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Attn: Mr. Titus Yeung - Senior Resident Engineer

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Contract No. CM 04/2021

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 January 2024 (Rev. 1)

16 February 2024

By Email

Dear Sir,

I refer to the Monthly EM&A Report for January 2024 (Rev. 1) under the captioned Project, which was certified on 15 February 2024 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

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Independent Environmental Checker

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Encl.

c.c. DSD

Atkins China Limited

Acuity Sustainability Consulting Limited **Build King Civil Engineering Limited**

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By Email

Mr. Lawrence Lam







Contract No. DC/2019/07

Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 -**Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities**

30th Monthly Environmental Monitoring and Audit Report -January 2024

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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 30th 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 to 31 January 2024.
- A.4 Key activities carried out in this reporting period for the Project included the followings:
 - Trial Pit and Ground Investigation
 - Excavation and Lateral Support (ELS) at CCSTW
 - Construction of Sludge Digester Building
 - Construction of MBR Treatment Facilities
 - Mechanical Installation of Sludge Digestor Building and Sludge Holding Tanks
 - MVAC Installation Works
 - Construction of Sludge Holding Tank
 - Lifting Appliance Installation for Sludge Digestor Building
 - FS Installation
- 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)

Locations	Dust in μg/m³				
	Ave	verage Rang		ıge	
	TSP-1hr	TSP-24hr	TSP-1hr	TSP-24hr	
A1a	78	95	67 – 90	71 - 135	
A2a	64	74	57 - 70	55 - 103	

Table B - Monitoring Results (Noise)

	Noise in dB(A)		
Locations	Average	Range	
	L _{eq (30 min)} (7:00-19:00)	L _{eq (30 min)} (7:00-19:00)	
N2a	69.4	66.2 - 72.4	
N3a	73.0	71.6 - 74.8	

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 2, 9, 16, 23 and 29 January 2024.
- 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.

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- 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

Nature	Number	Issue Date	Expiry Date
Environmental Permit	EP-488/2014/A	13/05/2021	N/A
Notification pursuant to Air Pollution Control (Construction Dust) Regulation	462303	26/11/2020	N/A
Waste Disposal Billing Account	7039094	21/11/2020	N/A
Chemical Waste Producer	5213-920-B2500-05	31/12/2020	N/A
Effluent Discharge Licence under Water Pollution Control Ordinance	WT00038597-2021	20/08/2021	31/08/2026

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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 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

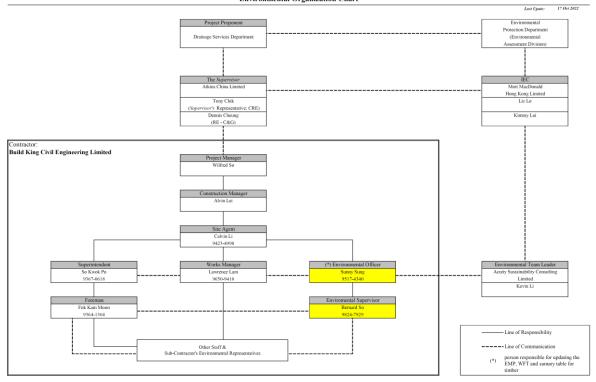
- 1.2.1 The purpose of the Project is to upgrade the sewerage collection, treatment and disposal facilities in Cheung Chau in order to cater for the projected ultimate population and planned developments in Cheung Chau to meet the increased demand and to achieve more stringent effluent quality standards. 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 ORGANIZATION 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 Limited)	Site Agent Environmental Officer Environmental Officer	Calvin Li Sunny Sung Bernard So	9423 4998 9517 4340 9824 7929

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
- Excavation and Lateral Support (ELS) at CCSTW
- Construction of Sludge Digester Building
- Construction of MBR Treatment Facilities
- Mechanical Installation of Sludge Digestor Building and Sludge Holding Tanks
- MVAC Installation Works
- Constructing of Sludge Holding Tank
- Lifting Appliance Installation for Sludge Digestor Building
- FS Installation

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

- Trial Pit and Ground Investigation
- Excavation and Lateral Support (ELS) at CCSTW
- Construction of Sludge Digester Building
- Construction of MBR Treatment Facilities
- Mechanical Installation of Sludge Digestor Building and Sludge Holding Tanks
- MVAC Installation Works
- Constructing of Sludge Holding Tank
- Lifting Appliance Installation for Sludge Digestor Building
- FS Installation

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 January to 31 January 2024.

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) $0.6 1.7 \text{ m}^3$ 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 cm²;
 - (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.

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- 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.

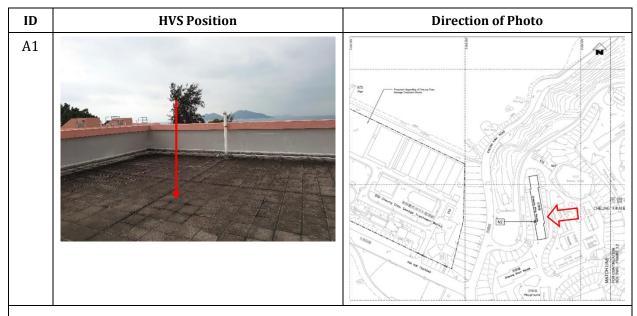
2.4.2 The proposed dust monitoring station is presented in **Table 2.2** and the respective locations are shown in Figure 2.1 of the EM&A Manual.

Table 2.2 Proposed Dust Monitoring Stations

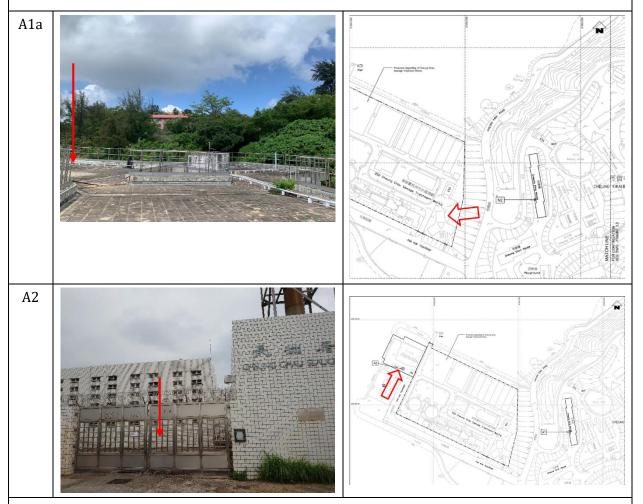
ID No.	Location	Nature of Use	Remarks
A1	Cheung King House, Cheung Kwai Estate	Residential	Specified in the EM&A Manual but proposed to change location
A1a	The admin building inside the construction site	Institutional	Proposed alternative location to replace A1
A2	Cheung Chau Slaughter House	Slaughter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

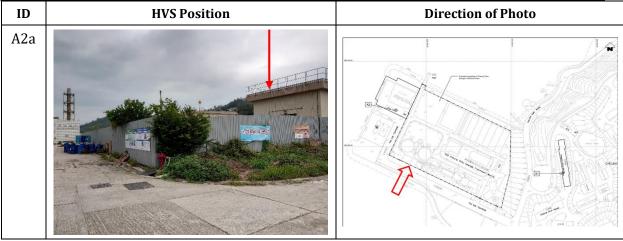
Table 2.3 Photo of Proposed HVS Position at Dust Monitoring Stations



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.



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	78	67 – 90
A2a	64	57 – 70

Table 2.5 Summary of 24-hour TSP Monitoring Results

Monitoring Location	Average(μg/m3)	Range(μg/m3)
A1a	95	71 - 135
A2a	74	55 - 103

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

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	Parameters Monitoring Location		Limit Level μg/m³
1-hour TSP Level	A1a	151	260
in μg/m³	A2a	154	260
24-hour TSP Level	A1a	270	r00
in μg/m³	A2a	271	500

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	
EVENT	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	Time Duration		Parameters		
Daytime: 0700-1900 hrs	Once per week	Continuously in $L_{\text{eq 5min}}/L_{\text{eq 30min}}$ (average of 6 consecutive $L_{\text{eq 5min}}$)	$ m L_{eq~5min}, L_{eq~30min}, \ m 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	96063		
Acoustic Calibrator	Rion NC-75	35124527		

3.3. MONITORING LOCATION

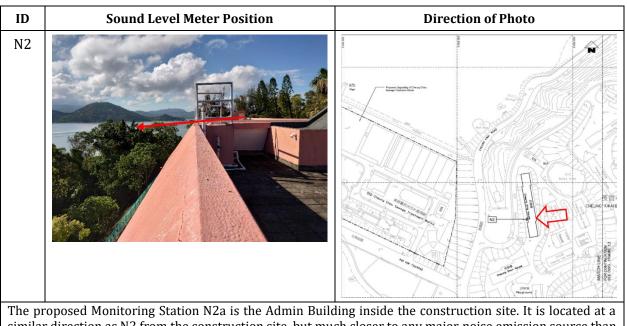
3.3.1 According to the environmental findings detailed in the EIA report, the designated locations for the construction noise monitoring are listed in **Table 3.3** and shown in Figure 3.1 – 3.8 of the EM&A Manual.

Table 3.3 Noise Monitoring Stations for Noise Monitoring

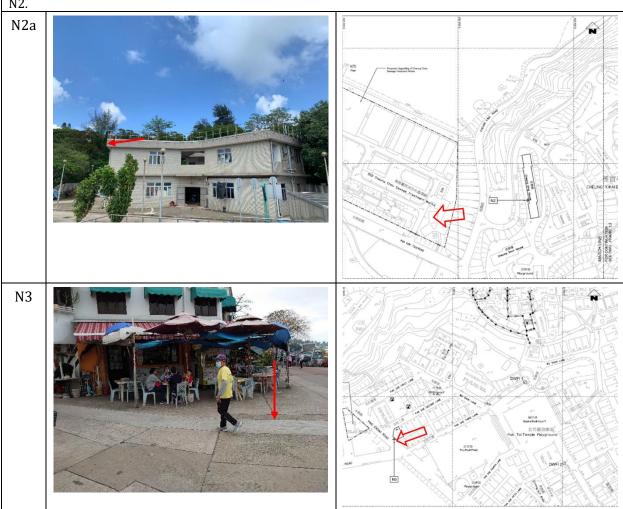
ID No.	Location	Location Nature of Uses		Façade/Free- field
N2	House, Cheung Residential b		Specified in the EM&A Manual but proposed to change location	Façade
N2a	Admin Building inside the Construction Site	inside the Construction Institutional		Façade
N3	No. 1A Pak She Second Lane	Residential	Specified 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 safer 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.

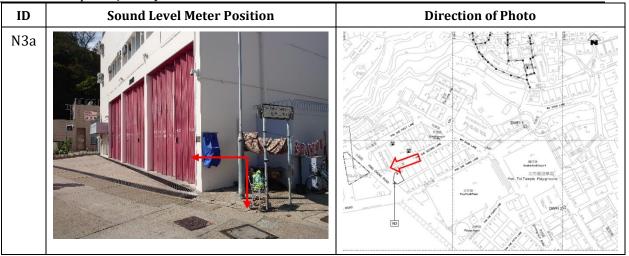
Table 3.4 Photo of Proposed Sound Level Meter Position at Noise Monitoring Stations



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.



3.4. RESULTS AND ANALYSIS

3.4.1 The noise monitoring was carried out in January 2024. The measurement data are shown in Appendix F and summarized in **Table 3.5**.

Table 3.5 Summary of Noise Monitoring Results

Monitoring Location	Time Period	Average[dB(A))	Range[dB(A))		
N2a	Daytime (0700-1900)	69.4	66.2 - 72.4		
N3a	Daytime (0700-1900)	73.0	71.6 - 74.8		

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 militgation 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 02, 09, 16, 23 and 29 January 2024. 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 05 December 2023 for testing. The test results were under the limitations of the requirements. The quality of the discharge compliant with the requirements of the discharge licence.

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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

Table 5.1 Monthly Summary Waste Flow Table for 2024 (in Weight)

Marine Dumping Permit (Type 2 - Confined Marine Disposal):

(All quantities shall be rounded off to 3 decimal places)							updated on:	02-Feb-2024					
	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 kg)							Actual Quantities o	of Other C&D Materials	Wastes Generated		Marine Dumping	
Month	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 (f)	Plastic (g) (bottles/containers, plastic sheets/ fours from package 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)	(a)	(b)	(c)	(d)		(e) (in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in m ³)	(in m ³)
Jan-2024	1588.4400	0.0000	0.0000	0.0000	1563.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.4400	0.0000	0.0000
Feb-2024	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mar-2024		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Apr-2024		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
May-2024	100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Jun-2024	(3), 3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Half-year total	1588,4400	0.0000	0.0000	0.0000	1563.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.4400	0.0000	0.0000
Jul-2024	0.000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Aug-2024		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Sep-2024	7 / (1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Oct-2024		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Nov-2024	2.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Dec-2024		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Yearly Total	1588.4400	0.0000	0.0000	0.0000	1563.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.4400	0.0000	0.0000

EP/MD/23-033

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

	in quantities shall be founded on to 2 decimal places)												
	Actual Quantities of Inert C&D Materials Generated / Imported (in '000 kg)							Actual Quantities of	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 package material)	Chemical Waste	Others (e.g. General Refuse etc.)	Type 1 - Open Sea Disposal	Type 2 - Confined Marine Disposal
	[a+b+c+d+c+f+g+h+i)	(a)	(b)	(c)	(d)		(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in m ³)	(in m ³)
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	49757.9100	0.0000	0.0000	0.0000	49610.8700	0.0000	0.0000	0.0000	0.0000	0.2000	146.8400	835.0000	1350.0000
2024	1588.4400	0.0000	0.0000	0.0000	1563.0000	0.0000	0.0000	0.0000	0.0000	0.0000	25.4400	0.0000	0.0000
2025	0.0000												
2026	0.0000												
Total	69286.4300	0.0000	0.0000	0.0000	68992.5400	0.0000	0.0000	0.0000	0.0000	0.2000	293.6900	1360.0000	1553.0000

Remark

Notes:

 1) Density of C&D material to be
 2
 metric ton/m3
 3) Density of Chemical Waste to be
 0.88

 2) Density of General Refuse to be
 1.6
 metric ton/m3

(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.
- 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.

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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 2, 9, 16, 23 and 29 January 2024. A joint site inspection with IEC was carried out on 29 January 2024.
- 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
2 January 2024	The rubbish and the sediments in the U-channel should be cleaned.	The rubbish and the sediments in the U-channel was cleaned.	NIL
9 January 2024	Broken geotextile should be replaced to The geo		NIL
16 January 2024	NIL	N/A	The garbage in the U- Channel should be cleaned more frequently.
23 January 2024	NIL	N/A	NIL
29 January 2024	NIL	N/A	NIL

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**.

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8. Environmental Non-conformance

- **8.1.** Summary of Exceedances
- 8.1.1 No exceedance of Action and Limit Levels of air quality and construction noise was recorded in the reporting month.
- **8.2.** Summary of Environmental Complaint
- 8.2.1 No environmental complaint was recorded in the reporting month.
- 8.3. SUMMARY OF ENVIRONMENTAL SUMMON AND SUCCESSFUL PROSECUTION
- 8.3.1 There was no successful environmental prosecution or notification of summons received since the Project commencement.

