





**Contract No. DC/2019/07** 

# **Environmental Monitoring Works for** Upgrading of Cheung Chau Sewage Collection, Treatment and **Disposal Facilities**

# 25th Monthly Environmental Monitoring and Audit Report -August 2023

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Independent Environmental Checker for Environmental Monitoring Works for Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities

**Environmental Permit No. EP-488/2014/A** 

Monthly EM&A Report for August 2023 (Rev. 2)

14 September 2023

By Email

Dear Sir,

I refer to the Monthly EM&A Report for August 2023 (Rev. 2) under the captioned Project, which was certified on 14 September 2023 by the Environmental Team Leader appointed under Condition 2.1 of Environmental Permit No. EP-488/2014/A (hereafter referred to as "EP").

I hereby verify the abovementioned submission in accordance with EP Conditions 1.9 and 4.4.

Should you have any queries regarding the captioned or require any further information, please contact the undersigned at 2828 5751.

Yours faithfully

for MOTT MACDONALD HONG KONG LIMITED

1082

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# **REVISION HISTORY**

REV.	DESCRIPTION OF MODIFICATION	DATE
0	First Issue for Comments	11 September 2023
1	Updated according to IEC's comments	13 September 2023
2	Updated according to IEC's comments	14 September 2023

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# **EXECUTIVE SUMMARY**

- A.1 Pursuant to the Environmental Impact Assessment Ordinance (EIAO), the Director of Environmental Protection (DEP) granted the Environmental Permit (No. EP-488/2014/A) to DSD for the Project.
- A.2 Upon the requirement of the Environmental Permit (EP), the Monthly EM&A Monitoring Report shall be submitted to the DEP within 10 working days after the end of the reporting month. The submissions shall be verified by the Independent Environmental Checker (IEC) and complied with the requirements set out in the Environmental Monitoring and Audit (EM&A) Manual before submission to the DEP as stipulated in Condition 4.4 of the EP.
- A.3 The commencement date of the Project was 6 August 2021. Impact environmental monitoring of 24-hour TSP, 1-hour TSP and noise was conducted as stipulated in Condition 4.2 of the EP. This is the 25<sup>th</sup> Monthly EM&A Report for the Project summarizing the monitoring results and audit findings of the EM&A programme at selected locations at and around Cheung Chau during the reporting period from 1 August to 31 August 2023.
- A.4 Key activities carried out in this reporting period for the Project included the followings:
  - Trial pit and ground investigation
  - Smart sewage monitoring
  - Excavation and Lateral Support (ELS) at CCSTW
  - Construction of Sludge Digester Building
  - Construction of MBR Treatment Facilities
  - Erection of Tower Crane "XCMG XT335"
  - Energization of Electrical System and Permit to Work Procedure
  - Mechanical Installation of Sludge Digestor Building and Sludge Holding Tanks
  - Removal of RMD Strut of ELS at CCSTW
- A.5 The major environmental impacts brought by the above construction works include:
  - Construction dust and noise generation from construction works and piling works
  - Wastewater generated from construction activities
  - Waste generation from the construction activities
- A.6 The key environmental mitigation measures implemented for the Project in this reporting period associated with the above construction works include:
  - Dust suppression by regular wetting and water spraying for construction works
  - Reduction of noise from equipment and machinery on-site
  - Mitigation measures preventing seepage of muddy water
  - Sorting and storage of general refuse and construction waste
- A.7 Six (6) sessions of air monitoring were carried out at all designated monitoring locations. No exceedance of Action or Limit Level was recorded.
- A.8 Five (5) sessions of noise monitoring were carried out at all designated monitoring locations. No exceedance of Action or Limit Level was recorded.
- A.9 Results of the monitoring for air quality and airborne noise are given in **Table A** and **Table B** as follows:

Table A - Monitoring Results (Dust)

		Dust in μg	g/m <sup>3</sup>	
Location	Avei	rage	Ran	ge
	TSP-1hr	TSP-24hr	TSP-1hr	TSP-24hr
A1a	65	50	51 - 77	23 - 117
A2a	48	52	39 - 57	24 - 105

**Table B - Monitoring Results (Noise)** 

	Noise in o	dB(A)
Location	Average	Range
	L <sub>eq (30 min)</sub> (7:00-19:00)	$L_{eq (30 min)} (7:00-19:00)$
N2a	71.7	67.3 – 74.0
N3a	73.0	71.2 – 74.4

s: +3 dB(A) free-field corrections have been made to N3a.

- A.10 According to Section 4.3.3 of the EM&A Manual, Site inspection shall be carried out by the ET and attention shall be paid to the mitigation measures recommended for water pollution control. Weekly site inspections were carried out and no non-compliance was spotted during the reporting month.
- A.11 Waste management mitigation measures were properly implemented in the reporting period.
- A.12 For cultural heritage impact, as this Project does not involve proposed sewers works, according to Section 6.1.5 of the EM&A Manual, no EM&A requirement is considered necessary during the construction and operational phase of upgrading of Cheung Chau STW and Pak She SPS.
- A.13 The recommended landscape and visual mitigation measures were properly implemented in the reporting period.
- A.14 Weekly site inspection of the construction work by ET were carried out on 01, 08, 15, 22 and 30 August 2023.
- A.15 No environmental complaint was received during the reporting period.
- A.16 No notification of summons or prosecution was received in the reporting period.
- A.17 A map of the construction site and monitoring locations are shown in **Appendix A**.
- A.18 The summary of permit / licences for this Project is presented in **Table C** below:

Table C - Summary of Permit / Licences

Contract No. DC/2019/07 Environmental Monitoring Works for

Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities 25th EM&A Report – August 2023

Nature	Number	Issue Date	Expiry Date
Environmental Permit	EP-488/2014/A	13/05/2021	N/A
Notification pursuant to	462303	26/11/2020	N/A
Air Pollution Control			
(Construction Dust)			
Regulation			
Waste Disposal Billing	7039094	21/11/2020	N/A
Account			
Waste Disposal (Vessel)	7040870	11/07/2023	10/10/2023
Billing Account			
Permit issued under the	EP/MD/23-112	07/03/2023	06/09/2023
Dumping At Sea			
Ordinance			
Chemical Waste	5213-920-B2500-	31/12/2020	N/A
Producer	05		
Effluent Discharge	WT00038597-	20/08/2021	31/08/2026
Licence under Water	2021		
Pollution Control			
Ordinance			

# 1. Introduction

# 1.1. BACKGROUND

- 1.1.1. Drainage Services Department (DSD) has contracted Build King Civil Engineering Limited (BK) to carry out the Outlying Islands Sewerage Stage 2 Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities under Contract No. DC/2019/07.
- 1.1.2. Acuity Sustainability Consulting Limited (ASCL) is commissioned by BK to undertake the Environmental Team (ET) services as required and/or implied, both explicitly and implicitly, in the Environmental Permit (EP), Environmental Impact Assessment Report (EIA Report) (Register No. AEIAR-181/2013) and Environmental Monitoring and Audit Manual (EM&A Manual) for the Project; and to carry out the Environmental Monitoring and Audit (EM&A) programme in fulfillment of the EIA Report's EM&A requirements under Agreement No. CE 15/2010 (DS).

# 1.2. PROJECT DESCRIPTION

- 1.2.1. The purpose of the Project is to upgrade the sewerage collection, treatment and disposal facilities in Cheung Chau in order to cater for the projected ultimate population and planned developments in Cheung Chau to meet the increased demand and to achieve more stringent effluent quality standards. The key elements of the proposed works for the Project will include as follows:
  - Expansion of the sewage treatment capacity and upgrading of the treatment level of the existing Cheung Chau Sewage Treatment Works (Cheung Chau STW) to secondary treatment level; and
  - Expansion of the pumping capacity of the existing Pak She Sewage Pumping Station (Pak She SPS).

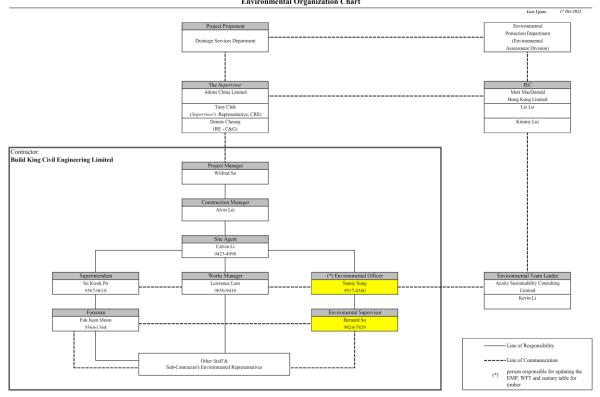
# 1.3. PROJECT ORGANISATION STRUCTURE

1.3.1. The Project organization structure is presented in **Figure 1.1**.

Figure 1.1 Project Organization Structure

Contract No.: DC/2019/07
Outlying Islands Sewerage, Stage 2

– Upgrading of Cheung Chau
Sewage Treatment and Disposal Facilities
Environmental Organization Chart



Party	Role	Contact Person	Phone No.
Drainage Services Department HKSAR (DSD)	Project Proponent	QIU Yujiing, Eugene	2594 7298
Supervisor / Supervisor's Representative (Atkins China Limited)	Resident Engineer	Dennis Cheung	2675 3910
Environmental Team (Acuity Sustainability Consulting Limited)	Environmental Team Leader	Kevin Li	2698 6833
Independent Environmental Checker (Mott Macdonald Hong Kong Limited)	Independent Environmental Checker	Liz Lo	2828 5751
Contractor (Build King Construction	Site Agent	Calvin Li	9423 4998
Limited)	Environmental Officer	Sunny Sung	9517 4340

# 1.4. SUMMARY OF CONSTRUCTION WORKS

1.4.1. Details of the major construction activities undertaken in this and the next reporting periods are shown below. The construction programme is presented in **Appendix B**.

Key activities carried out in this reporting period for the Project included the followings:

- Trial pit and ground investigation
- Smart sewage monitoring
- Excavation and Lateral Support (ELS) at CCSTW
- Construction of Sludge Digester Building
- Construction of MBR Treatment Facilities
- Erection of Tower Crane "XCMG XT335"
- Energization of Electrical System and Permit to Work Procedure
- Mechanical Installation of Sludge Digestor Building and Sludge Holding Tanks
- Removal of RMD Strut of ELS at CCSTW

Key activities to be carried out in the next reporting period for the Project included the followings:

- Trial pit and ground investigation
- Smart sewage monitoring
- Excavation and Lateral Support (ELS) at CCSTW
- Construction of Sludge Digester Building
- Construction of MBR Treatment Facilities
- Erection of Tower Crane "XCMG XT335"
- Energization of Electrical System and Permit to Work Procedure
- Mechanical Installation of Sludge Digestor Building and Sludge Holding Tanks
- Removal of RMD Strut of ELS at CCSTW

# 1.5. Purpose of the Report

- 1.5.1. According to the EM&A Manual for the Project, monitoring for air quality and noise should be conducted throughout the construction period of the Project.
- 1.5.2. The EM&A requirements for environmental monitoring are set out in the EM&A Manual. Environmental aspect of construction noise and air quality were identified as the key issues requiring implementation of monitoring programme during the construction phase of the Project.
- 1.5.3. This report is summarizing the monitoring results and audit findings of the EM&A programme during the reporting period from 1 August to 31 August 2023.

# 2. AIR QUALITY

# 2.1. AIR QUALITY PARAMETERS

- 2.1.1. The air quality parameters to be monitored includes:
  - 24-hour TSP:
  - 1-hour TSP; and

# 2.2. Monitoring Criteria

- 2.2.1. Dust monitoring was carried out at the designated monitoring location at least once in every six-days to obtain 24-hour TSP samples. One-hour TSP sampling shall also be done at least 3 times in every six-days while the highest dust impact occurs.
- 2.2.2. Before commencing the impact monitoring, the ET Leader shall inform the IEC of the impact monitoring programme such that the IEC can conduct on-site audit to ensure accuracy of the impact monitoring results.
- 2.2.3. In case of non-compliance with the air quality criteria, additional monitoring as specified in the Action Plan shall be conducted within 24 hours after the result is obtained. This additional monitoring shall be continued until the excessive dust emission or the deterioration in air quality is rectified.

# 2.3. MONITORING REQUIREMENTS AND EQUIPMENT

- 2.3.1. 1-hour and 24-hour TSP levels were measured to indicate the impacts of construction dust on air quality. The 24-hour TSP levels shall be measured by following the standard high volume sampling method as set out in the Title 40 of the United States Code of Federal Regulations, Chapter 1 (Part 50), Appendix B.
- 2.3.2. High volume samplers (HVSs) in compliance with the following specifications shall be used for carrying out the 1-hour and 24-hour TSP monitoring:
  - (i) 0.6 1.7 m<sup>3</sup> per minute adjustable flow range;
  - (ii) equipped with a timing / control device with +/- 5 minutes accuracy for 24 hours operation;
  - (iii) installed with elapsed-time meter with +/- 2 minutes accuracy for 24 hours operation;
  - (iv) capable of providing a minimum exposed area of 406 cm<sup>2</sup>;
  - (v) flow control accuracy: +/- 2.5% deviation over 24-hour sampling period;
  - (vi) equipped with a shelter to protect the filter and sampler;
  - (vii) incorporated with an electronic mass flow rate controller or other equivalent devices;
  - (viii) equipped with a flow recorder for continuous monitoring;
  - (ix) provided with a peaked roof inlet;
  - (x) incorporated with a manometer;
  - (xi) able to hold and seal the filter paper to the sampler housing at horizontal position;
  - (xii) easily changeable filter; and

(xiii) capable of operating continuously for a 24-hour period.

- 2.3.3. The ET is responsible for provision of the monitoring equipment. They shall ensure that sufficient number of HVSs with an appropriate calibration kit is available for carrying out the impact monitoring, and ad hoc monitoring. The HVSs shall be equipped with an electronic mass flow controller and be calibrated against a traceable standard at regular intervals. All the equipment, calibration kit, filter papers, etc., shall be clearly labelled.
- 2.3.4. Initial calibration of dust monitoring equipment shall be conducted upon installation and thereafter at bi-monthly intervals. The transfer standard shall be traceable to the internationally recognised primary standard and be calibrated annually. The concerned parties such as ER shall properly document the calibration data for future reference. All the data shall be converted into standard temperature and pressure condition.
- 2.3.5. If the ET proposes to use a direct reading dust meter to measure 1-hour TSP levels, he shall submit sufficient information to the ER to prove that the instrument is capable of achieving a comparable result to the HVS. The instrument shall also be calibrated regularly, and the 1-hour sampling shall be determined periodically by the HVS to check the validity and accuracy of the results measured by direct reading method.

# <u>Laboratory Measurement / Analysis</u>

- 2.3.6. A clean laboratory with constant temperature and humidity control, and equipped with necessary measuring and conditioning instruments to handle the dust samples collected, shall be available for sample analysis, and equipment calibration and maintenance. The laboratory shall be HOKLAS accredited.
- 2.3.7. Filter paper of size 8" x 10" shall be labelled before sampling. It shall be a clean filter paper with no pinholes, and shall be conditioned in a humidity-controlled chamber for over 24-hours and be pre-weighed before use for the sampling
- 2.3.8. After sampling, the filter paper loaded with dust shall be kept in a clean and tightly sealed plastic bag. The filter paper shall then be returned to the laboratory for reconditioning in the humidity-controlled chamber followed by accurate weighing by an electronic balance with readout down to 0.1 mg. The balance shall be regularly calibrated against a traceable standard.
- 2.3.9. 1-hour TSP levels and 24-hour TSP had been measured with direct reading dust meters and High Volume Samplers respectively. The details of equipment used for monitoring are listed in **Table 2.1**, and the calibration certificates are presented in **Appendix C**.

**Table 2.1 Equipment Used for Air Quality Monitoring** 

Equipment	Model	Serial Number
Portable Dust Meter – 1- hour TSP	SIBATA Digital Dust Indicator (Model: LD-5R)	2Y6550 2Y6549
High Volume Samplers – 24- hour TSP	Tisch TE-5170X High Volume Air Sampler	1048 1085
Calibrator Kit	Tisch TE-5028A Calibration Kit	3702

#### 2.4. Monitoring Locations

- 2.4.1. The ET agreed with the ER and the IEC on the position of the HVS for the installation of the monitoring equipment. When positioning the samplers, the following points were noted:
  - (i) a horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
  - (ii) no two samplers shall be placed less than 2 meters apart;
  - (iii) the distance between the sampler and an obstacle, such as buildings, must be at least twice the height that the obstacle protrudes above the sampler;
  - (iv) a minimum of 2 meters of separation from walls, parapets and penthouses is required for rooftop samplers;
  - (v) a minimum of 2 meters separation from any supporting structure, measured horizontally is required;
  - (vi) no furnace or incinerator flue is nearby;
  - (vii) airflow around the sampler is unrestricted;
  - (viii) the sampler is more than 20 meters from the dripline;
  - (ix) any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring
  - (x) permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
  - (xi) a secured supply of electricity is needed to operate the samplers.
- 2.4.2. The proposed dust monitoring station is presented in **Table 2.2** and the respective locations are shown in Figure 2.1 of the EM&A Manual.

**Table 2.2 Proposed Dust Monitoring Stations** 

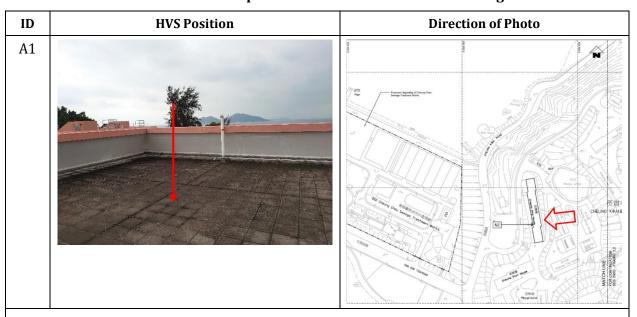
ID No.	Location	Nature of Use	Remarks
A1	Cheung King House, Cheung Kwai Estate	Residential	Specified in the EM&A Manual but proposed to change location
A1a	The admin building inside the construction site	Institutional	Proposed alternative location to replace A1
A2	Cheung Chau Slaughter House	Slaughter house	Specified in the EM&A Manual but proposed to change location
A2a	The existing outfall pumping station inside the construction site	Institutional	Proposed alternative location to replace A2

- **2.4.3.** As secured electricity supply was not able to be provided at Monitoring Station A1, Monitoring Station A1a was then proposed. The proposed Monitoring Station A1a is the Admin Building inside the construction site. It is located at a similar direction as A1 from the construction site, but much closer to any major dust emission source than A1.
- **2.4.4.** Monitoring Station A2 is now abandoned, only limited access can be granted and power supply cannot be guaranteed which may not feasible to be a monitoring location. An alternative location A2a, which is the existing outfall pumping station Building inside the construction site. Location A2a is about 30 meter away from the Cheung Chau slaughter

house and closer to the dust emission source.

