load of dusty materials, the load shall be covered entirely by clean impervious sheeting to ensure that the dusty materials will not leak from the vehicle 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> Erection of hoarding of not less than 2.4 m high from ground level along the site boundary, where appropriate 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> Any stockpile of dusty materials shall be covered entirely by impervious sheeting; and/or placed in an area sheltered on the top and 4 sides 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.5.9	S.3.2.2	<ul style="list-style-type: none"> All dusty materials shall be sprayed with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet 	Air Quality (fugitive dust) Control during Construction Phase	Contractors	Ditto	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
Operational Phase						
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table A-2 Noise Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> The Contractor shall adopt the Code of Practice on Good Management Practice to Prevent Violation of the Noise Control Ordinance (Chapter 400) (for Construction Industry) published by EPD 	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> The Contractor shall observe and comply with the statutory and non-statutory requirements and guidelines 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> Before commencing any work, the Contractor shall submit to the Engineer Representative for approval the method of working, equipment and noise mitigation measures intended to be used at the site 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> The Contractor shall devise and execute working methods to minimise the noise impact on the surrounding sensitive uses, and provide experienced personnel with suitable training to ensure that those methods are implemented 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> Noisy equipment and noisy activities should be located as far away from the NSRs as is practical 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> Unused equipment should be turned off. PME should be kept to a minimum and the parallel use of noisy equipment / machinery should be avoided 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> Regular maintenance of all plant and equipment 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
S.4.8.2	S.4.8.1	<ul style="list-style-type: none"> Material stockpiles and other structures should be effectively utilised as noise barriers, where practicable 	Noise control during construction	Contractors	Ditto	Annex 5 of EIAO-TM
Operational Phase						
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table A-3 Water Quality Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S.5.10.1 -5.10.2	S.5.8.2 -5.8.3	Construction for the desilting facilities at intake and outfall portals should be carried out behind a temporary cofferdam which is watertight enclosure built in the reservoirs and pumped dry to expose the bottom.	Point Pollution Control	Contractors	Before construction of intake and outfall portals and remain on site until completion of intake and outfall portals and tunnel construction	Water Pollution Control Ordinance
S.5.10.3	S.5.8.4	The cofferdams should be regularly inspected and maintained to ensure no spillage of waste or wastewater into the reservoirs.	Point Pollution Control	Contractors	Before construction of intake and outfall portals and remain on site until completion of intake and outfall portals and tunnel construction	Water Pollution Control Ordinance
S. 5.10.4	S. 5.8.5	Construction of desilting facilities within works areas capable of controlling discharge of SS to comply with WPCO/TM-DSS	Point and Non-point Pollution Control	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
S.5.10.5	S.5.8.6	Construction runoff will be managed as per the Practice Note for Professional Persons ProPECC PN1/94 - Construction Site Drainage and the conditions of working within Water Gathering Grounds stipulated by WSD	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance Water Gathering Ground control by WSD
S.5.10.6	S. 5.8.7	A Drainage Management Plan should be prepared by the Contractor for approval by the Engineer for each of the works areas, detailing the facilities and measures to manage pollution arising from surface runoff from those works areas	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance Water Gathering Ground control by WSD
S. 5.10.7	S. 5.8.8	An Emergency Contingency Plan should also be prepared by the Contractor, detailing the response and procedures to contain and remove any accidental spillage along the temporary and permanent roads and at the site at short notice to prevent or minimize the quantities of contaminants from reaching the reservoirs and local streams leading to the reservoirs. The Emergency Contingency Plan should be submitted to the Engineer for approval	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance Water Gathering Ground control by WSD
S. 5.10.8	S. 5.8.9	▪ Surface run-off and effluent from the construction sites at	Stormwater and Non-point	Contractors	Ditto	Water Pollution Control