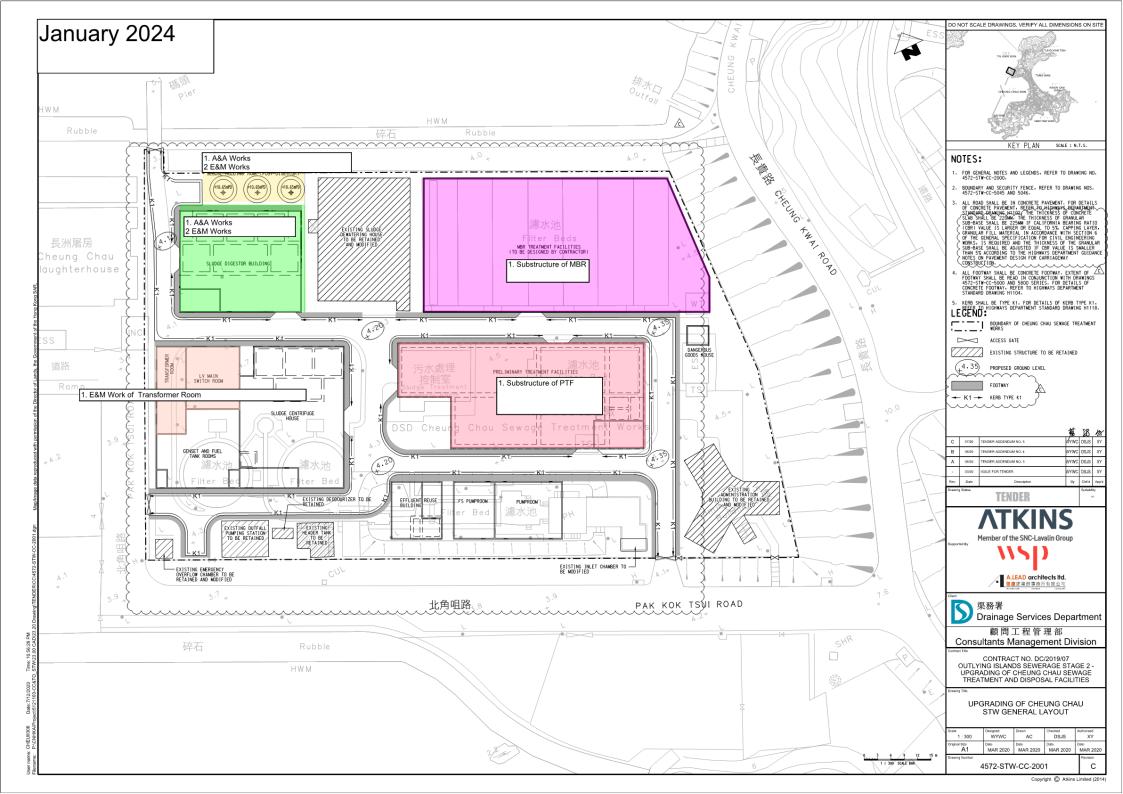
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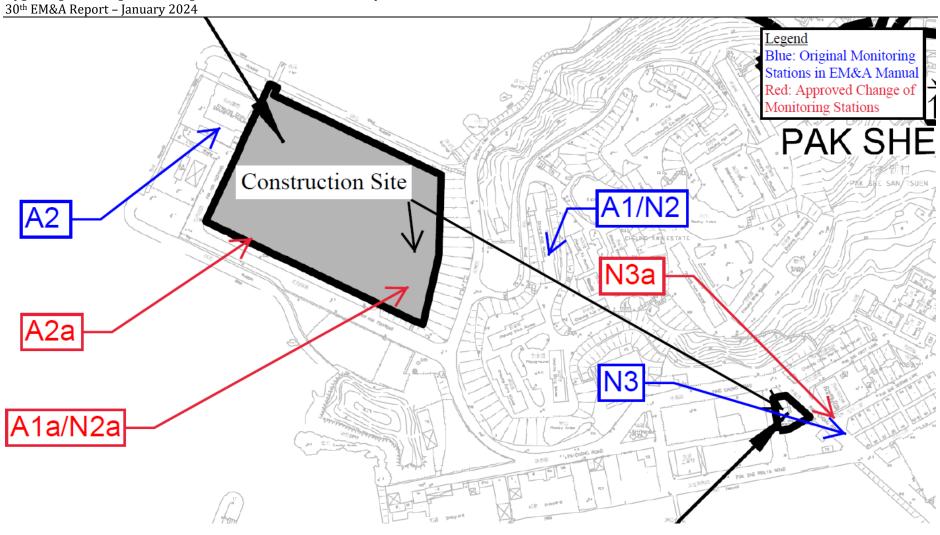
9. CONCLUSION

- 9.1 This is the 30th Monthly EM&A Report for the Project which summarizes the key findings of the programme during the reporting period from 1 January to 31 January 2024 in accordance with the EM&A Manual and the requirement under EP-488/2014/A.
- 9.2 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.
- 9.3 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.
- 9.4 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.
- 9.5 No exceedance of Action or Limit Level was recorded in the reporting period.
- 9.6 No environmental complaint was received in the reporting period.
- 9.7 No notification of summons or prosecution was received during the reporting period.

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APPENDIX A Location Plan and Noise and Dust Monitoring Stations

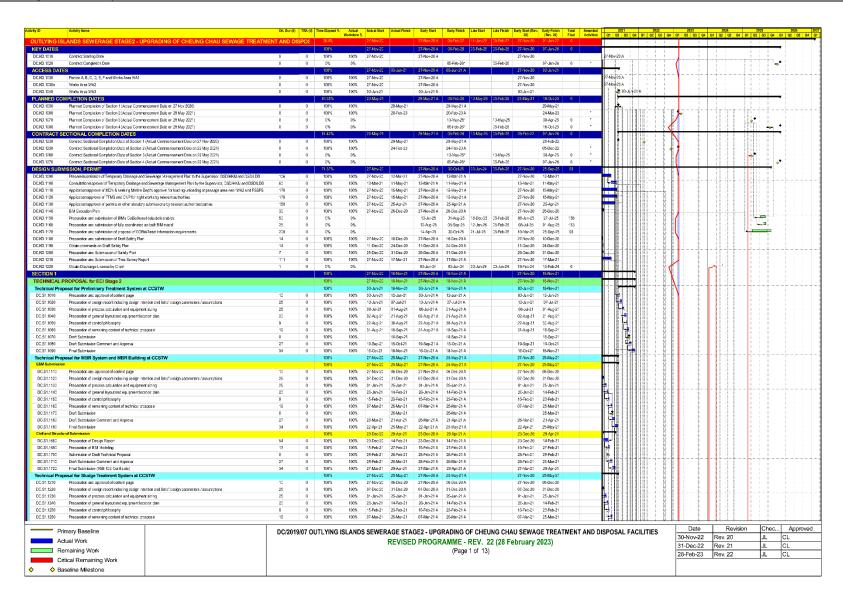




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APPENDIX B Construction Programme

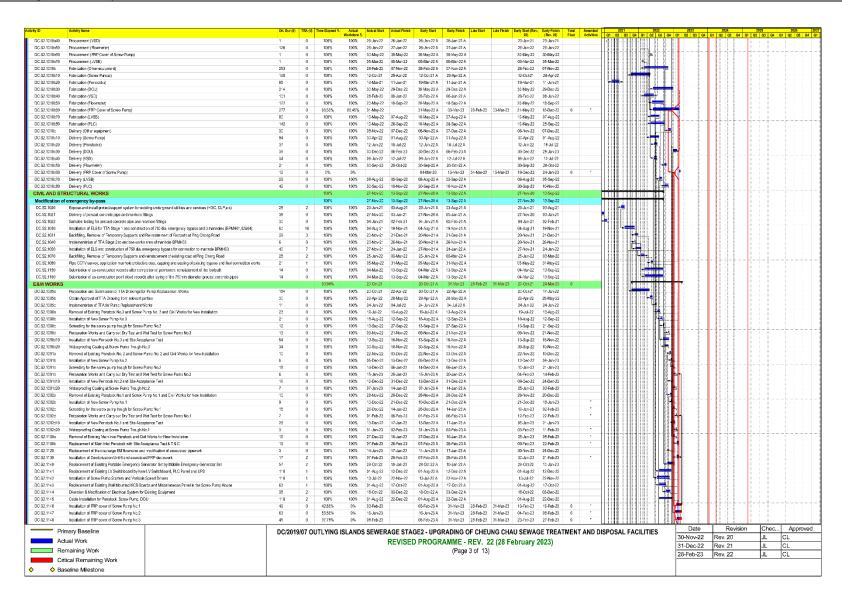




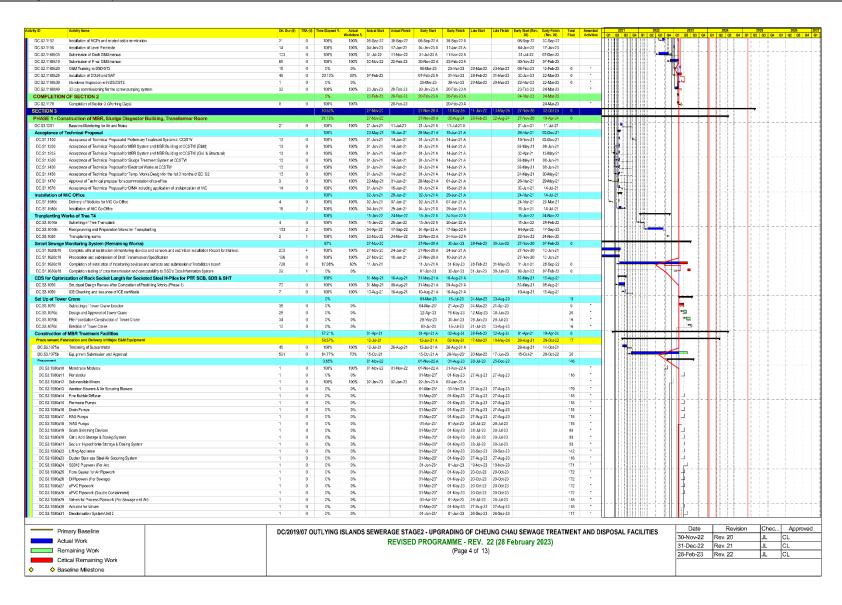


Activity Name	Orl. Dur (d)	TRA (d) 1	Time Elapsed N	Actual Workdone %	Actual Start	Actual Finish	Early Start	Early Finish	Late Start La	te Finish Early Sta 20	t (Rev. Early F	nish Total Amend 20) Float Activit	led O1	2021	4 01 7	2022	2023 Q1 02 03 Q	04 01 10	2024	2025	04 O1 M
1.1270 Draf Submission	0	0	100%	100%		25-Mar-21		25-Mar-21 A		20	25-Ma		130	41	1416	- w W	- uz us 0	- 1	<u> </u>	u. v. us	41 W
1.1280 Disht Submission Comment and Approva	27	0	100%	100%	28-Mar-21	21-Apr-21	26-Mar-21 A	21-Apr-21 A		26-Ma			4			771					
1.1230 Final Submission	34	0	100%	100%	22-Apr-21	25-May-21	22-Apr-21 A	25-May-21 A		22-Ap			-								
nical Proposal for Electrical Works at CCSTW			100%		27-Nov-20	25-May-21	27-Nov-20 A	25-May-21 A		27-No	-20 25-Ma					1 1 1 1			. 11 1		
1.1310 Pregassition and approval of content page	10	0	100%	100%	27-Nov-20	06-Dec-20	27-Nov-20 A	06-Dec-20 A		27-No			_								
1.1320 Preparation of design report including design intention and list of design parameters / assumptions	25	0	100%	100% 100%	97-Dag-20	31-Dec-20	97-Dec-29 A	31-Dec-20 A		97-De			L		1111-	4-4-1	1		, il-1		
1.1330 Progration of process cate dation and equipment string 1.1340 Presention of corerol layout and equipment location dan	25	- 0	100%	100% 100%	01-Jan-21 28-Jan-21	25-Jan-21 14-Frip-21	91-Jan-21 A 26-Jan-21 A	25-Jan-21 A 14-Feb-21 A		01-Ja 28-Ja						1 1 1					
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-Fe						1 9 8				1 1 1	
1.1380 Preparation of remaining content of technical prosposal	19	0	100%	100%	07-Mar-21	25-Mar-21	07-Mar-21 A	25-Mar-21 A		07-146											
1.1570 Diat Submission	0	0	100%	100%	U 1901 X 1	25-Mar-21	OT MOTETIN	25-Mar-21 A		01-44	25-M		[J			- 8 8					
1.1380 Draft Submission Commerciand Approva	27	0	100%	100%	26-Mar-21	21-Apr-21	26-Mar-21 A	21-Apr-21 A		26-\4s				11111	1111-	1-6-6	11-		riir it -		
1.1330 Final Submission	34	- 0	100%	100%	22-Apr-21	25-May-21	22-Apr-21 A	25-Way-21 A		22-Ap			- 1								
nical Proposal for Temp. Works Design for the 1st 3months of ECLS2			100%		18-Jan-21	23-May-21	16-Jan-21 A	23-Way-21 A		16-Ja	-21 23-Me	-21				1 0 1	1				
1.1410a. Preparation and approval of Technical Prosposal for ELS Design of Sludge Digister Building	67	- 0	100%	100%	18-Jan-21	23-Mar-21	16-Jan-21 A	23-Mar-21 A		18-Ja	-21 23-Ma	-21									
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-Ja	-21 23-Ma	-21	H#1			1 9 8					
1.1410c 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-Ja			H##								
1.1410c 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-Ja											
1.1420 Draft Sutmission	0	0	100%	100%		23-Mar-21		23-Mer-21 A			23-Ma		- 1			1 0 6	1				
1.1430 Disht Submission Comment and Approva	27	0	100%	100%	24-Mar-21	19-Apr-21	24-Mar-21 A	19-Apr-21 A		24-\48											
1.1440 Final Submission	34	0	100%	100%	20-Apr-21	23-May-21	20-Apr-21 A	23-May-21 A		20-Ap				3	Ш.	1-1-1	1		-4-4-	- 4-4-4	
nical Proposal for Accommodation for the Project Manager's, Supervisor's & Contractor's Co-Office			100%	To solve	27-Nov-20	25-Mar-21	27-Nov-20 A	25-Mar-21 A		27-No											
1.1480 EC Stage 1 - Technical proposal for accommodation for the Project Manager's Supervision's & Contractor's de difficencial Proposal for DfMA including application of prefabrication and MiC	119	0	100%	100%	27-Nov-20 28-Jan-21	25 Mar-21 29 Jun-21	27-Nov-20 A 26-Jan-21 A	25-Mar-21 A 29-Jun-21 A		27-No 26-Ja			-	₩.Ⅱ		1 1 1					
nical Proposal for DfMA including application of prefabrication and MiC 1.1480 Presention and approval of content page	48	0	100%	100%	26-Jan-21 26-Jan-21	12-Mar-21	26 Jan 21 A 26 Jan 21 A	12-Mar-21 A		26-Ja 26-Ja											
1.1490 Preparation and approval or content page 1.1490 Preparation of design memorandum for Civil DMM.	30	0	100%	100%	26-Jan-21 13-Mar-21	12-Mar-21 11-Apr-21	26-Jan-21 A 13-Mar-21 A	12-M97-21 A 11-Apr-21 A		26-Ja 13-Ma											
1.1430 Preparation of cestign memorandum for CVI URAVA 1.1500 Preparation of cestign memorandum for E&M DBMA	30	0	100%	100% 100%	13-Mar-21	11-Apr-21	13-Mar-21 A	11-Apr-21 A		13-Ms			- 🗓		1111-		1				
1.1530 Preparation of remaining content of technical prosposal	19	0	100%	100%	12-Apr-21	30-Apr-21	12-Apr-21 A	30-Apr-21 A		13-46 12-Ap						1 8 8					
1.1540 Dest Submission	0	0	100%	100%		30-Apr-21	process	30-Apr-21 A		14-14	-2 30-Ap		-1111			1 II II					
1.1550 Drait Submission Commert and Asprova	24	0	100%	100%	91-May-21	24-May-21	01-May-21 A	24-May-21 A		01-Ma						1 8 8					
1.1590 Final Submission	38	-0	100%	100%	25-May-21	29-Jun-21	25 Atay-21 A	29-Jun-21 A		25-Ma			-1111	4		1 9 8					
PREPARATION WORKS			100%		27-Nov-20	15 May-21	27-Nov-20 A	15-May-21 A		27-No	-20 15-Ma	A21	-								