2.4.5. The proposed alternative monitoring locations meet the guidelines and requirements specified in Section 2.4.1 and 2.4.2 of the EM&A Manual. **Table 2.3** shows the photographs of the air monitoring locations.

Table 2.3 Photo of Proposed HVS Position at Dust Monitoring Stations

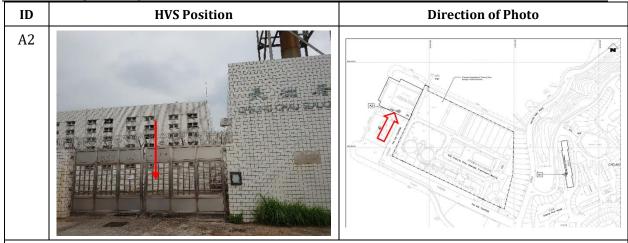


The proposed Monitoring Station A1a is the Admin Building inside the construction site. It is located at a similar direction as A1 from the construction site, but much closer to any major dust emission source than A1.



Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities

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Because Monitoring Station A2 is now abandoned, only limited access can be granted and power supply cannot be guarunteed which may not feasible to be a monitoring location.



# 2.5. RESULTS AND ANALYSIS

2.5.1. The 1-hour TSP and 24-hour TSP measurement data are shown in <u>Appendix D</u> and summarized in **Table 2.4** and **Table 2.5** respectively.

**Table 2.4 Summary of 1-hour TSP Monitoring Results** 

Monitoring Location	Average(μg/m3)	Range(μg/m3)
A1a	65	51 - 77
A2a	48	39 - 57

Table 2.5 Summary of 24-hour TSP Monitoring Results

Monitoring Location	Average(μg/m3)	Range(μg/m3)
A1a	50	23 - 117
A2a	52	24 - 105

# 2.6. Environmental Quality Performance Limits

2.6.1. The baseline monitoring results formed the basis for determining the air quality criteria for the impact monitoring. The ET shall compare the impact monitoring results with air quality criteria set up for 24-hour TSP and 1-hour TSP. **Table 2.6** shows the air quality criteria, namely Action and Limit levels to be used.

**Table 2.6** Action / Limit Levels for Air Quality

Parameters	Action Level	Limit Level
1-hour TSP Level	For baseline level $\leq 200 \mu\text{g/m}^3$ AL = (BL * 1.3 + LL)/2	260 μg/m <sup>3</sup>
in μg/m³	For baseline level > $200 \mu g/m^3$ AL = LL	
24-hour TSP Level in	For baseline level $\leq 384 \mu g/m^3$ AL = (BL * 1.3 + LL)/2	500 μg/m <sup>3</sup>
μg/m³	For baseline level > $384 \mu g/m^3$ AL = LL	

2.6.2. The derived Action/Limit Levels are presented in **Table 2.7**.

Table 2.7 Derived Action / Limit Levels for Air Quality

Parameters	Monitoring Location	<b>Action Level</b> μg/m <sup>3</sup>	<b>Limit Level</b> μg/m <sup>3</sup>
1-hour TSP Level	A1a	151	260
in μg/m <sup>3</sup>	A2a	154	
24-hour TSP Level in	A1a	270	500
μg/m³	A2a	271	

# 2.7. EVENT AND ACTION PLAN

2.7.1. Should non-compliance of the air quality criteria occur, actions in accordance with the Action Plan in **Table 2.8** shall be carried out.

# Table 2.8 Event and Action Plan for Air Quality (Construction Dust)

EVENT		ACTION PLAN FOR CONST	RUCTION DUST							
EVENI	ET	ET IEC ER		CONTRACTOR						
ACTION LEVEL										
Exceedance for one sample	Identify source, investigate the causes of exceedance and propose remedial measures;     Inform IEC and ER;     Repeat measurement to confirm finding; and     Increase monitoring frequency to daily.	Check monitoring data submitted by ET; and     Check Contractor's working method.	Notify Contractor.	Rectify any unacceptable practice; and     Amend working methods if appropriate.						
Exceedance for two or more consecutive samples	Identify source;     Inform IEC and ER;     Advise the ER on the effectiveness of the proposed remedial measures;     Repeat measurements to confirm findings;     Increase monitoring frequency to daily;     Discuss with IEC and Contractor on remedial actions required;     If exceedance continues, arrange meeting with IEC and ER; and	Check monitoring data submitted by ET;     Check Contractor's working method;     Discuss with ET and Contractor on possible remedial measures;     Advise the ET on the effectiveness of the proposed remedial measures; and     Supervise implementation of remedial measures	Confirm receipt of notification of failure in writing;     Notify Contractor; and     Ensure remedial measures properly implemented.	Submit proposals for remedial to IEC within 3 working days of notification;     Implement the agreed proposals; and     Amend proposal if appropriate.						

# 3. Noise

#### 3.1. MONITORING CRITERIA

- 3.1.1. Impact monitoring was conducted once a week between 07:00-19:00 hours on normal weekdays.
- 3.1.2. **Table 3.1** summarizes the monitoring parameters, frequency and duration of the noise monitoring.

**Table 3.1 Noise Monitoring Parameters, Time, Frequency and Duration** 

Time	Duration	Interval	Parameters
Daytime: 0700-1900 hrs	Once per week	Continuously in $L_{eq \; 5min}/L_{eq \; 30min}$ (average of 6 consecutive $L_{eq}$ $_{5min}$ )	$L_{eq~5min}$ , $L_{eq~30min}$ , $L_{10}~\&~L_{90}$

# 3.2. MONITORING REQUIREMENTS AND EQUIPMENT

- 3.2.1. Sound level meters and calibrators shall comply with the International Electrotechnical Commission Publications 651: 1979 (Type 1) and 804: 1985 (Type 1) specification as referred to in the Technical Memorandum (TM) issued under the Noise Control Ordinance.
- 3.2.2. Sound level meters were calibrated using a portable calibrator prior to and following each noise measurement. Where the difference between the calibration levels is greater than 1.0 dB(A), the measurement shall be repeated. Calibrated hand-held anemometers were supplied for the measurement of wind speeds during noise monitoring periods.
- 3.2.3. Noise measurements should not be made in fog, rain, wind with a steady speed exceeding 5 m/s or wind with gusts exceeding 10 m/s. The wind speed shall be checked with a portable wind speed meter capable of measuring the wind speed in m/s.
- 3.2.4. The details of equipment used for impact monitoring are listed in **Table 3.2**, and the calibration certificates are presented in <u>Appendix E</u>.

**Table 3.2 Equipment Used for Noise Monitoring** 

Equipment	Model	Serial Number
Sound Level Meter	SVANTEK 971	C119577
Acoustic Calibrator	Rion NC-75	35124528

# 3.3. MONITORING LOCATION

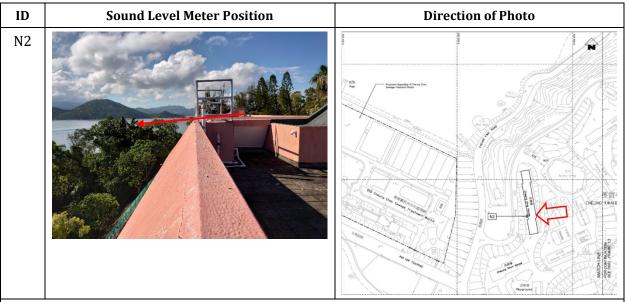
3.3.1. According to the environmental findings detailed in the EIA report, the designated locations for the construction noise monitoring are listed in **Table 3.3** and shown in Figure 3.1 – 3.8 of the EM&A Manual.

Table 3.3 Noise Monitoring Stations for Noise Monitoring

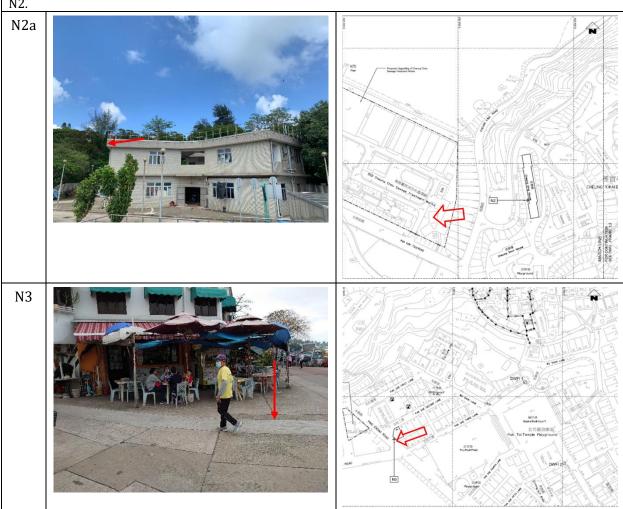
ID No.	Location	Nature of Uses	Remarks	Façade/Free- field
N2	I KWALECTATA I		Specified in the EM&A Manual but proposed to change location	Façade
N2a	Construction Institutional location to		Proposed alternative location to replace N2	Façade
N3	No. 1A Pak She Second Lane	Residential	Specified in the EM&A Manual but proposed to change location	Free-field
N3a	Cheung Chau Fire Station	Fire Station	Proposed alternative location to replace N3	Free-field

- 3.3.2. For this Contract, only N2 and N3 need to be monitored since all the other monitoring stations specified in the EM&A Manual are for sewers works but this Contract does not include sewers works.
- 3.3.3. The proposed Monitoring Station N2a is the Admin Building inside the construction site. It is located at a similar direction as N2 from the construction site, but much closer to any major noise emission source than N2.
- 3.3.4. According to Figure 3.3 of the EM&A Manual, Location N3 is placed in front of a restaurant on Ping Chong Road. It may pose potential danger to pedestrians, cyclists, drivers and the equipment. A proposed monitoring location N3a, which is about 5 m away from the original monitoring location. N3a is at the corner of the Cheung Chau Fire Station. This location is more safe and meets the guidelines and requirements specified in Section 3.4.1 and 3.4.2 of the EM&A Manual.
- 3.3.5. The monitoring locations should normally be made at a point 1m from the exterior of the NSRs building façade and be at a position 1.2m above the ground. **Table 3.4** showed photographs and indications of the proposed position of sound level meters to be placed for the baseline and impact monitoring.

Table 3.4 Photo of Proposed Sound Level Meter Position at Noise Monitoring Stations

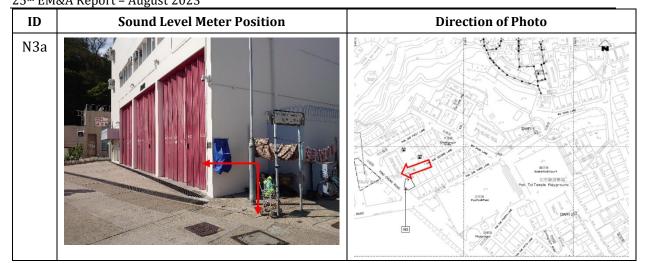


The proposed Monitoring Station N2a is the Admin Building inside the construction site. It is located at a similar direction as N2 from the construction site, but much closer to any major noise emission source than N2.



According to Figure 3.3 of the EM&A Manual, Location N3 is placed in front of a restaurant on Ping Chong Road. It may pose potential danger to pedestrians, cyclists, drivers and the equipment.

25th EM&A Report – August 2023



# 3.4. RESULTS AND ANALYSIS

3.4.1. The noise monitoring was carried out in July 2023. The measurement data are shown in <a href="Appendix F">Appendix F</a> and summarized in **Tables 3.5**.

**Table 3.5 Summary of Noise Monitoring Results** 

Monitoring Location	Time Period	Average[dB(A))	Range[dB(A))
N2a	Daytime (0700-1900)	71.7	67.3 - 74.0
N3a	Daytime (0700-1900)	73.0	71.2 - 74.4

s: +3 dB(A) free-field corrections have been made to the data of N3a.

# 3.5. Environmental Quality Performance Limits

3.5.1. The Action and Limit levels for construction noise are shown in **Table 3.6**. All NSRs identified in the Project are classified with an Area Sensitivity Rating (ASR) A in accordance with the Technical Memorandum on Noise from Construction Work Other Than Percussive Piling.

**Table 3.6** Action / Limit Levels for Construction Noise

Time Period	Action	Limit
07:00-19:00 hours on normal weekdays;	When one or more documented complaints are received	75dB(A)

# 3.6. EVENT AND ACTION PLAN

3.6.1. Should non-compliance of the noise monitoring criteria occur, actions in accordance with the Action Plan in **Table 3.7** shall be carried out.

# **Table 3.7 Event and Action Plan for Construction Noise**

Event	ET	IEC	ER	CONTRACTOR
Action Level	Notify ER, IEC and Contractor;     Carry out investigation;     Report the results of investigation to the IEC, ER and Contractor;     Discuss with the IEC and contractor and formulate remedial measures; and	Review the investigation results submitted by the ET;     Review the proposed remedial measures by the Contractor and advise the ER accordingly; and     Advise the ER on the effectiveness of the proposed remedial measures.	Confirm receipt of notification of failure in writing;     Notify Contractor;     In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; and     Supervise the implementation of remedial measures.	Submit noise mitigation proposals to IEC and ER; and     Implement noise mitigation proposals.
Limit Level	Notify IEC, ER, EPD & Contractor;     Identify source and investigate the cause of exceedance;     Repeat measurement to confirm findings;     Increase monitoring frequency;     Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;     Discuss with the IEC, Contractor and ER on remedial measures required;     Assess the effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and     If exceedance stops, cease additional monitoring.	Discuss amongst ET, ER and Contractor on the potential remedial actions; and     Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly.	Confirm receipt of notification of failure in writing;     Notify Contractor;     In consolidation with the EIC, agree with the Contractor on the remedial measures to be implemented;     Supervise the implementation of remedial measures; and     If exceedance continues, consider stopping the Contractor to continue working on that portion of work which causes the exceedance until the exceedance is abated.	Take immediate action to avoid further exceedance;     Submit proposals for remedial actions to IEC and ER within 3 working days of notification;     Implement the agreed proposals;     Submit further proposal if problem still not under control; and     Stop the relevant portion of works as determined by ER, until the exceedance is abated.

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# 4. WATER QUALITY

- 4.1. As suggested in Section 4.3 of the EM&A Manual, regular site audit was carried out to ensure that the recommended mitigation measures were properly implemented during the construction phase of upgrading of Cheung Chau STW and Pak She SPS. Site audit included site inspections and compliance audits were conducted in the reporting period.
- 4.2. Site inspection was carried out by the ET on 01, 08, 15, 22 and 30 August 2023. No major deficiency was observed and the implementation of recommended for water pollution control was considered satisfactory.
- 4.3. Compliance audits were undertaken that a valid discharge license was issued by EPD on 20 August 2021. The Contractor was reminded to make sure any effluent discharge from construction activities of the Project site should meet the requirements stipulated in the discharge license and monitoring of the treated effluent quality from the Works Areas should be carried out in accordance with the Water Pollution Control Ordinance license that is under the ambit of the relevant regional EPD office.
- 4.4. According to the Specific Conditions B2 in Part B of the discharge licence issued under WPCO, a sample of discharge was taken on 21 August 2023 for testing. The quality of the discharge compliance with the requirements of the discharge licence.

# 5. WASTE MANAGEMENT

5.1. The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials. With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are presented in **Table 5.1**.



#### Contract No: DC/2019/07

Build King Outlying Islands Sewerage Stage 2 – Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities

Name of Department : <u>Drainage Services Department</u> Contract No./ Work Order No. : <u>DC/2019/07</u>

Project Title: Outlying Islands Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities

Contractor: Build King Civil Engineering Limited

Trip Ticket Account (Main Account): 7039094
Trip Ticket Account (Vessel Account): 7040870

Marine Dumping Permit (Type 1 - Open Sea Disposal): EP/MD/23-041

Marine Dumping Permit (Type 2 - Confined Marine Disposal): EP/MD/23-033

#### Monthly Summary Waste Flow Table for 2023 (in Weight)

(All quantities	Il quantities shall be rounded off to 3 decimal places) updated on: 10-Aug-2023												
	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 kg)						Actual Quantities of Other C&D Materials / Wastes Generated Marin				Marine l	Dumping	
Month	Total Quantities Generated	into aggregates)	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported C&D Material	Metal	Paper/ Cardboard Packaging (f)	Plastic (g) (bottles/containers, plastic sheets/ foams from puckage material)	Chemical Waste (h)	Others (i) (e.g. General Refuse etc.)	Type 1 - Open Sea Disposal	Type 2 - Confined Marine Disposal
	[a+b+c+d+e+f+g+h+i)		(b)	(c)	(d)		(e) (in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in m')	(in m <sup>3</sup> )
Jan-2023	6752.4100	0.0000	0.0000	0.0000	6745.3900	0.0000	0.0000	0.0000	0.0000	0.0000	7.0200	0.0000	0.0000
Feb-2023	2032.0500	0.0000	0.0000	0.0000	2028.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.0500	0.0000	0.0000
Mar-2023	4282.9700	0.0000	0.0000	0.0000	4276.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6.9700	835.0000	1350.0000
Apr-2023	2152.4200	0.0000	0.0000	0.0000	2148.0000	0.0000	0.0000	0.0000	0.0000	0.0000	4.4200	0.0000	0.0000
May-2023	1664.6600	0.0000	0.0000	0.0000	1657.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7.6600	0.0000	0.0000
Jun-2023	1724.9700	0.0000	0.0000	0.0000	1717.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7.9700	0.0000	0.0000
Half-year total	18609.4800	0.0000	0.0000	0.0000	18571.3900	0.0000	0.0000	0.0000	0.0000	0.0000	38.0900	835.0000	1350.0000
Jul-2023	3.6500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3.6500	0.0000	0.0000
Aug-2023	7507.6900	0.0000	0.0000	0.0000	7505.9000	0.0000	0.0000	0.0000	0.0000	0.0000	1.7900	0.0000	0.0000
Sep-2023													
Oct-2023										, and the second			
Nov-2023										The state of the s			
Dec-2023										·			
Yearly Total	26120.8200	0.0000	0.0000	0.0000	26077.2900	0.0000	0.0000	0.0000	0.0000	0.0000	43.5300	835.0000	1350.0000

(All quantities shall be rounded off to 3 decimal places)

	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 kg)					Actual Quantities of Other C&D Materials / Wastes Generated					Marine Dumping		
Year	Total Quantities Generated	Broken Concrete (including rock for recycling into aggregates)	Reused in the Contract	Reused in Other Projects	Disposed as Public Fill	Imported C&D Material	Metal	Paper/ Cardboard Packaging	Plastic (bottles/containers, plastic sheets/ foams from puckage material)	Chemical Waste	Others (e.g. General Refuse etc.)	Type 1 - Open Sea Disposal	Type 2 - Confined Marine Disposal
	[a+b+c+d+e+f+g+h+i)	(a)	(b)	(c)	(d)		(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in m <sup>3</sup> )	(in m <sup>3</sup> )
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	858.3600	0.0000	0.0000	0.0000	786.3000	0.0000	0.0000	0.0000	0.0000	0.0000	72.0600	0.0000	0.0000
2022	17081.7200	0.0000	0.0000	0.0000	17032.3700	0.0000	0.0000	0.0000	0.0000	0.0000	49.3500	525.0000	203.0000
2023	26120.8200	0.0000	0.0000	0.0000	26077.2900	0.0000	0.0000	0.0000	0.0000	0.0000	43.5300	835.0000	1350.0000
2024	0.0000												
2025	0.0000			, and the second						, and the second			
2026	0.0000												
Total	44060.9000	0.0000	0.0000	0.0000	43895.9600	0.0000	0.0000	0.0000	0.0000	0.0000	164.9400	1360.0000	1553.0000

Remark

Density of C&D material to be
 Density of General Refuse to be

2 metric ton/m3 1.6 metric ton/m3 3) Density of Chemical Waste to be

0.88 metric ton/m3

Notes:

- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Sites.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) The summary table shall be submitted to the Project Manager monthly together with the Waste Flow Table for review and monitoring in accordance with the PS Clause 25.20(8)

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# 6. LANDSCAPE & VISUAL

- 6.1. The EIA Report has recommended landscape and visual mitigation measures to be undertaken during construction and operational phases of the upgrading of Cheung Chau STW under this Project. The implementation and maintenance of landscape mitigation measures were checked to ensure that they are fully realized and that potential conflicts between the proposed landscape measures and any other project works and without compromise to the intention of the mitigation measures.
- 6.2. Regular audits were carried out to ensure all the recommended landscape and visual mitigation measures were effectively implemented.
- 6.3. The EM&A Manual proposed mitigation measures were checked on a regular basis to ensure compliance with the intended aims of the EIA.

