


Drainage Services Department

Agreement No. SPW 07/2019 Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1

Monthly EM&A Report June 2021

(Version 1)

Certified By 

(Environmental Team Leader:
Mr. KS Lee)

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

CINOTECH accepts no responsibility for changes made to this report by third parties

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22 July 2021

By E-mail and Fax (3922 9797)

AECOM Asia Company Limited
8/F., Grand Central Plaza, Tower 2,
138 Shatin Rural Committee Road
Sha Tin, New Territories, Hong Kong

Attention: Mr CHANG Ping Wah

Dear Mr CHANG,

**Re: Contract No. SPW 08/2019
Independent Environmental Checker for
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1**

Monthly EM&A Report for June 2021

Reference is made to the Environmental Team's submission of Monthly EM&A Report for June 2021 (Version 1) certified by the ET Leader and provided to us via e-mail on 21 July 2021.

Please be informed that we have no adverse comments on the captioned submission. We write to verify the captioned submission in accordance with Condition 3.4 of FEP-02/474/2013.

The ET Leader is reminded that it is the ET's responsibility to ensure the report be timely submitted to the Director of Environmental Protection as per Conditions 3.4 of the FEP-02/474/2013.

Thank you for your attention. Please do not hesitate to contact us should you have any queries.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited



Y H Hui
Independent Environmental Checker

c.c.

DSD
Cinotech

Attn.: Ms Konica Cheung
Attn.: Mr K. S. Lee

(By Fax: 3104 6420)
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EXECUTIVE SUMMARY**Introduction**

1. This is the 18th EM&A Report prepared by the Environmental Team, Cinotech Consultants Ltd., for Agreement No. SPW 07/2019 “Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1”. This report summarized the monitoring results and audits findings of the EM&A programme under the issued further EP No. FEP-02/474/2013 and in accordance with the Updated EM&A Manual during the reporting month of June 2021.

Summary of Main Works Undertaken and Key Measures Implemented

2. The main works undertaken during the reporting period are as follows:

Table I Summary Table for Major Site Activities in the Reporting Month

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • RC works • Wall and slab construction • Backfilling • Pipe laying • Pipe jacking work • Excavation works
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Cable diversion works • Demolition work of existing main facilities • Alternation of existing powerhouse • Pre-bored H piles • Sheetpile installation
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Socket H piling • Installation of EOT crane
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Construction of temporary filtrate equalisation tank • Installation of temporary primary sludge thickener and its accessories • Retrofitting the existing primary sedimentation tank no. 4 and 6

3. Implementation of the key mitigation measures during the reporting period are as follows:

Air Quality

- Stockpiles were covered by impervious sheets.
- Water spraying on haul road was done to minimize dust generation.
- Faded NRMM label was replaced.

Water Quality

- Stagnant water on the impervious sheets was removed.

Waste Management

- Chemicals were stored in drip trays properly.
- Unused waste and materials were removed to maintain the tidiness of the site.

Summary of Exceedances, Investigation and Follow-up

4. Exceedance of Action/Limit levels during the reporting month (June 2021) and the investigation results and/or follow-up actions:

Air Quality Monitoring

- No Action/Limit Level exceedance for 1-hour TSP was recorded.
- No Action/Limit Level exceedance for 24-hour TSP was recorded.

Construction Noise Monitoring

- No Action/Limit Level exceedance for day time construction noise monitoring was recorded in the reporting month.

Ecological Monitoring

- No Action and Limit Level exceedance was triggered.

Complaint Handling, Prosecution and Public Engagement**Table II Summary of Complaint/Summons/Prosecution in the Reporting Month**

Event	Event Details		Follow-up/ Remedial Actions	Status/ Remarks
	Number	Brief Description		
Complaints Received	0	-	-	-
Notification of Summons and Prosecutions Received	0	-	-	-
Public Engagement Activities	0	-	-	-

Reporting Changes

5. There were no reporting changes during the reporting month.

Future Key Issues

6. The key works or activities will be anticipated in the next reporting period are as follows:

Table III Summary Table for Site Activities in the Next Reporting Period

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • RC works • Wall and slab construction • Backfilling • Pipe laying • Pipe jacking work
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Cable diversion works • Demolition work of existing main facilities • Alternation of existing powerhouse • Pre-bored H piles • Sheetpile installation
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Socket H piling • Installation of EOT crane • Installation of cable tray, conduit • Installation of F.S. equipment • Installation of power cable
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Electrical installation of temporary filtrate equalisation tank • Electrical installation of temporary primary sludge thickener and its accessories • Retrofitting the existing primary sedimentation tank no. 6 • Modification of existing emergency generator electrical works

1 INTRODUCTION

Background

- 1.1 The Further Expansion of Shek Wu Hui Effluent Polishing Plant (SWHEPP) is a designated Project (DP) under F.1 and F.2 of Part 1, Schedule 2 of Environmental Impact Assessment Ordinance (EIAO). The “North East New Territories New Development Areas” Environmental Impact Assessment (NENT NDAs EIA) Report (Registered No.: AEIAR-175/2013) covered the assessment for the Further Expansion of SWHSTW Phase 1A, 1B and 2, and the associated Environmental Monitoring and Audit (EM&A) Manual was approved on 18 October 2013.
- 1.2 The existing Shek Wu Hui Sewage Treatment Works (SWHSTW) is operated and maintained by the Drainage Services Department (DSD). It provides secondary level treatment to sewage collected from Sheung Shui, Fanling and adjacent areas, SWHSTW was completed in two stages and expanded progressively in the past year. In 2009, the expansion of SWHSTW was completed and its design capacity was 93,000m²/day at average dry weather flow (ADWF). After the Resource Allocation Exercise 2017, the existing SWHSTW is proposed to be upgraded from secondary to tertiary treatment level as the new SWHEPP at 3 stages: Main Works Stage 1, Stage 2 and Stage 3.
- 1.3 A Further Environmental Permit (EP) (Permit No. FEP-02/474/2013) was issued on 15 February 2018 to DSD as the Permit Holder to assume the responsibility for construction and operating the SWHEPP Project up to a capacity of 190,000m³/day. The updated Environmental Monitoring and Audit (EM&A) Manual was prepared in accordance with Condition 2.3 of the Further EP. The site layout plan for the Project is shown in **Figure 1.1**.
- 1.4 Cinotech Consultants Ltd. was designated as the Environmental Team (ET) to undertake the EM&A works for “Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1” (hereinafter called the “Project”).

Purpose of the Report

- 1.5 This is the 18th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in June 2021.

Project Organizations

- 1.6 Different Parties with different levels of involvement in the project organization include:
 - Permit Holder – Drainage Services Department (DSD)
 - Supervisor Representative – AECOM Asia Company Limited (AECOM)
 - Environmental Team (ET) – Cinotech Consultants Limited (Cinotech)
 - Independent Environmental Checker (IEC) – Ramboll Hong Kong Limited (Ramboll)
 - Contractors
 - Contract No.: DC/2018/06 - Kwan Lee - Chun Wo Joint Venture (KLCWJV)
 - Contract No.: DC/2018/07 - Kwan Lee - Chun Wo Joint Venture (KLCWJV)
 - Contract No.: DE/2018/03 - Jardine Engineering Corporation Limited (JEC)
 - Contract No.: DE/2018/04 - Bestwise Envirotech Limited (Bestwise)

1.7 The key contacts of the Project are shown in **Table 1.1**.

Table 1.1 Key Project Contacts

Party	Role	Contact Person	Phone No.
DSD	Permit Holder	Ms. Konica Cheung	2594 7463
AECOM	Supervisor Representative	Ms. Bianca Choi	3907 6141
Cinotech	Environmental Team	Mr. KS Lee (ETL)	2151 2091
		Ms. Betty Choi	2151 2072
Ramboll	Independent Environmental Checker	Mr. YH Hui	3465 2850
KLCWJV	Contractor (DC/2018/06)	Ms. Ruby Hui	6218 6408
KLCWJV	Contractor (DC/2018/07)	Ms. Shirley Kong	5162 5933
JEC	Contractor (DE/2018/03)	Ms. Juliet Ting	6826 7319
Bestwise	Contractor (DE/2018/04)	Mr. Albus Cheung	9731 0831

1.8 The Organizational Structure for Environmental Management is shown in **Figure 1.2**.

Construction Activities undertaken during the Reporting Month

1.9 The major site activities undertaken in the reporting month included:

Table 1.2 Summary Table for Major Site Activities in the Reporting Month

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • RC works • Wall and slab construction • Backfilling • Pipe laying • Pipe jacking work • Excavation works
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Contract No.	Contract Title	Site Activities
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Socket H piling • Installation of EOT crane
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Construction of temporary filtrate equalisation tank • Installation of temporary primary sludge thickener and its accessories • Retrofitting the existing primary sedimentation tank no. 4 and 6

Summary of EM&A Requirements

1.10 The EM&A programme requires construction noise monitoring, air quality monitoring, water quality monitoring, ecological monitoring and environmental site audit, etc. The EM&A requirements for each parameter are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA Report.