.1580s Design of MiC Co-Office	15	- 0	100%	100%	96-Mar-21	23-Mar-21	06-Mar-21 A	23-Mar-21 A		96-144	-21 23-Ma	-21				1 9 8					
.1580b Fabrication of M.C. Co-O'lico	44	- 6	100%	100%	28-Jan-21	23-Mar-21	28-Jan-21 A	23-Mar-21 A		28-Ja	-21 23-Ma	-21	- 1	4111		1 8 8					
.1590 Site clearence, set up site hearding, 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-No	-20 15-Ma	/21	-								
.1800 Structural Condition Survey	34	2	100%	100%	10-Apr-21	15 May 21	10-Apr-21 A	15-May-21 A		10-Ap	21 15 Ma	/21		+ 11		1 8 8					
.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-Ja	-21 10-Ms	r-21	1								
.1840 Setup of mor itering and instrumentation system	119	8	100%	100%	02-Jan-21	08-May-21	02-Jan-21 A	08-May-21 A		02-Ja	-21 06-Me	r-21	-			1 0 0			. 11 1		
.1660 Initial site survey record	56	4	100%	100%	27-Nov-20	25-Jan-21	27-Nov-20 A	25-Jan-21 A		27-No											
.1670 Conduct ULI detection and issuance of UU detection report	25	2	100%	100%	21-Dec-20	19-Jan-21	21-Dec-20 A	19-Jan-21 A		21-De	>20 19-Ja	-21	7			1 1 1					
.1671s Installation of Piecometer PS1 to PS3	45	- 0	100%	100%	31-Mar-21	15-May-21	31-Mar-21 A	15-May-21 A		31-Ma				7		1 1 1					
Sewerage Sampling Survey			100%		27-Nov-20	96-Feb-21	27-Nov-20 A	06-Feb-21 A		27-No											
1.1619a Conduct miliar Reconnaissance Visit	13	1	100%	100%	27-Nov-20	10-Dec-20	27-Nov-20 A	10-Dec-20 A		27-No						1 8 8					
1.1610b Submit Report of Initial Recommissance Visit 1.1610c Approval of Report of Initial Recommissance Visit	5	0	100%	100% 100%	11-Dec-20	15-Dec-20	11-Dec-20 A	15-Dec-20 A		11-De											
	7	0	100%	100%	18-Dec-20 23-Dec-20	22-Dec-20 29-Dec-20	16-Dec-20 A 23-Dec-20 A	22-Dec-20 A 29-Dec-20 A		23-De			-111			1 0 6					
1.1610c Preparation work for Raw Sewage Sampling 1.1610e Conduct Raw Sewage Sampling	14	0	100%	100%	30-Dec-21	12-Jan-21	30-Dec-20 A	12-Jan-21 A		23-De 30-De			_ []-HH				1		c+++-	- 4-4-4	
1.1610f Submission of Survey Report	21	0	100%	100%	13-Jan-21	02-Feb-21	13-Jan-21 A	02-Feb-21 A		12-Ja						1 9 8					
1.1610g Comment and Approval of Survey Report	2	0	100%	100%	03-Feb-21	04-Feb-21	03-Feb-21 A	04-Feb-21 A		03-Fe			⊑							1 1 1	
1.1610h Submission of Final Survey Report	2	0	100%	100%	05-Feb-21	06-Feb-21	05-Feb-21 A	06-Fab-21 A		05-Fe						1 9 8					
t Sewerage Monitoring System	-		100%		27-Nov-20	10-Jan-21	27-Nov-20 A	10-Jan-21 A		27-No			+			1 8 8					
1.1620a Carry out site investigation and submit Reconnais ance Survery Report	42	3	100%	100%	27-Nov-20	10-Jan-21	27-Nov-20 A	10-Jan-21 A		27-No			+ []			1 9 E					
PLETION OF SECTION 1			0%		28-May-21	294tsy-21	29-May-21 A	29-May-21 A		28-Ma	-21 29-Ma	r21		*		1 0 0	1				
.1850 Completion of Section 1 (Working Days)	0	- 0	100%	100%		29-May-21		29-May-21 A			29-Ma			*							
ION 2 - Upgrading the existing Pak She Sewage Pumping Station (PSSPS)			96.26%		27-Nov-20		27-Nov-20 A	31-War-23	28-Feb-23 3	-Mar-23 27-No	-20 24-M			1	1111	+##	†		. 11 1		
CUREMENT, FABRICATION and DELIVERY of MAJOR E&M EQUIPMENT			98,09%		19-Mar-21		19-Mar-21 A	15-War-23	28-Feb-23 1:	i-Mar-23 27-No	-20 28-Ja	-23 0	H				†				
.1005s Tendering of Subcontrator	45	- 0	100%	100%	12-Jul-21	25-Aug-21	12-Jul-21 A	25-Aug-21 A		12-Ju	-21 25-Au	-21	1111		11111	7-11-E	1 1				
.1095b Equipment Submission and Approval (Other equipment)	141	- 6	100%	100%	28-Aug-21	14-Jan-22	26-Aug-21 A	14-Jan-22 A		26-Au	-21 22-Ja	-22		-	*						
.1095c Equipment Submission and Approval (Scree Pumps)	40	- 0	100%	100%	31-Aug-21	09-Oct-21	31-Aug-21 A	09-0ct-21 A		26-Az	-21 04-00			-							
.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-No					 	4-8 E					
.1006e Equipment Submission and Approval (DOU)	131	0	100%	100%	31-Oct-21	11-Mar-22	31-Oct-21 A	11-Mar-22 A		27-No		-21	H			4-4.					
.1006f Equipment Submission and Approval (VSD)	91	0	100%	100%	30-Nov-21	01-Mar-22	30-Nov-21 A	01-Mar-22 A		27-No				# 11		4-41					
.1005g Equipment Submission and Approval (Rowneter)	172	-0	100%	100%	93-Dec-21	24-May-22	03-Dec-21 A	24-May-22 A		27-No			_##	H		4-4-4					
.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-No			_##		ш	41-4 E					
.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-Fe			_		177	+-+ I					
.1010s Procurement (Other equipment)	6	0	100%	100%	08-Jan-22	14-Jan-22	08-Jan-22 A	14-Jan-22 A		06-Ja					MIII.					- 1- 1- 1	
1010s10 Procurement (Screw Pumps)	7	0	100%	100%	24-Sep-21	24-Sep-21	24-Sep-21 A	24-Sep-21 A		05-00			_	l l							
.1010s20 Procurement (Perstocks)	1 2	0	100%	100%	03-Jan-22 20-Mar-22	04-Jan-22	03-Jan-22 A	04-Jan-22 A 21-Mar-22 A		17-Ma 20-Ma			-1111								
:1010830 Procurement (DOU)	Z	0	100%	100%	20-Mar-22	21-Mar-22	20-Mar-22 A	21-Mar-22 A		20-148	-22 T-M	~ZZ		H 111	111111	H H E	1	1 1	11.1	11 1 1	
																	Date	$\overline{}$	Revisio	n Che	00 1 4-
Primary Baseline	DC/2019	9/07 OU	TLYING I	SLANDS	SEWER	RAGE STA	GE2 - UPG	RADING C	F CHEUN	G CHAU SE	VAGE TR	EATMENT AND	DISPO	SAL FA	CILITI	ES		_ _			
Actual Work																					CL
							2110011			(== 1 00100	., 2020,						31-Dec-22	2 Re	v. 21		CL
-								(rage	201 13)								28-Feb-23	3 Re	JV. 22	JL	CL
Critical Remaining Work																					
Actual Work Remaining Work									REVISED PROGRAMME -		REVISED PROGRAMME - REV. 22 (28 Februa	REVISED PROGRAMME - REV. 22 (28 February 2023)	REVISED PROGRAMME - REV. 22 (28 February 2023)	REVISED PROGRAMME - REV. 22 (28 February 2023)	REVISED PROGRAMME - REV. 22 (28 February 2023)	REVISED PROGRAMME - REV. 22 (28 February 2023)	REVISED PROGRAMME - REV. 22 (28 February 2023)	REVISED PROGRAMME - REV. 22 (28 February 2023) (Page 2 of 13) (Page 3 of 15)	REVISED PROGRAMME - REV. 22 (28 February 2023) 30-Nov-22 Re (Page 2 of 12) 31-Dec-22 Re	REVISED PROGRAMME - REV. 22 (28 February 2023) (Page 2 of 13) (Rev. 20	REVISED PROGRAMME - REV. 22 (28 February 2023) 31-Dec-22 Rev. 21 JL