# 7. SITE INSPECTION AUDIT

- 7.1. Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. In the reporting period, site inspections were carried out on 01, 08, 15, 22 and 30 August 2023. A joint site inspection with IEC was carried out on 30 August 2023.
- 7.2. Environmental deficiencies were observed during weekly site inspection. Key observations during the site inspections and during the reporting period are summarized in **Table 7.1**.

Table 7.1 Site Observations

Date	Environmental Observations	Follow-up Status	Reminders
01 August 2023	NIL	N/A	NIL
08 August 2023	NIL	N/A	1. Contractor have been reminded to clear the leaves on top of the drainage
15 August 2023	Drainage should be maintained properly	Drainage was maintained in good condition.	1. Contractor have been reminded to clean the haul road after daily construction activities.
22 August 2023	1. Drainage should be covered and surrounded by sandbags to prevent muddy water flow in. (Inside the construction site)	Sand bags were put around gullies to avoid seepage of muddy runoff.	1. Haul road should be cleaned regularly after daily construction activities

Date	Environmental	Follow-up Status	Reminders			
	Observations					
30 August 2023	1. Mud should be cleared in the drainage (entrance)	The U-channel was cleaned.	NIL			
	2. Rock breaker of heavy machine should be placed on tarpaulins sheet and covered with tarpaulins sheet.	The rock breaker was removed.				

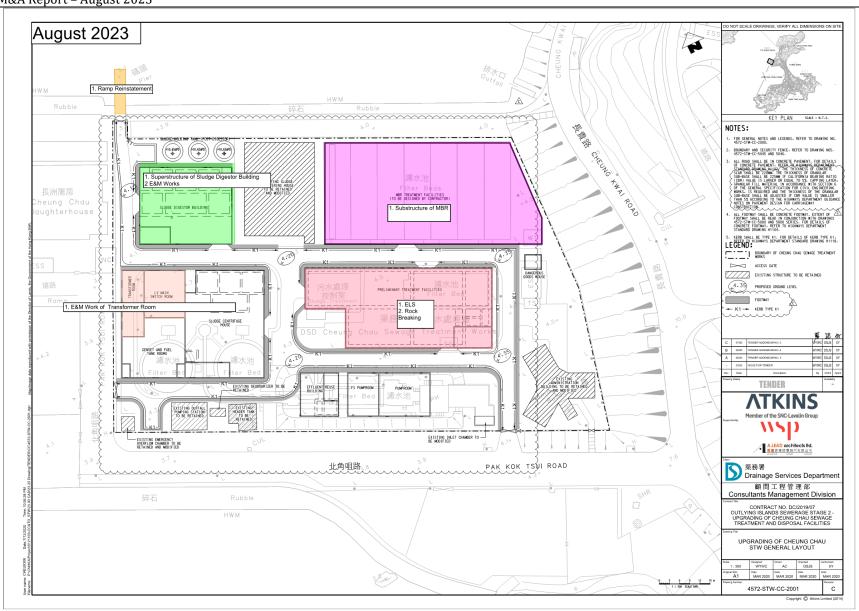
7.3. According to the EIA Study Report, Environmental Permit, contract documents and EM&A Manual, the mitigation measures detailed in the documents should be implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix G**.

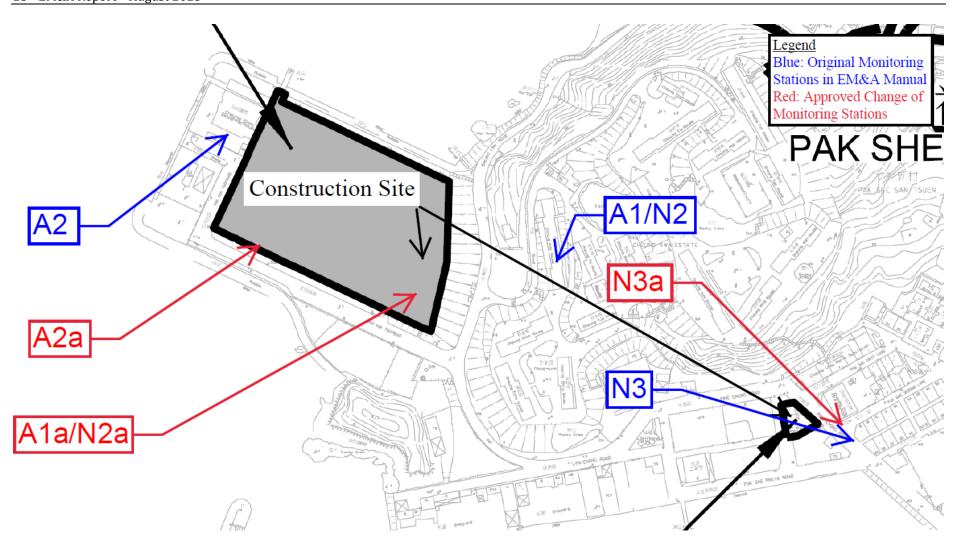
# 8. CONCLUSION

- 8.1. This is the 25<sup>th</sup> Monthly EM&A Report for the Project which summarizes the key findings of the programme during the reporting period from 1 August to 31 August 2023, in accordance with the EM&A Manual and the requirement under EP-488/2014/A.
- 8.2. Six (6) sessions of air and Five (5) sessions of noise monitoring were carried out at the monitoring locations sited at Cheung Chau in the reporting month.
- 8.3. Site audits were conducted as mitigation measures recommended for water pollution control and landscape and visual impact monitoring in the reporting period. Proper mitigation measures were implemented.
- 8.4. Weekly environmental site inspections were conducted during the reporting period. Only minor deficiencies were observed during site inspections. The environmental performance of the project was therefore considered satisfactory.
- 8.5. No exceedance of Action or Limit Level was recorded in the reporting period.
- 8.6. No environmental complaint was received in the reporting period.
- 8.7. No notification of summons or prosecution was received during the reporting period.

Contract No. DC/2019/07 Environmental Monitoring Works for Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities 25<sup>th</sup> EM&A Report – August 2023

# APPENDIX A Location Plan and Noise and Dust Monitoring Stations



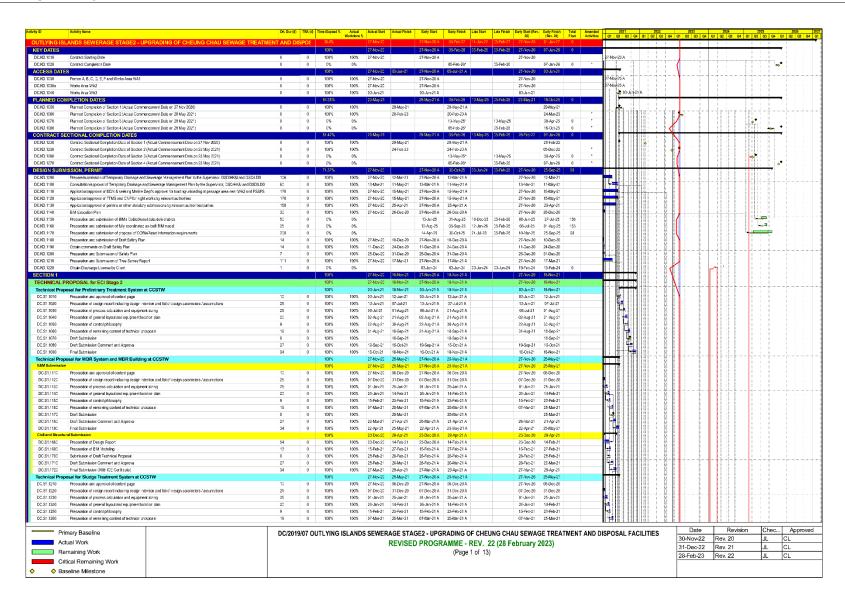


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Contract No. DC/2019/07 Environmental Monitoring Works for Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities 25<sup>th</sup> EM&A Report – August 2023