1.11 The advice on the implementation status of environmental protection and pollution control/mitigation measures is summarized in Section 8 of this report.

1.12 This report presents the monitoring results, observations, locations, equipment, period, methodology and QA/QC procedures of the monitoring parameters of the required environmental monitoring works and audit works for the Project in June 2021.

Statuses of Environmental Licensing and Permitting

1.13 All permits/licenses obtained for the Project are summarized in **Table 1.3**.

Table 1.3 Summary of Environmental License and Permit

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Environmental Permit (EP)				
All	FEP-02/474/2013	15 Feb 2018	N/A	Valid
Notification of Construction Works under Air Pollution Control Ordinance (APCO)				
DC/2018/06	449210 (Portion A & C)	23 Sep 2019	N/A	Valid
DC/2018/06	449211 (WM1)	23 Sep 2019	N/A	Valid
DC/2018/07	449210	23 Sep 2019	N/A	Valid
DE/2018/03	455843 (WA3)	6 May 2020	N/A	Valid
DE/2018/03	457212 (WA1-B)	15 Jun 2020	N/A	Valid
DE/2018/03	460065 (Sidestream)	16 Sep 2020	N/A	Valid
DE/2018/04	460181	17 Sep 2020	N/A	Valid
Billing Account for Construction Waste Disposal				
DC/2018/06	7035390	11 Oct 2019	N/A	Valid
DC/2018/07	7035985	9 Dec 2019	N/A	Valid
DE/2018/03	7035700	6 Nov 2019	N/A	Valid
DE/2018/04	703621912	2 Jan 2020	N/A	Valid
Registration of Chemical Waste Producer				
DC/2018/06	5213-624-K3371-01	14 Nov 2019	N/A	Valid
DC/2018/07	5213-624-K3371-02	6 Jan 2020	N/A	Valid
DE/2018/03	5213-624-T3861-01	14 Apr 2020	N/A	Valid
DE/2018/04	5213-624-B2592-01	7 Jul 2020	N/A	Valid
Effluent Discharge License				
DC/2018/06	WT00035431-2019 (Portion C)	27 Jul 2020	31 Jan 2025	Valid
DC/2018/06	WT00035718-2020 (Portion A)	2 Apr 2020	30 Apr 2025	Valid
DC/2018/07	WT00035727-2020	1 Apr 2020	30 Apr 2025	Valid
DE/2018/03	WT00037220-2020	16 Mar 2021	31 Jan 2026	Valid
Construction Noise Permit (Use of Powered Mechanical Equipment)				
DC/2018/06 & DC/2018/07	GW-RN0181-21	12 Apr 2021	11 Jul 2021	Valid
DC/2018/06	GW-RN0321-21	15 May 2021	30 Jun 2021	Valid
DE/2018/03	GW-RN0274-21	28 Apr 2021	27 Jul 2021	Valid
Admission Ticket for Disposal of Special Waste				
DC/2018/07	16113	17 Feb 2021	16 Jun 2021	Expired on 16 Jun 2021

2 AIR QUALITY

Monitoring Requirement

- 2.1 According to the Updated EM&A Manual of SWHEPP, 1-hour and 24-hour Total Suspended Particulates (TSP) monitoring were conducted to monitor the air quality for this Project. For regular impact monitoring, a sampling frequency of at least once in every six days at all of the monitoring stations for 24-hour TSP monitoring. For 1-hour TSP monitoring, the sampling frequency of at least three times in every six days shall be undertaken when the highest dust impact occurs. **Appendix A** shows the established Action/Limit Levels for the environmental monitoring works.

Monitoring Locations

- 2.2 Four designated monitoring stations were selected for air quality monitoring programme. **Table 2.1** describes the air quality monitoring locations, which are also depicted in **Figure 2**.

Table 2.1 Air Quality Monitoring Locations

Monitoring Stations	Location	Location of Measurement
AM1 ⁽¹⁾	Wai Loi Tsuen	Ground Level
AM2 ⁽¹⁾	Fu Tei Au	Ground Level
AM1a ⁽²⁾	Site Boundary of the Shek Wu Hui STW (East)	Ground Level
AM2a ⁽²⁾	Site Boundary of the Shek Wu Hui STW (North)	Ground Level

Remarks: (1) For 1-hour TSP monitoring; (2) For 24-hour TSP monitoring

Monitoring Parameters and Frequency

- 2.3 **Table 2.2** summarizes the monitoring parameters, monitoring period and frequencies of impact air quality monitoring. The monitoring schedule is shown in **Appendix B**.

Table 2.2 Frequency and Parameters of Air Quality Monitoring

Monitoring Stations	Parameter	Period	Frequency
AM1 & AM2	1-hour TSP	0700 – 1900	3 times/day, once every 6 days
AM1a & AM2a	24-hour TSP	24 hours	Once every 6 days

Monitoring Equipment

- 2.4 High Volume Samplers (HVS) in compliance with the specification stipulated in the EM&A Manual, Section 2.2.2, were used to carry out 24-hour TSP monitoring. Direct reading dust meter were also used to measure 1-hour average TSP levels. The 1-hour sampling was determined by HVS to check the validity and accuracy of the results measured by direct reading method.
- 2.5 Wind data monitoring equipment was set on rooftop (about 4/F) of the SWHSTW control room building for logging wind speed and wind direction such that the wind sensors were clear of obstructions or turbulence caused by building. The wind data monitoring equipment was re-calibrated at least once every six months and the wind directions were divided into 16 sectors of 22.5 degrees each.

- 2.6 **Table 2.3** summarizes the equipment to be used for air quality monitoring. Copies of calibration certificates are attached in **Appendix C**.

Table 2.3 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
1-hour TSP Dust Meter	Sibata Model No.: LD-5R	2
HVS Sampler	GMW Model: GS 2310	1
	TISCH Model: TE 5170	1
Calibrator	TISCH Model: TE-5025A	1
Wind Anemometer	Global Water Instrumentation WE800	1

Monitoring Methodology

1-hour TSP Monitoring

Measuring Procedures

- 2.7 The measuring procedures of the 1-hour dust meter are in accordance with the Manufacturer's Instruction Manual as follows:

(Sibata Model No.: LD-5R)

- The 1-hour dust meter is placed at least 1.3 meters above ground.
- Set POWER to "ON" and make sure that the battery level was not flash or in low level.
- Allow the instrument to stand for about 3 minutes and then the cap of the air sampling inlet has been released.
- Push the knob at MEASURE position.
- Set time/mode setting to [BG] by pushing the time setting switch. Then, start the background measurement by pushing the start/stop switch once. It will take 6 sec. to complete the background measurement.
- Push the time setting switch to change the time setting display to [MANUAL] at the bottom left of the liquid crystal display. Finally, push the start/stop switch to stop the measuring after 1 hour sampling.
- Information such as sampling date, time, count value and site condition were recorded during the monitoring period.

Maintenance/Calibration

- 2.8 The following maintenance/calibration is required for the 1-hour dust meter:

- Check and calibrate the meter by HVS to check the validity and accuracy of the results measured by direct reading method at 2-month intervals throughout all stages of the air quality monitoring.

24-hour TSP Monitoring

Instrumentation

- 2.9 High volume samplers (HVS) (TISCH Model: TE-5170) complete with appropriate sampling inlets was employed for 24-hour TSP monitoring. The sampler was composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complied with that required by USEPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50). Moreover, the HVS also met all the requirements in Section 2.2 of the Annex II Specification.
- 2.10 The positioning of the HVS samplers are as follows:
- A horizontal platform with appropriate support to secure the samplers against gusty wind shall be provided;
 - No two samplers shall be placed less than 2 meter apart;
 - 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;
 - A minimum of 2 metres of separation from walls, parapets and penthouses is required for rooftop samplers;
 - A minimum of 2 metres of separation from any supporting structure, measured horizontally is required;
 - No furnace or incinerator flue is nearby;
 - Airflow around the sampler is unrestricted;
 - The sampler is more than 20 metres from the dripline;
 - Any wire fence and gate, to protect the sampler, shall not cause any obstruction during monitoring;
 - Permission must be obtained to set up the samplers and to obtain access to the monitoring stations; and
 - A secured supply of electricity is needed to operate the samplers.

Operating/analytical procedures for the operation of HVS

- 2.11 Operating/analytical procedures for the air quality monitoring are highlighted as follows:
- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 1.1 m³/min. and 1.4 m³/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50.
 - For TSP sampling, fiberglass filters with a collection efficiency of > 99% for particles of 0.3µm diameter were used.
 - The power supply was checked to ensure the sampler worked properly. On sampling, the sampler was operated for 5 minutes to establish thermal equilibrium before placing any filter media at the designated air monitoring station.
 - The filter holding frame was then removed by loosening the four nuts and a weighted and conditioned filter was carefully centered with the stamped number upwards, on a supporting screen.
 - The filter was aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter. Then the filter holding frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.