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		the intake at Kowloon Byewash Reservoir and outfall at the Lower Shing Mun Reservoir will be directed towards adequately designed sand/silt removal facilities such as sand/silt traps and sediment basins to remove sand/silt particles from runoff to meet the requirements of the TM standards under the WPCO before discharging to discharge points downstream of the Kowloon Byewash Reservoir Dam and Lower Shing Mun Reservoir Dam respectively. The design of efficient silt removal facilities should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. Sizes may vary depending upon the flow rate, but for a flow rate of 0.1m ³ /s a sedimentation basin of 30m ³ would be required and for a flow rate of 0.5m ³ /s the basin would be 150m ³ . The detailed design of the sand/silt traps should be undertaken by the contractor prior to the commencement of construction	Source Pollution Control			Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Channels, earth bunds or sand bag barriers will be provided on-site to properly direct stormwater to the above-mentioned facilities 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Existing on-site silt removal facilities, channels and manholes, if any, will be maintained and the deposited silt and grit will be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Other manholes, if any, including any newly constructed ones will be adequately covered and temporarily sealed so as to prevent silt, construction materials or debris from getting into the drainage system 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Open stockpiles of materials on site will be avoided within water gathering grounds as far as practicable. All surplus spoil will be removed from water gathering grounds as soon as possible Measures will be taken to prevent the washing away of construction materials, soil, silt or debris 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Where possible, works entailing soil excavation will be minimized during the rainy season (i.e. April to September). If excavation in soil could not be avoided in these months or 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		at any time of year when rainstorms are likely, for the purpose of preventing soil erosion, temporary exposed slope surfaces should be covered e.g. by tarpaulin, and temporary access roads should be protected by crushed stone or gravel, as excavation proceeds. Intercepting channels should be provided (e.g. along the crest/edge of excavation) to prevent storm runoff from washing across exposed soil surfaces. Arrangements should always be in place to ensure that adequate surface protection measures can be safely carried out well before the arrival of a rainstorm				
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Where applicable, final earthworks surfaces/ slopes will be well compacted and hydro-seeded following completion to prevent erosion 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Where surface runoff or construction effluent is likely to be contaminated with oil, properly designed and maintained petrol interceptor will be provided to meet the WPCO/TM-DSS requirements. Oil leakage or spillage shall be contained and cleaned up immediately. Detailed design of the petrol interceptor shall be provided by the Contractor before commencement of construction 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Sewage arising from the construction workers on site should be collected by temporary sanitary facilities e.g. portable chemical toilets. Portable toilets should be used coupled with tankering away services provided by a licensed collector 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> All site discharges within Inland Waters Group A must comply with the terms and conditions of a valid discharge licence issued by EPD 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Vehicle wheel washing facilities should be provided, where applicable, at the site exit such that mud, debris, etc. deposited onto the vehicle wheels or body can be washed off before the vehicles are leaving the site area 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Section of the road between the wheel washing bay and the public road should be paved with backfill to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> ▪ Vehicle washing facilities should be drained into desilting facilities before discharge. The water should be recycled on site wherever possible. It is suggested that the wash water from the wheel wash basin is either reused for site watering or pumped to the on-site desilting facilities for treatment 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> • Desilting facilities should be checked and the deposited silt and grit should be removed regularly to ensure they are working properly at all times 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> • To minimize water quality impact, recycled water should be used at the cutter face for cooling purposes. Used water should be collected and discharged to settling tank for settlement 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> • Excess water from the settling tank would be transferred to the desilting facilities for treatment before discharge. The Contractor should ensure that the discharge water from the desilting facilities and treated spent effluent arising from tunnel boring from the desilting facilities comply with the WPCO/TM-DSS requirements before discharge 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> ▪ Existing on-site silt removal facilities, channels and manholes, if any, would be maintained such that the deposited silt and grit will be removed regularly, at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times; 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> ▪ Desilting facilities should be checked and the deposited silt and grit should be removed regularly to ensure they are working properly at all times; 	Stormwater and Non-point Source Pollution Control	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> ▪ The project may occasionally involve the handling of fuel and generates chemical wastes. It must be ensured that all fuel tanks and chemical storage are sited on sealed and bunded areas, provided with locks and located outside water gathering grounds as far as practicable 	Protection Against Accidental Spillage	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> ▪ The storage areas will be surrounded by bunds with a capacity equal to 110% of the storage capacity of the largest tank to prevent accidentally spilled oil, fuel or chemicals from reaching the receiving waters 	Protection Against Accidental Spillage	Contractors	Ditto	Water Pollution Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location / Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Oil and grease removal facilities will be provided where appropriate, for example, in area near plant workshop/maintenance areas, if any 	Protection Against Accidental Spillage	Contractors	Ditto	Water Pollution Control Ordinance
S. 5.10.8	S. 5.8.9	<ul style="list-style-type: none"> Chemical waste arising from the site should be properly stored, handled, treated and disposed of in compliance with the requirements stipulated under the Waste Disposal (Chemical Waste) (General) Regulation 	Protection Against Accidental Spillage	Contractors	Ditto	Waste Disposal (Chemical Waste) (General) Regulation
Operational Phase						
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table A-4 Waste Management Implication – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S.6.7.1		Given the potential for secondary environmental impacts (dust, noise, water quality and visual impacts), mitigation measures are required to ensure proper handling, storage, transportation and disposal of materials at the outset and throughout the construction phase of the project	Waste management during construction	Contractors	At all construction areas of the site during the entire construction period	Waste Disposal Ordinance