# APPENDIX B Construction Programme

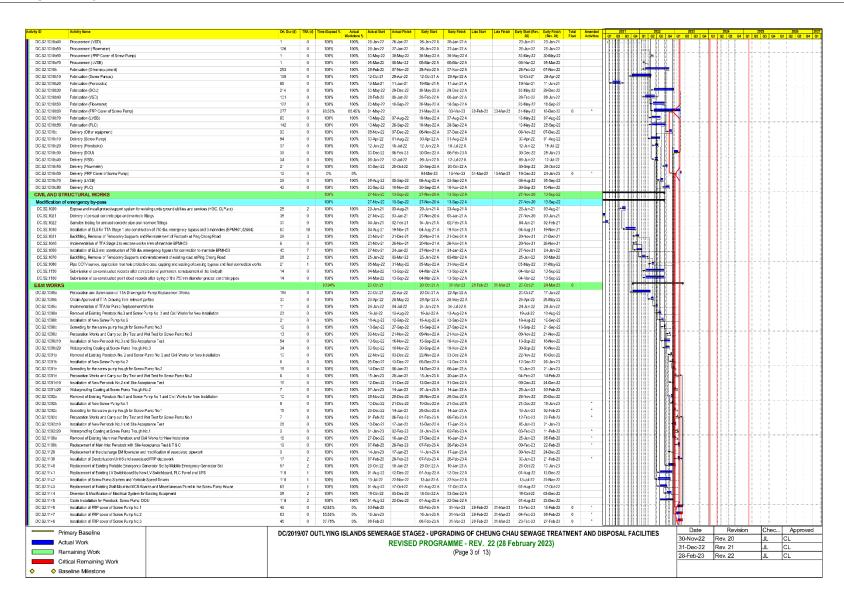




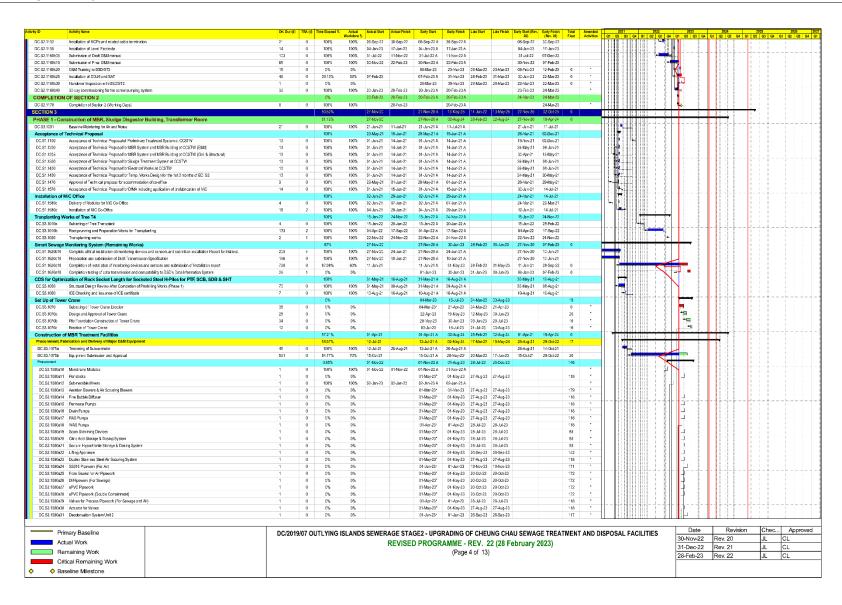


vity ID	Activity Name	Ori, Dur (d)	TRA (d)	Time Elapsed %	Actual Workdone %	Actual Start	Actual Finish	Early Start	Early Finish	Late Start	Late Finish Early Start (Rev. 20)	Early Finish Total Amende (Rev. 20) Float Activitie	id	2021 2022 2 03 Q4 01 Q2 Q1 04	2023 Q1 Q2 Q3 Q4	2024 Q1 Q2 Q3 D4	2925	2026 Q1 Q2 Q3 Q4
DC.81.1270	Draft Submission	0	0	100%	100%		25-Mar-21		25-Mar-21 A			25-Mar-21	131					
DC.S1.1280	Dea't Submission Comment and Approval	27	0	100%	100%	28-Mar-21	21-Apr-21	26-Mar-21 A	21-Apr-21 A		26-Mar-21	21-Apr-21	11 11					
DC.S1:1290	Final Submission	34	- 0	100%	100%	22-Apr-21	25-May-21	22-Apr-21 A	25-May-21 A		22-Apr-21	25-May-21	-					
Technical Prope	osal for Electrical Works at CCSTW	10		100%		27-Nov-20	25-May-21	27-Nov-20 A	25-May-21 A		27-Nov-20	25-May-21						
DC.S1.1310	Preparation and approval of content page		0	100%	100%	27-Nov-20	06-Dec-20	27-Nov-20 A	08-Dec-20 A		27-Nov-20	06-Dec-20	-1::::					
DC.S1.1320 DC.S1.1330	Preparation of design report including design intention and fish of design parameters / assumptions	25 25	- 0	100%	100% 100%	97-Dao-20 91-Jan-21	31-Dec-20 25-Jan-21	97-Dec-20 A P1-Jan-21 A	31-Dec-20 A 25-Jan-21 A		07-Dec-20 01-Jen-21	31-Dec-20 25-Jun-21		141141111-1	44	-           -   -		
DC.91.1340	Proparation of process cate dation and equipment sizing  Preparation of ceneral layout and equipment location plan	20	0	100%	100%	28-Jan-21	14-Feb-21	26-Jan-21 A	14-Feb-21-A		26-Jan-21	14-Feb-21						
DC.\$1.1350	Preparation of control philosophy	20	0	100%	100%	15-Feb-21	06-Mar-21	15-Feb-21 A	06-Mar-21 A		15-Feb-21	08-Mar-21						
DC-81.1360	Pregestition of terms ring content of technical prosposal	19	0	100%	100%	07-Mar-21	25-Mar-21	07-Mar-21 A	25-Mar-21 A		07-Mar-21	25-Mar-21			i i			
DC.81.1870	Deat Submission	0	0	100%	100%		25-Mar-21		25-Mar-21 A			25-Mur-21	1 .					
DC.S1.1380	Braft Submission Comment and Approva	27	-0	100%	100%	26-Mar-21	21-Apr-21	26-Mar-21 A	21-Apr-21 A		26-Mar-21	21-Apr-21	12		11			
DC.S1.1330	Final Submission	34	0	100%	100%	22-Apr-21	25-May-21	22-Apr-21 A	25-May-21 A		22-Apr-21	25-May-21	1 4					
Technical Prope	osal for Temp. Works Design for the 1st 3months of ECI S2			100%		16-Jan-21	23-May-21	16-Jan-21 A	23-May-21 A		16-Jan-21	23-May-21	- I					
DC.S1.1410a	Preparation and approval of Technical Presposal for ELS Design of Sludge Digester Bulting	67	- 0	100%	100%	18-Jan-21	23-Mar-21	16-Jan-21 A	23-Mar-21 A		18-Jan-21	23-Mar-21	H= 1					
DC:\$1.1410b	Preparation and approval of Technical Proposal for ELS Design of LV Main Switch Rm, Transformer Rm & WAS Storage Tanks	67	- 0	100%	100%	18-Jan-21	23 Mar-21	16 Jan-21 A	23-Mar-21 A		18-Jan-21	23-Mar-21					1 1 1	
DC.S1.1410c	Preparation and approval of Technical Proposal for ELS Design of MBR Treatment Facilities	67	0	100%	100%	18-Jan-21	23-Mar-21	16-Jan-21 A	23-Mar-21 A		18-Jan-21	23-Mar-21						
DC.S1.14106	Preparation and approval of Technical Proposal for ELS of 750mm dameter emergency bypass diversion at PSSPS	67	- 0	100%	100%	18-Jan-21	23-Mar-21	16-Jan-21 A	23-Mar-21 A		18-Jan-21	23-Mar-21					1 1 1	
DC.S1.1420	Dea't Submission	0	- 0	100%	100%		23-Mar-21		23-Mer-21 A			23-Mar-21	_     -\$					
DC.S1.1430	Draft Submission Comment and Approva	27	-0	100%	100%	24-Mar-21	19-Apr-21	24-Mar-21 A	19-Apr-21 A		24-Mar-21	19-Apr-21	11					
DC.S1.1440	Final Submission	34	- 0	100%	100%	20-Apr-21	23-May-21	20-Apr-21 A	23-May-21 A		20-Apr-21	23-Mey-21			1	_		
Technical Prop	osal for Accommodation for the Project Manager's, Supervisor's & Contractor's Co-Office			100%	Anna	27-Nov-20	25-Mar-21	27-Nov-20 A	25-Mer-21 A		27-Nov-20	25-Mar-21						
DC.S1.1460	EC Stage 1 - Technical proposal for accommodation for the Project Manager's Supervision's & Contractor's co-office	119	- 0	100%	100%	27-Nov-20 28-Jan-21	25-Mar-21 29-Jun-21	27-Nov-20 A	25-Mar-21 A		27-Nov-20 28-Jan-21	25-Mar-21 29-Jun-21						
echnical Prope	osal for DfMA including application of prefabrication and MiC	48	0	100%	100%	28-Jan-21 28-Jan-21	29-Jun-21 12-Mar-21	26-Jan-21 A	29-Jun-21 A		26-Jan-21 26-Jan-21	29-Jun-21 12-Mar-21						
C.S1.1480 C.S1.1480	Preparation and approval of content page Preparation of design memorandum for Civil DRMA	30	0	100%	100%	28-Jan-21 13-Mar-21	12-Mar-21 11-Apr-21	26 Jan 21 A 13 Mar 21 A	12-Mar-21 A 11-Apr-21 A		26-Jan-21 13-Mar-21	12-Mar-21 11-Agr-21						
XX.51.1480 XX.51.1500	Preparation of besign memorandum for E&M DfMA	30	0	100%	100% 100%	13-Mar-21	11-Arr-21	13-Mar-21 A	11-Apr-21 A		13-Mar-21	11-Apr-21	-   0	H 11 H H H H 11 - 11 - 11	1			
C.S1.1530	Preciatation of terms ninc content of technics or caposal	19	0	100%	100%	12-Apr-21	30-Apr-21	12-Apr-21 A	30-Apr-21 A		12-Apr-21	30-Apr-21	- 1					
C.S1.1540	Draft Submission	0	0	100%	100%	1214121	30-Apr-21	127412111	30-Apr-21 A		15.747.2	30-Apr-21	1					
DC S1 1550	Drait Sutmission Commert and Approva	24	- 0	100%	100%	01-May-21	24-May-21	01-May-21 A	24-May-21 A		01-May-21	24-May-21			1		1 1 1	1 1 1
DC.S1.1580	Final Submission	38	0	100%	100%	25-May-21	29-Jun-21	25 May-21 A	29-Jun-21 A		25-May-21	29-Jun-21						
ITE PREPARA	ATION WORKS			100%		27-Nov-20	15-May-21	27-Nov-20 A	15-May-21 A		27-Nov-20	15-May-21	-					
C S1.1580a	Design of MiC Co-Office	15	- 0	100%	100%	08-Mar-21	23-Mar-21	06-Mar-21 A	23-Mar-21 A		06-Mar-21	23-Mar-21						
C S1.1580b	Fabrication of M.C.Co-O'lice	44	0	100%	100%	28-Jan-21	23-Mar-21	28-Jan-21 A	23-Mar-21 A		28-Jan-21	23-Mar-21	=					
C S1.1590	Site clearance, set up site hoarding, provision of temporary fence, and erection of project signboard	184	6	100%	100%	27-Nov-20	15-May-21	27-Nov-20 A	15-May-21 A		27-Nov-20	15-May-21	-	H				
C S1.1800	Structural Condition Survey	34	2	100%	100%	10-Apr-21	15 May-21	10-Apr-21 A	15-May-21 A		10-Apr-21	15 May-21		H 11				
C S1.1630	Ground Investigation (45 nos, 3 rig. 2team) with relevant subletting and site setup	82	6	100%	100%	20-Jan-21	10-May-21	20-Jan-21 A	10-May-21 A		20-Jan-21	10-May-21	1				-11-1-1-	
DC S1.1640	Setup of monitoring and instrumentation system	119	8	100%	100%	02-Jan-21	08-May-21	02-Jan-21 A	08-May-21 A		02-Jan-21	08-Msy-21	1					
DC S1.1660	Initial site survey record	56	£	100%	100%	27-Nov-20	25-Jan-21	27-Nov-20 A	25-Jan-21 A		27-Nov-20	25-Jan-21						
DC S1.1670	Conduct UU detection and issuance of UU detection report	25	2	100%	100%	21-Dao-20	19-Jan-21	21-Dec-20 A	19-Jan-21 A		21-Dec-20	19-Jan-21	<b>+</b>					
DC S1.1871#	Installation of Piecomoter PS1 to PS3	48	-0	100%	100%	31-Mar-21	15-May-21	31-Mar-21 A	15-May-21 A		31-Mar-21	15-May-21						
Raw Sewerage	Sampling Survey			100%		27-Nov-20	06-Feb-21	27-Nov-20 A	06-Feb-21 A		27-Nov-20	08-Feb-21						
DC.S1.1610a	Conduct Initial Recommissance Visit	13	1	100%	100%	27-Nov-20	10-Dec-20	27-Nov-20 A	10-Dec-20 A		27-Nov-20	10-Dec-20					11 1 1	
DC.S1.1610b	Submit Report of Initial Reconnaissance Visit	5	0	100%	100%	11-Dec-20 18-Dec-20	15-Dec-20	11-Dec-20 A	15-Dec-20 A 22-Dec-20 A		11-Dec-20 16-Dec-20	15-Dec-20 22-Dec-20						
DC.S1.1610c	Approval of Regard of Initial Reconnaissance Visit	7	0	100%	100%	10 1010 80	22-Dec-20	16-Dec-20 A	EX BGC EGIT		16-Dec-20 23-Dec-20	KE SPECULO	-8   11					
DC.S1.1610d DC.S1.1610e	Preparation work for Raw Savage Sampling	14	0	100%	100% 100%	23-Dso-20 30-Dso-20	29-Dec-20 12-Jan-21	23-Dec-20 A 30-Dec-20 A	29-Dec-20 A 12-Jan-21 A		23-Jec-20 30-Jec-20	29-Dec-20 12-Jan-21	[]-[]-[]	H-144444	4	-+	- 4-4-4-	
DC.S1.1610e DC.S1.1610E	Conduct Raw Sewage Sampling Submiring of Supray Brand	14	0	100%	100% 100%	13-Jan-21	12-Jan-21 02-Feb-21	30-Den-20 A 13-Jan-21 A	12-Jan-21 A 02-Feb-21 A		30-Geo-20 12-Jan-21	12-Jan-21 02-Fah-21	_I. II					
DC.S1.1610r DC.S1.1610c	Submission of Survey Report  Comment and Approval of Survey Report	2	- 0	100%	100% 100%	03-Feb-21	02-Feb-21	03-Feb-21 A	02-Feb-21 A 04-Feb-21 A		03-Feb-21	02-Hab-21 04-Fab-21						
DC.S1.1610g DC.S1.1610h	Submission of Final Survey Report	2	- 0	100%	100%	05-Feb-21	06-Feb-21	05-Feb-21 A	04-Fab-21 A 06-Fab-21 A		05-Fe0-21	06-Fab-21					11 1 1	
Smart Sewerac	e Monitoring System	-		100%		27-Nov-20	10-Jan-21	27-Nov-20 A	10-Jan-21 A		27-Nov-20	10-Jan-21	+ 1				11 1 1	
DC.S1.1620a	Carry out site investigation and submit Reconnais since Survey Report	42	3	100%	100%	27-Nov-20	10-Jan-21	27-Nov-20 A	10-Jan-21 A		27-Nov-20	10-Jan-21	<b> </b>				1000	
	OF SECTION 1			0%		29-May-21	29-May-21	29 May-21 A	29-May-21 A		29-May-21	29-May-21						
C S1.1650	Compliction of Section 1 (Working Days)	0	- 0	100%	100%		29-May-21		29-May-21 A			29-May-21						
ECTION 2 - Up	ograding the existing Pak She Sewage Pumping Station (PSSPS)			96.28%		27-Nov-20		27-Nov-20 A	31-Har-23	28-Feb-23	31-Mor-23 27-Nov-20	24-Mar-23 0			<del> </del>			
	NT, FABRICATION and DELIVERY of MAJOR E&M EQUIPMENT			98.09%		19-Mar-21		19-Mar-21 A	15-War-23	28-Feb-23	15-Mar-23 27-Nov-20	28-Jan-23 0	<del>     </del>		<del> </del>			
C SZ 1005s	Tendering of Subcontrator	45	- 0	100%	100%	12-Jul-21	25-Aug-21	12-Jul-21 A	25-Aug-21 A		12-Jul-21	25-Aug-21	11111		1	-1111-1-		
C.SZ.1005b	Equipment Submission and Approval (Other equipment)	141	- 0	100%	100%	28-Aug-21	14-Jan-22	26-Aug-21 A	14-Jan-22 A		26-Aug-21	22-Jan-22						
C S2.1005c	Equipment Submission and Approval (Scree Pumps)	40	0	100%	100%	31-Aug-21	09-Oct-21	31-Aug-21 A	09-0ci-21 A		26-Aug-21	04-0ct-21		40				
C S2.1005d	Equipment Submission and Approval (Penstocks)	189	0	100%	100%	31-Aug-21	08-Mar-22	31-Aug-21 A	08-Mar-22 A		27-Nov-20	31-Mar-21						
OC 82.1005e	Equipment Submission and Approval (DOU)	131	0	100%	100%	31-Oct-21	11-Mar-22	31-0:t-21 A	11-Mar-22 A		27-Nov-20	1'-Mar-21	11111					
C S2.1005f	Equipment Submission and Approval (VSD)	91	0	100%	100%	30-Nov-21	01-Mar-22	30-Nov-21 A	01-Mar-22 A		27-Nov-20	22-Jan-21						
C S2.1005g	Equ. priment Submission and Approval (Flowmeter)	172	0	100%	100%	03-Dec-21	24-May-22	03-Dec-21 A	24-May-22 A		27-Nov-20	17-May-21			-			
C S2.1005h	Equipment Submission and Approval (FRP Cover of Screw Pump)	100	0	100%	100%	29-Feb-22	08-Jun-22	28-Feb-22 A	08-Jun-22 A		27-Nov-20	06-Mar-21						
DC S2.1005i	Equipment Submission and Approval (LVSB)	95	0	100%	100%	03-Jan-22	11-Apr-22	03-Jan-22 A	11-Apr-22 A		28-Fet-22	13-Apr-22						
C S2.1010s	Procurement (Other equipment)	6	0	100%	100%	08-Jan-22	14-Jan-22	08-Jan-22 A	14-Jan-22 A		08-Jan-22	14-Jan-22					_     -   -   -	
C SZ.1010s10	Procurement (Scies Purps)	7	0	100%	100%	24-Sep-21	24-Sep-21	24-Sep-21 A	24-Sep-21 A		05-OcH21	11-0ct-21					11 1 1	
C S2.1010s20	Procurement (Perstocks)	1	0	100%	100%	03-Jan-22	04-Jan-22	03-Jan-22 A	04-Jan-22 A		17-Mar-21	18-Mar-21	-11/11				11 1 1	
C S2.1010s30	Procurement (DOU)	2	0	100%	100%	20-Mar-22	21-Mar-22	20-Mar-22 A	21-Mar-22 A		20-Mar-22	21-Mar-22				11 (1.1	II i i	1 1 1
- Prin	nary Baseline	DC/2044	0/07 (0)	LITI VINC S	SI AMPS	CEMED	AGE STA	GE2 - HPC	DADING OF	CUEIII	IC CUALL SELVAC	SE TREATMENT AND	DISDOS	AL EACH ITIES	Date	Revision	on Chec.	Approve
		DOIZUTS	אט זטונ	UILTING	SLANDS								הוסרטסי	AL FAUILITIES	30-Nov-22	Rev. 20	JL	CL
Act	ual Work						REVISE	D PROGR	AMME - R	REV. 22	? (28 February 2	2023)			31-Dec-22	Rev. 21	JL	CL
Rei	maining Work								(Page 2	of 13)							JL	CL
	ical Remaining Work								( .5+-	- /					28-Feb-23	Rev. 22	JL	JUL
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	seline Milestone																	