- The shelter lid was closed and secured with the aluminum strip.
- The timer was then programmed. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number).
- After sampling, the filter was removed and sent to the HOKLAS laboratory (High Precision Chemical Testing Limited) for weighing. The elapsed time was also recorded.
- Before weighing, all filters were equilibrated in a conditioning environment for 24 hours. The conditioning environment temperature should be between 25°C and 30°C and not vary by more than $\pm 3^\circ\text{C}$; the relative humidity (RH) should be $< 50\%$ and not vary by more than $\pm 5\%$. A convenient working RH is 40%.

Maintenance/Calibration

2.12 The following maintenance/calibration is required for the HVS:

- The high volume motors and their accessories were properly maintained. Appropriate maintenance such as routine motor brushes replacement and electrical wiring checking were made to ensure that the equipment and necessary power supply are in good working condition.
- High volume samplers were calibrated at bi-monthly intervals using TE-5025A Calibration Kit throughout all stages of the air quality monitoring.

Results and Observations

2.13 Impact air quality monitoring was conducted at four monitoring stations as scheduled. The monitoring schedule is shown in **Appendix B**.

2.14 No Action/Limit Level exceedance was recorded for all 1-hour TSP monitoring in the reporting month.

2.15 No Action/Limit Level exceedance was recorded for all 24-hour TSP monitoring in the reporting month.

2.16 The air temperature, precipitation and the relative humidity data was obtained from daily extract of Ta Kwu Ling Station in Hong Kong Observatory Climate Information Service, where the wind speed and wind direction were recorded by the installed Wind Anemometer at rooftop (about 4/F) of the SWHSTW control room building. This weather information for the reporting month is summarized in **Appendix D**.

2.17 The monitoring data and graphical presentations of 1-hour and 24-hour TSP monitoring results are shown in **Appendix E** and **Appendix F** respectively.

2.18 According to our field observations, the major dust source identified at the designated air quality monitoring stations are as follows:

Table 2.4 Major Dust Source during Air Quality Monitoring

Monitoring Stations	Major Dust Source
AM1 - Wai Loi Tsuen	Road Traffic at Sheung Shui Tung Hing Road
AM2 - Fu Tei Au	N/A
AM1a - Site Boundary of the Shek Wu Hui STW (East)	Vehicle Movement within SWHSTW
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A

Comparison of EM&A Result with EIA Prediction

2.19 The air monitoring data was compared with the predictions in the EIA Report (as approved in 2013) as summarised in **Tables 2.5** and **Table 2.6**.

Table 2.5 Comparison of 1-hr TSP Monitoring Data with Predictions in EIA Report (As Approved in 2013)

Monitoring Stations	ASR ID	Predicted 1-hr TSP Concentration in EIA Report (as Approved in 2013), dB(A), $\mu\text{g}/\text{m}^3$	Reporting Month (June 2021), $\mu\text{g}/\text{m}^3$
AM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	10.4 - 52.5
AM2 - Fu Tei Au	FLN-E28	255	7.8 - 50.0

Remarks:

(1) No 1-hr TSP concentration was predicted in EIA Report (As Approved in 2013).

Table 2.6 Comparison of 24-hr TSP Monitoring Data with Predictions in EIA Report (As Approved in 2013)

Monitoring Stations	Predicted 24-hr TSP Concentration in EIA Report (as approved in 2013), dB(A), $\mu\text{g}/\text{m}^3$	Reporting Month (June 2021), $\mu\text{g}/\text{m}^3$
AM1a - Site Boundary of the Shek Wu Hui STW (East)	N/A ⁽¹⁾	33.4 - 77.3
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A ⁽¹⁾	13.5 - 31.7

Remarks:

(1) No 24-hr TSP concentration was predicted in EIA Report (as approved in 2013).

2.20 The 1-hour TSP concentration at AM2 in the reporting month was lower than the prediction in the EIA Report (As Approved in 2013). The 1-hour TSP concentrations at AM1 as well as 24-hour TSP concentrations at AM1a and AM2a were not predicted in the EIA Report (As Approved in 2013).

3 NOISE

Monitoring Requirements

- 3.1 According to the Updated EM&A Manual, construction noise monitoring was conducted to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and conduct one set of measurements between 0700 and 1900 hours on normal weekdays. **Appendix A** shows the established Action and Limit Levels for the environmental monitoring works.

Monitoring Locations

- 3.2 Noise monitoring was conducted at three designated monitoring stations in the reporting period. **Table 3.1** and **Figure 3** show the locations of these stations.

Table 3.1 Noise Monitoring Stations

Monitoring Stations	Location	Location of Measurement
NM1	Wai Loi Tsuen	Ground Level
NM2	Fu Tei Au	Ground Level
NM3	Man Kok Village	Ground Level

Monitoring Parameters, Frequency and Duration

- 3.3 **Table 3.2** summarizes the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix B**.

Table 3.2 Frequency and Parameters of Noise Monitoring

Monitoring Stations	Time Period	Duration	Frequency	Parameter	Measurement
NM1	0700-1900 hrs on normal weekdays	30 minutes	Once per week	L ₁₀ (30 min.) dB(A)	Free Field
NM2				L ₉₀ (30 min.) dB(A)	Free Field
NM3				L _{eq} (30 min.) dB(A)	Free Field

Monitoring Equipment

- 3.4 Integrating Sound Level Meter was used for impact noise monitoring. The meters were Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (L_x) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 3.3** summarizes the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix G**.

Table 3.3 Noise Monitoring Equipment

Equipment	Model and Make	Quantity
Integrating Sound Level Meter	BSWA 308	3
Calibrator	ST-120	2

Monitoring Methodology and QA/QC Procedure

3.5 The monitoring procedures are as follows:

- The monitoring station was normally be at a point 1m from the exterior of the sensitive receivers building façade and be at a position 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. All records for free field noise levels were adjusted with a correction of +3 dB(A).
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
 - Frequency weighting: A
 - Time weighting: Fast
 - Time measurement: 30 minutes
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with the portable wind meter.
- At the end of the monitoring period, the L_{eq} , L_{90} and L_{10} were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Noise monitoring would be cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. Supplementary monitoring would be provided to ensure sufficient data would be obtained.

Maintenance and Calibration

- 3.6 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.
- 3.7 The sound level meter and calibrator were checked and calibrated at yearly intervals.
- 3.8 Immediately prior to and following each noise measurement the accuracy of the sound level meter was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as valid only if the calibration levels from before and after the noise measurement agree to within 1.0 dB.

Results and Observations

- 3.9 No Action/Limit Level exceedance was recorded for all construction noise monitoring in the reporting month.
- 3.10 Noise monitoring results and graphical presentations are shown in **Appendix H**.

3.11 The major noise sources identified at the noise monitoring stations are shown in **Table 3.4**.

Table 3.4 Other Noise Source Identified during Noise Monitoring

Monitoring Stations	Major Noise Source
NM1	Railway Noise and Road Traffic at Sheung Shui Tung Hing Road
NM2	N/A
NM3	Road Traffic at Po Wan Road

3.12 All the Construction Noise Levels (CNLs) reported in this report were adjusted with the corresponding baseline level (i.e. Measured Leq – Baseline Leq = CNL), in order to facilitate the interpretation of the noise exceedance. The baseline noise level and the Noise Limit Level at each designated noise monitoring station are presented in **Table 3.5**.

Table 3.5 Baseline Noise Level and Noise Limit Level for Monitoring Stations

Monitoring Stations	Baseline Noise Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)	Noise Limit Level, dB (A) (at 0700 – 1900 hrs on normal weekdays)
NM1	63.4	75
NM2	58.0	
NM3	63.4	

Comparison of EM&A Result with EIA Prediction

3.13 The noise monitoring data was compared with the predictions in EIA Report (as approved in 2013) as summarised in **Table 3.6**.

Table 3.6 Comparison of Noise Monitoring Data with Predictions in EIA Report (As Approved in 2013)

Monitoring Stations	NSR ID	Predicted Mitigated Construction Noise Levels in EIA Report (as Approved in 2013), dB(A)	Reporting Month (June 2021), Leq (30min) dB(A)
NM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	59.7 – 65.5
NM2 - Fu Tei Au	N/A	N/A ⁽¹⁾	56.5 – 61.2
NM3 – Man Kok Village	FN-18	66-75	57.4 – 63.1

Remarks:

(1) No construction noise level was predicted in EIA Report (As Approved in 2013).

3.14 The results at NM3 were lower than the range of the predicted mitigated construction noise levels in the EIA Report (As Approved in 2013). Construction noise levels at NM1 and NM2 were not predicted in the EIA Report (As Approved in 2013).

4 ECOLOGY

Monitoring Requirements

- 4.1 According to the Updated EM&A Manual, waterbird species which use rivers near the Project Site were identified and recorded. The monitoring requirement in the EM&A Manual is shown in **Table 4.1**. **Appendix A** shows the established Action/Limit Levels for ecological monitoring works.