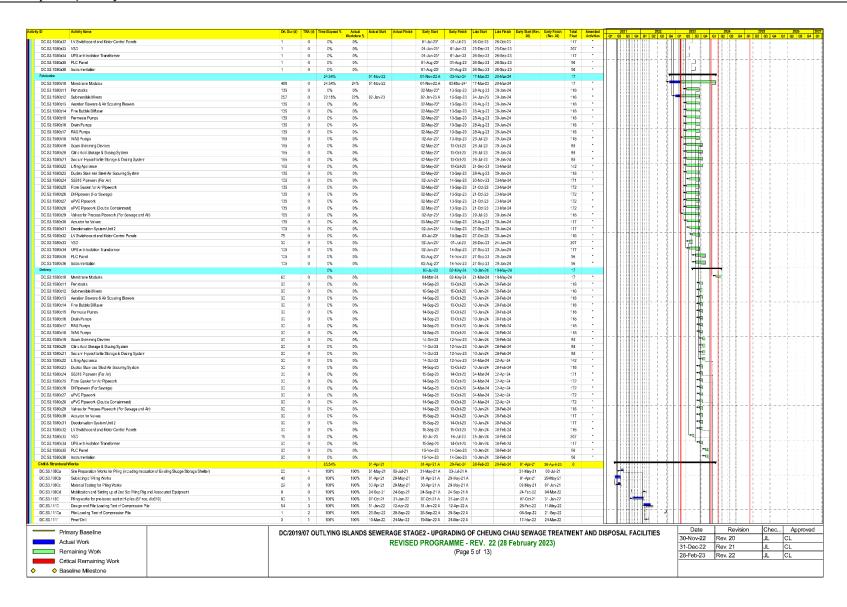




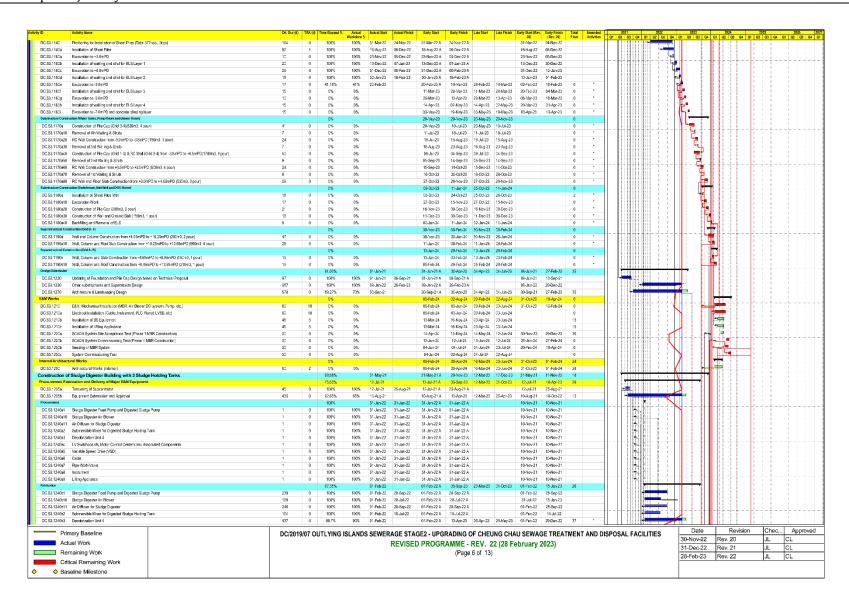




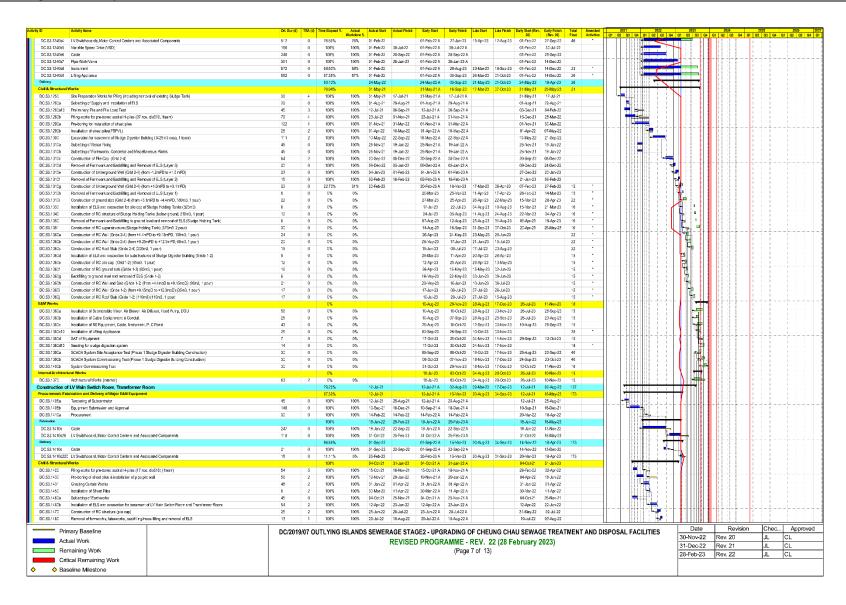












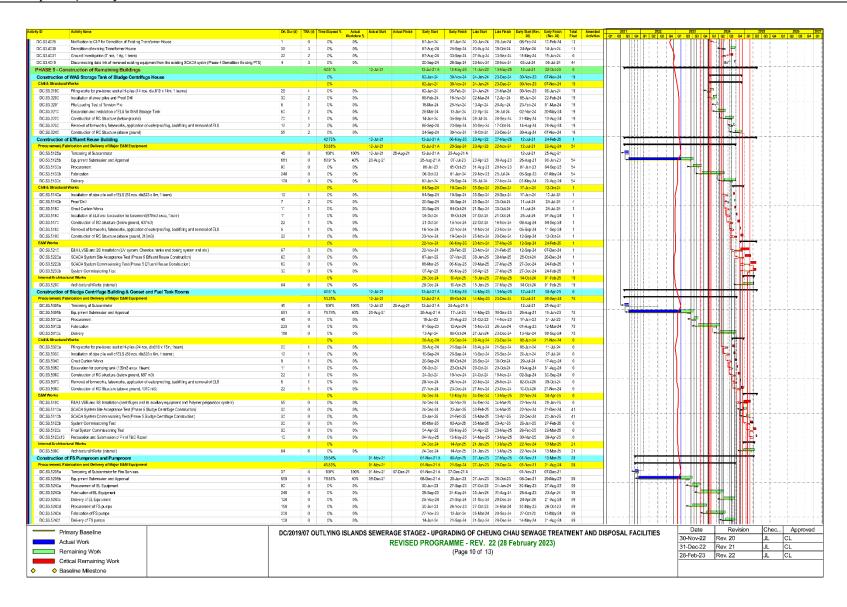


710	Activity Name	Orl. Dur (d)	TRA (d)	Time Bapsed N	Actual Workdone %	Actual Start	Actual Finish	Early Start	Early Finish	Late Start	Late Finish	Early Start (Rev. 20)	Early Finish (Rev. 20)	Total /	mended ctivities	Q1 02	03 Q4 C	1 92 01	Q4 C4	2023	Ot u	1 Q2 Q3	Q4 O1	2025	34 O1 F	2026
DC.S3.1490a	Subjecting of Finishing Works	181	0	100%	100%	19-Jul-22	31-Jan-23	19-Jul-22 A	31-Jan-23 A			19-Jul-22	3'-Jan-23					-			П			1 00		
DC.88.1490b	Construction of RC Structure (Remaining)	103	2	100%	100%	15-Aug-22	19-Dec-22	15-Aug-22 A	19-Dec-22 A			15-Aag-22	19-Dec-22					-	1:-							
SM Works				1.88%		25-Feb-23		25-Feb-23 A	02-Aug-23		17-Dec-23	16-Feb-23	02-Aug-23	137			-1444	4			##-					
DC:53:1500 DC:53:1500b	Installation of other E&M equipments Installation of Electrical System	70 70	2	D%-	9% 9%			D1-Apr-23 D1-Apr-23			17-Nov-23 17-Nov-23	19-Apr-23	03-Jul-23	115												
DC:53:15006 DC:53:15006	Installation of Electrical System Installation of SCADA	35	- 0	DW-	0%			15-Vev-23	28-Jur-23 28-Jur-23		17-Nov-23			120				1.1		44	11 11					
DC.53.1500d	Installation of BS System	45	- 0	0%	0%			03-Yey-23	28-Jur-23		17-Nov-23			120						44	 		1			
DC.83.1510	Site Acceptance Test	30	0	0%	0%			04-Jul-23	02-Aug-23		17-Dec-23	04-Jul-23	02-Aug-23	137									1 1			
ESM Works at Trans	Inner Room			2.38%		25-Feb-23		25-Feb-23 A	30-Jun-23	22-Jul-23	17-Nov-23	16-Feb-23	20-Jun-23	140					: I t		11 11		1			
DC:\$3.1530a	Installation of BS equipment at CLP Transformer Room	34	2	5.58%	0%	25-Feb-23		25-Feb-23 A	12-Apr-23	22-Jul-23	30-Aug-23	16-Feb-23	29-Mar-23	116					-	9	11 11		1			
DC.S3.1530b	She Acceptance Test	4	-0	0%	0%			13-Apr-23		31-Aug-23		30-Mar-23	02-Apr-23	140					(5¶	11 11		1			
DC:S3.1530c	CLP Inspection and Defect Rectification	9	0	D%-	0%			17-Apr-23		04-Sep-23		03-Apr-23	20-Apr-23	116					:]	2	11 11		1			
DC.S3.1530d DC.S3.1530d10	CLP Re-inspection and Minor Defect Rectification	12	0	D%-	0% 0%			27-Apr-23	02-May-23		18-Sep-23	21-Apr-23	25-Apr-23	116			-1444	بمأسات	- 4			4444				
DC.S3.1530010 DC.S3.1530e	Temporary Reinstatement of Access for CLP's Works Handover to CLP for CLP's Works	45	- 0	0%	0%			17-Apr-23 03-Way-23		05-Sep-23 19-Sep-23	16-Nov-23	28-Apr-23	19-Jun-23	116	•						11 11					
DC.S3.1530f	Enceraing	1	0	0%	0%			30-Jun-23		17-Nov-23		20-Jun-23	20-Jun-23	116				1.1	:	П	11 11		1			
Internal Architect				45.1%		01-Feb-23		01-Feb-23 A	31-Har-23		22-Aug-23	01-Feb-23	24-Mar-23	115					+	- [
DC.83.1550	Architectural Works (internal)	48	5	45.1%	33%	01-Feb-23		01-Feb-23 A	31-Har-23	21-Jul-23	22-Aug-23	01-Feb-23	24-Mar-23	115				1 1		5	11 11		1			
DC.SS.1560	Architectural Works for CLP Transformer Room (Internal)	42	- 1	53.49%	100%	01-Feb-23		01-Feb-23 A	22-Har-23	09-Mar-23	31-h/ar-23	01-Feb-23	15-Feb-23	8				777	 	•	111			111		
	f Underground Utilities			DN-				18-Sep-23	30-Oct-23	09-Oct-23	17-Nov-23	14-Jun-23	25-Jul-23	16					: V				1			
DC.S3.1600	Construction of Drainage and Severage System. Fire Services, Electrical & Plumping Undergound Utilities	32	2	D%	0%			18-Sep-23		09-Oct-23		14-Jun-23	25-Jul-23	16				1 _		447	11.1		1 '			
	dge Digestion System	88	2	97.68% 100%	1000	24-Jun-22 24-Jun-22	10-Oct-22	24-Jun-22 A	30-Dec-23	18-040-23	30-Dec-23	24-Jun-22	29-Nov-23	0					. \				1 1			
DC.S3.1700 DC.S3.1710	Construction of Temporary Studge Digestion System 18C Temporary Flow Diversion and isolate existing serobic studge digestor and relevant buildings	8	3	100%	100% 100%	24-Jun-22 11-Oct-22	20-Oct-22	24-Jun-22 A 11-Oct-22 A	10-0ct-22 A 20-0ct-22 A			24-Jun-22 11-Oct-22	10-Oct-22 20-Oct-22						<u>.</u>]				1			
DC.S3.1710 DC.S3.1720	Removal of Temporary Stridge Digestion System	10	0	0%	0%	11-06/22	20100122	18-Dec-23	30-Dec-23*	18-Den-23	30-Dec-23	13-Nov-23	29 Nov-23	0					: /		14.					
	Clearance at the area of Proposed Preliminay Treatment Facilities			100%		20-Oct-22	24-Nov-22	20-Oct-22 A	24-Nov-22 A	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		20-Oct-22	09-Dec-22					: ! !	;– \							
Demolition wor				100%		20-Oct-22	24-Nov-22	20-Oct-22 A	24-Nov-22 A			20-Oct-22	09-Dec-22					1 1	- \							
DC.83.2010	Demolition of existing Aerobic Studge Digestor	29	0	100%	100%	21-Oct-22	24 Nov-22	21-Oct-22 A	24-Nov-22 A			21-Oct-22	09-Dec-22						<u>-</u> -							
DC.S3.2620	Demolition of existing Blower and Pump House	29	0	100%	100%	21-Oct-22	24-Nov-22	21-Ost-22 A	24-Nov-22 A			21-Oct-22	09-Dec-22						-							
DC.S3.2630	Demolition of existing General Room	29	0	100%	100%	21-Oct-22	24-Nov-22	21-Ont-22 A	24-Nov-22 A			21-Oct-22	09-Den-22						-							
DC.S3.2040	Disconnecting data link of removed existing equipment from the existing SCADA system	7	0	100%	100%	20-Oct-22	26-Oct-22	20-Ost-22 A	26-Oct-22 A			20-Oct-22	26-Out-22			.	li III		7							
HASE 3 - Con	struction of Preliminary Treatment Facilities			53.12% 53.51%		12-Jul-21		12-Jul-21 A	06-Aug-24	28-Feb-23	06-Aug-24	12-Jul-21	23-Apr-24	0			111111				Ш		1			
	f Preliminary Treatment Facilities brigation and Delivery of Major E&M Equipment			61.25%		12-Jul-21 12-Jul-21		12-Jul-21 A 12-Jul-21 A		28-Feb-23 21-Mar-23	02-Aug-24 08-Jun-24	12-Jul-21 12-Jul-21	19-Apr-24 14-Dep-22	90							111	4-4-1	ļ			
DC.SS.3005a	Tendering of Subcontrator	45	- 0	100%	100%	12-Jul-21	25-Aug-21	12-Jul-21 A	25-Aug-21 A	21-1/81-23	ua-Jun-24	12-Jul-21	25-Aug-21	50		_		1.1					1			
DC.83.3005b	Equipment Submission and Approval	544	- 0	83.09%	50%	03-Dag-21	LUTING LT	03-Dec-21 A	30-Var-231	21-Mar-23	20-Jun-23	03-0ec-21	14-Dec-22	21				-	$\overline{}$				1			
Procurement				0%				01-Jun-23	01-Dec-23	14-0:1-23	11-Feb-24			72				1 1	N	+++	₩		1			
DC:83.3015	Stoping	1	- 0	0%	0%			01-Aug-23*	01-Aug-23	02-Dec-23	02-Dec-23			123					1 \	Ш			1 '			
DC.83.3025	Perstock	1	0	0%	0%			01-Aug-23*	01-Aug-23					123	•					H						
DC:S3:3035	Mechanical Bar Screen - Coarse Screen	1	0	0%	0%			01-Aug-23*	01-Aug-23		02-Dec-23			123	•			1 1		Ш			1			
DC:S3.5045	Screw Conveyor	1	0	0%	0%			01-Aug-23*	01-Aug-23					123	*					H			1			
DC.S3.5055	Sorew Compactor	1	0	D% D%	0% 0%			01-Aug-23*	01-Aug-23					123						H			1			
DC:S3:3065 DC:S3:3075	Submersible Pump Submersible Je: Mixer	1	9	0%	0%			01-Aug-23* 01-Aug-23*	01-Aug-23 01-Aug-23					123			-1444				-⊪	41-1-1	ļ			
DC 83.3085	Gri Punc	1	0	0%	0%			01-Aug-23*	01-Aug-23					123					:	П						
DC.S3.3095	Gri Classifer & Gri Mixer	1	0	0%	0%			01-Aug-23*	01-Aug-23					123							11 11		1			
DC.S3.3105	Mechanical Filter Mean	1	0	0%	0%			01-Aug-23*	01-Aug-23					123						Ш			1			
DC.S3.3115	Lifting Appliance	1	0	0%	0%			03-Jul-23*	03-Jul-23	06-Dec-23	06-Dec-23			156	•			1.1		- 1			1			
DC:S3.3125	OI Skimmer Pump	1	0	0%	0%			01-Aug-23*	01-Aug-23		02-Dec-23			123	•		1911	1 1		111						
DC:S3.3135	Decidorization Unit (DOU1)	1	0	0%	0%			01-Aug-23*	01-Aug-23		02-Dec-23			123						Н						
DC.S3.3145	LV Switchooard/MCC	1	0	0%	0%			01-Aug-23*		13-Duc-23	13-Dec-23			134				1.1	111	Н						
DC:S3:3155 DC:S3:3165	VSD UPS with Isolation Transformer	1	0	D% D%	0%			01-Aug-23* 02-Oct-23*	01-Aug-23 02-Oct-23	13-Dec-23	13-Dec-23 11-Feb-24			134	-					Н						
DC:S3:3166 DC:S3:3176	UPS with tectation Transformer PLC Panel	1	0	0%	0%			02-061-23* 01-Dep-23*	02-0ct-23 01-0ec-23		11-Feb-24 06-Feb-24			132	.			-:			TL#	11-11-1				
DC.S3.3185	Instrumentation	1	0	0%	0%			01-Jun-23*	01-Jun-23		14-Oct-23			135				1.1			l[III					
Fabrication				0%				02-Jun-23	09-Feb-24	15-Oct-23	09-May-24			90					111	1	₩					
DC:S3.3195	Stoplog	125	0	0%	0%			02-Aug-23	04-Dec-23		05-Apr-24			123	•			1 1	11	114	HI.					
DC:S3.3206	Pensitok	125	0	D%	0%			02-Aug-23	04-Dec-23					123	*			and an order of		1.11						
DC:S3:3216	Machanical Bar Screan - Coanse Screen	125	0	D%	0%			02-Aug-23	04-Dec-23					123												
DC:S3:3226	Screw Conveyor	125	0	D%	0%			02-Aug-23		03-Duo-23				123												
DC:S3:3235 DC:S3:3245	Scrow Compactor Submersible Pumo	125 125	0	D% D%	0% 0%			02-Aug-23	04-Dec-23					123	:				111							
DC:83.3245 DC:83.3256	Submersible Pump Submersible Jet Mixer	125	0	0%	0%			02-Aug-23 02-Aug-23	04-Dec-23 04-Dec-23					123					111	1 4						
DC.83.3265	Submersible Jet Mixer Grit Punic	125	0	0%	0%			02-Aug-23 02-Aug-23	04-Dec-23					123				-:		1 4	44					
DC.S3.3275	Grit Chasaffer & Grit Mixer	125	0	0%	0%			02-Aug-23	04-Dec-23					123						1 4	#		1			
DC:S3.3286	Machanical Filter Mesh	125	0	D%	0%			02-Aug-23	04-Dec-23					123				1 1	11	1 1+4	#		1			
DC:S3.3296	Lifting Appliance	155	0	DW-	9%			04-Jul-23	05-Dec-23					156					: 1	1++	Ħ					
DC:S3.3305	OI Skinner Pump	125	- 0	D%	0%			02-Aug-23	04-Dec-23	03-Duo-23	05-Apr-24			123					111		Ħ				- 1	
DC:S3.3315	Deadorization Unit (DOU1)	125	0	D%	D%			02-Aug-23	04-Dec-23					123				77 77		11						
DC.83.3325	LV SwitchroansMCC	125	0	0%	0%			02-Aug-23	04-Dec-23	14-Dec-23	16-Apr-24			134				1 1	Ш	-	Ħ					
Driv	mary Baseline	DC/2040	2/07 (HTI VINC I	SLAMP	SSEWED	AGE STA	GE2 - UPG	DADING 0	E CHELL	NG CUA	HSEWA	SE TREAT	MENT 4	ND DE	SDOG A	EAC	ITIES	T	Date	.e	Re	vision	Che	fG /	Appro
		DC/2015	2/U/ U	OILING	OLAND:									MENTA	אח חויי	J-U3A	- FAUIL		13	0-Nov-	.22	Rev. 20		JL	CL	
	ual Work	1					REVISED	PROGR			2 (28 Fe	ebruary 2	2023)							1-Dec-		Rev. 21		JL	CL	
Re	maining Work	1							(Page	8 of 13)										8-Feb-2		Rev. 22		JL	CL	
Crit	tical Remaining Work	1																	-	.J-1 0U%		.101. 22		lor.		
		1																								
	seline Milestone																									