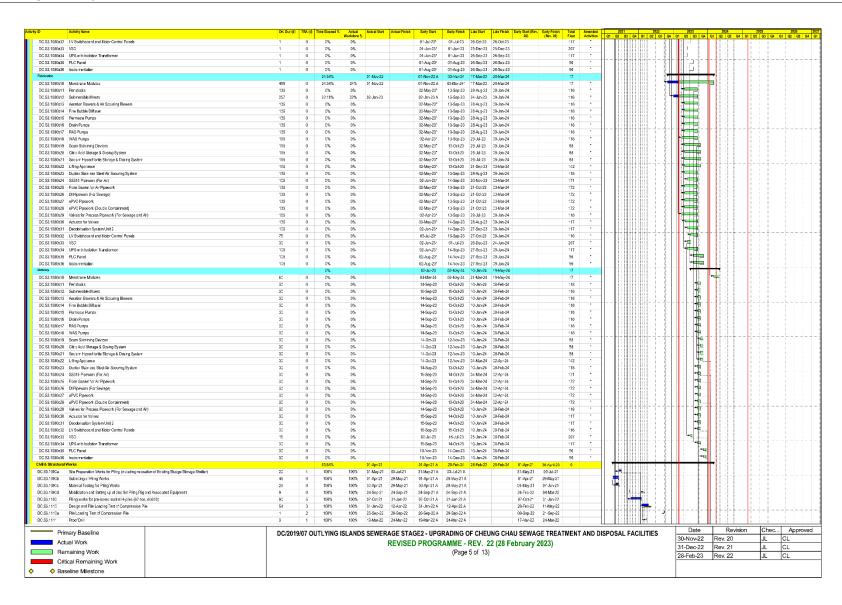




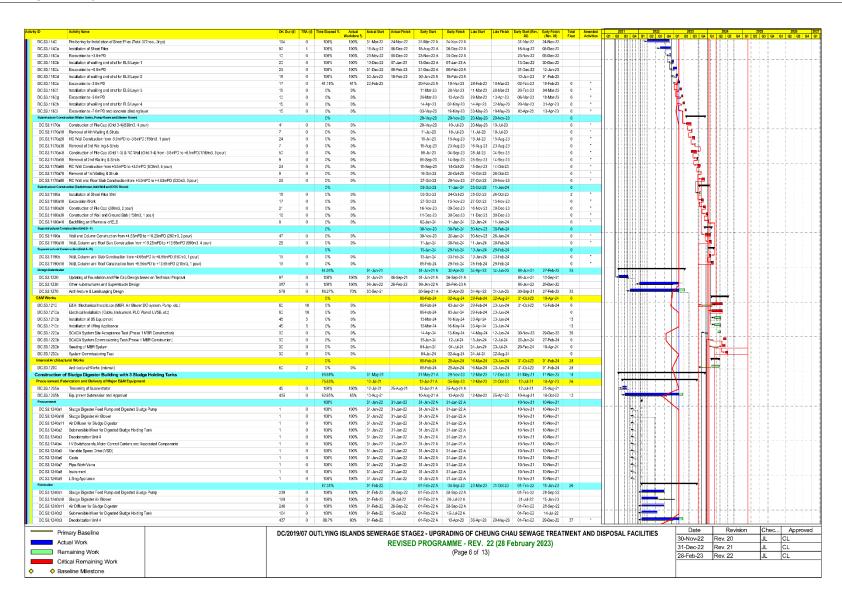




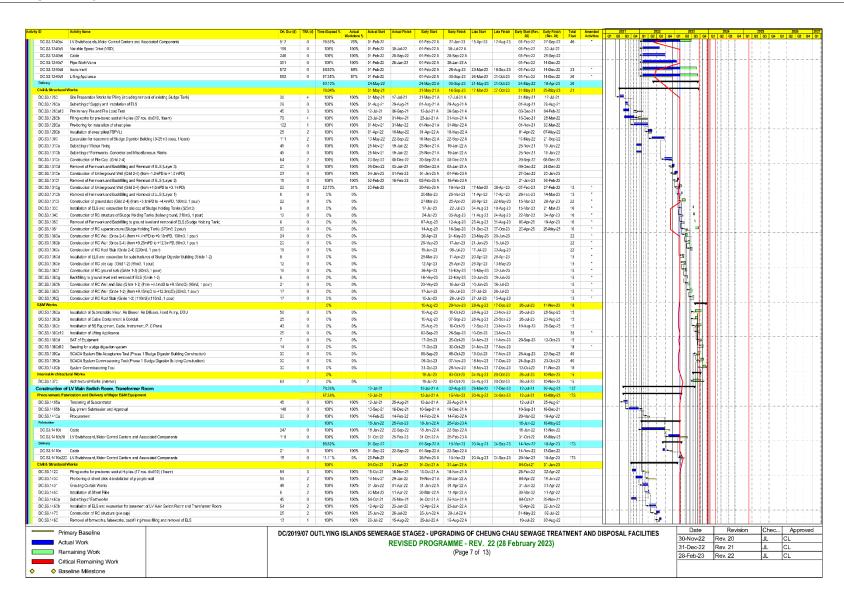




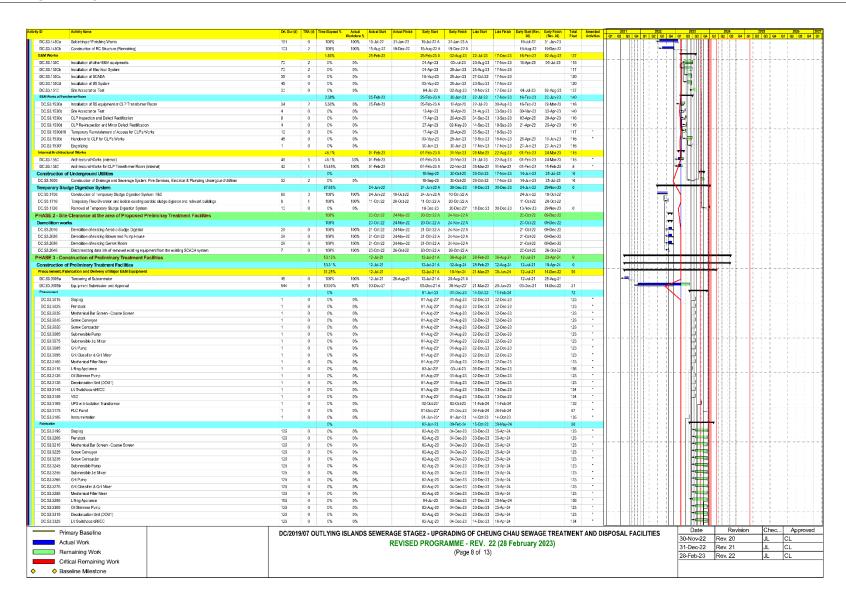








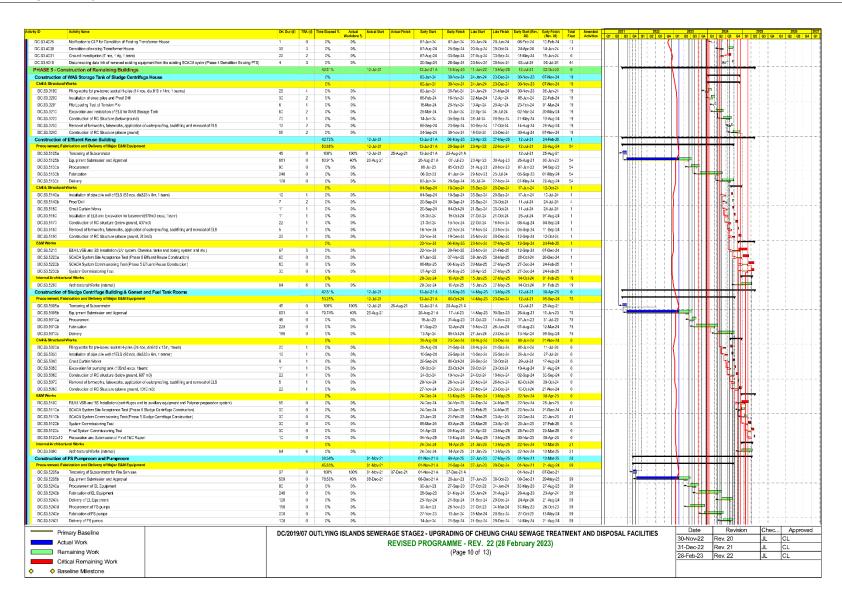




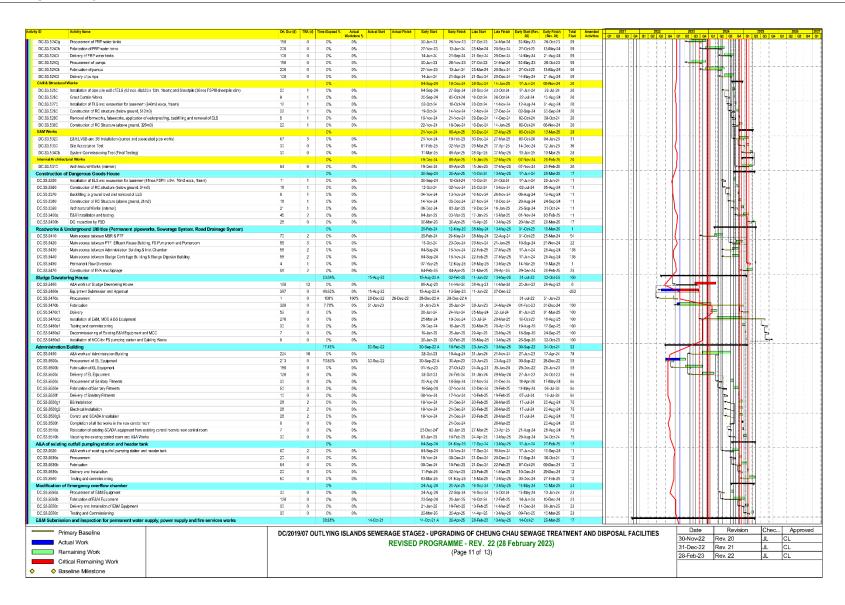


ty ID	Actistry Name	Orl. Dur (d)	TRA (d) Ti	me Elapsed %	Actual Actual Start Workdone %	Actual Finish Early Start	Early Finish		Late Finish	Early Start (Rev. Early Finish 20) (Rev. 20)	Total Amended Float Activities	Q1 Q2	03 Q4 C	2022 1 Q2 Q3	Q4 Q1 02	2023 24 Q1 Q2 Q3	04 01 02 03 Q4	2026 Q1 Q2 Q3 Q4
DC:83.3335	VSD	125	0	0%	0%	02-Aug-23	04-Dec-23	14-Dec-23	16-Apr-24		134							
DC:S3.8345 DC:S3.8355	UPS with Isolation Transformer	65	0	0%	0%	03-Oct-23		12-Feb-24	16-Apr-24		132 *					117		
DC S3.3365	PLC Panel Instrumentation	70 195	0	DN-	0% 0%	02-Dec-23 02-Jun-23	09-Feb-24 03-Dec-23		16-Apr-24 16-Apr-24		136		-1444		- - - - -		<del>  </del>	
Deikery	I I S. C. I O'I I SOLITO	120		DN-	0%	04-Dec-23	10-Har-24	D6-Apr-24	08-Jun-24		50							
DC:S3.3375	Stopiog	30	- 0	D%	0%	05-Dec-23			05-May-24		123					<del>   </del>		
DC.S3.3385	Persicol	32	0	D%	P%	95-Dec-23	03-Jan-24		05-May-24		123 *					<b> -6</b>		
DC:83.3395	Mechanical Bar Screen - Coarse Screen	30	0	0%	0%	05-Dec-23	03-Jan-24	06-Apr-24	05-May-24		123		- [6] [1]					
DC:\$3.3405	Screw Conveyor	30	0	0%	0%	05-Dec-23	03-Jan-24		05-May-24		123					<b> -</b>		
DC:\$3.8415	Screw Compactor	30	0	0%	0%	05-Dec-23			05-May-24		123 *							
DC:\$3.8425	Submersible Pump	30	0	0%	0%	05-Dec-23	03-Jar-24		05-May-24		123 *							
DC:S3.3435	Submersible Jet Mixer	32	0	DN-	0%	05-Dec-23			05-May-24		123 ^							
DC:S3.3445	Grit Pump	32	0	D%-	P%	05-Dec-23			05-May-24		123		-1444	الساسات		Ш 🔲 📖	ļ <u>iii.</u>	
DC:S3.3455	Grit Classifier & Grit Mixer	32	0	D% D%	0% 0%	05-Dec-23			05-May-24		123							
DC:83.3465 DC:83.3475	Mechanical Filter Mesn Lifting Appliance	30	0	0%	0%	05-Dec-23 06-Dec-23			05-May-24 08-Jun-24		123							
DC.83.3475	Ol Skimmer Pump	30	0	0%	0%	05-Dec-23	03-Jan-24		05-May-24		123							
DC.S3.3495	Deadorization Unit (DOU't)	30	0	0%	0%	05-Dec-23	03-Jan-24		05-May-24		123			1 1 1				
DC:S3.3505	LV Switzhzos rd•MCC	30	0	DN.	0%	05-Der-23	03-Jan-24	17-Apr-24	16-May-24		134 ^		-1944		- -		t	
DC:S3:3515	CSV	30	0	D%	6%	05-Dec-23	03-Jan-24	17-Apr-24	16-May-24		134 ^							
DC:S3.3525	UPS with Isolation Transformer	30	0	DN-	0%	07-Dec-23	05-Jan-24	17-Apr-24	16-May-24		132 '							
DC:S3.3535	PLC Parel	32	0	DN-	0%	10-Feb-24		17-Apr-24	16-May-24		67	11   1						
DC:83.3545	Instrumentation	30	- 0	0%	0%	94-Dec-23	02-Jan-24		16-May-24		135				11			
	Norks			18.03%	25-Nov-22	25-Nov-22	04-May-24		04-May-24	25-Nov-22 20-Jan-24	0		[811]					
DG.83.3020	Pre-boring Works for Sheet Pile Wall Installation	113	0	80.18%	51% 25-Nov-22	25 Nov 22 :		28-Feb-23		25-Nov-22 15-Mar-23	0 .			1   1	<b>-</b>			
DC.83.3040	Installation of Sheet Pile Wall	24	0	0%	0%	31-Mar-23			03-May-23	09-Feb-23 27-Mar-23	0 .	41 1		111	1,41			
DC.SS.3050a	Excevation to +2.5mPD	14	0	0%	0%	04-Vey-23			11-May-23		0 ^	-11		111	1 1	<b>1</b>		
DC.SS.3050a10 DC.SS.3050a20	Installation of 1st Walling & Struts  Excevation to +0.5mPD (approx. 50m3 rock excevation)	74	0	D%.	0%	06-Yey-23 23-Yey-23		23-May-23 23-May-23	22-May-23 31-May-23		0 '		-(###		- -   🖒	4+1- <b>1</b> -14i-	+	
DC.83.3950a20 DC.83.3950a30	Excession to HJ 5 mm D (approx. Sums nock excession) Installation of 2nd Visiting & Struts	14	0	DN-	0%	23-98y-23 01-Jun-23			.11-May-23 16-Jun-23		0 .		[811]	111	1   5			
DC 83 3050a40	Excavation to 3.5mPD (approx. 1000m0 rock excavation)	18	0	D'S.	0%	17-Jun-23	97-Jul-23		07-Jul-23		g .			111	[			
DC.83.3050a50	Installation to 3rd Walling & Struts	14	0	0%	0%	08-Jul-23			24-Jul-23		9 .					<u> </u>		
DC.83.3050a60	Excavation to -5mPD (approx. 950m3 rock excavation)	18	0	0%	0%	25-Jul-23			11-Aug-23		0 .			111		-3		
DC.S3.3050a70	Installation to 4th Walling & Struts	11	0	0%	0%	12-Aug-23	24-Aug-23		24-Aug-23		0 *	11				9	1-1-1-1-1	
DC.S3.3050a60	Excavation to -8.075mPD and Blinding Layer (approx. 950m3 rook excavation)	16	0	0%	0%	25-Aug-23	12-Sep-23	25-Aug-23	12-Sep-23		0 ^		191111	111	ء لا ا	<u> </u>		
DC.SS.3060	Plate Lord Test (Total 3 nos.)	5	0	0%	0%	13-Sep-23			17-Sep-23	30-Jun-23 11-Jul-23	0 ^			111	KII	<u> </u>		
DC.SS.3080	Construction of Pile Csp (Grid E to Grid H) (1209n3, 6 pours)	30	0	DN-	0%	28-Sep-23			04-Nov-23	12-Jul-23 27-Oct-23	0 '				\ \ '	<b></b>		
DC.53.3080a	Removal of 4h Vitaling and Struis	6	0	0%	0%	06-\o1-23	11-Nov-23		11-Nov-23		0 '			1-1-1	_   .	<u>a</u>		
DC.83.3983b	Construction of Pile Cap (Grid Alto Grid E) and R.C. Wall to -3.5mPD (Grid E to Grid H) (920m3, 5 pours)	25	0	0%	0%	13-101-23	11-Dec-23		11-Dec-23		0 .			111				
DC.83.3980c	Removal of 3rd Walling and Struis	6	0	0%	0%	12-Dec-23	18-Dec-23	12-Dec-23	18-Dec-23		0 .			111				
DC.S3.3080d DC.S3.3080e	Construction of RC Wall (from -3.5mPD to +0.5mPD) (180m3, 2 pours)  Removal of 2nd Walling and Strats	15	0	0%	0%	19-Dec-23 12-Jan-24	11-Jan-24 18-Jan-24	19-Dec-23 12-Jan-24	11-Jan-24 18-Jan-24		0 .	-11		111				
DC.SS.30606 DC.SS.3080f	Construction of RC Wall (from +0.5mPQ to +2.5mPQ);	18	0	0%	0%	19-Jan-24	08-Feb-24		08-Feb-24		0 .	-11 : 11						
DC.S3.3080g	Removal of 1st Visiling and Struts	6	0	0%	0%	09-Feb-24	19-Feb-24	09-Feb-24	19-Feb-24		0 ^		- }}}		-	{      <b>        </b>	+	
DC.S3.3080h	Construction of RC Ground Stati (from +2.5mPD to +4.6mPD)	22	0	DS-	0%	20-Feb-24	13-Har-24	20-Feb-24	13-Mar-24		0 '	-11 : 1:		111				
DC.S3.3080i	Construction of RC Wall and MCC Room Stab (from +4.8mPD to +9.35mpD)	20	0	D%	0%	14-Mar-24	10-Apr-24	14-Mar-24	10-Apr-24		0 '			111	IJ	<u> </u>		
DC.S3.3100	Construction of RC Wall and Roof Stab (from +9.35 to +13.58)	20	0	0%	0%	11-Apr-24	04-May-24	11-Apr-24	04-May-24	09-Nov-23 20-Jan-24	0 '			111				
E8M Works				0%		05-Yay-24	02-Aug-24	06-May-24	02-Aug-24	22-Jan-24 19-Apr-24	0			1.1.1		<del>                                </del>		
DC.S3.3120	E&W, Mechanida Installation (Mixers, Inlet Pumps, Grit removal system, DO systems and etc.)	48	2	0%	0%	06-Yay-24			03-Jul-24	22-Jan-24 20-Mar-24	0							
DC.S3.3120a	Electrical Installation (Calole, Instrument PLC Planel LVSB, etc)	48	2	0%	0%	05-Yay-24	21-Jur-24	17-May-24			12	41 1		111	11			
DC.S3.3120b	Installation of BS Equipment	25	0	0%	0%	18-Yay-24	11-Jur-24		03-Jul-24		22 *			111				
DC.S3.3120b10	Installation of Lifting Appliance	25	0	0%	0%	18-Vsy-24	11-Jur-24		03-Jul-24	00 1 01 00 00 00 00	22 *	41 1		111	И			
DC.S3.3130a DC.S3.3130b	SCADA System Site Acceptance Test (Press 3 PTF Construction) SCADA System Commissional Test (Press 3 PTF Construction)	30 30	0	D% D%	0%	14-Vay-24 13-Jun-24	12-Jur-24 12-Jul-24		03-Jul-24 03-Aug-34	22-Jan-24 20-Feb-24 21-Feb-24 21-Mar-24	21		-(844)		<u> </u>		ļ <del> </del>	
DC.S3.31336 DC.S3.31436	SCADA System Commissioning Test (Phase 3 PTF Construction) Surface Commissioning Test	32	0	DS-	0%	13-Jun-2- 04-Jul-24			02-Aug-24 02-Aug-24	21-Fec-24 21-Mar-24 21-Mar-24 19-Apr-24	0			111	11	HIA ITOS		
Internal Architect	System Commissioning Test	22	9	DN.	VA.	04-JU-24 06-Vay-24	17-Jul-24		02-Aug-24 02-Aug-24	21-Mar-24 19-Apr-24 22-Jan-24 08-Apr-24	12	-11		111	V I			
DC.S3.3110	/architectural Works (internal)	58	2	0%	0%	06-Vay-24		23-May-24		22-Jan-24 08-Apr-24	14		[[]]	111	1			
Temporary Flow				0%	-"	14-Mar-24	06-Aug-24		06-Aug-24	02-Dec-23 23-Apr-24	0			111		<del>       </del>		
DC.S3.1550a	Installation of Temporary Studge Thickening System	92	8	0%	0%	19-Mar-24	22-Jul-24		06-Aug-24	05-Dec-23 10-Apr-24	13	11	181111	7717	111	<del>                               </del>	1 - 1 - 1 - 1 - 1	
DC.S3.3150	Temporary WAS Pipe Construction from MBR to Studge Digestor Building with temp pre-thickening system	23	2	0%	0%	14-Mar-24	12-Apr-24		03-Jun-24	02-Dec-23 29-Dec-23	42	11 1		111				
DC.S3.3160	Temporary saverage pipe from existing manhole FWH7000149 to manhole FWH21 to isolate inlet Chamber	42	3	D%	0%	06-Vay-24	28-Jur-24	09-May-24	03-Jul-24	22-Jan-24 16-Mar-24	3							
DC.S3.3170	Temporary Row Diversion to isolate existing preliminary treatment system	2	1	D%	0%	03-Aug-24		03-Aug-24	06-Aug-24	20-Apr-24 23-Apr-24	0			111	1			
&M Works - 3	0-month performance verification (At least 9 months before End of S3)			D%		07-Aug-24	07-May-25	07-Aug-24	07-May-26	24-Apr-24 19-Jan-25	0			اللل	$I\Box\Box$			
DC S3.8180	33-month performance verification (At least 9 months before End of S3) (Period from 6th to 9th month)	274	0	D%	0%	07-Aug-24		07-Aug-24		24-Apr-24 19-Jan-25	0				(	1		
	f Underground Utilities			DW.		08-Yay-24	22-Jur-24	16-May-24		22-Jan-24 11-Mar-24	8			111	V I			
DC S3.8250	Construction underground utilities for MBR Treatment Facilities and Perlimnary Treatment Facilities	35	2	D%	P%	06-Yay-24		16-May-24		22-Jen-24 11-Mar-24	a			111	1		<u> </u>	
PHASE 4 - Den	nolition of existing Preliminary Treatment System			DN-		07-Jun-24	18-Oct-24	20-Jin-24	09-Nav-24	08-Feb-24 09-Jul-24	22			111			JII II i	
DC S3.4010 DC S3.4020	Demoltion of existing niet pumping station, preliminary treatment facilities & primary sediment tank Modification of linial Chamber	24 55	- 4	D%-	0%	07-Aug-24 07-Aug-24		07-Aug-24 29-Aug-24		24-Apr-24 15-Jun-24 25-Apr-24 08-Jul-24	19		-644	+++	1		<b> </b>	
Drie	nary Baseline	DC/204	0/07 ()!!	TI VINC	ISI ANDS SEWED	GE STAGES UP	CDADING	OE CUE!!	NG CUA	U SEWAGE TREAT	MENT AND	Nepoe*	LEAC	ITIES		Date Re	evision Chec	Approv
		DC/201	9101 OU	LTING							MENT AND L	noruoA	L FAUIL	. I IES		Nov-22 Rev. 20		CL
Act	ual Work				F	REVISED PROG			2 (28 Fe	ebruary 2023)						Dec-22 Rev. 2		CL
Rei	maining Work						(Page	9 of 13)								eb-23 Rev. 22		CL
		1						,							20-1	60-20   Rev. 22	- JJL	
	ical Remaining Work																	
Crit	ical Remaining Work seline Milestone																	