Table 4.1 Monitoring of Measures to Minimise Disturbance to Waterbirds on Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Phase	Methodology
Construction	Weekly transect at both high and low tides to identify and enumerate all bird species utilising the river channels and identify any sources of actual or potential disturbance to birds due to construction activities throughout the construction period.

- 4.2 The monitoring should be conducted by the ET and supervised by a qualified ecologist who will be a member of the ET.

Monitoring Locations

- 4.3 Transect and point count surveys were proposed within the 500m boundary of Ng Tung River, Sheung Yue River and Shek Sheung River of the assessment area. Three transects and seven-point count locations during high and low tides were applied. These locations are shown in **Figure 4** and summarized in **Table 4.2**. The photo of each transect is provided in **Appendix J**.

Table 4.2 Ecological Monitoring Stations

Monitoring Stations	Descriptions	Influenced by Tidal Action
Transect T1	Along Ng Tung River	No
Point Count Location P1		
Point Count Location P2		
Transect T2		Yes
Point Count Location P3		
Point Count Location P4		
Point Count Location P5	At Shek Sheung River (Low-flow Channel)	No
Transect T3	Along Shek Sheung River & Sheung Yue River	Yes
Point Count Location P6	At Shek Sheung River	Yes
Point Count Location P7	At Intersection between Sheung Yue River and Shek Sheung River	Yes

Monitoring Parameters, Frequency and Duration

- 4.4 Monitoring surveys were conducted on a weekly basis at both high and low tides (it is considered high tide when tidal levels are above 1.5m and low tide when tidal level are below 1.5m at Tsim Bei Tsui Station). The magnitude of how much above or below 1.5m was subject to tidal conditions of that week as it varied throughout different times of the year. Nonetheless, the high and low tide relative to that week's tidal condition were taken into consideration. The ecological monitoring schedule is shown in **Appendix B**.

Monitoring Methodology

- 4.5 Transect survey was undertaken along the concerned rivers (Ng Tung River, Sheung Yue River and Shek Sheung River) adjacent to proposed construction activities. As the sensitive receivers (large waterbirds) are easily visible and the surveyor has used auxiliary equipment such as camera(s) and binoculars (magnification 7-10x). The transect route only follows one bank of these rivers.
- 4.6 At point count locations, surveyors identified and recorded bird species which were seen or heard along the river channel. For each point count, surveyors quantitatively recorded all species seen and heard for the duration of five minutes up to the distance where birds were still detectable. All avifauna along the walk transect were recorded. Noticeable behaviours (e.g. breeding behaviours such as nesting and presence of recently fledged juveniles, roosting and feeding activities, etc.) were recorded as well.
- 4.7 Ornithological nomenclature used in report should follow *The Avifauna of Hong Kong* (Carey et al. (2001)), *The Birds of Hong Kong and South China* (Viney et al. (2005)) and the most recent updated list from other sources (e.g. Hong Kong Bird Watching Society).
- 4.8 Weather conditions, tidal information at the time of the survey and other noticeable activities occurring within or in the vicinity of the survey areas (e.g. ongoing routine drainage channel maintenance works and other human activities that could create disturbances to birds) were recorded.

Analytical Methodology

- 4.9 The number and species of waterbirds utilizing the rivers fluctuate every day naturally. Therefore, the survey data were collectively analysed on a monthly basis to increase the sample size and to reduce random error on one survey day. Since occurrence of waterbirds has distinctive seasonal pattern, the construction phase data for all waterbirds and representative waterbirds were compared with the baseline data for the respective month and season. The representatives of waterbirds are listed in **Table 4.3**.

Table 4.3 Representative Waterbirds

Species Name	Common Name	Chinese Name
<i>Egretta garzetta</i>	Little Egret	小白鷺
<i>Ardea cinerea</i>	Grey Heron	蒼鷺
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鷗鷺
<i>Ardea alba</i>	Great Egret	大白鷺
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺

- 4.10 When a decline in abundance of all or representative waterbird is identified, one-tailed Student t-test was adopted to statistically analyse whether the drop is significant. If the collected data for the reporting month fails to show no significant difference from that in the baseline phase at 95% confidence level, the action level will be triggered. Likewise, the limit level is set at 99% confidence level.
- 4.11 In addition, if important behaviours such as breeding, brooding, nesting and presence of recently fledged juveniles of species of conservation importance are observed, the Resident Engineer, Contractor and IEC should be notified immediately after the survey. The Contractor should review current construction programme and minimize disturbance due to construction activities.

Results

- 4.12 For this reporting month, the numbers of species and individuals recorded were provided in **Table 4.4**. The photo record of waterbirds can be found in **Appendix J**.

Table 4.4 Total Bird Species and Abundance in the Reporting Month

	Number of Species	Abundance
All Avifauna	41	831
Waterbirds	10	169

- 4.13 **Table 4.5** presents the abundance of representative species.

Table 4.5 Abundance of Representative Waterbirds in the Reporting Month

Species Name	Common Name	Chinese Name	Abundance
<i>Egretta garzetta</i>	Little Egret	小白鷺	71
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	0
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	59
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鷗鷺	0
<i>Ardea alba</i>	Great Egret	大白鷺	10
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	22

Analysis

4.14 The result of student t-tests for all waterbirds and representative waterbirds are compiled in **Table 4.6** and **4.7** respectively. Further details are provided in **Appendix I**.

Table 4.6 T-test Result for All Waterbirds in the Reporting Month

T-values of Data in Reporting Month			Confidence Level (Critical Value)	
			95% (-2.353)	99% (-4.541)
Abundance	Monthly	-2.430	✗	✓
	Seasonal	-0.930	✓	✓

Remarks

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

Table 4.7 T-test Result for Representative Waterbirds in the Reporting Month

Common Name of Representative Waterbird	T-value	Confidence Level (Critical Value)		T-value	Confidence Level (Critical Value)		Overall
	Monthly	95% (-2.353)	99% (-4.541)	Seasonal	95% (-2.353)	99% (-4.541)	
Little Egret	-2.746	✗	✓	-1.794	✓	✓	✓
Grey Heron	N/A*						
Chinese Pond Heron	-7.444	✗	✗	-1.912	✓	✓	✓
Great Cormorant	N/A*						
Great Egret	-0.602	✓	✓	-0.163	✓	✓	✓
Eastern Cattle Egret	1.134	✓	✓	1.651	✓	✓	✓

Remarks

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

* Great Cormorant (*Phalacrocorax carbo*) and Grey Heron (*Ardea cinerea*) were not recognised as representative waterbird species during Summer.

4.15 No Action Level and Limit Level was triggered for ecological monitoring in the reporting month.

4.16 The monitoring work will continue next month to evaluate any construction impact on waterbirds.

Observations

4.17 Waterbird behaviour observed during ecological monitoring are listed below:

- Flying
- Foraging
- Soaring
- Resting

4.18 The anthropogenic activities observed during ecological monitoring are listed in **Table 4.8**.

Table 4.8 Observations during Ecological Monitoring in the Reporting Month

Location	Observations	
	Project Related	Non-project Related
T1 (PC1, PC2)	N/A	N/A
T2 (PC3, PC4)	Excavation and crane	Jaywalking & Fishing
PC5	Excavation and crane	N/A
T3 (PC6, PC7)	N/A	Construction of planter, sheet-piling, generator & welding works Jaywalking & Fishing

5 WATER QUALITY

Monitoring Requirement

- 5.1 According to the Updated EM&A Manual, no water monitoring is required before the commencement of outfall construction at Ng Tung River.
- 5.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of water quality mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix K**.

6 WASTE MANAGEMENT

Monitoring Requirement

- 6.1 According to the Updated EM&A Manual, waste management would be the contractor's responsibility to ensure that all wastes produced during the construction works for the Project are handled, stored and disposed of in accordance with good waste management practices, EPD's regulations and requirements. No monitoring for waste management is required for the Project. An environmental management plan (EMP) should be prepared and submitted to the Supervisor for approval. The monitoring and auditing requirements of the EMP should be followed with regard to the management of C&D material.

Waste Management Status

- 6.2 Site audits were carried out on a weekly basis to monitor and audit to ensure that proper storage, transportation and disposal practices of waste materials generated during construction activities, such as construction and demolition (C&D) materials and general refuse are being implemented. The summaries of site audits are attached in **Appendix K**.
- 6.3 The amount of wastes generated by the major site activities of this Project during the reporting month is shown in **Appendix L**.

7 LANDSCAPE AND VISUAL

Audit Requirement

- 7.1 According to the Updated EM&A Manual, site audits would be undertaken during the construction phase of the Project to check that the proposed landscape and visual mitigation measures are properly implemented and maintained as per their intended objectives. Particularly audits would be carried out during site clearance when proposed tree felling and transplantation may occur. Site inspections would be undertaken at least once every two weeks during the construction period.
- 7.2 Site audits were carried out on a weekly basis to monitor and audit the timely implementation of landscape and visual mitigation measures within the site boundaries of this Project. The summaries of site audits are attached in **Appendix K**.