	Activity Name	Orl. Dur (d)	TRA (d)	Time Elapsed 5	Actual Actual Start Workdome S.	Actual Finish Early Start	Early Finish	Late Start	Late Finish	Early Start (Rev. Early Finish Total A 20) (Rev. 20) Float A	mended ctivities	2021 20 Q1 02 03 Q4 01 02	01 04 04	2023	2024 2025 2026 24 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q
C.\$3.3335	VSD CSV	125	0	0%	morrations %	02-Aug-23	04-Dec-23	14-Dec-23	16-Apr-24	20) (Nav. 20) Froat A		Q: 02 03 04 01 02	U4 U1	1	# 41 42 43 44 41 42 43 44 41 42 6
C.S3.8345	UPS with Isolation Transformer	65	0	0%	0%	03-Oct-23	06-Dec-23	12-Feb-24	16-Apr-24	132					4
\$3.5355	PLC Parel	70	0	0%	0%	02-Dec-23	09-Feb-24	07-Feb-24	16-Apr-24	67	•			ШЛ	- 1
3.3365	Instrumentation	195	-0	DN-	P%	02-Jun-23	03-Dec-23		16-Apr-24	135	,				
rety				DN-		04-Dec-23		D6-Apr-24	08-Jun-24	90					
S3.3375 S3.3385	Stoplog Per stock	32 32	0	D% D%	0% 0%	05-Dec-23	03-Jan-24 03-Jan-24	D6-Apr-24 D6-Apr-24	05-May-24 05-May-24	123 123	•				1
.83.3395	Mechanical Bar Screen - Coarse Screen	30	0	0%	0%	95-Dec-23 95-Dec-23		06-Apr-24	05-May-24	123					-4
\$3.3405	Screw Conveyor	30	0	0%	0%	05-Dec-23		06-Apr-24	05-May-24	123					
\$3.3415	Screw Compactor	30	0	0%	0%	05-Dec-23		08-Apr-24	05-May-24	123					-4
\$3.8425	Submersible Pump	30	0	0%	0%	05-Dec-23		08-Apr-24	05-May-24	123					- 4
S3.3435	Submersible Jet Mixer	32	-0	DN-	0%	05-Dec-23	03-Jan-24	D6-Apr-24	05-May-24	123	*				-
\$3.3445	Grit Pump	30	-0	DN-	0%	05-Dec-23	03-Jan-24	DS-Apr-24	05-May-24	123					-1
S3.3455	Grit Classifier & Grit felixer	32	0	D%	0%	05-Dec-23	03-Jan-24	D6-Apr-24	05-May-24	123					1
\$3.3465	Mechanical Filter Mesn	30	0	0%	0%	05-Dec-23	03-Jan-24	D6-Apr-24	05-May-24	123					-1
3.3475	Lifting Appliance	30	0	0%	0%	06-Dec-23	04-Jan-24	10-May-24	08-Jun-24	156	:				11
33.3485	OTSkimmer Pump Deadnotzetion Unit (DOUr)	30 30	0	0%	0%	05-Dec-23	03-Jan-24 03-Jan-24	06-Apr-24	05-May-24	123	:				
33.3495 33.3505	Deadonzation Unit (DOU1) LV Switchoos roMCC	30	0	0% 0%	0%	05-Der-23 05-Der-23	03-Jan-24 03-Jan-24	06-Apr-24 17-Apr-24	05-May-24	123	-	1			.]] -
3,3515	VSD VSD	32	0	DN-	0%	05-Dec-23	03-Jar-24	17-Apr-24	16-May-24 16-May-24	134					-8
3.3525	UPS with Isolation Transformer	32	0	DN-	0%	07-Dec-23	05-Jar-24	17-Apr-24	16-May-24	134					-
3.3535	PLC Panel	30	0	DN-	0%	10-Feb-24	10-Har-24	17-Apr-24	16-hay-24	87			- 1		H-d
3.3545	Instrumentation	32	- 0	0%	0%	04-Dec-23	02-Jan-24	17-Apr-24	16-May-24	135					
Structural	Works			18.03%	25-Nov-22	25-Nov-22 A	04-May-24	28-Feb-23	04-May-24	25-Nov-22 20-Jan-24 0			++	-	-
.3020	Pre-boring Works for Sheet Pile Wall Installation	113	0	80.18%	51% 25-Nov-22	25 Nov-22 A	25-Apr-23	28-Feb-23	25-Apr-23	25-Nov-22 15-Mar-23 0			-		
3040	Installation of Sheet Pile Wall	24	0	0%	0%	31-Mar-23			03-May-23	09-Feb-23 27-Mar-23 0			4.	•	
.3050a	Excevation to +2.5 mPD	7	0	0%	0%	04-Yay-23	11-May-23	04-May-23	11-May-23	0	•		Y	401	
3050a10	Installation of 1st Wailing & Struts	14	0	D%	0%	06-Vsy-23		06-May-23		0	*			9"	
3050a20	Excevation to +0.5mPD (approx. 50m3 rock excevation)	7	0	D%	0%	23-Vay-23		23-May-23		0					
9050a30	Installation of 2nd Weiling & Struis	14	0	0%	0%	01-Jun-23		01-Jun-23	16-Jun-23	0	:		11		
3050a40	Excevation to -3 5mPD (approx 1000m3 rock excevation)	18	-0	0%	0%	17-Jun-23	07-Jul-23	17-Jun-23	07-Jul-23	0	:			٦.	
3050a50	Installation to 3rd Walling & Struts	14	0	0%	0%	08-Jul-23			24-Jul-23	0	:				
3050a60 3050a70	Excavation to -5mPD (approx. 950m3 rock excavation)	18	0	0%	0%	25-Jul-23 12-Aun-23		25-Jul-23	11-Aug-23	0	:			C	
.3050e/0 .3050e80	Installation to 4th Wailing & Stutis Exceleration to -8 075mPD and Blinding Layer (approx. 950m3 rock exceleration)	11	0	D% D%	0%	12-Aug-23 25-Aug-23		12-Aug-23 25-Aug-23	24-Aug-23 12-Sep-23	0				됞	
3050a60 3660	Excevation to 4 9/4mPD and Blinding Layer (approx. 960m3 rock escavation) Plate Load Test (Total 3 nos.)	10	- 0	D% D%	0%	25-Aug-23 13-Sep-23	12-Sep-23 17-Sep-23		12-Sep-23 17-Sep-23	30-dun-23 11-dul-23 0				ф17	
.3060	Construction of Pile Cap (Crid E to Crid H) (1200m3, 6 pounts)	30	- 0	DN:	0%	15-Sep-23 28-Sep-23		28-Sep-23	17-580-23 04-Nov-23	30-d04-23 11-d04-23 0 12-du4-23 27-Out-23 0				Ç.	
.3060a	Removed of 4th Walling and Shuls	6	- 0	D%	0%	96-Nor-23		D6-Nov-23	11-Nov-23				-	<u> </u>	
3060b	Construction of Pile Cap (Grid A to Grid E) and R.C. Wall to -3.5mPD (Grid E to Grid H) (920m3, 5 pours)	25	- 0	D%	0%	13-Nor-23	11-Dec-23		11-Dec-23	0		1		- - - -	
.3083c	Removal of Srd Wailing and Struis	6	- 0	0%	0%	12-Dec-23		12-Dec-23	18-Dec-23	0					
3.3080d	Construction of RC Well (from -3.5mP3 to +0.5mP3) (380m3, 2 pours)	18	0	0%	0%	19-Dec-23	11-Jan-24	19-Dec-23	11-Jan-24	0					4
3080e	Removal of 2nd Weiling and Struts	6	0	0%	0%	12-Jan-24	18-Jan-24	12-Jan-24	18-Jan-24	0				<u> </u>	*
i.3080f	Construction of RC Wall (from +0.5mPG to +2.5mPG)	18	0	0%	0%	19-Jan-24	08-Feb-24	19-Jan-24	08-Feb-24	0					
i.3080g	Removal of 1st Visiting and Struts	6	Ð	0%	0%	09-Feb-24	19-Feb-24	09-Feb-24	19-Feb-24	0	*			1111	PI
3082h	Construction of RC Ground Stab (from +2.5mPD to +4.6mPD)	21	0	D%	D%	20-Feb-24		20-Feb-24	13-Mar-24	0					
3.3082i	Construction of RC Well and MCC Room Stab (from +4.6mPG to +9.35mpB)	23	- 0	DN-	P%	14-Mar-24	10-Apr-24	14-Mar-24	10-Apr-24	0				 	
3100	Construction of RC Well and Roof Stab (from +9.35 to +13.55)	23	- 0	DW-	P%	11-Apr-24	04-May-24		04-May-24	09-Nov-23 20-Jan-24 0	•		r		
lorks				0%		05-Yey-24	02-Aug-24	06-May-24	02-Aug-24	22-Jan-24 19-Apr-24 0					
3.3120	E&N, Mechanida Installation (Mixers, Inter Pumps, Grit removal system, DO systems and etc.)	48 48	2	0%	0%	06-Vay-24		06-May-24		22-Jan-24 20-Mar-24 0	.		-: N		
i.3120a i.3120b	Electrical Installation (Citale, Instrument PLC Planet LVSB, etc) Installation of BS Equipment	48	- 0	0% 0%	0%	05-Vey-24 18-Vey-24	21-Jun-24	17-May-24 09-Jun-24	03-Jul-24	12			- 11		
i.3120b i.3120b10	Installation of BS Equipment Installation of Lifting Appliance	25 25	- 0	0% 0%	0%	18-Vsy-24 18-Vsy-24	11-Jur-24 11-Jur-24	*********	03-Jul-24 03-Jul-24	22 22			-		
.3123610 .3133a	Installation of Litting Appliance SCADA System Site Acceptance Test (Phase 3 PTF Construction)	32	- 0	DN-	0%	18-98y-24 14-98y-24	11-Jur-24 12-Jur-24	09-Jun-24 04-Jun-24	03-Jul-24	22-Jan-24 20-Feb-24 21	_				
3130b	SCADA System Commissioning Test (Phase 3 PTF Construction)	32	0	DN-	0%	13-Jun-24	12-Jul-24		02-Aug-24	21-Feb-24 21-Mar-24 21	\rightarrow				
3143b	System Commissioning Test	32	0	D%	0%	04-Jul-24			02-Aug-24	21-Mar-24 19-Apr-24 0			. ∐	1111	T
	tural Works	155	-	0%		06-Vay-24	17-Jul-24	23-May-24	02-Aug-24	22-Jan-24 08-Apr-24 14			\ \ \ \ \		
3110	Architectural Works (internal)	58	2	0%	0%	06-Yay-24		23-May-24		22-Jan-24 08-Apr-24 14			-		
	w Diversion			0%		14-Mar-24	06-Aug-24	08-Apr-24	06-Aug-24	02-Dec-23 23-Apr-24 0					
550a	Installation of Temporary Sludge Thickening System	92	8	0%	0%	19-Mar-24	22-Jul-24	08-Apr-24	06-Aug-24	05-Dec-23 10-Apr-24 13				1111	-
3150	Temporary WAS Pipe Construction from MBR to Studge Digestor Building with temp pre-thickening system	23	2	D%	0%	14-Mar-24		08-May-24		02-Dec-23 29-Dec-23 42					
3150	Temporary sewerage pipe from existing manhole FMH7000149 to manhole FMH21 to isolate inlet Chamber	42	3	DN-	0%	06-Vay-24	28-Jur-24	09-May-24		22-Jan-24 16-Mar-24 3					
3170	Temporary Row Diversion to isolate existing preliminary treatment system	2	1	DN-	0%	03-Aug-24		03-Aug-24		20-Apr-24 23-Apr-24 0			1		
	0-month performance verification (At least 9 months before End of S3)			DS/		07-Aug-24		07-Aug-24		24-Apr-24 18-Jan-25 0					
180	33-month performance verification (At least 9 months before End of S3) (Period from (thito 9th month)	274	-0	D%	0%	07-Aug-24		07-Asg-24		24-Apr-24 19-Jan-25 0			- : {		
uction c	of Underground Utilities			DS		06-Vay-24	22-Jun-24	16-May-24		22-Jan-24 11-Mar-24 8			- I V I		
250	Construction underground utilities for MBR Treatment Facilities and Perlimnary Treatment Facilities	35	2	D%	0%	06-Vay-24		16-May-24		22-Jan-24 11-Mar-24 8			11		
4 - Den	nolition of existing Preliminary Treatment System			DN/		07-Jun-24	18-Cel-24	20-Jun-24	09-Nov-24	08-Feb-24					
1010	Demoktion of existing rifet pumping station, preliminary treatment facilities & primary sediment tank Modification of finist Chamber	24 56	- 4	D% D%	0%	07-Aug-24 07-Aug-24		07-Aug-24 29-Aug-24		24-Apr-24 15-Jun-24 0 26-Apr-24 08-Jul-24 19					
— D.:.	mary Baseline	DC/2044	M7 C	ITI VINC	ICI ANDO CEMED	AGE STACES JID	SDADING:	ים כיובי	NG CUA	II SEWAGE TREATMENT A	אים חוא	SDOSAL FACILITIES	, –	Date	Revision Chec App
		DC/2019	91U1 OI	UILTING						U SEWAGE TREATMENT A	אט טאו	SPUSAL FAUILITIES	30	-Nov-22	
Act	ual Work				I	REVISED PROG	RAMME -	REV. 2	2 (28 Fe	ebruary 2023)				-Dec-22	
Re	maining Work							9 of 13)	•	• •					
	tical Remaining Work						, -3-	. •,					28	-Feb-23	Rev. 22 JL CL
	num rearrang track	1													
	seline Milestone														