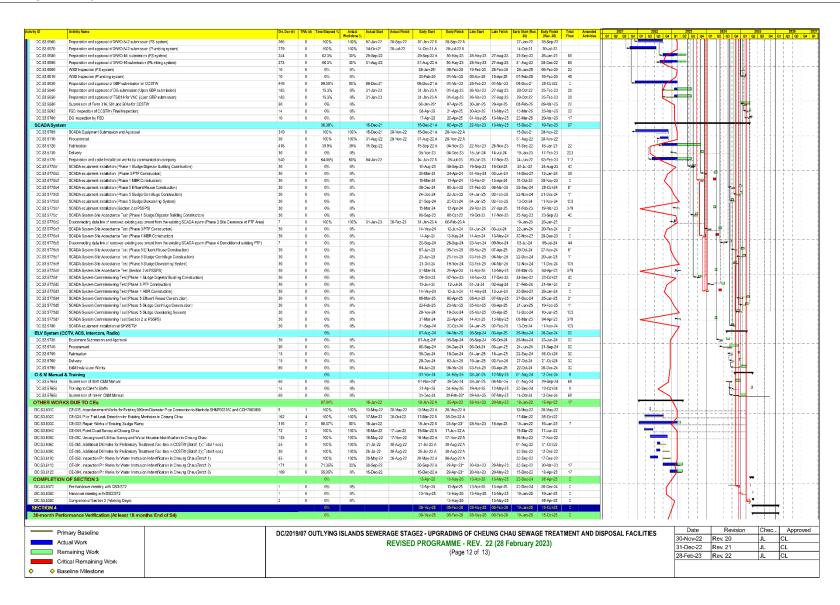














	Activity Name				Workdone %	al Start Actual Finish		Early Finish					Total Amende Float Activitie							03 04 01 0	
DC S4.1040	30-month performance verification (At least 18 months before End of S4) (Period from 9th to 18th month)	274	0	0%	0%		08-Yay-25		08-May-25 C		20) 19-Jan-25	Early Finish (Rev. 20) 15-Oct-25	0	S Q1 02 0	33 Q4 Q1 Q2	7	02 Q3 Q4	Q1 Q2 Q3	04 01 02		22 Q3 Q4
External Archi	lectrual			0%			14-Vay-25				08-Apr-25	05-Aug-25	88			\			· ·	<del> </del>	
DC 84.1010	External Architectural at MBR Treatment Facilities	90	6	0%	0%		14-Yay-25		08-Aug-25 C		06-Apr-25	05-Aug-25	72			- N			-	#	
DC S4.1100	External Architectural of Sludge Digestor Building	60	4	0%	0%		14-Vay-25		15-Sep-25		08-Apr-25	27-Jun-25	104	41						HI	
DC 84.1110 DC 84.1120	External Architectural at Studge Centrifuge House	60 90	6	0% 0%	0%		14-Vay-25		15-Sep-25		08-Apr-25	27-Jun-25	104 72					4-4-4-			
DC 84.1120 DC 84.1130	External Architectural at Preliminary Treatment Facilities  External Architectural at Effuent Reuse Building	90	2	DN-	0% 0%				08-Aug-25 0 24-Out-25 0		09-Apr-25 09-Apr-25	95-Aug-25 20-May-25	138	+		- [ ]					
DC S4.1140	External Architectural at FS Purnorcom and Purnorcom	30	2	D%	0%				24-Oct-25 0			20-May-25	136			- 1					
DC S4.1150	External Architectural at Dangerous Good House	30	2	D%	0%		14-Yay-25		24-Oct-25 C		09-Apr-25	20-May-25	136								
DC 84.1160	External Architectural at Studge Dewatering House	60	4	0%	0%		14-Yey-25		15-Sep-25 C		06-Apr-25	27-Jun-25	164						H-		
DC 84.1170	External Architectural at Administration Building	40	2	0%	0%		14-Yay-25		13-Oct-25		06-Apr-25	02-Jun-25	126						-		
	Works & Irrigation System			0%			14-Yay-25		02-Oct-25 C		09-Apr-25	11-Oct-25	85								
DC S4.1020 DC S4.1080	The site wide landscaping works	97	7 7	0%	0%		11-Jul-25 14-Vay-25		02-Oct-25 0 02-Oct-25 0		10-Jun-25	11-Oct-25 14-Aug-25	70								
00.0.11440	Installation of Ingation System of New Security Fence	9/	1	0%	0%		14-98y-25 14-98y-25		06-Aug-25 0		09-Apr-25 09-Apr-25	14-Aug-25 28-Aug-25	118			- 1				11.	
DC S4.1030	Denotion of Existing Boundary Wall	60	i.	0%	0%		14-Vay-25		06-Aug-25 2		06-Apr-25	27-Jun-25	70								
DC S4.1060	Construction of New Security Fence R.C. Structures	60	4	0%	0%		24-Jun-25		15-Sep-25 C		23-May-25	07-Aug-25	70						يا ا	#11 1	
DC S4.1070	Installation of New Security Fence Metall Works	45	3	0%	0%				09-Dec-25 0		04-Jul-25	28-Aug-25	106			1 1			1	#	
	Section 4 (Working Day)			0%			15-Xor-25				16-Sep-25	16-Oct-25	0			- 1 /		1 1 1			
DC 84.1041	Pre-handover meeting with DSD:ST2	1	0	0%	0%		15-Nor-25		06-Jan-26 C		16-Sep-25	18-Sep-25	52			-1-(1		1-1-1-		4	
DC 84.1042	Handover meeting with DSD/ST2	1	0	0%	0%		15-Dec-25		05-Feb-26 0		18-Oct-25	16-Oct-25		41 1		17					
30-month perfe	Completion of Section 4	0	0	0%	0%		05-Feb-26	05-Feb-26* 05-Feb-27		5-Feb-26 5-Feb-27	16-Oct-25	16-Oct-25 01-Jan-27	0	_		(				<b>"</b>	
DC.PV.1010	smance verification (remaining 12 months after S4) 30-month performance vertication (remaining 12 months after S4) (Perced from 18th to 30th month)	365	0	0%	0%		05-Feb-26 05-Feb-26				18-Oct-25	15-Oct-26	0							نسليا	
DC.PV.1010	Date of 12 months after S4	000	0	DN-	D%			05-Feb-27*		15-Feb-27	ro-correct	0'-Jan-27	0	+							7
DC.S3.5765d10	Submission of final O&M Manual	62	0	D%	0%			24-Apr-26			13-Dec-25	10-Feb-26	286					1-1			

# APPENDIX C Calibration Certificates (Air Monitoring)



Operator: Jim Tisch

RECALIBRATION DUE DATE:

March 31, 2024

### Certificate of Calibration

**Calibration Certification Information** 

Cal. Date: March 31, 2023 Rootsmeter S/N: 438320

**Ta**: 294 °K **Pa**: 748.54 mn

mm Hg

Calibration Model #: TE-5028A Calibrator S/N: 3702

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.3110	4.1	1.50
2	3	4	1	1.0280	6.7	2.50
3	5	6	1	0.9340	8.1	3.00
4	7	8	1	0.8680	9.4	3.50
5	9	10	1	0.6580	16.2	6.00

	Data Tabulation									
Vstd	Qstd	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$		Qa	√∆H(Ta/Pa)					
(m3)	(x-axis)	(y-axis)	Va	(x-axis)	(y-axis)					
0.9929	0.7573	1.2237	0.9945	0.7586	0.7676					
0.9894	0.9624	1.5798	0.9910	0.9641	0.9909					
0.9875	1.0573	1.7306	0.9892	1.0591	1.0855					
0.9858	1.1357	1.8693	0.9874	1.1376	1.1725					
0.9767	1.4844	2.4474	0.9784	1.4869	1.5351					
	m=	1.68024		m=	1.05214					
QSTD	b=	-0.04353	QA	b=	-0.02731					
	r=	0.99994		r=	0.99994					

Calculations								
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)					
Qstd=	Vstd/∆Time	Qa=	Va/ΔTime					
	For subsequent flow rate	e calculatio	ns:					
Qstd=	$1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$	Qa=	$1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$					

	Standard Conditions
Tstd:	298.15 °K
Pstd:	760 mm Hg
	Key
ΔH: calibrator	manometer reading (in H2O)
ΔP: rootsmete	er manometer reading (mm Hg
Ta: actual abs	olute temperature (°K)
Pa: actual bar	ometric pressure (mm Hg)
b: intercept	
m: slope	

Chandand Candibland

### RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30.

Fisch Environmental, Inc. L45 South Miami Avenue /illage of Cleves, OH 45002

www.tisch-env.com

TOLL FREE: (877)263-7610 FAX: (513)467-9009





### HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

### Site Information

L	ocation:	The admin building inside the construction site	Site ID:	A1a	Date:	01-Aug 2023
s	erial No:	1048	Model:	TE-5170X	Operator:	Andy Li

### **Ambient Condition**

Actual Pressure during Calibration (P <sub>a</sub> ) (mm Hg):	Actual Temperature during Calibration (T <sub>a</sub> ) (deg K):	303.3
---	--	-------

### **Calibration Orifice**

Model:	TE-5028A	Slope (m <sub>c</sub> ):	1.68024
Serial No.:	3702	Intercept (b <sub>c</sub> ):	-0.04353
Calibration Due Date:	31-Mar-24	Corr. Coeff:	0.99994

### **Calibration Data**

Plate or	∆H <sub>2</sub> O	Qa, X-Axis	I, CFM	IC, Y-Axis
Test #	(in)	(m³/min)	(chart)	(corrected)
18	7.60	1.643	52.0	51.25
13	5.80	1.439	48.0	47.31
10	4.80	1.311	42.0	41.40
7	4.00	1.199	39.0	38.44
5	2.40	0.935	33.0	32.52

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

m= 27.5161 b= 6.2677 Corr. Coeff= 0.9906

### Calculations

Qa =  $1/m_c*[Sqrt (\Delta H_2O*(P_a/P_{Std})*(T_{Std}/T_a))-b_c]$ 

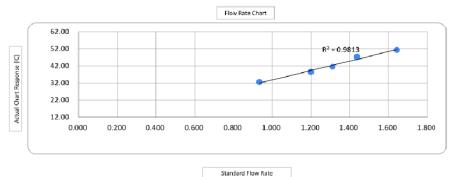
 $IC = I*(Sqrt(P_a/P_{Std})*(T_{Std}/T_a))$ 

Qa = actual flow rate IC = corrected chart response I = actual chart response m<sub>c</sub> = calibrator slope

 $b_{c}$  = calibrator intercept

m = sampler slope b = sampler intercept T<sub>Std</sub> = 298 deg K P<sub>Std</sub> = 760 mm Hg

T<sub>a</sub> = actual temperature during calibration (deg K) P<sub>a</sub> = actual pressure during calibration (mm Hg)



(m³/min)

Checked by: Tandy Tse

Senior Consultant, Environmental

Date: 01-Aug 2023





### HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

### Site Information

Location:	The existing outfall pumping station inside the construction site	Site ID:	A2A	Date:	01-Aug 2023
Serial No:	1085	Model:	TE-5170X	Operator:	Andy Li

### **Ambient Condition**

Actual Pressure during Calibration (P <sub>a</sub> ) (mm Hg):	751/1	Actual Temperature during Calibration (T <sub>a</sub> ) (deg K):	303.3
--	-------	---	-------

### Calibration Orifice

Model:	TE-5028A	Slope (m <sub>c</sub> ):	1.68024
Serial No.:	4167	Intercept (b <sub>c</sub> ):	-0.04353
Calibration Due Date:	1.9-Jun-24	Corr. Coeff:	0.99994

### Calibration Data

Plate or	$\Delta H_2O$	Qa, X-Axis	I, CFM	IC, Y-Axis
Test#	(in)	(m³/min)	(chart)	(corrected)
18	2.60	0.972	36.0	35.48
13	4.70	1.298	45.0	44.35
10	5.80	1.439	50.0	49.28
7	6.60	1.533	53.0	52.24
.5	8.10	1.695	59.0	58.15

Sampler Calibtation Relationship (Qa on x-axis, IC on y-axis)

m= 31.1856 b= 4.6386 Corr. Coeff= 0.9977

### Calculations

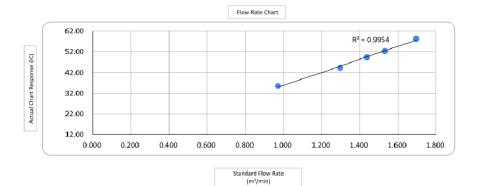
 $Qa = 1/m_{_{C}}*[Sqrt \; (\Delta H_{2}O*(P_{a}/P_{Std})*(T_{Std}/T_{a})) - b_{_{C}}]$ 

IC = I\*(Sqrt ( $P_a/P_{Std}$ )\*( $T_{Std}/T_a$ ))

Qa = actual flow rate
IC = corrected chart response
I = actual chart response
m<sub>c</sub> = calibrator slope
b<sub>c</sub> = calibrator intercept

m = sampler slope b = sampler intercept T<sub>Std</sub> = 298 deg K P<sub>Std</sub> = 760 mm Hg

 $T_a$  = actual temperature during calibration (deg K)  $P_a$  = actual pressure during calibration (mm Hg)



Checked by: Tandy Tse
Senior Consultant, Environmental

Date: 01-Aug 2023



SIBATA SCIENTIFIC TECHNOLOGY LTD. 1-1-62, Nakane, Soka, Saitama, 340-0005 Japan TEL. +81-48-933-1582 FAX. +81-48-933-1591

Date: January 23th, 2023

### CALIBRATION CERTIFICATE

Equipment Name : Digital Dust Indicator, Model LD-5R

 Code No.
 : 080000-73

 Quantity
 : 1 unit

 Serial No.
 : 2Y6549

 Sensitivity
 : 0.001 mg/m3

 Sensitivity Adjustment
 : 549 CPM

Scale Setting : November 15th, 2022.

We hereby certify that the above mentioned instrument has been calibrated satisfactory.

Sincerely

Tong Zhang

(Signature)

Overseas & New Business Group

Overseas Sales Department



SIBATA SCIENTIFIC TECHNOLOGY LTD. 1-1-62, Nakane, Soka, Saitama, 340-0005 Japan TEL. +81-48-933-1582 FAX. +81-48-933-1591

Date: January 23th, 2023

### CALIBRATION CERTIFICATE

Equipment Name : Digital Dust Indicator, Model LD-5R

 Code No.
 : 080000-73

 Quantity
 : 1 unit

 Serial No.
 : 2Y6550

 Sensitivity
 : 0.001 mg/m3

 Sensitivity Adjustment
 : 665 CPM

Scale Setting : November 15th, 2022.

We hereby certify that the above mentioned instrument has been calibrated satisfactory.

Sincerely

Tong Zhang

(Signature)

Overseas & New Business Group

Overseas Sales Department

### APPENDIX D Monitoring Data (Air)

Location: A1a

Monitoring Period: August 2023

Parameter: TSP 1-hour

Major Dust Source Construction activities and daily operation of the sewerage

treatment plant

Date	Weather	Start Time	1 <sup>st</sup> Hour	2 <sup>nd</sup> Hour	3 <sup>rd</sup> Hour
Date	weather	Start Time	(μg/m³)	(μg/m³)	(μg/m³)
1/8/2023	Sunny	13:47	57	66	68
7/8/2023	Sunny	13:32	71	77	65
14/8/2023	Sunny	14:13	66	67	62
21/8/2023	Sunny	14:24	67	73	75
28/8/2023	Sunny	13:36	53	54	51
31/8/2023	Sunny	10:07	64	65	69
		Average		65	
		Range		51 - 77	

Location: A2a

Monitoring Period: August 2023

Parameter: TSP 1-hour

Major Dust Source Construction activities and daily operation of the sewerage

treatment plant

Date	Weather	Start Time	1st Hour (μg/m³)	2 <sup>nd</sup> Hour (μg/m³)	3 <sup>rd</sup> Hour (μg/m³)
1/8/2023	Sunny	13:30	56	48	47
7/8/2023	Sunny	13:24	45	39	46
14/8/2023	Sunny	14:00	55	50	55
21/8/2023	Sunny	14:07	47	44	43
28/8/2023	Sunny	13:09	39	44	41
31/8/2023	Sunny	09:51	45	57	55
		Average		48	
		Range		39 - 57	

Figure D.1 Measured 1-Hour TSP at the admin building inside the construction site (A1a)

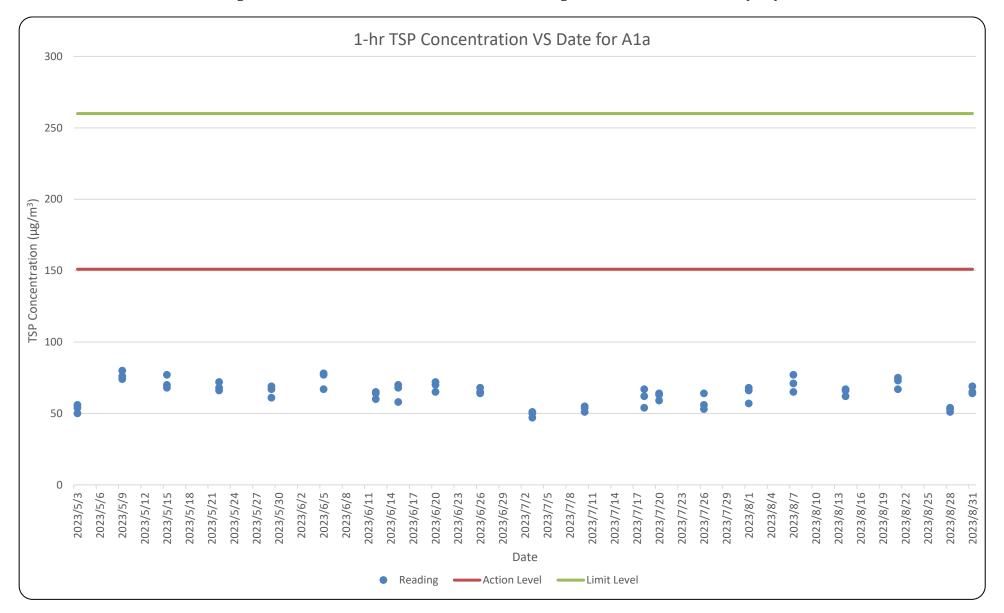
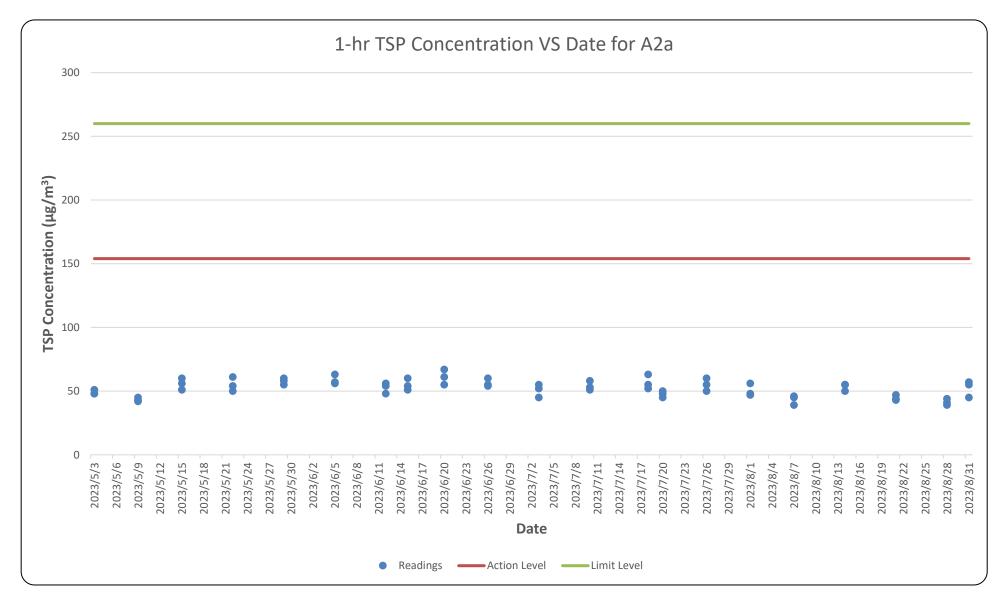