8 ENVIRONMENTAL AUDIT

Site Audits

- 8.1 Site audits were carried out on a weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures in the Project site. The summaries of site audits are attached in **Appendix K**.
- 8.2 Site audits for Contract No. DC/2018/06 and DC/2018/07 were conducted on 1, 10, 15, 22 & 29 June 2021 in the reporting month, whereas that for Contract No. DE/2018/03 and DE/2018/04 were conducted on 1, 8, 15, 22 & 29 June 2021 in the reporting month. Joint site inspection with the representative of IEC was conducted on 29 June 2021. No non-compliance was observed during the site audit.

Implementation Status of Environmental Mitigation Measures

- 8.3 According to Environmental Permits, the approved EIA Report (Register No.: AEIAR-175/2013), and the Updated EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix N**.
- 8.4 The ET weekly site inspections were carried out during the reporting month and the observations and recommendations are summarized in **Tables 8.1 - 8.4**. Refer to **Appendix K** for the site inspection summary reports in the reporting month.

Table 8.1 Observations and Recommendations of Site Audit of Contract No. DC/2018/06

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	26 May 2021	Faded NRMM label should be replaced at Portion C.	The condition was observed to be improved/rectified by the contractor during the audit session on 1 June 2021.
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	N/A	There was no observation in the reporting period.	N/A
<i>Ecology and Fisheries</i>	N/A	There was no observation in the reporting period.	N/A
<i>Visual and Landscape</i>	N/A	There was no observation in the reporting period.	N/A
<i>Permits /Licences</i>	N/A	There was no observation in the reporting period.	N/A

Table 8.2 Observations and Recommendations of Site Audit of Contract No. DC/2018/07

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	N/A	There was no observation in the reporting period.	N/A
<i>Ecology and Fisheries</i>	N/A	There was no observation in the reporting period.	N/A
<i>Visual and Landscape</i>	N/A	There was no observation in the reporting period.	N/A
<i>Permits /Licences</i>	N/A	There was no observation in the reporting period.	N/A

Table 8.3 Observations and Recommendations of Site Audit of Contract No. DE/2018/03

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	N/A	There was no observation in the reporting period.	N/A
<i>Ecology and Fisheries</i>	N/A	There was no observation in the reporting period.	N/A
<i>Visual and Landscape</i>	N/A	There was no observation in the reporting period.	N/A
<i>Permits /Licences</i>	N/A	There was no observation in the reporting period.	N/A

Table 8.4 Observations and Recommendations of Site Audit of Contract No. DE/2018/04

Parameters	Date	Observations and Recommendations	Follow-up
<i>Water Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Air Quality</i>	N/A	There was no observation in the reporting period.	N/A
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	N/A	There was no observation in the reporting period.	N/A
<i>Ecology and Fisheries</i>	N/A	There was no observation in the reporting period.	N/A
<i>Visual and Landscape</i>	N/A	There was no observation in the reporting period.	N/A
<i>Permits /Licences</i>	N/A	There was no observation in the reporting period.	N/A

Implementation Status of Event and Action Plans

8.5 The Event and Action Plans for air quality, construction noise, ecological monitoring and landscape and visual are presented in **Appendix M**.

Air Quality Monitoring

- No Action/Limit Level exceedance for 1-hour TSP was recorded.
- No Action/Limit Level exceedance for 24-hour TSP was recorded.

Construction Noise Monitoring

- No documented complaint on construction noise was received; no Action Level exceedance for day time construction noise monitoring was recorded.
- No Limit Level exceedance for day time construction noise monitoring was recorded in the reporting month.

Ecological Monitoring

- No Action and Limit Level was triggered.

Landscape and Visual Monitoring

- No non-conformity for landscape and visual was recorded.

9 ENVIRONMENTAL NON-CONFORMANCE

Summary of Complaint, Warning, Notification of any Summons and Successful Prosecution

- 9.1 No environmental complaints, warning, notifications of summons and successful prosecutions were received in the reporting month.
- 9.2 The summary of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix O**.

Summary of Exceedance

- 9.3 The summary of exceedance record in reporting month is shown in **Appendix P**.

10 FUTURE KEY ISSUES

10.1 Tentative construction programmes for the next three months are provided in **Appendix Q**.

10.2 Major site activities undertaken for the coming months are summarized in **Table 10.1**.

Table 10.1 Summary Table for Site Activities in the Next Reporting Period

Contract No.	Contract Title	Site Activities
DC/2018/06	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sludge Treatment Facilities and 132kV Primary Substation	<ul style="list-style-type: none"> • RC works • Wall and slab construction • Backfilling • Pipe laying • Pipe jacking work
DC/2018/07	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Civil Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • ELS and construction of inlet reception chamber • Trench excavation • Road and drainage works • Diversion of inlet works • Process pipe of CHR and CHS • Pre-drilling work and foundation work • Cable diversion works • Demolition work of existing main facilities • Alternation of existing powerhouse • Pre-bored H piles • Sheetpile installation
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	<ul style="list-style-type: none"> • Socket H piling • Installation of EOT crane • Installation of cable tray, conduit • Installation of F.S. equipment • Installation of power cable
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	<ul style="list-style-type: none"> • Electrical installation of temporary filtrate equalisation tank • Electrical installation of temporary primary sludge thickener and its accessories • Retrofitting the existing primary sedimentation tank no. 6 • Modification of existing emergency generator electrical works

10.3 Key environmental issues in the coming months include:

- Stockpile accumulation on-site;
- Water spraying for dust generating activities and on haul road;
- Wastewater and runoff discharge from site;
- No disposition of slurry at the existing Shek Wu Hui Sewage Treatment Works;
- Coverage of open manholes to avoid dirty runoff to drainage system;
- Noise from operation of the equipment, especially for excavation works and machinery onsite;
- Accumulation of general refuse and construction waste on-site;
- Proper storage of construction materials on-site; and
- Storage of chemicals/fuel and chemical waste/waste oil on-site.

Monitoring Schedule

10.4 The tentative environmental monitoring schedule for the next month is shown in **Appendix B**.

11 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 11.1 This is the 18th Monthly EM&A Report which presents the EM&A works undertaken during the reporting month in accordance with the Updated EM&A Manual and the requirement under EP.

Air Quality Monitoring

- 11.2 No Action/Limit Level exceedance was recorded for all 1-hour and 24-hour TSP monitoring in the reporting month.

Construction Noise Monitoring

- 11.3 No Action/Limit Level exceedance was recorded for all noise monitoring in the reporting month.

Ecology

- 11.4 No Action and Limit Level exceedance was triggered for all ecological monitoring in the reporting month.

Site Audit

- 11.5 5 ET joint weekly environmental site inspections were conducted in the reporting month.

Complaint, Notification of Summons and Successful Prosecution

- 11.6 No environmental complaints, notifications of summons and successful prosecutions were received in the reporting month.

Recommendations

- 11.7 According to the environmental audit performed in the reporting month, the following recommendations were made:

Air Quality

- Regular water spraying on haul road and dry surfaces should be applied to minimize dust generation.
- Stockpiles should be covered by impervious materials.
- Faded NRMM label should be replaced.

Water Quality

- Stagnant water should be removed and pumped through the sedimentation tank.
- Wastewater should be pumped and collected in the sedimentation tank before discharge.
- Muddy water should not be discharged into the surrounding rivers.
- No slurry should be disposed of at the existing Shek Wu Hui Sewage Treatment Works.

Waste Management

- General refuse and construction waste accumulation should be avoided.
- Chemicals should be stored in drip trays properly.