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> An on-site environmental co-ordinator employed by the Contractor should be identified at the outset of the works. The co-ordinator shall prepare a Waste Management Plan ("WMP") in accordance with the requirements set out in the ETWB TCW No. 19/2005, Waste Management on Construction Sites. The WMP shall include monthly and yearly Waste Flow Tables ("WFT") that indicate the amounts of waste generated, recycled and disposed of (including final disposal site), and which should be regularly updated 	Waste management during construction	Contractors	Ditto	ETWB TCW No. 19/2005, Waste Management on Construction Sites
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> The reuse/ recycling of all materials on site shall be investigated and exhausted prior to treatment/ disposal off-site 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> Good site practices shall be adopted from the commencement of works to avoid the generation of waste, reduce cross contamination of waste and to promote waste minimisation 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> All waste materials shall be sorted on-site into inert and non-inert C&D materials, and where the materials can be recycled or reused, they shall be further segregated. Inert material, or public fill will comprise stone, rock, concrete and soil which is suitable for land reclamation and site formation whilst non-inert materials include all other wastes generated from the construction process such as plastic packaging and vegetation (from site clearance) 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> The Contractor shall be responsible for identifying what materials can be recycled/ reused, whether on-site or off-site. In the event of the latter, the Contractor shall make 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		arrangements for the collection of the recyclable materials. Any remaining non-inert waste shall be collected and disposed of to the public fill reception facilities whilst any inert C&D materials shall be re-used on site as far as possible. Alternatively, if no use of the inert material can be found on-site, the materials can be delivered to a public fill reception facilities after obtaining the appropriate licence				
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> In order to monitor the disposal of C&D material and solid wastes at public fill reception facilities and landfills, and control fly-tipping, a trip-ticket system shall be implemented by the Contractor, in accordance with the contract and the requirements of WBTC 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Material" 	Waste management during construction	Contractors	Ditto	WBTC 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Material"
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> Under the Waste Disposal (Chemical Waste) (General) Regulation, the Contractor shall register as a Chemical Waste Producer if chemical wastes such as spent lubricants and paints are generated on site. Only licensed chemical waste collectors shall be employed to collect any chemical waste generated at site. The handling, storage, transportation and disposal of chemical wastes shall be conducted in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and A Guide to the Chemical Waste Control Scheme both published by EPD 	Waste management during construction	Contractors	Ditto	Waste Disposal (Chemical Waste) (General) Regulation
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> A sufficient number of covered bins shall be provided on site for the containment of general refuse to prevent visual impacts and nuisance to the sensitive surroundings. These bins shall be cleared daily and the collected waste disposed of to the refuse transfer station. Further to the issue of ETWB TCW No. 6/2002A, Enhanced Specification for Site Cleanliness and Tidiness, the Contractor is required to maintain a clean and hygienic site throughout the project works 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> All chemical toilets, if any, shall be regularly cleaned and the night-soil collected and transported by a licensed contractor to a Government Sewage Treatment Works facility for disposal 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> ▪ Toolbox talks should be provided to workers about the concepts of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance
S.6.7.2	S. 6.2.5	<ul style="list-style-type: none"> ▪ The Contractor shall comply with all relevant statutory requirements and guidelines and their updated versions that may be issued during the course of project construction 	Waste management during construction	Contractors	Ditto	Waste Disposal Ordinance
Operational Phase						
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Table A-5 Ecological Impact – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S 8.8	N/A	Minimise the habitat loss of secondary woodland / plantation and grassland as far as possible	Reduce habitat and vegetation loss	Contractors	At all construction areas of the site during the entire construction period	Annex 16 of EIAO-TM
S 8.8	N/A	Disturbed secondary woodland / plantation and grassland should be reinstated after the completion of works	Reinstate disturbed habitats	Contractors	Worksite areas at the two portals / after completion of construction works	Annex 16 of EIAO-TM
S 8.8	N/A	Provide clear definition of site boundary	Prevent impact on offsite habitats	Contractors	At all construction areas of the site during the entire construction period	Annex 16 of EIAO-TM
S 8.8	N/A	Protect the protected plant <i>Pavetta hongkongensis</i> on its existing location; Transplant the <i>Pavetta hongkongensis</i> to other suitable location if onsite protection is not feasible.	Preserve the protected plant species	Contractors	On the vegetated slope along the existing vehicle access at worksite area at Lower Shing Mun Reservoir / Construction period	Annex 16 of EIAO-TM
S 8.8	N/A	Carry out compensatory planting if the individual of <i>Artocarpus hypargyreus</i> cannot be retained onsite	Mitigate the tree removal	Contractors	worksite area at Kwoloon Byewash Reservoir / Construction Period	ETWB TCW No. 3/2006
S 8.8	N/A	Workers should avoid eating and leave food in works area and avoid feeding the wildlife; Fishes observed remaining at the proposed works area during the draining down process should be translocated to the portion of the reservoir outside the cofferdam.	Avoidance of injury to wildlife	Contractors	At all construction areas of the site during the entire construction period	Annex 16 of EIAO-TM
S 8.8	N/A	Implement standard good site practices for dust suppression	Avoid dust deposition on vegetation	Contractors	At all construction areas of the site during the entire construction period	EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S 8.8	N/A	Implement standard good site practices for water quality control	Avoid site runoff to nearby habitats	Contractors	At all construction areas of the site during the entire construction period	Water Pollution Control Ordinance
S 8.8	N/A	Workers shall not disturb birds and other wildlife; Litter shall not be burned on-site but shall be removed off-site;	Avoid disturbance to wildlife	Contractors	At all construction areas of the site during the entire construction period	Annex 16 of EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
		Machinery not in use should be switched off to minimize the noise nuisance; No fishing is allowed in the reservoir without permission.				
Operational Phase						
S 8.8	N/A	Compensate the habitat loss (grassland and woodland) by restoration of same type of habitats to be lost. The compensatory ratio should not be less than 1:1 in terms of area.	Mitigate the temporary habitat loss	Contractors	Woodland at worksite area at Kowloon Byewash Reservoir and Grassland at worksite area at Lower Shing Mun Reservoir / Operational period	Annex 16 of EIAO-TM