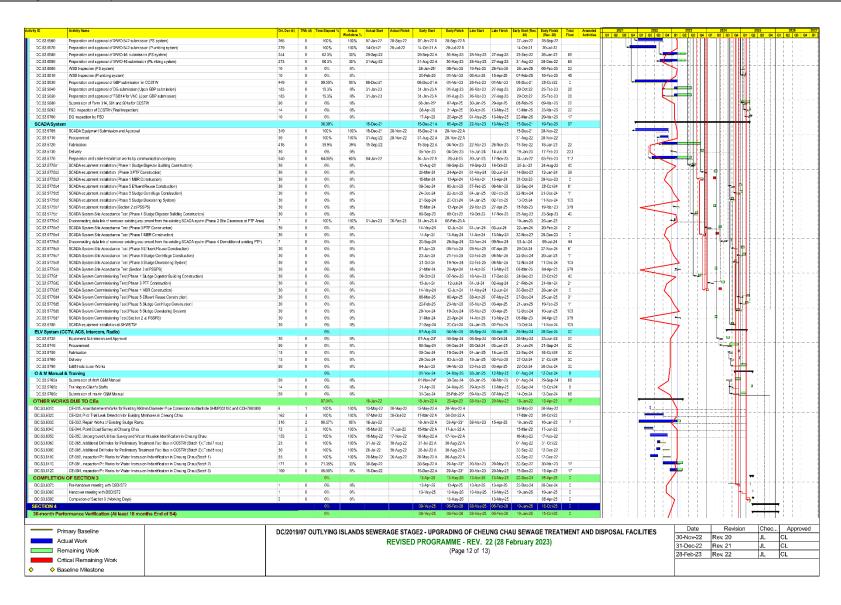






DC.S3.5540 Modification o	Testing and commissioning	60	0	0%	0%			03-Mar-25 24-Aug-24	01-May-25 20-Apr-25	25-P90-25 15-Mar-25	13-May-25 13-May-25	30-Dec-24 15-May-24	27-Feb-25 12 10-Mar-25 23			111			
DC.S3.5630b DC.S3.5630c	Fabrication Delivery and Installation	64 23	0	D% D%	0%			09-Dec-24 11-Feb-25	10-Fet-25 02-Har-25	21-Dec-24 23-Feb-25	22-Feb-25 14-Mar-25	07-Oct-24 10-Dec-24	09-Dec-24 12 29-Dec-24 12						
DC.S3.5530a	Propurement	20	0	D%	0%			19-Vor-24	08-Dec-24		20-Dec-24	17-Sep-24	06-Oct-24 12						
DC.S3.5520	A&A works of existing outfall pumping station and header tank	60	2	0%	0%			04-Sep-24	18-Nov-24		30-Nov-24	17-Jun-24	16-Sep-24 11		# + + +	-	-	# -##	
A&A of existing	vacaing the existing control room and AsA Works gloutfall pumping station and header tank	32	0	0%	056			03-Jan-25 04-Sep-24	01-May-25	17-Sep-24	13-May-25 13-May-25	29-Aug-24 17-Jun-24	04-061-24 /5 27-Feb-25 12					 	
DC.S3.5510a DC.S3.5510b	Relocation of existing SCADA equipment from existing control room to new control room Vacation the existing control room and ASA Works	7 30	0	0%	0% 0%			23-Dec-24* 03-Jan-25	02-Jan-25 10-Feb-25	27-Mar-25 04-Apr-25	03-Apr-25 13-May-25	21-Aug-24 29-Aug-24	28-Aug-24 75 04-Oct-24 75			-)		1 1 1 1	
DC.S3.5500h	Completion of all the works in the new control room	0	0	D%	0%				21-Dec-24		26-Mar-25		20-Aug-24 95			-{			
DC.S3.5500g2	Confroi and SCADA Installation	25	2	0%	0%			18-101-24	21-Dec-24		26-Mar-25	17-Jul-24	20-Aug-24 75	H	Hiii				1-11
DC.S3.5500g1 DC.S3.5500g2	BS Installation Electrical Installation	28 28	2	D%-	0% 0%			18-\lor-24 18-\lor-24	21-Dec-24 21-Dec-24	20-Feb-25 20-Feb-25	26-Mar-25 26-Mar-25	17-Jul-24 17-Jul-24	20-Aug-24 75 20-Aug-24 75	+		-111			
DC.S3.5500f	Delivery of Sanitary Firments	10	0	0%	0%			08-Nor-24	17-Nov-24	10-Feb-25	19-Feb-25	07-Jul-24	16-Jul-24 84			1			
DC.S3.5500e	Fabrication of Santary Fitments	50	0	0%	0%			19-Sep-24	07-Nov-24	22-Dec-24	09-Feb-25	18-May-24	08-Jul-24 94					1 	
DC.83.5500d	Procurement of Sankary Fitments	30	0	0%	0%			20-Aug-24	18-Sep-24		21-Dec-24	27-JUN-23 18-Apr-24	24-00(23 85 17-May-24 94					4 8 8	
DC.93.5500b DC.93.5500c	Fabrication of EL Equipment Delivery of EL Equipment	190 120	0	D% D%	0% 0%			01-Yey-23 28-Oct-23	27-Oct-23 24-Feb-24		30-Jan-24 29-May-24	29-Dec-22 27-Jun-23	28-Jun-23 95 24-Oct-23 95			'			
DC.93.5500a	Procurement of EL Equipment	213	0	70.89%	30%	30-Sep-22		30-Sep-22 A	30-Apr-23		03-Aug-23	30-Sep-22	28-Dec-22 95						
DC.93.5490	A&A works of Administration Building	224	16	DW.	0%	Locupez		28-Oul-23		31-Jan-24		27-Jun-23	17-Apr-24 78				- HHH		
	Installation of MCC for FS pumping station and Cabling Works Building	8	- 0	17.48%	0%	30-Sep-22		26-Jan-25 30-Sep-22 A	02-Feb-25 10-Feb-25	06-May-25 03-Jun-23	13-May-25 13-May-25	25-Sep-25 30-Sep-22	02-Oct-25 100 04-Oct-24 92		+	-			
DC.S3.5480s2 DC.S3.5480s3	Decormissioning of Existing E&M Equipment and MCC	7 8	0	0% 0%	0% 0%			19-Jan-25 26-Jan-25	25-Jar-25 02-Feb-25	29-Apr-25 06-May-25	05-May-25	18-Sep-25	24-Sep-25 100 02-Out-25 100	-				1	Č.
DC.S3.5480a1	Testing and commissioning	30	0	0%	0%			20-Dec-24	18-Jar-25	30-Mar-25	28-Apr-25	19-Aug-25	17-Sep-25 100						ام-ا
DC.83.5470c2	Installation of E&M, MCC & BS Equipment	270	0	0%	0%			25-Mar-24	19-Dec-24		29-Mar-25	19-Oct-23	18-Aug-25 100		1 1			4	-1
DC.S3.5470b DC.S3.5470c1	Delivery	59	- 0	7.78%	0%	51-Jim-23		25-Jan-24	25-Jan-24 24-Her-24	05-May-24		01-Fe0-23 01-Jan-25	31-D60-24 100 0'-Mar-25 100		++++			I	
DC.S3.5470a DC.S3.5470b	Procurement: Fabrication	1 380	0	100% 7.78%	190% 0%	28-Dao-22 31-Jan-23		28-Dec-22 A 31-Jan-23 A	28-Dec-22 A 25-Jan-24	08-Jun-23	74.Non.24	31-Jul-22 01-Feb-23	31-Jan-23 31-Dec-24 160	-					
DC.S3.5460m	Equipment Submission and Approval	397	Ð	49.62%	6%	15-Aug-22		15-Aug-22 A	16-Snp-23	11-Jin-22			-262						
DC.S3.5460	A&A works of Sludge Devisioning House	168	12	0%	0%	0.00		08-Aug-23	14-Har-24		14-blar-24	20-Jan-23	29-Aug-23 0			<u> </u>		 	
Sludge Dowate	Construction of EVA and Signage wring House	58	2	23.09%	0%	15-Aug-22		04-Feb-25 15-Aug-22 A	04-Apr-25 02-Feb-25	01-Mar-25 11-Jun-22	29-Apr-25 13-May-25	29-Dec-24 31-Jul-22	26-Feb-25 25 02-Oct-25 100		1	4			
DC.S3.5450 DC.S3.5470	Permanent Row Diversion	4 58	1 2	0%	0%			07-Yay-25 04-Feb-25	12-May-25		13-May-25	14-Mar-25	19-Mar-25 1 26-Feb-25 25			-			
DC.S3.5440	Main access between Studge Centriuge Building & Studge Digestor Building	58	2	D%	0%			04-Sep-24	15-Nov-24	22-Feb-25	07-May-25	17-Jun-24	28-Aug-24 138			-			
DC.S3.5420 DC.S3.5430	Main access between PT+, Effluent Reuse Building, RS Pumproom and Pumproom Main access between Administration Bailding & Intel Chamber	55	2	0%	0%			15-Uci-24 04-Sep-24			21-Jan-25 07-May-25	10-Sep-24 17-Jun-24	21-Nov-24 22 28-Aug-24 138	1		1 7			
DC.S3.5410 DC.S3.5420	Main access between MBR & PTF Main access between PTF. Effluent Rouse Building, FS Pumproom and Pumproom	73 55	2 5	D% D%	0% 0%			29-Feb-24 15-Oct-24	29-May-24 23-Dec-24	08-May-24 09-Nov-24	21-Jan-25	31-Oct-23 10-Sep-24	25-Mar-24 54 21-Nov-24 22						
Roadworks &	Underground Utilities (Permanent pipeworks, Sewerage System, Road Drainage System)			D%				29-Feb-24			13-May-25	31-Oct-23	19-Mar-25 1			- 1/1			
DC.S3.5400b	DC inspection by FSD	28	0	0%	0%			30-Mar-25	26-Apr-25	16-Apr-25	13-May-25	20-Mar-25	28-Mar-25 17			-1 []			
DC.S3.5390 DC.S3.5400a	Architectural Works (internal) E&V Installation and testing	21 45	1 2	0%	0%			06-Dec-24 04-Jan-25	03-Jan-25 03-War-25		16-Jan-25 15-Mar-25	25-Sep-24 01-Nov-24	31-Oct-24 11 03-Feb-25 11	+		+			
DC.S3.5380	Construction of RC Structure (above ground, 21m3)	18	1	0%	0%			14-Yor-24	05-Dec-24		18-Dec-24	20-Aug-24	24-Sep-24 11 31-Oct-24 11						
DC.S3.5370	Backfilling to ground level and removal of ELS	8	1	0%	0%			04-Nor-24	13-Nov-24	16-Nov-24	26-Nov-24	06-Aug-24	19-Aug-24 11		1				
DC.S3.5360 DC.S3.5360	Installation of ELS and excavation for passement/sensis FSPHII x s/m, rums exce, meanly Construction of RC shuckure (below ground, 34m2)	15	1	DS-	0%			2t-Sep-24 12-Oct-24	02-Nov-24		24-008-24 15-Nov-24	02-Jul-24	25-Jun-24 11 06-Aug-24 11	1					
Construction of DC.S3.5350	If Dangerous Goods House Installation of ELS and excavation for basement(48nos FSPIII x 8m, 70m3 excs, 1team)	11	1	D% D%	0%			26-Sep-24 26-Sep-24	26-Apr-25 10-Oct-24	10-0at-24 10-0at-24	13-May-25 24-Oct-24	17-Jun-24 17-Jun-24	29-Mar-25 17 29-Jun-24 11			-			
DC.S3.5310	Architectural Works (internal)	84	6	DN.	0%			19-Dec-24	09-Apr-25	15-Jan-25	07-May-25	07-Nov-24	26-Feb-25 20		11-1-4				1-1
Internal Architec	tural Works		-	0%				19-Dec-24	09-Apr-25	15-Jan-25	07-May-25	07-Nov-24	28-Feb-25 20			-			
DG.83.5330 DG.83.5340b	Site Acceptance Test System Commissioning Test (Final Testing)	30 30	0	0%	0% 0%			01-Feb-25 11-Mar-25	02-Har-25 09-Apr-25		07-Apr-25 07-May-25	14-Dec-24 13-Jan-25	12-Jan-25 36 13-Man-25 28			- 1			
DC.83.5320	E&H,LVSB and 3S Installation (pumps and associated pipe works)	67	5	0%	0%			21-Nor-24	19-Feb-25	30-Dec-24		09-Oct-24	04-Jan-25 31			1 1			
E8M Works				D%-				21-Yor-24	09-Apr-25	30-Dec-24	07-May-25	09-Oct-24	13-Mar-25 28						
DC.53.5300 DC.53.5300	Construction of RC Structure (above ground, 326m3)	22	1	DN-	0%			22-Nor-24	18-Dec-24		14-Jan-25	02-Oct-24	06-Nov-24 20	-		- 1			
DC.S3.5280 DC.S3.5290	Construction of RC structure (below ground, 512m3) Removal of formetries, falseworks application of celeptropring, backfilling and removal of ELS	22	1	0% D%	0% 0%			19-Oct-24 15-Nor-24	14-Nov-24 21-Nov-24	12-Nov-24 09-Dec-24	07-Dec-24 14-Dec-24	02-Sep-24 02-Oct-24	30-Sep-24 20 08-Oct-24 20						
DC.83.5270	Installation of ELS and excavation for basement (940m3 exca, 1team)	12	1	0%	0%			03-Det-24	18-Oct-24		11-Nov-24	12-Aug-24	3'-Aug-24 20			1 1		1 1 1	
DC.83.5260	Grout Curtain Works	9	1	0%	0%			20-Sep-24	02-Oct-24		26-Oct-24	22-Jul-24	10-Aug-24 20			- i \			
DC.83.5250	Installation of size sile wall of ELS (82 nos. dis323 x 12m. 1team) and Sixestpile (56 nos ESPIII sheetpile x8m)	20		D% D%	0%			04-Sep-24 04-Sep-24	18-Dec-24 27-Sep-24	28-Sep-24 28-Sep-24	14-Jan-25 23-Oct-24	17-Jun-24 17-Jun-24	96-Nov-24 20 28-Jul-24 20			- 1			
DC.53.5243I	Delitery of pumps	109	- 0	D%	8%			14-Jun-24		21-Sep-24		14-May-24	21-Aug-24 99			- 1]]		H-111	
DC.53.5243k	Fabrication of pumps	200	- 0	DN-	0%			27-Nor-23		05-Mar-24		27-Oct-23	13-May-24 99	T	1177	- -			
DC.53.5243j	Programment of pumps	150	- 0	DN-	D3s			30-Jun-23	26-Nov-23		24-bec-24 04-blar-24	30-May-23	26-Oct-23 99	-		- 111	-	,	
DC.83.5240h DC.83.5240i	Estation of FRP water ranks Delivery of FRP water tanks	200 100	0	0%	0% 0%			27-Nov-23 14-Jun-24	13-Jur-24 21-Sep-24	05-Mar-24 21-Sep-24	20-Sep-24 29-Dec-24	27-Oct-23 14-May-24	13-May-24 99 21-Aug-24 99	- 11		- 1			
			0														-		
C.83.5240g	Activity Name Procurement of FRP water tunks	Orl. Dur (d)	0	0%	Workdone 5	Actual Start	Acidel Hiller	Early Start 30-Jun-23	26-Nov-23	D7-Oct-23	04-Mar-24	Early Start (Rev. 20) 30-May-23	(Rev. 20) Float Activities 26-Oct-23 99	Q1 02 03 C	24 01 02 0	03 04 01	02 03 0	4 Q1 Q2 Q3 Q4 Q1 Q2	03 04 01 02 03







D Activity Name	Ori, Dur ((d) TRA (d) 1	Time Elapsed %	Actual Actual Workdone %	al Start Actual Finish	Early Start	Carly Fillion	Line Start L	ate Finish Early	y Start (Rev.	(Paul 201	Float Articities	2021	Q4 Q1 Q2 1	01 04 01	2023	2024	I 04 01 0	2 01 04 4	
C S4.1040 30-month performance verification (At least 18 months before End of S4) (Period from 9th	to 18th month) 274	0	0%	Workdone %		08-Yay-25	05-Feb-26	08-May-25 0	5-Feb-26 1	9-Jan-25	15-Oct-25	Float Activities 0	Q1 02 03	GE 01 02	()	ns (03 (04	un 02 03	201 01 0	2 03 04 0	ar Q2 Q3 Q
xternal Architectrual			0%			14-Vay-25		08-Aug-25 0		6-Apr-25	05-Aug-25	88			1					
C S4.1010 External Architectural at MBR Treatment Facilities C S4.1100 External Architectural at Studge Diseator Building	90	6	0%	0%		14-Vay-25 14-Vay-25		08-Aug-25 0			05-Aug-25 27-Jun-25	72						1		
C S4.1100 External Architectural at Studge Digestor Building C S4.1110 External Architectural at Studge Centrifuce House	60	4	0%	0%		14-98y-25 14-98y-25		15-Sep-25 0 15-Sep-25 0	1-Dec-25 0		27-Jun-25 27-Jun-25	104	\mathbb{H}					1		
C S4.1120 External Architectural at Preliminary Treatment Facilities	90	6	0%	0%		14-Vay-25			1-Dec-25 0		05-Aug-25	72	+	† -						
C S4.1130 External Architectural at Effluent Reuse Building	30	2	DN-	0%		14-Yay-25	20-Jur-25	24-Oct-25 0	11-Dec-25 0	G-Apr-25	20-May-25	136						+		
C S4.1140 External Architectural at FS Pumproom and Pumproom	32	2	D%	0%		14-Vay-25			1-Dec-25 0		20-May-25	136						+4		
C SA 1150 External Architectural at Dangerous Good House	33	2	0%	0%		14-Vay-25		24-0ct-25 0			20-May-25	136	\blacksquare					1	C.	
C SA.1160 External Architectural at Studge Dewatering House C SA.1170 External Architectural at Administration Building	60 40	2	0%	0%		14-Way-25 14-Way-25		15-Sep-25 0 13-Oct-25 0			27-Jun-25 02-Jun-25	104 126							3	
andscaping Works & Irrigation System		-	0%	0.0		14-Vay-25		02-Oct-25 0		G-Apr-25	11-Oct-25	85								
C S4.1020 The site-wide landscaping works	97	7	0%	0%		11-Jul-25		02-Oct-25 0			11-Oct-25	70								
C S4.1080 Installation of Irrigation System	97	7	0%	0%		14-Yay-25	13-Sep-25	02-Oct-25 0	5-Feb-26 0	G-Apr-25	14-Aug-25	118						144	-	
onstruction of New Security Fence			0%			14-Vsy-25		06-Aug-25 0		G-Apr-25	28-Aug-25	106								
C S4.1030 Derrolltion of Existing Boundary Wall	60	4	0%	0%		14-Yay-25		06-Aug-25 2			27-Jun-25	70						"1		
C S4.1060 Construction of New Security Fence R.C. Structures C S4.1070 Installation of New Security Fence Metall Works	60 45	3	0%	0% 0%		24-Jun-25 04-Aux-25	27-Sep-25	19-Sep-25 0 09-Dec-25 0	11-Dec-25 23 5-Feb-26 0		07-Aug-25 28-Aug-25	70						17		
ompletion of Section 4 (Working Day)	45	,	0%	0.0		16-Yor-26		06-Um-26 0		6-Stp-25	16-Oct-25	0			\perp					
S4.1041 Pre-handover meeting with DSD/ST2	1	0	0%	0%		15-Nov-25		06-Jan-26 0			18-Sep-25	52			I				ų þ	
C S4.1042 Handover meeting oith DSD/ST2	1	0	0%	0%		15-Dec-25	16-Dec-25	05-Feb-28 0	5-Feb-28 1		16-Oct-25	52			1		111		-	
C S4.1050 Completion of Section 4	0	0	0%	0%			05-Feb-26*		5-Feb-26		16-Oct-25	0							H	
month performance verification (remaining 12 months after S4)			DX-			05-Feb-26	05-Feb-27				01-Jan-27	0								
PV.1010 30-month performance vertification (remaining 12 months after S4) (Period from 18th to 3 PV.1020 Date of 12 months after S4	Ith morth) 365	0	0% 0%	0% 0%		05-Feb-26	05-Feb-27 05-Feb-27*	05-Feb-28 0	5-Feb-27 1/ 5-Feb-27	6-Oct-25	15-Oct-26 01-Jan-27	0	\mathbb{H}							
PV.1020 Uses of 12 months after Sti S3.5705d10 Submission of final O&M Manual	62	0	DS-	0%		24-Feb-26			14-Feb-27 11			286	#	+-+-+			-+-+-		+-+	<u> </u>
- Diversity																Date	R	evision	Chac	Апри
Primary Baseline	DC/20	19/07 OU	TLYING	ISLANDS SEV	WERAGE STA							WENT AND	DISPOSAL I	-ACILITIES	330	Date_Nov-22		eevision 0	Chec	
Actual Work	DC/20	19/67 OU	ITLYING	ISLANDS SEV		√GE2 - UPGR D PROGRÆ	AMME - F	REV. 22				MENT AND I	DISPOSAL I	-ACILITIES	30	-Nov-22	Rev. 20	0		CL
-	DC/20	119/67 OU	ITLYING	ISLANDS SEV			AMME - F					MENT AND I	DISPOSAL I	-ACILITIES	30	-Nov-22 -Dec-22	Rev. 20 Rev. 21	0 1	JL JL	CL
Actual Work	DC/20	119/07 OU	TLYING:	ISLANDS SEV			AMME - F	REV. 22				MENT AND I	DISPOSAL I	FACILITIES	30	-Nov-22	Rev. 20	0 1	JL JL	CL
Actual Work Remaining Work	DC/20	19/07 OU	TLYING (ISLANDS SEV			AMME - F	REV. 22				MENT AND I	DISPOSAL I	FACILITIES	30	-Nov-22 -Dec-22	Rev. 20 Rev. 21	0 1	JL JL	CL CL

Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30^{th} EM&A Report – January 2024

APPENDIX C Calibration Certificates (Air Monitoring)



RECALIBRATION DUE DATE:

March 31, 2024

Certificate of Calibration

Calibration Certification Information

Cal. Date: March 31, 2023 Rootsmeter S/N: 438320 Ta: 294 °K

Operator: Jim Tisch Pa: 748.54 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	√∆Н(Та/Ра)						
(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						

	Calculation	s	
Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	Va=	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	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=	$1/m\left(\left(\sqrt{\Delta H(Ta/Pa)}\right)-b\right)$

	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	

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

	The admin building inside	air In		n .	00 D 0000
Location:	the construction site	Site ID:	A1a	Date:	08-Dec-2023
Serial No:	1048	Model:	TE-5170X	Operator:	Andy Li

Ambient Condition

Actual Pressure during Calibration (P _a) (mm Hg):	757 2	Actual Temperature during Calibration (T _a) (deg K):	297.1
--	-------	--	-------

Calibration Orifice

Model:	TE-5028A	Slope (m _c):	1.68024
Serial No.:	4167	Intercept (b _c):	-0.04353
Calibration Due Date:	31-Mar-24	Corr. Coeff:	0.99994

Calibration Data

Plate or	∆H ₂ O	Qa, X-Axis	I, CFM	IC, Y-Axis
Test #	(in)	(m³/min)	(chart)	(corrected)
18	8.00	1.709	59.0	58.98
13	6.00	1.483	54.0	53.98
10	5.00	1.356	51.0	50.98
7	2.30	0.928	43.0	42.99
5	2.00	0.867	40.0	39.99

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

m= 21.5495 b= 22.0428 Corr. Coeff= 0.9969

Calculations

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

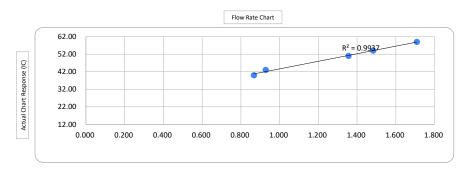
 $IC = I*(Sqrt (P_a/P_{Std})*(T_{Std}/T_a))$

 $\begin{aligned} &\text{Qa = actual flow rate} \\ &\text{IC = corrected chart response} \\ &\text{I = actual chart response} \\ &\text{m}_c = \text{calibrator slope} \end{aligned}$

 m_c = calibrator slope b_c = calibrator intercept m = sampler slope

b = sampler intercept T_{Std} = 298 deg K P_{Std} = 760 mm Hg

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



Standard Flow Rate

Checked by: Tandy Tse

Senior Consultant, Environmental

Date:

e: 08-Dec-2023





HIVOL SAMPLER CALIBRATION DATA SHEET (TSP)