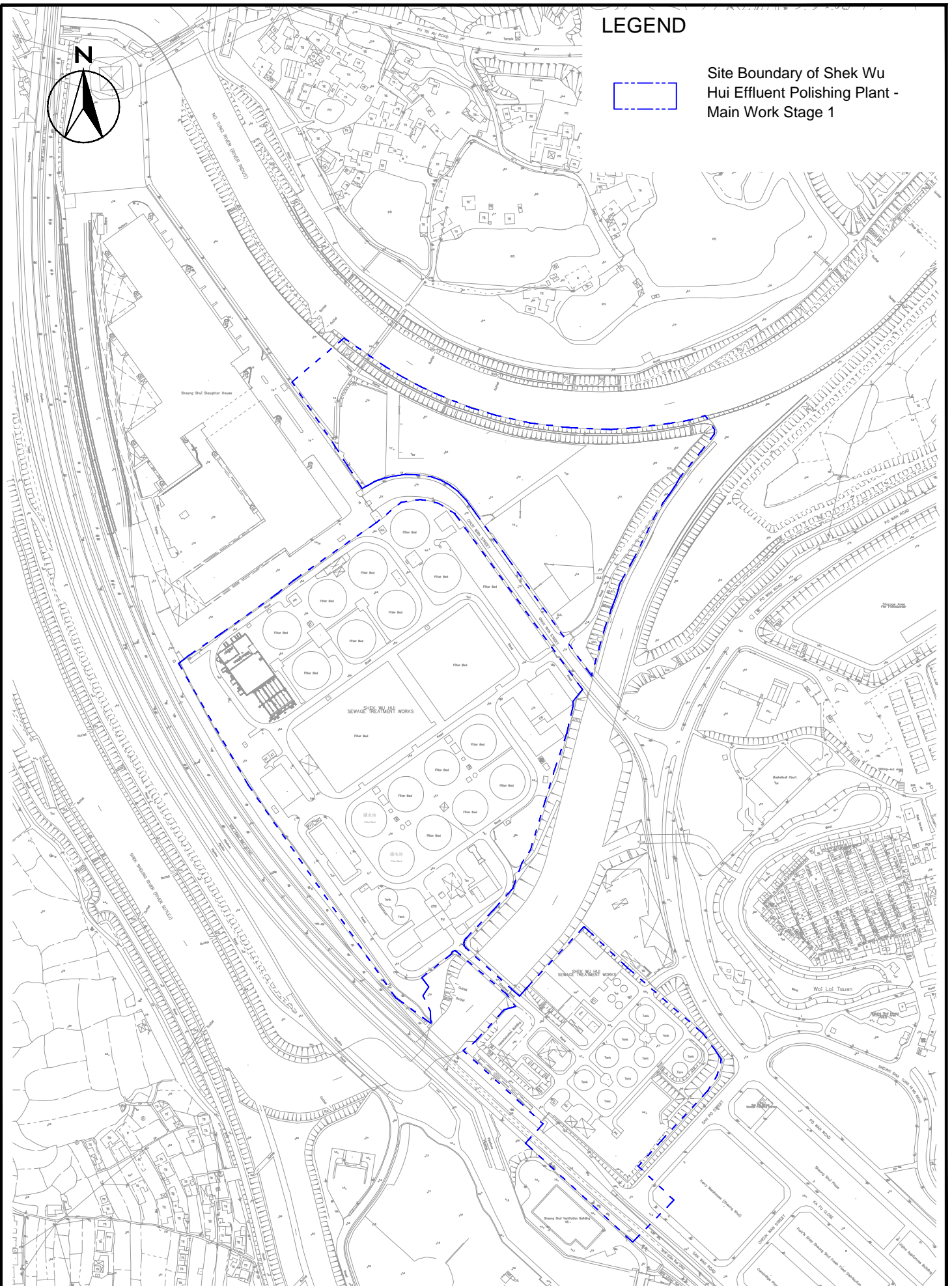
FIGURES



LEGEND



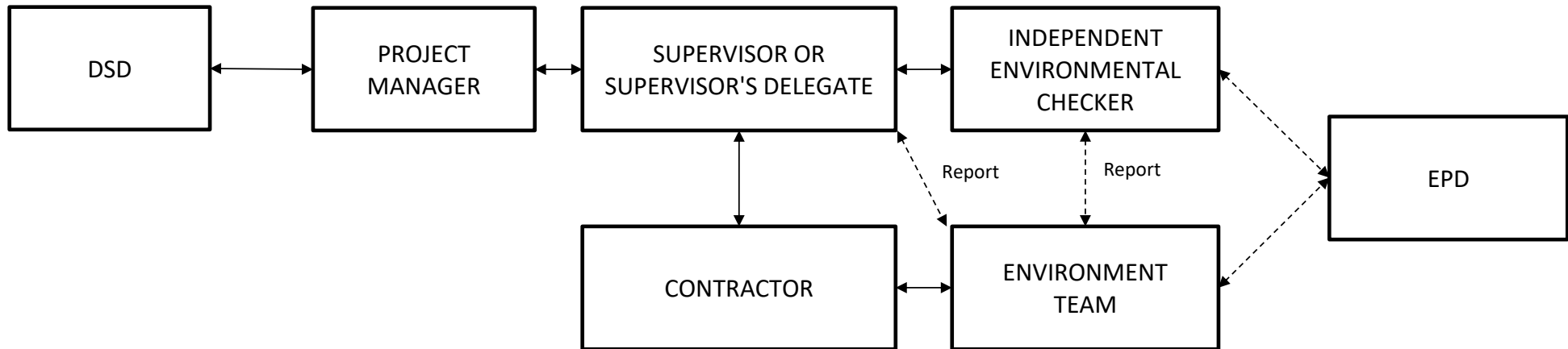
Site Boundary of Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1



Agreement No. SPW07/2019
 Shek Wu Hui Effluent Polishing Plant -
 Main Works Stage 1

Site Layout

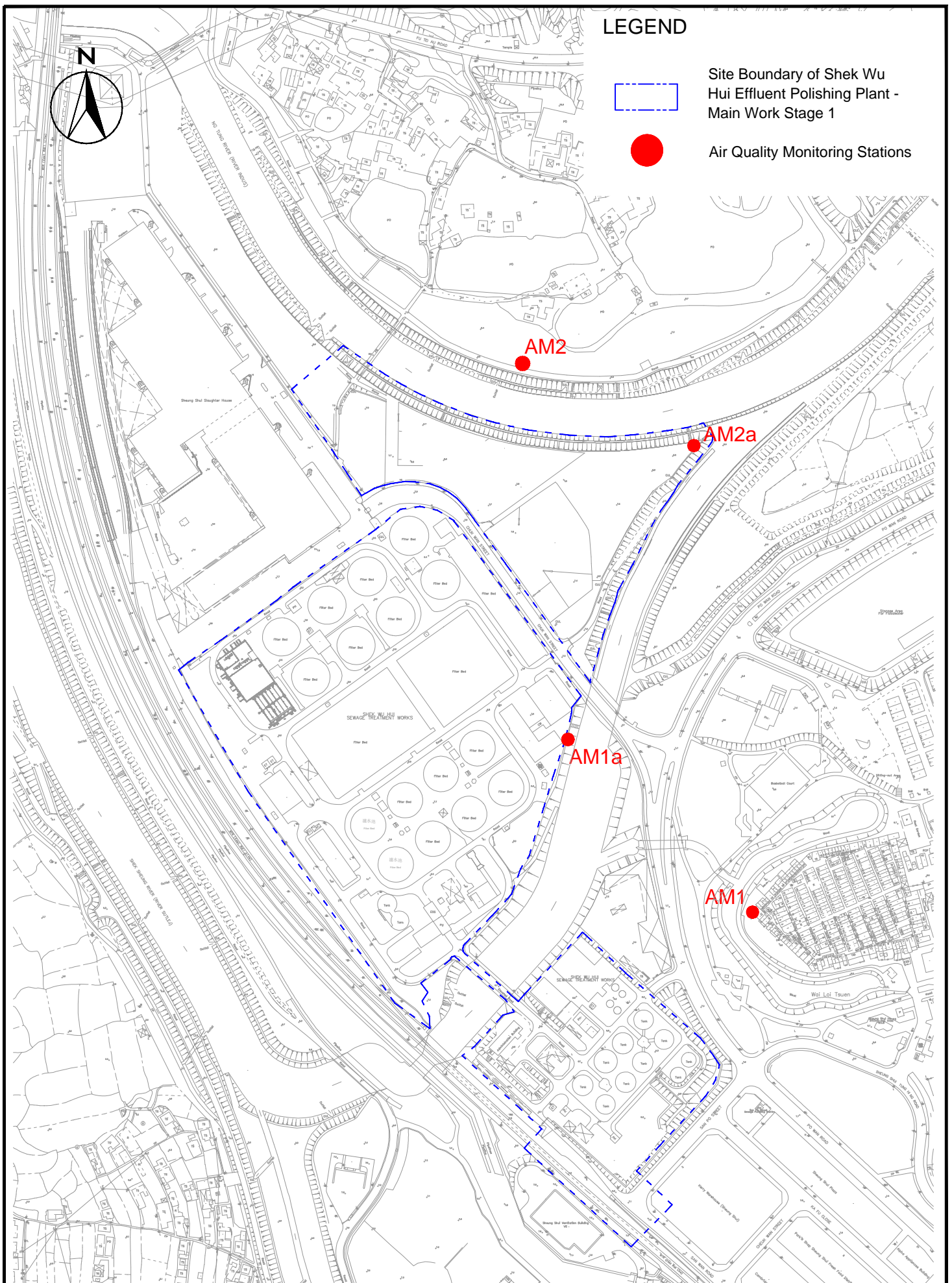
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JOB No.	MA19019	FIGURE NO.	1.1
		REV	-