Figure D.2 Measured 1-Hour TSP at the existing outfall pumping station inside the construction site (A2a)



Location: A1a

Parameter: TSP 24-hour

Major dust source Construction activities and daily operation of the sewerage treatment plant

Start Date	Avg Air Temp	Avg Atmos pheric Pressu re	Weather Condition	Elapse Time		Sampling Time	Flow Rate	Standard Air Volume	Filter Weigh	t (g)	Particulate weight	Conc.
	(°C)	(mm Hg)		Initial (min)	Final (min)	Actual (min)	(m³/min)	(m³)	Initial	Final	(g)	(μg/m³)
01/08/2023	29.9	1004.2	Sunny	290546.0	292088.0	1542	1.27	1963	2.6503	2.6960	0.0457	23
07/08/2023	30.2	1002.7	Sunny	292088.0	293608.0	1520	1.27	1930	2.6797	2.7566	0.0769	40
14/08/2023	29.7	1006.0	Sunny	293608.0	295060.0	1452	1.28	1853	2.6840	2.7324	0.0484	26
21/08/2023	29.8	1007.0	Sunny	295060.0	296526.0	1466	1.28	1872	2.6799	2.7925	0.1126	60
28/08/2023	29.5	1003.1	Sunny	296526.0	298025.0	1499	1.27	1907	2.7432	2.8135	0.0703	37
31/08/2023	28.1	999.5	Sunny	298025.0	299512.0	1487	1.27	1889	2.7419	2.9623	0.2204	117
	•										Average	50
											Range	23-117

Location: A2a

Parameter: TSP 24-hour

Major Site Activities Construction activities and daily operation of the sewerage treatment plant

Major dust source Routine operation of the Sewage Treatment Plant

Start Date	Avg Air Temp	Avg Atmos pheric Pressu re	Weather Condition	Elapse Time		Sampling Time	Flow Rate	Standard Air Volume	Filter Weigh	t (g)	Particulate weight	Conc.
	(°C)	(mm Hg)		Initial (min)	Final (min)	Actual (min)	(m <sup>3</sup> /min)	(m³)	Initial	Final	(g)	(μg/m³)
01/08/2023	29.9	1004.2	Sunny	509239.0	510785.0	1546	1.18	1817	2.6515	2.7314	0.0799	44
07/08/2023	30.2	1002.7	Sunny	510785.0	512298.0	1513	1.17	1774	2.6747	2.7727	0.0980	55
14/08/2023	29.7	1006.0	Sunny	512298.0	513753.0	1455	1.08	1576	2.6733	2.7412	0.0679	43
21/08/2023	29.8	1007.0	Sunny	513753.0	515216.0	1463	1.15	1679	2.6829	2.7233	0.0404	24
28/08/2023	29.5	1003.1	Sunny	515216.0	516727.0	1511	1.05	1584	2.7327	2.7967	0.0640	40
31/08/2023	28.1	999.5	Sunny	516727.0	518200.0	1473	1.20	1774	2.7364	2.9228	0.1864	105
			•								Average	52
											Range	24-105

Figure D.3 Measured 24-Hour TSP at the admin building inside the construction site (A1a)

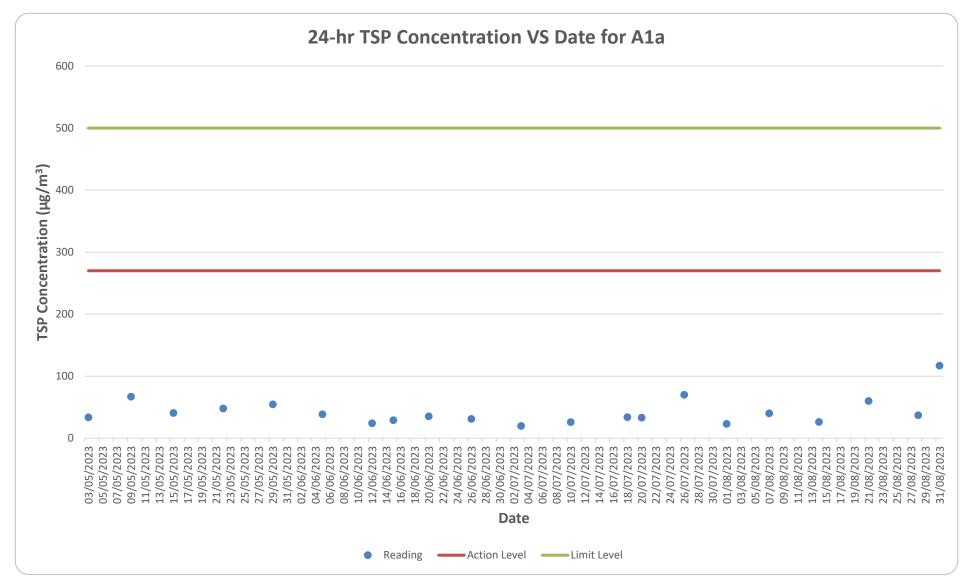
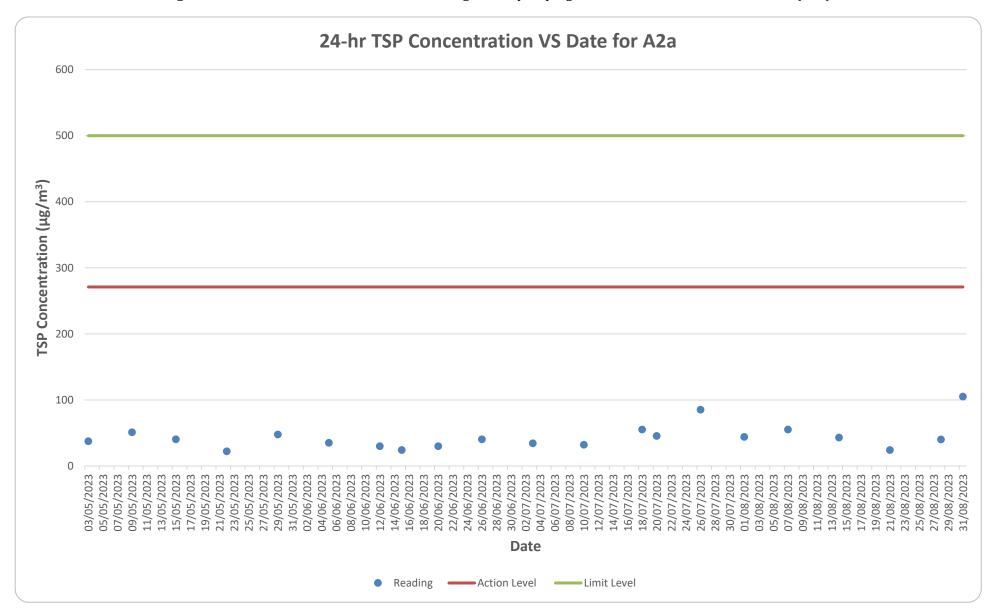


Figure D.4 Measured 24-Hour TSP at the existing outfall pumping station inside the construction site (A2a)



### APPENDIX E Calibration Certificates (Noise)



ISO9001 certified

### FACTORY CALIBRATION DATA OF THE SVAN 971 No. C119577

with preamplifier SVANTEK type SV 18 No. C122487 and with microphone ACO type 7052E No. 85197

### 1. CALIBRATION (acoustical)

LEVEL METER function; Range: Low; Reference frequency: 1000Hz; Sound Pressure Level: 114.03 dB.

Characteristic	Correct value [dB]	Indication [dB]	Error [dB]		
Z	114.03	114.05	0.02		
A	114.03	114.05	0.02		
С	114.03	114.05	0.02		

Calibration measured with the microphone ACO type 7052E No. 85197. Calibration factor: 0.74 dB.

### 2. LINEARITY TEST (electrical)

LEVEL METER function; Range	Low; Char	acteristic:	A; f sin= 10	00 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	-0.1	-0.1	-0.1	-0.0	-0.0	-0.0	-0.0

LEVEL METER function; Range	: Low; Char	acteristic:	A; f sin= 80	000 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	-0.1	-0.1	-0.1	-0.1	-0.1	-0.0	-0.0	-0.0	-0.0

LEVEL METER function; Range	e: High; Char	racteristic:	A; f sin= 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; Char	acteristic:	$A; f_{sin}=10$	000 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]	-0.0	0.0	-0.0	-0.0	-0.1	-0.1	-0.0	-0.0	-0.0	-0.0

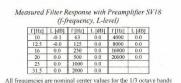
LEVEL METER function; Range	: High; Char	acteristic:	A; $f_{sin} = 80$	000 Hz						
Nominal result LEQ [dB]	34.0	35.0	36.0	38.0	40.0	60.0	80.0	100.0	120.0	136.0
Error [dB]	-0.0	-0.0	-0.1	-0.1	-0.1	-0.1	0.0	0.0	-0.0	0.0

1/3 OCTAVE (1kHz); Range:	Low; $f_{sin}=100$	0 Hz						
Nominal result [dB]	25.0	30.0	40.0	60.0	80.0	100.0	120.0	123.0
Error [dB]	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0

### 4. FREQUENCY RESPONSE\* (electrical)

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





### 5. INTERNAL NOISE LEVEL (electrical - compensated)

LEVEL METER function; Range	: Low; (Back-light -	off); Calibrati	on factor: 0dB

Characteristic	Z	A	С
Level [dB]	≤20	≤12	≤12

<sup>\*</sup> measured with preamplifier SVANTEK type SV 18 No. C122487.

### 6. INTERNAL NOISE LEVEL (acoustical - compensated)

LEVEL METER function; Characteristic: A; (Backlight - off)

Range	Low	High
Indication [dB]	≤15	20.5

Noise measured in special chamber, with reference microphone G.R.A.S type 40AN No. 73421

### ENVIRONMENTAL CONDITIONS

Temperature	Relative humidity	Ambient pressure
23 °C	42%	1008 hPa

### TEST EQUIPMENT

Item	n Manufacturer Model Serial no.		Description		
1.	SVANTEK	SVAN 401	100	Signal generator	
2.	SVANTEK	SVAN 912A	4369	Sound & Vibration Analyser	
3.	RIGOL	DM3068	DM30155100773	Digital multimeter	
4.	SVANTEK	SV33B	93171	Acoustic calibrator	
5.	SVANTEK	ST02	1.	Microphone equivalent electrical impedance (18pF)	

### CONFORMITY & TEST DECLARATION

- Herewith Svantek company declares that this instrument has been calibrated and tested in compliance with the internal ISO9001 procedures and meets all specification given in the Manual(s) or respectively surpass them.
   The acoustic calibration was performed using the Sound Calibrator and is traceable to the GUM (Central Office of Measures) reference standard 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.

Calibration specialist: Cezary Dardziński ...

Test date: 2022-10-11

Page 1 of 2

Certificate No. D224645E



### CALIBRATION CERTIFICATE

Product : SOUND CALIBRATOR

Type : NC-75 Serial number : 35124528

Manufacturer : RION CO., LTD.

Calibration quantities : Sound pressure level (with reference standard microphone)

Calibration method : Measured by specified secondary standard microphone

according to JCSS calibration procedure specified by RION.

Ambient conditions : Temperature 23.9 °C, Relative humidity 49 %,

Static pressure 100.6 kPa

Calibration date : 02/11/2022 (DD/MM/YYYY)

Calibration location : 3.20-41 Higashimotomachi, Kokubunji, Tokyo 185-8533, Japan

RION CO., LTD. Calibration Room

We hereby certify that the results of this calibration were as follows.

Issue date: 09/11/2022 (DD/MM/YYYY)

Junichi Kawamura
Manager
Quality Assurance Section,
Quality Assurance Department,
Environmental Instrument Division,
RION CO., LTD.

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Tokyo 185-8533, Japan

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The accreditation symbol is attestation of which the result of calibration is traceable to Primary Measurement Standards (National Standards).

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Certificate No. D224645E

### CALIBRATION RESULT

1. Sound pressure level (with reference standard microphone)

Measured	Expanded
value	uncertainty *1
93.99 dB	0.09 dB

Specified secondary standard microphone:

Type Serial number : 2973341

: 4160

Reference Sound pressure: 2×10.5 Pa

 $^{*1}$  Defines an interval estimated to have a level of confidence of approximately 95 %.Coverage factor k=2

Calibration result is the calibration value in ambient conditions during calibration.

### BE OUT OF JCSS CALIBRATION

### 1. Frequency

Measured value	Measurement uncertainty (k=2)
1000.0 Hz	$2.7 \times 10^{-4}  \mathrm{Hz}$

Working measurement standard universal counter:

Type : 53132A

Serial number : MY40005574

(JCSS Calibration Certificate No. 2208001889940)

### 2. Total distortion

Measured	
value	
0.2 %	

Working measurement standard distortion meter:

: VA-2230A Serial number : 11076061

(A2LA Calibration Certificate No. 1502-03109)

· closing ·



## APPENDIX F Monitoring Data (Noise)

Location: N2a

Monitoring Period: August 2023

Parameter: Noise

Major Noise Source: Construction activities and daily operation of the sewerage

treatment plant

Date	Weather	Start Time	$L_{\rm eq}$ $L_{10}$		L <sub>90</sub>
2/8/2023	Sunny	15:30	67.3	69.4	62.2
8/8/2023	Sunny	14:55	71.9	75.1	63.9
15/8/2023	Cloudy	14:28	68.4	70.9	64.5
22/8/2023	Sunny	14:58	73.4	75.6	69.6
29/8/2023	Sunny	14:45	74.0	77.3	66.9
		Average		71.7	
		Range		67.3 - 74.0	

Location: N3a

Monitoring Period: August 2023

Parameter: Noise

Major Noise Source: Construction activities and daily operation of the sewerage

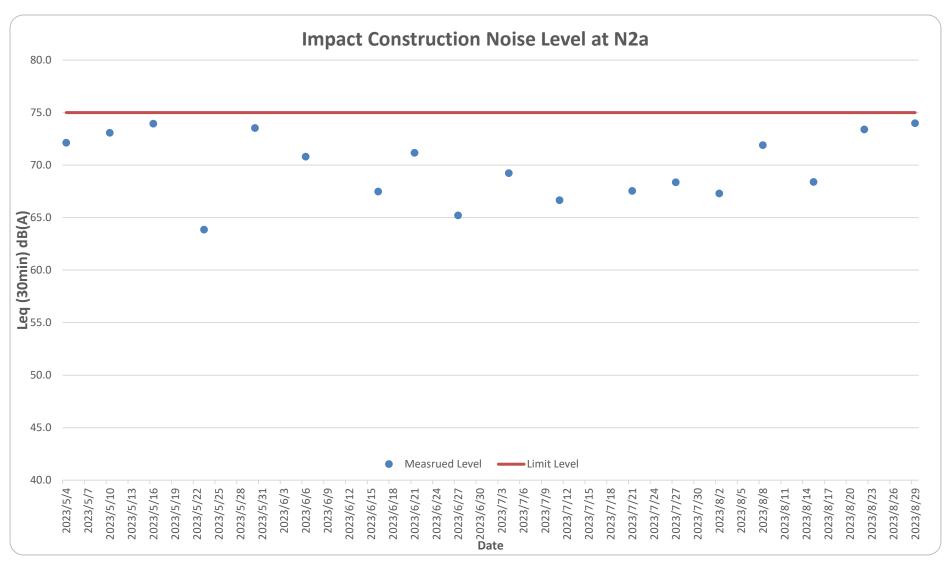
treatment plant

Other Factors NA

Date	Weather	Start Time	$L_{eq}$	$L_{10}$	L <sub>90</sub>
2/8/2023	Sunny	13:48	72.3	74.7	55.1
8/8/2023	Sunny	13:28	71.2	74.4	55.6
15/8/2023	Cloudy	13:10	74.3	77.6	55.2
22/8/2023	Sunny	13:01	74.4	78.9	54.0
29/8/2023	Sunny	13:00	71.2	73.6	53.3
		Average		73.0	'
		Range		71.2 - 74.4	

Remarks: +3 dB(A) free-field corrections have been made to N3a.

Figure F.1 Measured daytime (0700-1900) noise level at the admin building inside the construction site (N2a)



**Impact Construction Noise Level at N3a** 80.0 75.0 70.0 (30min) dB(A) Led 50.0 45.0 40.0 2023/5/10 2023/5/22 2023/6/3 2023/6/9 2023/6/12 2023/6/15 2023/7/3 2023/7/6 2023/7/9 2023/7/18 2023/7/27 2023/7/30 2023/8/2 2023/8/5 2023/8/8 2023/8/17 2023/8/20 2023/5/13 2023/5/16 2023/5/19 2023/5/25 2023/5/28 2023/5/31 2023/6/6 2023/6/18 2023/6/21 2023/6/24 2023/6/30 2023/7/12 2023/7/15 2023/7/24 2023/8/11 2023/8/14 2023/8/29 2023/5/7 2023/6/27 2023/7/21 Measured Level

Figure F.2 Measured daytime (0700-1900) noise level at Cheung Chau Fire Station (N3a)

s: +3 dB(A) free-field corrections have been made to the data in the graph.