Site Information

		Oite ii	Homilation		
Location:	The existing ourtfall pumping station inside the construction site	Site ID:	A2a	Date:	08-Dec-2023
Serial No:	1085	Model:	TE-5170X	Operator:	Andy Li

Ambient Condition

	71111011	int oonantion		
Actual Pressure during Calibration (P _a) (mm Hg):	757.2	Actual Temperature during Calibration (T _a) (deg K):	297.1	

Calibration Orifice

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

Calibration Data

Plate or	∆H ₂ O	Qa, X-Axis	I, CFM	IC, Y-Axis
Test#	(in)	(m³/min)	(chart)	(corrected)
1	10.00	1.907	56.0	55.98
2	9.00	1.811	54.0	53.98
3	8.00	1.709	51.0	50.98
4	6.40	1.531	48.0	47.98
5	4.20	1.245	40.0	39.99

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

m=	23.8761	b=	10.6122	Corr. Coeff=	0.9967

Calculations

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

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

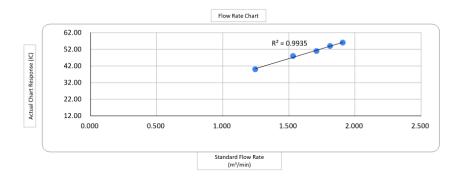
Qa = actual flow rate IC = corrected chart response I = actual chart response

m_c = calibrator slope b_c = calibrator intercept

m = sampler slope b = sampler intercept T_{Std} = 298 deg K

P_{Std} = 760 mm Hg

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



Checked by F.C Tsang Joseph Environemntal Team Leader

Date: ___ 08-Dec-2023





Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information of Calibrated Equiper	nont	

Unit-under-Test- Model No.:	Sibata LD-5R	•	
Unit-under-Test Serial No.:	2Y6549	-	
Our Report Refrence No.:	RPT-23-HVS-0046	-	
Calibration Location:		- Emax	

Standard Equipment Information

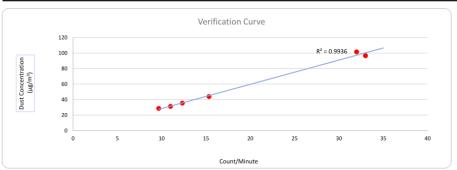
	otaliaala Equipilicite ililo	· · · · · · · · · · · · · · · · · · ·	
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator	
Standard Equipment Model No.:	TE-5170X	TE-5028A	
Equipment serial no.:	1049	3702	
Last Calibration Date:	8-Apr-23	31-Mar-23	
Next Calibration Date:	7-Jun-23	30-Mar-24	

Equipement Vertification Result

Verification		Duration		Duration Results from Calibrated Equipement		Results from Standard Equipment	
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (µg/m³) y-axis
1	8/4/2023	7339.85	7342.85	180.00	2760	15	44
2	8/4/2023	7342.85	7345.85	180.00	2220	12	36
3	8/4/2023	7345.85	7348.85	180.00	5940	33	97
4	9/4/2023	7349.74	7352.74	180.00	1740	10	29
5	9/4/2023	7352.76	7355.76	180.00	1980	11	31
6	9/4/2023	7355.77	7358.77	180.00	5760	32	102

Linear Regression of y on x





Operated By:

Andy Li

Project Technician, Environmental

Pate: 10-04-2023

Checked By:

Tandy Tse Senior Consultant Environmental

Date: 10-04-2023





Sibata LD-5R K-Factor Verification Test by Total Suspended Particulates HVS Test Report

Information	of Calibrated	Equipomont

Verification Test Date:	8-Apr-23	to	9-Apr-23	Next Verification Test Date:	9-Apr-24
Unit-under-Test- Model No.:	Sibata LD-5R				
Unit-under-Test Serial No.:		2Y6550		•	
Our Report Refrence No.:	F	PT-23-HVS-004	7	•	
Calibration Location:				- Emax	
					•

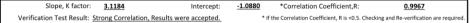
Standard Equipment Information

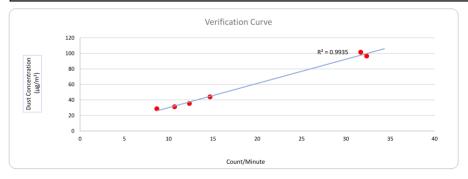
	Standard Equipment inform	ilation
Verification Equipment Type:	Tisch TSP HVS	Tisch HVS Calibrator
Standard Equipment Model No.:	TE-5170X	TE-5028A
Equipment serial no.:	1049	3702
Last Calibration Date:	8-Apr-23	31-Mar-23
Next Calibration Date:	7-Jun-23	30-Mar-24

Equipement Vertification Result

Verification		Duration			Results from	Calibrated Equipement	Results from Standard Equipment				
Test No.	Date	Start-time	End-time	Elapsed Time (in min)	Total Counts	Counts/ Minute x-axis	Dust Concentration (µg/m³) y-axis				
1	8/4/2023	7339.85	7342.85	180.00	2640	15	44				
2	8/4/2023	7342.85	7345.85	180.00	2220	12	36				
3	8/4/2023	7345.85	7348.85	180.00	5820	32	97				
4	9/4/2023	7349.74	7352.74	180.00	1560	9	29				
5	9/4/2023	7352.76	7355.76	180.00	1920	11	31				
6	9/4/2023	7355.77	7358.77	180.00	5700	32	102				

Linear Regression of y on x





Operated By: Andy Project

Andy Li
Project Technician, Environmental

Date: 10-04-2023

Checked By:

Tandy Tse Senior Consultant Environmental

Date: 10-04-2023

Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30^{th} EM&A Report – January 2024

APPENDIX D Monitoring Data (Air)

Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities

30th EM&A Report - January 2024

Location: A1a

Monitoring Period: January 2024

Parameter: TSP 1-hour

Major Dust Source Construction activities and daily operation of the sewerage

treatment plant

Date	Weather	Start Time	1 st Hour (μg/m³)	2 nd Hour (μg/m³)	3 rd Hour (μg/m³)	
2/1/2024	Sunny	13:53	77	71	78	
8/1/2024	Sunny	14:59	84	90	81	
11/1/2024	Sunny	15:11	73	68	74	
17/1/2024	Sunny	15:30	77	83	85	
22/1/2024	Cloudy	14:51	67	72	76	
31/1/2024	Cloudy	15:30	78	84	80	
		Average	78			
		Range	67 - 90			

A2a

30th EM&A Report – January 2024 Location:

Monitoring Period: January 2024

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 nd Hour (μg/m³)	3 rd Hour (µg/m³)
2/1/2024	Sunny	13:42	67	65	61
8/1/2024	Sunny	13:45	69	70	65
11/1/2024	Sunny	14:59	67	64	62
17/1/2024	Sunny	14:19	57	68	65
22/1/2024	Cloudy	14:30	64	63	60
31/1/2024	Cloudy	15:57	58	61	67
		Average		64	
			57-70		

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

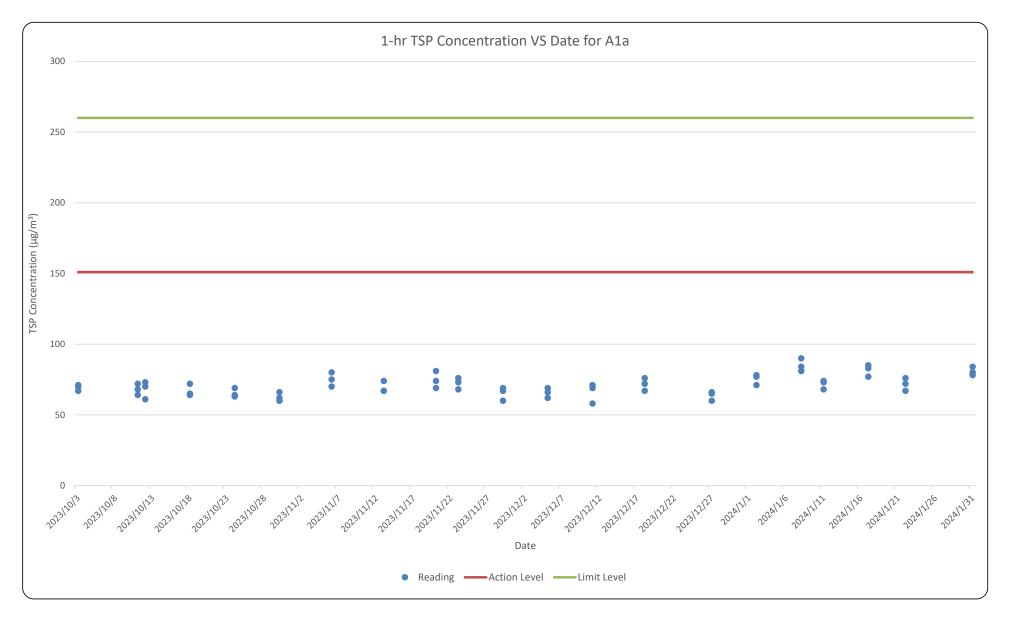
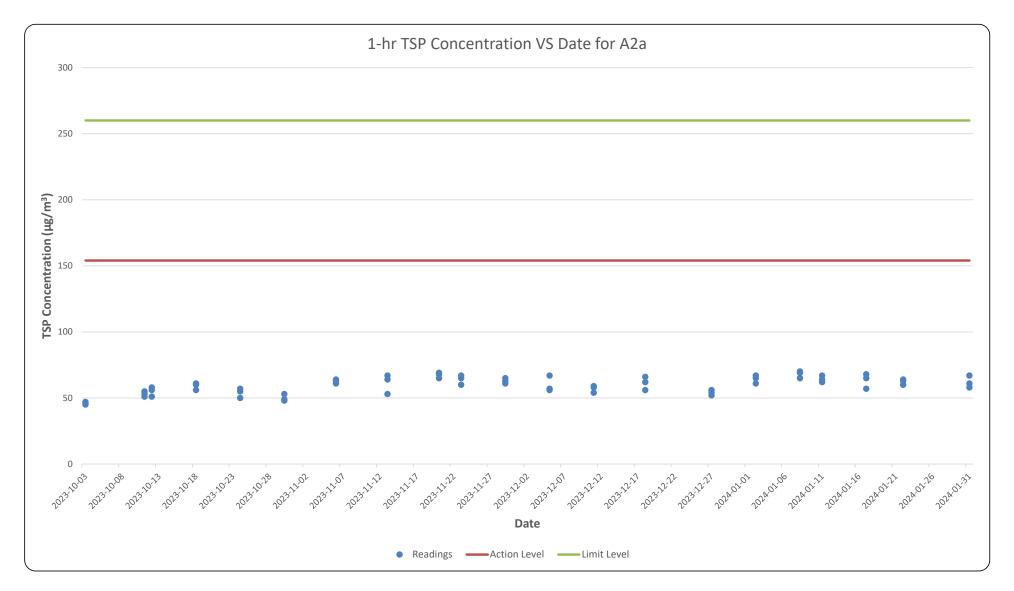


Figure D.2 Measured 1-Hour TSP at the existing outfall pumping station inside the construction site (A2a)



Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 -Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30th EM&A Report – January 2024

Location: A1a

Parameter: TSP 24-hour

Major dust source 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 Atmospheric Pressure	Weather Condition	Elapse	e Time	Sampling Time	Flow Rate	Standard Air Volume	Filter W	eight (g)	Particulate weight	Conc.
	(°C)	(mm Hg)		Initial (min)	Final (min)	Actual (min)	(m³/min)	(m³)	Initial	Final	(g)	(μg/m³)
2/1/2024	18.7	1003.3	Sunny	303893	305430	1537	0.93	1426	2.7082	2.9000	0.1918	135
8/1/2024	19.9	1004.3	Sunny	305430	306928	1498	0.93	1386	2.7098	2.8511	0.1413	102
11/1/2024	21.5	1003.5	Sunny	306928	308384	1456	0.92	1338	2.6954	2.7996	0.1042	78
17/1/2024	19.2	1004.6	Sunny	308384	309848	1464	0.93	1359	2.7031	2.8132	0.1101	81
22/1/2024	15.0	1005.7	Cloudy	309848	311347	1499	0.94	1416	2.7088	2.8569	0.1481	105
31/1/2024	19.3	1010.4	Cloudy	311347	312846	1499	0.94	1408	2.7107	2.8105	0.0998	71
											Average	95
											Range	71 – 135

Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 -Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30th EM&A Report – January 2024

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 Atmospheric Pressure	Weather Condition	Elapse	e Time	Sampling Time	Flow Rate	Standard Air Volume	Filter Weight (g)		Particulate weight	Conc.
	(°C)	(mm Hg)		Initial (min)	Final (min)	Actual (min)	(m³/min)	(m³)	Initial	Final	(g)	(μg/m³)
2/1/2024	18.7	1003.3	Sunny	522567	524101	1534	1.44	2212	2.7068	2.9341	0.2273	103
8/1/2024	19.9	1004.3	Sunny	524101	525599	1498	1.40	2094	2.7031	2.8505	0.1474	70
11/1/2024	21.5	1003.5	Sunny	525599	527041	1442	1.37	1976	2.6980	2.8065	0.1085	55
17/1/2024	19.2	1004.6	Sunny	527041	528541	1500	1.40	2101	2.7114	2.8594	0.1480	70
22/1/2024	15.0	1005.7	Cloudy	528541	530041	1500	1.29	1934	2.7024	2.8676	0.1652	85
31/1/2024	19.3	1010.4	Cloudy	530041	531541	1500	1.28	1927	2.7025	2.8223	0.1198	62
											Average	74
											Range	55 - 103

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

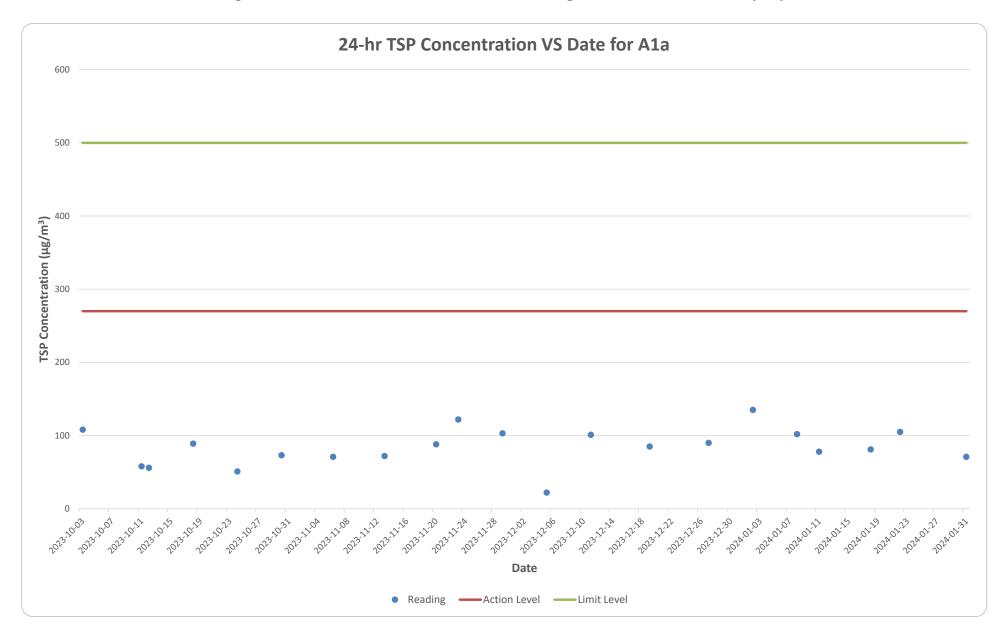
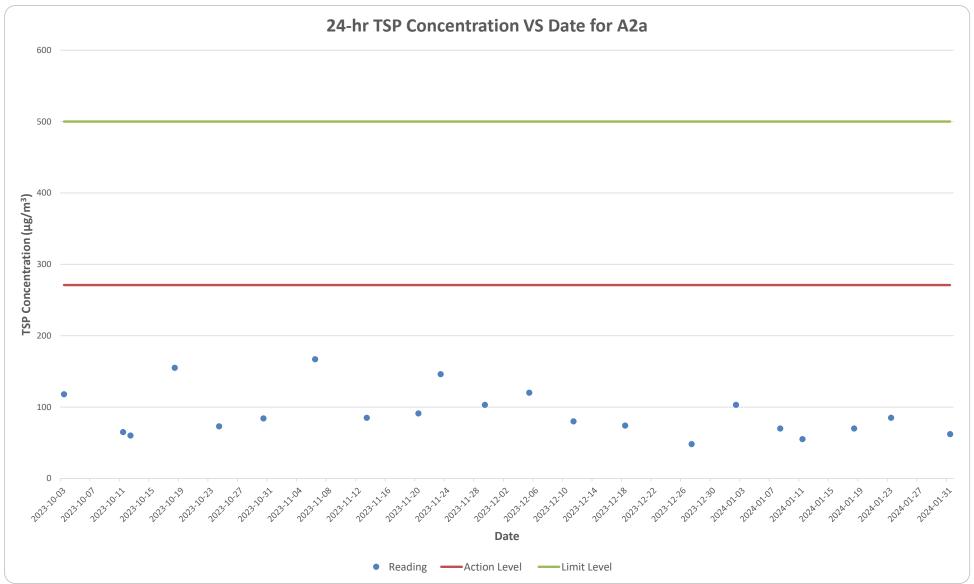


Figure D.4 Measured 24-Hour TSP at the existing outfall pumping station inside the construction site (A2a)



Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30^{th} EM&A Report – January 2024

APPENDIX E Calibration Certificates (Noise)



Certificate of Calibration

for

Description:

Sound Level Calibrator

Manufacturer:

RION

Type No.:

NC-75

Serial No.:

35124527

Submitted by:

Customer:

Acuity Sustainability Consulting Limited

Address:

Unit E, 12/F, Ford Glory Plaza,

Nos. 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon,

Hong Kong

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

✓ Within

☐ Outside

the allowable tolerance.