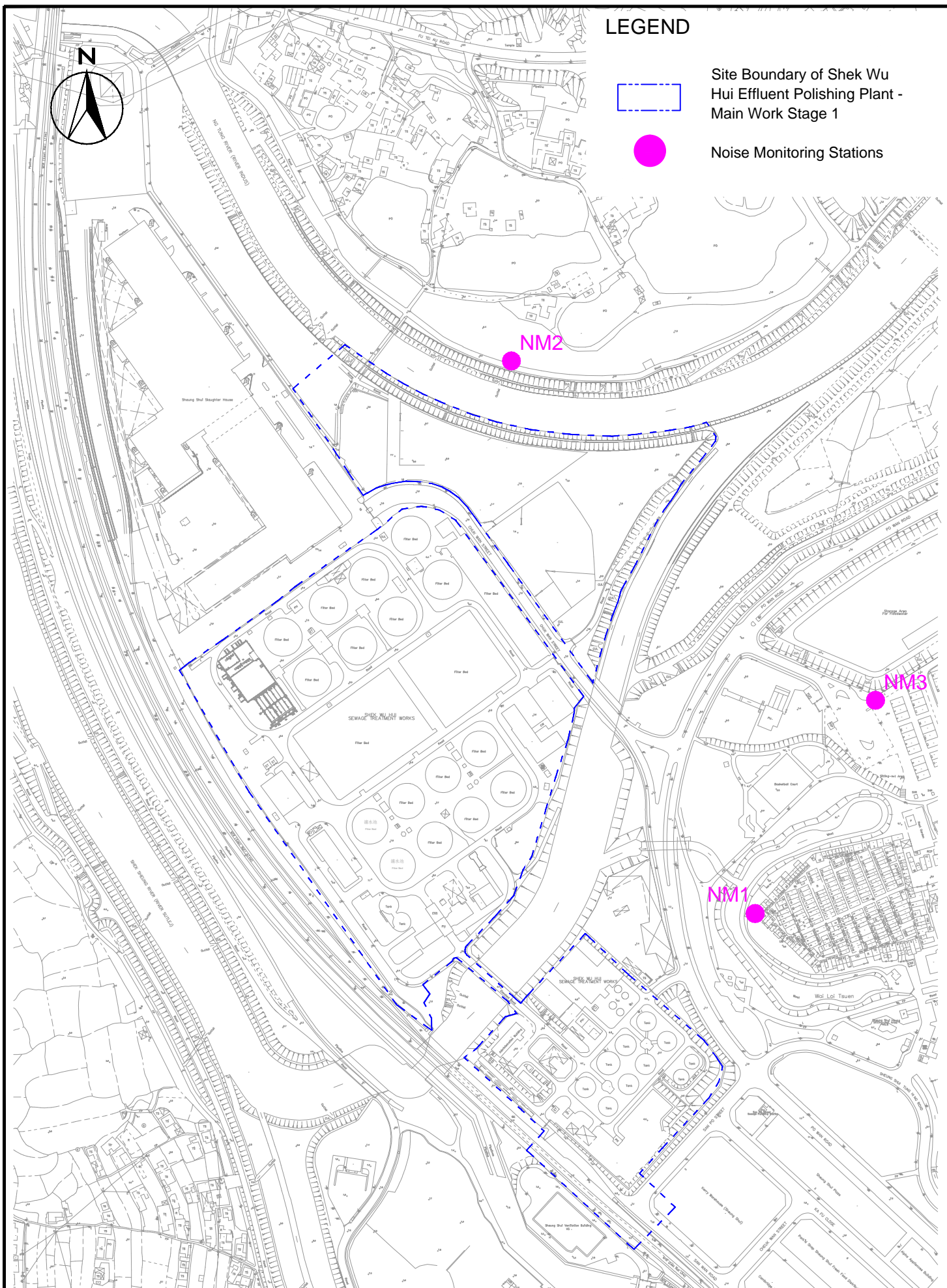
CINOTECH

Agreement No. SPW07/2019
 Shek Wu Hui Effluent Polishing Plant- Main Works Stage 1
Project Organisation For Environmental Monitoring and Audit

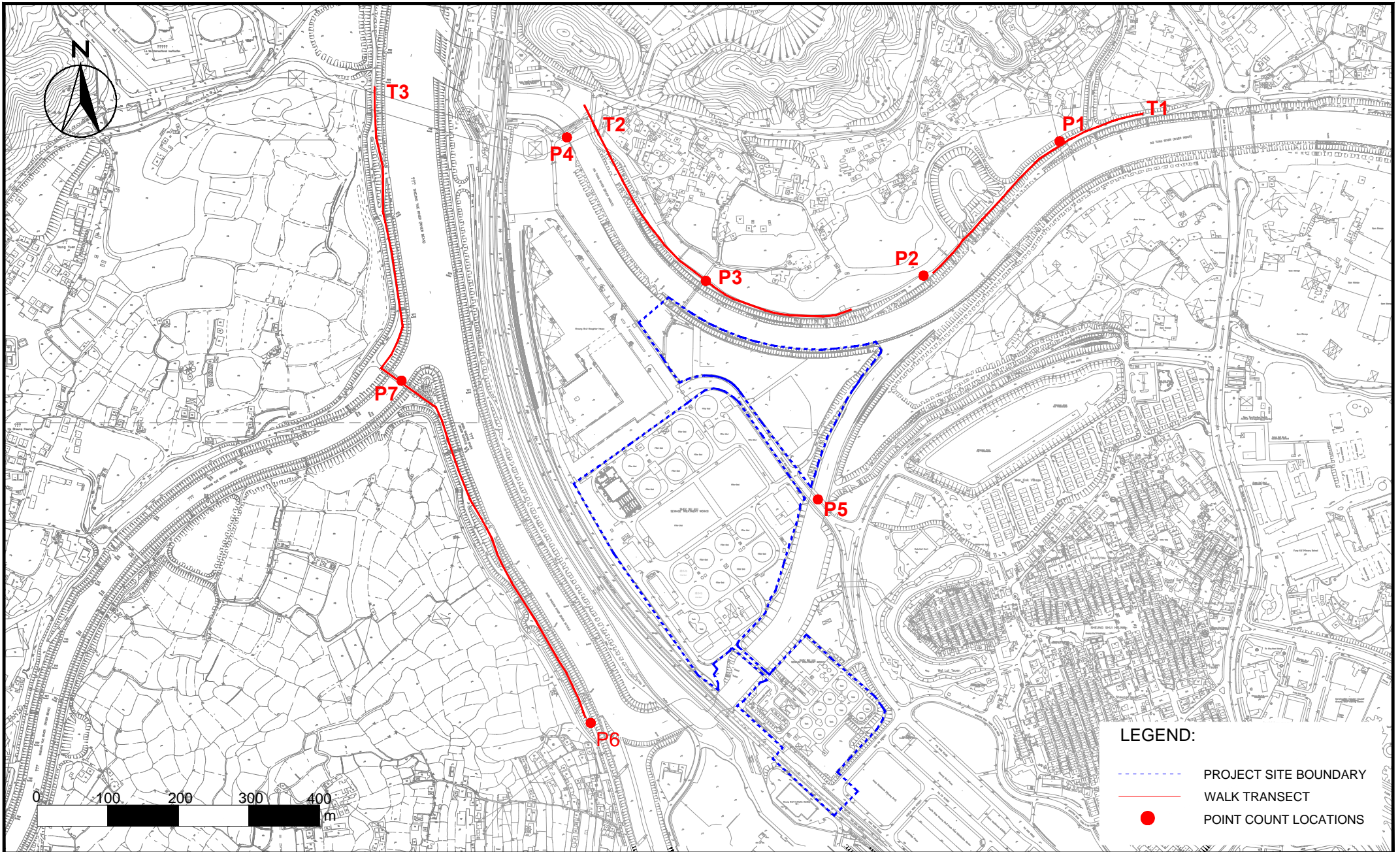
SCALE	N.T.S.	DATE	Sep 2019
CHECK	JM	DRAWN	SY
JOB NO.	MA19019	FIGURE NO.	1.2



SCALE	1:4000@A4	DATE	OCT 2019
CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	2
		REV	-



SCALE	1:4000@A4	DATE	OCT 2019
CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	3
		REV	-



Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1

Survey Location for Impact Ecological Monitoring

SCALE	1:7000 @ A4	DATE	Jan 2020
CHECK	BC	DRAWN	JM
JOB No.	MA19019	FIGURE NO.	4
		REV	-

**APPENDIX A
ACTION AND LIMIT LEVELS**

Appendix A - Action and Limit Levels

Table A-1 Action and Limit Levels for 1-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1	320	500
AM2	322	

Table A-2 Action and Limit Levels for 24-hour TSP

Location	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
AM1a	189	260
AM2a	187	

Table A-3 Action and Limit Levels for Noise during Construction Period

Time Period	Action Level	Limit Level
0700-1900 hrs on normal weekdays	When one documented complaint is received	75 dB(A)*

*Remarks:

- If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) used by the Noise Control Authority have to be followed.
- Reduce to 70 dB(A) for schools and 65 dB(A) during school examination periods.