Table A-6 Landscape and Visual Impact – Implementation Schedule of Recommended Mitigation Measures

Id No.	Landscape and Visual Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stage			Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
LMM1	Topsoil, where identified, should be stripped and stored for re-use in the construction of the soft landscape works, where practical	Site	WSD	Contractor	TM-EIA Annex 18		√		Throughout construction phase	To provide a viable growing medium suited to the existing conditions and reduce the need for the importation of top soil
LMM2	Existing Trees to be retained on site should be carefully protected during construction	Site	WSD	Contractor	TM-EIA Annex 18, ETWB TCW No. 2/2004 & ETWB TCW No. 3/2006		√		Throughout construction phase	To ensure the success of the tree preservation proposal
LMM3	Compensatory tree planting should be provided to compensate for felled trees	Site	WSD	Contractor	TM-EIA Annex 18, ETWB TCW No. 2/2004 & ETWB TCW No. 3/2006		√		Throughout design and construction phase	The planting proposal seeks to compensate for the predicted tree loss resulting from the construction, visually integrate the proposals within its existing landscape framework and provide an improved visual amenity
LMM4	Erection of decorative screen hoarding compatible with surrounding setting	Site	WSD	Contractor	TM-EIA Annex 18 and BD		√		Throughout construction phase	To integrate the construction site with the existing environment
LMM5	Locations of the site office, storage or workshops should be carefully adjusted to areas out of tree protection zones.	Site	WSD	Contractor	TM-EIA Annex 18 and BD	√			Throughout design phase	To avoid unnecessary felling of trees
LMM6	Selection of intake and outfall portals to areas enclosed by existing topography or vegetation	Site	WSD	Contractor	TM-EIA Annex 18 and BD	√			Throughout design phase	To preserve the existing topography and as many as trees as possible
LMM7	Appearance of the water intake and outfall structures	Site	WSD	Contractor	TM-EIA Annex 18 and BD	√			Throughout design phase	To reduce the apparent visual mass of water intake and outfall structures
LMM8	Reinstatement of disturbed vegetation at both portal	Site	WSD	Contractor	TM-EIA Annex 18			√	After the completion of construction	To mitigate disturbance to vegetation arising from the proposed construction