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

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

Date of receipt: 19 October 2023

Date of calibration: 27 October 2023

Date of NEXT calibration: 26 October 2024

Calibrated by:_

Calibration Technician

Certified by:_

Mr. Ng Yan Wa Laboratory Manager

Date of issue: 27 October 2023

Certificate No.: APJ23-090-CC002

Page 1 of 2

Room 422, Leader Industrial Centre, 57-59 Au Pui Wan Street , Fo Tan, Shatin, N.T., Hong Kong Tel: (852) 2668 3423 Fax: (852) 2668 6946

Homopago: http://www.aa-lab.com

F-mail: inquiry@aa-lah.com



1. Calibration Precautions:

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

2. Calibration Specifications:

Calibration check

3. Calibration Conditions:

Air Temperature:	24.4 °C		
Air Pressure:	1013 hPa		
Relative Humidity:	65.4 %		

4. Calibration Equipment:

Test Equipment	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS
Sound Level Meter	RION NA-28	30721812	AV220120	HOKLAS

5. Calibration Results

5.1 Sound Pressure Level

Nominal value	Accept lower level	Accept upper level	Measured value
dB	dB	dB	dB
94.0	93.6	94.4	94.0

Note:

The values given in this certification only related to the values measured at the time of the calibration.

AT TESTING LABORITOR (A+A) *L S

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Certificate No.: APJ23-090-CC002

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Homenage: http://www.aa-lab.com F-mail:inquirv@aa-lab.com



Certificate of Calibration

for

Description: Sound Level Meter

Manufacturer: SVANTEK

Type No.: 971 (Serial No.: 96063)

Microphone: ACO 7052E (Serial No.:79778)

Preamplifier: SVANTEK SV 18 (Serial No.:97276)

Submitted by:

Customer: Acuity Sustainability Consulting Limited

Address: Unit E, 12/F., Ford Glory Plaza,

Nos. 37-39 Wing Hong Street,

Cheung Sha Wan, Kowloon, Hong Kong

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

☑ Within (31.5Hz – 8kHz)

☐ Outside

the allowable tolerance.

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

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

Date of receipt: 27 July 2023

Date of calibration: 3 August 2023

Date of NEXT calibration: 2 August 2024

Calibrated by: ______ Calibration Technician

Date of issue: 3 August 2023

Certificate No.: APJ23-049-CC002

Certified by:_

Mr. Ng Yan Wa Laboratory Manager

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Room 422,Leader Industrial Centre,57-59 Au Pui Wan Street ,Fo Tan, Shatin,N.T.,Hong Kong
Tel: (852) 2668 3423 Fax:(852) 2668 6946



1. Calibration Precaution:

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

2. Calibration Conditions:

Air Temperature: 22.6°C Air Pressure: 1006 hPa Relative Humidity: 52.9 %

3. Calibration Equipment:

	Type	Serial No.	Calibration Report Number	Traceable to
Multifunction Calibrator	B&K 4226	2288467	AV220061	HOKLAS

4. Calibration Results

Sound Pressure Level

Reference Sound Pressure Level

Setting of Unit-under-test (UUT)			App	lied value	UUT Reading,	IEC 61672 Class 1	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
25.0-124.2	dBA	SPL	Fast	94	1000	93.7	±0.4

Linearity

Sett	ing of Uni	it-under-t	est (UUT)	Appl	lied value	UUT Reading,	IEC 61672 Class 1
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
				94		93.7	Ref
25.0-124.2	dBA	SPL	Fast	104	1000	103.7	±0.3
				114		113.7	±0.3

Time Weighting

Setting of Unit-under-test (UUT)				Appl	ied value	UUT Reading,	IEC 61672 Class 1
Range, dB	Freq.	Weighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
25.0-124.2	dBA	SPL	Fast	94	1000	93.7	Ref
23.0-124.2	UDA	SPL	Slow	94	1000	93.7	±0.3

Certificate No.: APJ23-049-CC002

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Frequency Response

Linear Response

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1		
Range, dB	Freq. We	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB	
					31.5	94.3	±2.0	
					63	94.2	±1.5	
					125	94.1	±1.5	
					250	94.1	±1.4	
25.0-124.2	dB	dB SPL Fast	Fast	94	500	94.0	±1.4	
					1000	93.7	Ref	
					2000	93.7	±1.6	
					4000	95.1	±1.6	
					8000	91.4	+2.1; -3.1	

A-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	55.0	-39.4 ±2.0
					63	68.1	-26.2 ±1.5
					125	78.1	-16.1±1.5
					250	85.4	-8.6±1.4
25.0-124.2	dBA	SPL	Fast	94	500	90.7	-3.2 ±1.4
					1000	93.7	Ref
					2000	94.9	+1.2±1.6
					4000	96.2	+1.0±1.6
					8000	90.5	-1.1+2.1; -3.1

C-weighting

Setting of Unit-under-test (UUT)			Applied value		UUT Reading,	IEC 61672 Class 1	
Range, dB	Freq. W	eighting	Time Weighting	Level, dB	Frequency, Hz	dB	Specification, dB
					31.5	91.3	-3.0 ±2.0
					63	93.4	-0.8 ±1.5
					125	94.0	-0.2 ±1.5
					250	94.8	-0.0 ±1.4
25.0-124.2	dBC	SPL	Fast	94	500	94.0	-0.0 ±1.4
					1000	93.7	Ref
					2000	93.5	-0.2 ±1.6
:					4000	94.4	-0.8 ±1.6
					8000	88.6	-3.0 +2.1: -3.1

Certificate No.: APJ23-049-CC002



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5. Calibration Results Applied

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

Uncertainties of Applied Value:

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

The uncertainties are evaluated for a 95% confidence level.

Note:

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

Certificate No.: APJ23-049-CC002



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Homepage: http://www.aa-lab.com E-mail: inquiry@aa-lab.com

Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 - Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30^{th} EM&A Report – January 2024

APPENDIX F Monitoring Data (Noise)

Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 -Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30th EM&A Report – January 2024

Location: N2a

Monitoring Period: January 2024

Parameter: Noise

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

treatment plant

Date	Weather	Start Time	L_{eq}	L ₁₀	L ₉₀
3/1/2024	Sunny	15:33	72.4	74.2	66.6
9/1/2024	Sunny	14:55	67.0	69.2	64.3
18/1/2024	Sunny	15:55	69.0	71.7	65.9
23/1/2024	Cloudy	15:30	66.2	69.5	63.0
31/1/2024	Cloudy	16:18	69.4	72.6	65.8
		Average		69.4	
			66.2 - 72.4		

Contract No. DC/2019/07 Environmental Monitoring Works for Outlying Islands Sewerage Stage 2 -Upgrading of Cheung Chau Sewage Treatment and Disposal Facilities 30th EM&A Report – January 2024

Location: N3a

Monitoring Period: January 2024

Parameter: Noise

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

treatment plant

Other Factors NA

Date	Weather	Start Time	$\mathbf{L}_{\mathbf{eq}}$	L ₁₀	L ₉₀
3/1/2024	Sunny	14:25	72.4	74.8	53.7
9/1/2024	Sunny	13:35	71.6	74.5	52.9
18/1/2024	Sunny	13:50	74.8	77.6	54.9
23/1/2024	Cloudy	14:40	73.4	76.3	53.5
31/1/2024	Cloudy	14:30	71.9	73.6	51.0
			73.0		
			71.6 - 74.8		

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

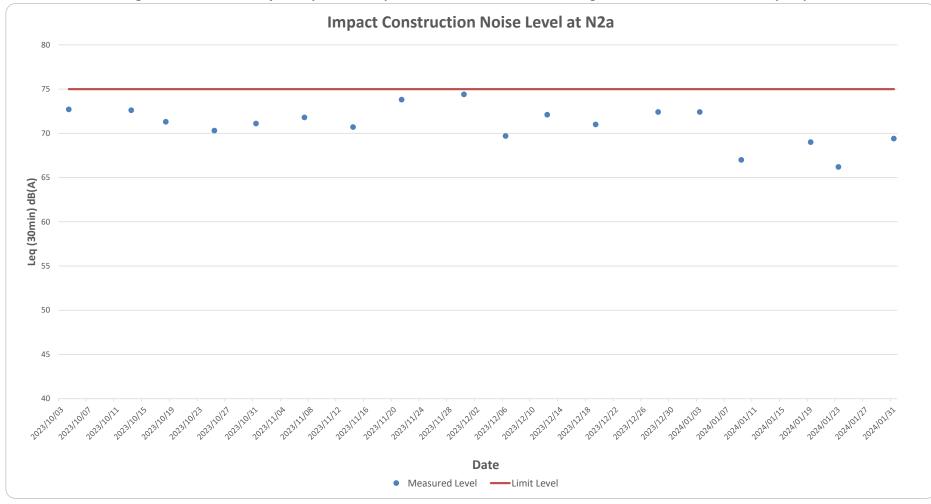


Figure F.1 Measured daytime (0700-1900) noise level at the admin building inside the construction site (N2a)

Impact Construction Noise Level at N3a 65 Leq (30min) dB(A) 2023/20/27 2023/12/14 2023/12/18 2023/20/32 30 2024113 2024117 20241112 20241123 20241123 **Date** Measured Level — Limit 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	Who to implement the	Location / Timing of implementation of Measures			What requirements or standards for the measures to achieve?
			measures?	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		1		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		on of	What requirements or standards for the measures to achieve?
			measures?	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		√		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		√		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		√		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	Location / Timing of implementation of Measures		nplement implementation of standar		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		V		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		V		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		1		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		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	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		1		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

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures	Objectives of the recommended measures & main concerns to address	Who to implement the measures?	When to implementhe measures?			What requirements or standards for the	
			measures?	D	С	0	measures to achieve?	
Construction Phase (U	pgrading Works of Cheung Chau STW and Pak She SPS (DP Com	ponent) and Sewers Work	s (non-DP Compo	nent))	•			
S.5.7.1	Practices outlined in ProPECC PN 1/94 Construction Site Drainage are recommended, as highlighted below: • Perimeter channels are to be installed in works areas to intercept runoff at the site boundary prior to the commencement of any earthworks. Surface runoff should be discharged into storm drains via sand/ silt removal facilities with an adequate capacity; • Works programme should be designed to minimize works areas to reduce soil exposure and site runoff; • Silt removal facilities, channels and manholes should be maintained and cleaned regularly to ensure their proper functions; • Works programme should be carefully planned to minimize the scale of soil excavation during the rainy season; • Earthworks surfaces should be well compacted and subsequent permanent works or surface protection measures should be carried out immediately; • All vehicles should be washed before they leave the construction site to avoid earth, mud, and debris being carried off from the site. Wash-water should be treated to remove sand and silt at least on a weekly basis to ensure the continued efficiency of the washing facility;	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 concerns to address	Who to implement the measures?		to impl measui		What requirements or standards for the
			measures?	D	С	0	measures to achieve?
(cont)	 Open stockpiles of construction materials on site should be covered with tarpaulin or similar fabric materials during storms; 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; 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. 	Water Quality Control	Contractors		V		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 concerns to address	Who to implement the measures?	When to implement the measures?			What requirements or standards for the
			illedsules?	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		√		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 concerns to address	Who to implement the	When to implement the measures?			What requirements or standards for the
			measures?	D	С	0	measures to achieve?
Construction Phase	(Upgrading Works of Cheung Chau STW and Pak She SPS (DP Comp	oonent) and Sewers Work	s (non-DP Compor	nent))	•	•	-
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		1		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		1		Waste Disposal Ordinance
S.6.6.1	Sufficient waste disposal points and regular collection of waste shall be provided.	Waste management during construction	Contractors		1		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		1		Waste Disposal Ordinance
S.6.6.1	Regular cleaning and maintenance programme for drainage systems, pumps and oil interceptors.	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?	When to implement the measures?			What requirements or standards for the	
		concerns to address	medsures !	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		1		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		1		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		1		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		1		Waste Disposal Ordinance	

EIA Ref. S.6.6.4	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?
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.	during construction	Contractors		٧		Development Bureau Technical Circular (Works) (TC(W)) No. 6/2010, Waste Disposal Ordinance
ticket system should be included. Reference can be made to Development Bureau Technical Circular (Works) (TC(W)) No. 6/2010 for details. 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. S.6.6.7 EIA Ref. Construction Phase Table 11.8	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.6.6.7	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		V		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	Who to s implement the	When to implement the measures?			What requirements or standards for the	
		address	measures?	D	С	0	measures to achieve?	
Construction Phas	e (Upgrading Works of Cheung Chau STW (DP Component))							
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 address	Who to implement the measures?		to impl measur	What requirements or standards for the 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. 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.	Landscape mitigation measures	DSD and Contractors	1	1	EIA, Annex 10 and Annex 18 of EIAO- TM

Table 11.8 Tr	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	V	V		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		√		EIA, Annex 10 and Annex 18 of EIAO- TM

EIA Ref.	Recommended Environmental Protection Measures/ Mitigation Measures 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. Objectives of the recommended measures & main concerns to address To minimise the disturbance to existing landscape resources and minimise the impacts on the visual amenity of the area		Who to implement the measures?	to impl measur C	What requirements or standards for the measures to achieve?
Table 11.8	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	to existing landscape resources and minimise the impacts on the visual	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

Reporting Period 1 January 2024 - 31 January 2024 Cumulative	Environmental Complaints Statistics						
Reporting Feriod	Frequency	Nature	Follow-up Actions				
-	0	N/A	N/A				
Cumulative	1*	Water	N/A				

^{*}Follow-up action is mentioned in Complaint Investigation Report of the Complaint Log No. C-001 submitted on 21 Dec 2023.

Statistical Summary of Environmental Summons

Reporting Period 1 January 2024 - 31 January 2024 Cumulative	Environmental Summons Statistics						
Reporting Feriod	Frequency	Nature	Follow-up Actions				
-	0	N/A	N/A				
Cumulative	0	N/A	N/A				

Statistical Summary of Environmental Prosecution

Reporting Period 1 January 2024 - 31 January 2024 Cumulative	Environmental Prosecution Statistics						
Reporting Period	Frequency	Nature	Follow-up Actions				
-	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)



	Impa	ct Monitoring Schedule for Upgradi	ing of Cheung Chau Sewage Collec	tion, Treatment and Disposal Facilit	ies	
			Jan-24			
Sun				Thu	Fri	Sat
	1	2	3	4	5	6
		A2a 1-hour TSP monitoring for A1a & A2a				
7	8	9	10	11	12	13
	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		
14	15	16	17	18	19	20
			24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	Daytime Noise monitoring for N2a & N3a		
21	22	23	24	25	26	27
	24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a	& N3a				
28	29	30	31	1		
			24-hour TSP monitoring for A1a & A2a 1-hour TSP monitoring for A1a & A2a Daytime Noise monitoring for N2a & N3a			



1

		Impact Monitoring Sched	ule for Upgrading of Cheung Chau	Sewage Collection, Treatment and	Disposal Facilities		
			Feb-24				
Sun	Mon	Tue	Wed	Thu	Fri	Sat	
				1	2	3	
			24-hour TSP monitor	ring for Ala &			
			A2a				
			1 hour TCD monitor	in a fam A 1 a R			



2