### APPENDIX G Implementation Schedule

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	res & implement		tion / Tin ementati Measure	on of	What requirements or standards for the measures to achieve?
			medadica:	D	С	0	
Construction Phase (U	pgrading Works of Cheung Chau STW and Pak She SPS	(DP Component))			•	•	
S.3.5.5	Appropriate dust control measures should be implemented during the construction stage in accordance with the requirements in the Air Pollution Control (Construction Dust) Regulation. Dust control techniques should be considered to control dust to a level not exceeding the AQOs as well as the 1-hour TSP guideline level of 500 µg/m³. These measures include, but are not limited to, the following:  Adoption of good site practices; Avoid practices likely to raise dust level; Frequent cleaning and damping down of stockpiles and dusty areas of the site; Covering the exposed areas with tarpaulin; Reducing drop height during material handling; Provision of wheel-washing facilities for site vehicles leaving the site; Regular plant maintenance to minimize exhaust emission; and Sweep up dust and debris at the end of each shift.	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√ 		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	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		1		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA 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?
				D	С	0	
S.3.10.1	Watering every 1.5 hours on active works areas and paved haul roads to reduce dust emissions by 90.9% (e.g. watering intensity at 0.5 litres/m². Actual application shall depend on the site condition and weather conditions).	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		EIA, Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Watering every hour on unpaved areas and stockpiles of dusty materials (if no tarpaulin is provided) to reduce dust emissions by 90% (e.g. watering intensity at 1.5 litre/m² during the first hour, subsequent application at 0.2 litre/m². Actual application shall depend on the site condition and weather conditions).	Air Quality (fugitive dust) Control during Construction Phase	Contractors		1		EIA, Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Use of frequent watering for particularly dusty construction areas and areas close to ASRs	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Vehicle washing facilities should be provided at every vehicle exit point	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA 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?
				D	С	0	
S.3.10.1	Where a site boundary adjoins a road, streets or other areas accessible to the public, hoarding of not less than 2.4 m high from ground level should be provided along the entire length except for a site entrance or exit	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Stockpiles of imported material kept on site shall be contained within hoarding, dampened and/or covered during dry and windy weather	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Material stockpiled alongside trenches should be covered with tarpaulins	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	Measures		on of	What requirements or standards for the measures to achieve?
			measures?	D	С	0	
S.3.10.1	Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or spayed with water to maintain the entire surface wet during the non-working hours	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	All dusty materials shall be sprayed with water prior to any loading, unloading or transfer operation so as to keep the dusty materials wet	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	Water sprays shall be used during the delivery and handling of sands aggregates and the like	Air Quality (fugitive dust) Control during Construction Phase	Contractors		√		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation
S.3.10.1	All demolished items that may emit dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition	Air Quality (fugitive dust) Control during Construction Phase	Contractors		<b>V</b>		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	impl	ion / Tim ementati Measures	on of	What requirements or standards for the measures to achieve?
			illedSuleS?	D	С	0	
S.3.10.1	Good site practices for concrete batching plant  Every stock of more than 20 bags of cement or dry pulverized fuel ash(PFA) should be cover entirely by impervious sheeting or placed in an area sheltered on the top and the sides.  Cement or dry PFA delivered in bulk should stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed.  Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with effective fabric filter or equivalent air pollution control system (Maximum TSP emission factor of Silos and Mising Tower: 50mg/m³)	Air Quality (fugitive dust) Control during Construction Phase	Contractors		V		Annex 4 and Annex 12 of EIAO -TM, Air Pollution Control (Construction Dust) Regulation  Best Practical Means for Cement Works (Concrete Batching Plant) BPM 3/2(93)

EIA 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 (U	pgrading Works of Cheung Chau STW and Pak She SPS	(DP Component))			
S.4.4.12	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
S.4.4.12	Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
S.4.4.12	Plant known to emit noise strongly in one direction should, where possible, be orientated to direct noise away from the NSRs.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
S.4.4.12	Mobile plant should be sited as far away from NSRs as possible.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
S.4.4.12	Material stockpiles and other structures should be effectively utilized, where practicable, to screen noise from on-site construction activities.	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements

EIA 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.4.4.13	Use of quiet plant (PME):  Generator Poker, vibratory, hand-held Breaker, excavator mounted (hydraulic) Excavator Tracked Mobile Crane Vibratory Compactor Dumper Air compressor Concrete Pump Pilling Rig	Noise control during construction	Contractors	At all construction areas of the site during the entire construction period	EIA, Contractual requirements
S.4.4.14	Temporary site hoardings of 2.4 m high are recommended for the works at the Pak She SPS. The hoardings will be erected along the works boundary facing the NSRs. The PME involved in the works would be screened by the erected site hoardings. Without direct line of sight from the affected NSRs, a noise reduction of 10 dB(A) could be achieved provided that the hoardings have no openings or gaps and have a surface mass of at least 7 kg/m². Nonetheless, a -5 dB(A) screening correction for site hoardings has been applied as a more conservative approach.	Noise control during construction	Contractors	At Pak She SPS during the entire construction period	EIA
S.4.4.23	For NSRs which would be affected by more than one Works Types, good scheduling works is recommended to minimize the cumulative construction noise impacts due to different Works Types.	Noise control during construction	Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements

EIA 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.4.4.29	In order to prevent potential cumulative construction noise impacts to NSRs, the works at Tai Kwai Wan San Tsuen are recommended to be scheduled to avoid concurrent works at the areas near Tai Kwai Wan of the Improvement of Fresh Water Supply to Cheung Chau project.	Noise control during construction	DSD and Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements
S.4.4.30	The contractor shall liaise with "Replacement and Rehabilitation of Water Mains Stage 4, Mains on Hong Kong and Islands – Investigation, Design and Construction" contractors so as to avoid undertaking works concurrently with the works when they are in the close proximity as far as practicable.	Noise control during construction	DSD and Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements
S.4.4.31	The contractor shall liaise with Improvement to Existing Roads and Drains in Cheung Chau Old Town, Remaining Engineering Works Stage 3 works contractors so as to avoid undertaking works concurrently with the works when they are in the close proximity as far as practicable.	Noise control during construction	DSD and Contractors	Construction areas near the specified locations during the construction period	EIA, Contractual requirements

measures & main concerns to address  concerns to address  conent) and Sewers Work  Water Quality Control	measures?  (s (non-DP Compo  Contractors	D nent))	C	0	standards for the measures to achieve?
,	· ·	nent))	√		- WDCO:
Water Quality Control	Contractors		√		WDCO:
					TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		concerns to address	ineasures:	D	С	0	measures to achieve?
(cont)	<ul> <li>Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric materials during storms;</li> <li>For sections of pipes that need to be laid underneath water courses with the open cut method, site works should be carried out during the dry season with a temporary drainage diversion; and;</li> <li>Any construction works along Hak Pai Road immediately by the Kwun Yam beach and Cheung Chau Tung Wan beach should be avoided during the swimming season.</li> </ul>	Water Quality Control	Contractors		~		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water
S.5.7.2 and S.5.7.3	Mitigations Measures for General Construction Activities:     Good site practices should be adopted to regularly clean the construction sites to avoid rubbish, debris and litter from entering to nearby water bodies; and     Good construction and site management practices should be implemented to ensure that litter, fuels, and solvents would not enter the public drainage systems.	Water Quality Control	Contractors		1		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		concerns to address	illedsures?	D	С	0	measures to achieve?
S.5.7.4	Domestic sewage generated by workforce would be collected and discharged to the STW for proper treatment. Portable toilets should be provided by the Contractor, where necessary, to handle sewage from the workforce. The Contractor should also be responsible for waste disposal.	Water Quality Control	Contractors		<b>√</b>		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water
S.5.7.5 and S.5.7.6	Mitigations Measures for Spillage of Chemicals:     Registration to EPD as a Chemical Waste Producer if chemical wastes are generated and need to be disposed of;     Illegal disposal of chemicals should be strictly prohibited; and     Oils and fuels should only be used and stored in the designated area which has polluting prevention facilities.	Water Quality Control	Contractors		√		WPCO;      TM –Effluent     Standards for     Effluents     Discharged into     Drainage and     Sewerage     Systems, Inland     and Coastal     Water

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		concerns to address		D	С	0	measures to achieve?
Construction Phase (Up	ograding Works of Cheung Chau STW and Pak She SPS (DP Comp	onent) and Sewers Work	s (non-DP Compor	ient))			
S.6.6.1	The Contractor shall prepare a Waste Management Plan in accordance with the requirements set out in the ETWB TCW No. 19/2005, Waste Management on Construction Site, for the ER's approval. The WMP shall include monthly and yearly Waste Flow Tables that indicate the amounts of waste generated, recycled and disposed of (including final disposal site).	Waste management during construction	Contractors		√		ETWB TCW No. 19/2005, Waste Management on Construction Sites
S.6.6.1	The Contractor's waste management practices and effectiveness shall be audited by the Engineer's Representative on regular basis.	Waste management during construction	DSD		√		Waste Disposal Ordinance
S.6.6.1	The Contractor shall provide training for site staff concept of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Sufficient waste disposal points and regular collection of waste shall be provided.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Trucks with covering for the open-box bed and enclosed container shall be used to minimise windblown litter and dust during transportation of waste.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Regular cleaning and maintenance programme for drainage systems, pumps and oil interceptors.	Waste management during construction	Contractors		√		Waste Disposal Ordinance

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		concerns to address	illeasules:	D	С	0	measures to achieve?
S.6.6.1	Separation of chemical wastes for special handling and appropriate treatment at a Chemical Waste Treatment Facility (CWTF).	Waste management during construction	Contractors		√		Waste Disposal (Chemical Waste) (General) Regulation
S.6.6.1	Encourage collection of aluminium cans, paper and plastic bottles by providing separate labelled bins to enable these wastes to be segregated from other general refuse generated by the workforce.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	A recording system for the amount of wastes generated, recycled and disposed (including disposal sites) should be proposed.	Waste management during construction	Contractors		√		Waste Disposal Ordinance
S.6.6.1	Plan and stock construction materials to minimise amount of waste generated and avoid unnecessary generation of waste.	Waste management during construction	Contractors		1		Waste Disposal Ordinance
S.6.6.2	Alternatives C&D materials such as steel frameworks and plastic fencing can be considered to increase the chances for reuse.	Waste management during construction	Contractors		1		Waste Disposal Ordinance
S.6.6.3	In order to minimise the potential environmental impacts resulting from collection and transportation of C&D materials for off-site disposal, the excavated materials comprising fill materials should be reused on-site as backfilling materials as far as practicable.	Waste management during construction	Contractors		√		Waste Disposal Ordinance

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?		to impl measu		What requirements or standards for the measures to achieve?
		concerns to address	modeares.	D	С	0	
S.6.6.4	C&D waste, such as wood, plastic, steel and other metals should be reused or recycled and, as a last resort, disposed of to landfill sites. A suitable area should be designated within the site for temporary stockpiling of C&D materials and to facilitate the sorting process. In order to monitor the disposal of C&D materials at the designated public fill reception facility and landfill and to control fly-tipping, a trip ticket system should be included. Reference can be made to Development Bureau Technical Circular (Works) (TC(W)) No. 6/2010 for details.	Waste management during construction	Contractors		V		Development Bureau Technical Circular (Works) (TC(W)) No. 6/2010, Waste Disposal Ordinance
S.6.6.5	The C&D materials to be disposed of at public filling reception facilities shall be only materials consist of brick, concrete, cement plaster, soil and inert building debris. The materials shall be free from plastics, chemical waste, industrial metals and other materials that are considered unsuitable at the facility.	Waste management during construction	Contractors		1		Waste Disposal Ordinance
S.6.6.6	General refuse should be stored in enclosed bins or compaction units separate from C&D materials. A reputable waste collector should be employed by the contractor to remove general refuse from the site regularly, separately from C&D materials. An enclosed and covered area is preferred to reduce the occurrence of 'wind blown' light materials. In addition, a sufficient number of enclosed bins shall be provided on site for containment of general refuse to prevent visual impacts and nuisance to the sensitive surrounding.	Waste management during construction	Contractors		1		Waste Disposal Ordinance

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main	Who to implement the measures?		to impl measur		What requirements or standards for the measures to achieve?
		concerns to address	measures:	D	С	0	
S.6.6.7	For the disposal of chemical wastes produced at the construction site, the Contractor is required to register with the EPD as a Chemical Waste Producer and to follow the requirements stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used. Appropriate labels should be securely attached on each chemical waste container indicating the chemical characteristics of the chemical waste, such as explosives, flammable oxidizing, irritant, toxic, harmful, corrosive, etc. The Contractor shall also use a licensed waste collector engaged to transport and dispose of the chemical wastes in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Waste management during construction	Contractors		<b>V</b>		Waste Disposal (Chemical Waste) (General) Regulation
S.6.6.8	Chemical toilets to be provided on-site 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		√		Waste Disposal Ordinance
EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measure & main concerns to address	Who to implement the measures?		n to impe meas	olement ures?	What requirements or standards for the measures to
Construction Phase	e (Upgrading Works of Cheung Chau STW (DP Component))						achieve?
Table 11.8	Visual Screen/Hoarding  Decorative hoarding or boundary fence for construction sites shall be considered, and designed to be compatible to the surroundings.	To minimise the potential visual impacts	Contractors		√		N/A

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
		address		D	С	0	measures to achieve?
Table 11.8	Protection to Existing Trees within Works Areas  All existing trees which are not in direct conflict with the proposed works will be retained. The existing trees proposed to be retained shall be properly maintained and protected by means of fencing to prevent vehicular or pedestrian intrusion that may potentially damage tree canopies, trunks and root zones. Detailed tree protection specifications shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and tree monitoring system. For trees with high preservation value, individual tree assessments and continuous tree monitoring reports shall be provided by a certified Arborist, Landscape Architect or related professional during construction. All retained trees shall be recorded photographically at the commencement of contract.	Landscape mitigation measures	DSD and Contractors	1	1		EIA, Annex 10 and Annex 18 of EIAO- TM
	Root pruning to the retained trees should be prohibited. Retained trees should be well-preserved by setting up a tree protection zone throughout the construction period for protecting the retained trees from damages.						
	To maximize protection to existing trees and ground vegetation, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should close monitor and restrict the site working staff not to enter the "no-intrusion zone", even for non-direct construction activities and storage of equipment.						

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to	Who to implement the	When to implement the measures?			What requirements or standards for the
		address	measures?	D	С	0	measures to achieve?
Table 11.8	Tree Transplanting  Existing trees to be affected shall be directly transplanted to the proposed tree receiving sites, or to temporary tree nurseries alternatively. Temporary tree nurseries may be set up for the transplanted tree and proposed trees at an early stage to allow small trees to grow during the construction stage. By the time when planting area becomes available, trees have been mature and required minimal pruning and suffer much less damage during transplanting. The construction programme should also allow sufficient time for root pruning and root ball preparation prior to transplanting, if necessary, and transplanting operations to be carried out in planting season.  Tree pruning such as topping, lion tailing would be prohibited as far as possible. Also, frequent keep watering would be necessary for transplanting trees. The proposed tree preservation measures during construction would be carried out and approved by the competent persons.	Landscape mitigation measures	DSD and Contractors	~	<b>V</b>		EIA, Annex 10 and Annex 18 of EIAO- TM
Table 11.8	Construction Light  Security floodlight for construction areas shall be controlled, such as equipped with adjustable shield, frosted diffusers and reflective covers, at night to avoid excessive glare to the nearby areas and residents.  Other security measures shall also be considered to minimize the visual impacts by construction light.	To reduce the night-time glare effect to the surrounding environs.	Contractors		V		EIA, Annex 10 and Annex 18 of EIAO- TM

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to	Who to implement the	When to implement the measures?			What requirements or standards for the	
		address	measures?	D	С	0	measures to achieve?	
Table 11.8	Dust and Erosion Control for Exposed Soil  Excavation works and demolition of existing building blocks shall be well planned with precautions to suppress dust. Exposed soil shall be covered or watered often. Areas that are expected to be left with bare soul for a long period of time after excavation shall be properly covered with suitable protective fabric. Suitable drainage shall be provided around construction sites to avoid discharge of contaminants and sediments into sensitive water-based habitats.	To minimise the disturbance to existing landscape resources and minimise the impacts on the visual amenity of the area	Contractors		√		EIA, Annex 10 and Annex 18 of EIAO- TM	
Table 11.8	Reinstatement of Works Areas  The affected works areas shall be properly reinstated to the satisfaction of relevant government departments.	Landscape mitigation measures	Contractors		√		EIA, Annex 10 and Annex 18 of EIAO- TM	

APPENDIX H
Summary of All Complaints Received,
Notification of Summons and Successful
Prosecutions

## Statistical Summary of Environmental Complaints

	Environmental Complaints Statistics						
Reporting Period	Frequency	Nature	Follow-up Actions				
1 August 2023 -	0	NI/A	N/A				
31 August 2023	0	N/A					
Cumulative	0	N/A	N/A				

## Statistical Summary of Environmental Summons

	Environmental Summons Statistics						
Reporting Period	Frequency	Nature	Follow-up Actions				
1 August 2023 -	0	NI/A	N/A				
31 August 2023	0	N/A					
Cumulative	0	N/A	N/A				

## Statistical Summary of Environmental Prosecution

	<b>Environmental Prosecution Statistics</b>						
Reporting Period	Frequency	Nature	Follow-up Actions				
1 August 2023 -	0	NI/A	NI/A				
31 August 2023	0	N/A	N/A				
Cumulative	0	N/A	N/A				

## APPENDIX I EM&A Monitoring Schedules in the Reporting Period and the Next Reporting Period (Tentative)



			Aug-23			
un	Mon	Tue		Thu	Fri	Sat
		1	2	3	4	5
		24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a			
;	7	8	9	10	11	12
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
13	14	15	16	17	18	19
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
0	21	22	23	24	25	26
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
7	28	29	30	31		
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a		24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a		

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Impact Monitoring Schedule for Upgrading of Cheung Chau Sewage Collection, Treatment and Disposal Facilities  Sep-23							
iun	Mon	Tue		Thu	Fri	Sat	
					1	2	
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a		24-hour TSP munitaining for A1a & A2a 1-hour TSP munitaining for A1a & A2a			
3	4	5	6	7	8	9	
			24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a			
10	11	12	13	14	15	16	
		24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a				
7	18	19	20	21	22	23	
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a					
24	25	26	27	28	29	30	
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a					