Id No.	Landscape and Visual Mitigation Measures	Location	Funding	Implementation/ Maintenance Agent	Relevant Standard or Requirement	Implementation Stage	Timing of Implementation	Objectives of the Recommended Measure and Main Concern to address
	areas						works	

Table A-7 Cultural Heritage – Implementation Schedule of Recommended Mitigation Measures

EIA Ref.	EM&A Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Location/ Timing of implementation of Measures	What requirements or standards for the measures to achieve?
Construction Phase						
S 10.7	S8.1.2	Condition Survey for the identified historic items and monitoring of vibration levels if required.	Prevention of structural damage to the identified historic items	Contractors	Condition survey to be undertaken prior to the construction phase and vibration monitoring to be undertaken during the construction phase if required.	None
Operational Phase						
N/A	N/A	None	None	None	None	None


Appendix K

Tentative Monitoring Schedule of Next Reporting Period

IRTS – EM&A Monitoring & Inspection Schedule

June 2021

Sun	Mon	Tue	Wed	Thur	Fri	Sat
		1 Impact Water Quality Monitoring & Weekly Site Inspection	2	3 Impact Water Quality Monitoring & Noise Monitoring at NM1 & NM2 (09:00-19:00); NM1 (19:00-23:00, 23:00-07:00)	4	5
6 Impact Water Quality Monitoring & Noise Monitoring at NM1 (09:00-19:00)	7	8 Impact Water Quality Monitoring & Weekly Site Inspection	9	10 Impact Water Quality Monitoring & Noise Monitoring at NM1 & NM2 (09:00-19:00); NM1 (19:00-23:00, 23:00-07:00)	11	12 Impact Water Quality Monitoring
13 Noise Monitoring at NM1 (09:00-19:00)	14	15 Impact Water Quality Monitoring & Weekly Site Inspection	16	17 Impact Water Quality Monitoring & Noise Monitoring at NM1 & NM2 (09:00-19:00); NM1 (19:00-23:00, 23:00-07:00)	18	19 Impact Water Quality Monitoring
20 Noise Monitoring at NM1 (09:00-19:00)	21	22 Impact Water Quality Monitoring & Weekly Site Inspection	23	24 Impact Water Quality Monitoring & Noise Monitoring at NM1 & NM2 (09:00-19:00); NM1 (19:00-23:00, 23:00-07:00)	25	26 Impact Water Quality Monitoring
27 Noise Monitoring at NM1 (09:00-19:00)	28	29 Impact Water Quality Monitoring & Weekly Site Inspection	30			

 = General Holiday

Appendix L

Cumulative Statistics on Complaints,
Notifications of Summons And
Successful Prosecutions

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 May 2021 - 31 May 2021	0	1	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 May 2021 - 31 May 2021	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 May 2021 - 31 May 2021	0	0	N/A

Appendix L

Investigation Report on Exceedance



**Inter-reservoirs Transfer Scheme –
Water Tunnel between Kowloon Byewash Reservoir and Lower Shing Mun Reservoir
Investigation Report**

Our Ref.	IR023
Monitoring Date	4 May 2021
Time	08:52
Environmental Aspect	Water Quality
Monitoring Location	D1b
Parameter	Suspended Solids
Control Level	NA
Action Level	9.0 mg/L
Limit Level	13.0 mg/L
Measured Level	12.0 mg/L
Exceedance	Action Level
Site Observation	<p>According to the information given by the Contractor, concreting works were conducted at the KBR site on 4 May 2021.</p> <p>Water quality parameters possibly affected by concreting activities include SS, pH and Turbidity. From the in-situ data of KBR on 4 May 2021, it is observed that the readings of pH (7.66) and turbidity (1.72) were at normal range. Based on the above, it is concluded that there is no evidence showing the concreting works to be the cause of the exceedance.</p> <p>With the lack of other possible source causing the exceedance contributed by the construction works, the exceedance is considered not project related.</p> <p>The Contractor is reminded to follow the Environmental Management Plan when carrying out construction procedures and all appropriate mitigation measures should be implemented during the operations.</p> <p>A site photo taken on 4 May 2021 is presented below:</p>