Table A-4 Action and Limit Levels of Disturbance to Waterbirds using Ng Tung, Sheung Yue and Shek Sheung Rivers during Construction Phase

Action Level	Limit Level
Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Action Level response is triggered.	Decline in numbers of all waterbird species relative to numbers during baseline monitoring such that the limit level response is triggered.
Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.

Note: Whether numbers are significant depend on species and season after collection and evaluation of baseline survey data.

**APPENDIX B
ENVIRONMENTAL MONITORING
SCHEDULES**

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Impact Air, Noise and Ecology Monitoring Schedule (June 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Jun	2-Jun	3-Jun	4-Jun	5-Jun
				24 hrs TSP Ecology	1 hr TSP x 3	
6-Jun	7-Jun	8-Jun	9-Jun	10-Jun	11-Jun	12-Jun
	Ecology	24 hrs TSP	1 hr TSP x 3 Noise			24 hrs TSP
13-Jun	14-Jun	15-Jun	16-Jun	17-Jun	18-Jun	19-Jun
		1 hr TSP x 3 Noise			24 hrs TSP Ecology	
20-Jun	21-Jun	22-Jun	23-Jun	24-Jun	25-Jun	26-Jun
	1 hr TSP x 3 Noise Ecology			24 hrs TSP	1 hr TSP x 3	
27-Jun	28-Jun	29-Jun	30-Jun			
		24 hrs TSP	1 hr TSP x 3 Noise			

The schedule may be changed due to unforeseen circumstances (adverse weather, etc)

Air Quality Monitoring Station

1-hr TSP

AM1 - Wai Loi Tsuen

AM2 - Fu Tei Au

24-hr TSP

AM1a - Site Boundary of the Shek Wu Hui STW (East)

AM2a - Site Boundary of the Shek Wu Hui STW (North)

Noise Monitoring Station

NM1 - Wai Loi Tsuen

NM2 - Fu Tei Au

NM3 - Man kok Village

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Tentative Impact Air, Noise and Ecology Monitoring Schedule (July 2021)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1-Jul	2-Jul	3-Jul
					Ecology	
4-Jul	5-Jul	6-Jul	7-Jul	8-Jul	9-Jul	10-Jul
	24 hrs TSP Ecology	1 hr TSP x 3 Noise				24 hrs TSP
11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul
	1 hr TSP x 3 Noise			24 hrs TSP	1 hr TSP x 3 Ecology	
18-Jul	19-Jul	20-Jul	21-Jul	22-Jul	23-Jul	24-Jul
			24 hrs TSP	1 hr TSP x 3 Noise Ecology		
25-Jul	26-Jul	27-Jul	28-Jul	29-Jul	30-Jul	31-Jul
		24 hrs TSP	1 hr TSP x 3 Noise		Ecology	

Air Quality Monitoring Station

1-hr TSP

AM1 - Wai Loi Tsuen

AM2 - Fu Tei Au

24-hr TSP

AM1a - Site Boundary of the Shek Wu Hui STW (East)

AM2a - Site Boundary of the Shek Wu Hui STW (North)

Noise Monitoring Station

NM1 - Wai Loi Tsuen

NM2 - Fu Tei Au

NM3 - Man kok Village

**APPENDIX C
COPIES OF CALIBRATION
CERTIFICATES FOR AIR QUALITY
MONITORING**

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 1-Jun-21
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 1-Aug-21
 Model No.: LD-5R
 Serial No.: 972777
 Equipment No.: SA-01-06 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 645
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 645

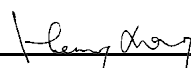
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	61.0	146.0
2	53.0	139.0
3	44.0	130.0
Average	52.7	138.3
By Linear Regression of Y on X Slope , mw = <u>0.9424</u> Intercept, bw = <u>88.7005</u> Correlation coefficient* = <u>0.9993</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)		138.3
Particulate Concentration by Dust Meter (µg/m ³)		52.7
Measureing time, (min)		60.0
Set Correlation Factor , SCF SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)] <u>2.6</u>		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)

Certificate of Calibration

It is certified that the item under calibration has been calibrated by corresponding calibrated High Volume Sampler


Description: Digital Dust Indicator Date of Calibration 1-Jun-21
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 1-Aug-21
 Model No.: LD-5R
 Serial No.: 972778
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-03 Before Sensitivity Adjustment 735 CPM
 Tisch Calibration Orifice No.: 3864 After Sensitivity Adjustment 735 CPM

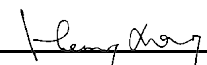
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration (µg/m ³) X-axis	Mass concentration (µg/m ³) Y-axis
1	62.0	146.0
2	57.0	139.0
3	49.0	130.0
Average	56.0	138.3
By Linear Regression of Y on X Slope , mw = <u>1.2209</u> Intercept, bw = <u>69.9612</u> Correlation coefficient* = <u>0.9982</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler (µg/m ³)		138.3
Particulate Concentration by Dust Meter (µg/m ³)		56.0
Measureing time, (min)		60.0
Set Correlation Factor , SCF SCF = [K=High Volume Sampler / Dust Meter, (µg/m ³)] <u>2.5</u>		

In-house method in according to the instruction manual:

The Dust Monitor was compared with a calibrated High Volume Sampler and The result was used to generate the Correlation Factor (CF) between the Dust Monitor and High Volume Sampler.

Those filter papers are weighted by HOKLAS laboratory (HPCT Litimed)

Calibrated by: 
 Technical Officer. (Wong Shing Kwai)

Approved by: 
 Project Manager (Henry Leung)



RECALIBRATION DUE DATE:
January 11, 2022

Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 11, 2021	Rootsmeter S/N: 438320	Ta: 297 °K	
Operator: Jim Tisch		Pa: 750.1 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 3864		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4470	3.2	2.00
2	3	4	1	1.0210	6.4	4.00
3	5	6	1	0.9140	8.0	5.00
4	7	8	1	0.8670	8.8	5.50
5	9	10	1	0.7140	12.9	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)}$ (y-axis)
0.9860	0.6814	1.4073	0.9957	0.6881	0.8899
0.9818	0.9616	1.9902	0.9915	0.9711	1.2585
0.9797	1.0719	2.2251	0.9893	1.0824	1.4071
0.9786	1.1288	2.3337	0.9883	1.1399	1.4757
0.9732	1.3630	2.8146	0.9828	1.3765	1.7798
QSTD	m=	2.06566	QA	m=	1.29348
	b=	0.00315		b=	0.00199
	r=	0.99996		r=	0.99996

Calculations	
$Vstd = \Delta Vol \left(\frac{Pa - \Delta P}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)$	$Va = \Delta Vol \left(\frac{Pa - \Delta P}{Pa} \right)$
$Qstd = Vstd / \Delta Time$	$Qa = Va / \Delta Time$
For subsequent flow rate calculations:	
$Qstd = 1/m \left(\left(\sqrt{\Delta H \left(\frac{Pa}{Pstd} \right) \left(\frac{Tstd}{Ta} \right)} \right) - b \right)$	$Qa = 1/m \left(\left(\sqrt{\Delta H \left(\frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric 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

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA19019/17/0010

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)
 Date: 6-May-21 Next Due Date: 6-Jul-21 Operator: SK
 Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	<u>298.2</u>	Pressure, Pa (mmHg)	<u>761.4</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	<u>11-Jan-22</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.2</u>	3.64	62.24	<u>10.1</u>	3.18
2	<u>10.4</u>	3.23	55.25	<u>7.5</u>	2.74
3	<u>8.1</u>	2.85	48.77	<u>5.6</u>	2.37
4	<u>5.4</u>	2.33	39.83	<u>3.4</u>	1.84
5	<u>2.8</u>	1.67	28.69	<u>1.9</u>	1.38

By Linear Regression of Y on X

Slope, mw = 0.0540 Intercept, bw = -0.2347
 Correlation coefficient* = 0.9968

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


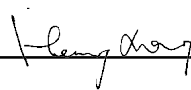
From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.36

Remarks: _____

Conducted by: SK Wong Signature:  Date: 6 May 2021
 Checked by: Henry Leung Signature:  Date: 6 May 2021

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET

File No. MA19019/24/0010

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)
 Date: 6-May-21 Next Due Date: 6-Jul-21 Operator: SK
 Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	<u>298.2</u>	Pressure, Pa (mmHg)	<u>761.4</u>

Orifice Transfer Standard Information					
Serial No.	<u>3864</u>	Slope, mc	<u>0.05846</u>	Intercept, bc	<u>-0.00313</u>
Last Calibration Date:	<u>11-Jan-21</u>	$mc \times Qstd + bc = [\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$ $Qstd = \{[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2} - bc\} / mc$			
Next Calibration Date:	<u>11-Jan-22</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	ΔH (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	ΔW (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.2</u>	3.64	62.24	<u>10.3</u>	3.21
2	<u>10.8</u>	3.29	56.30	<u>8.3</u>	2.88
3	<u>8.4</u>	2.90	49.66	<u>6.1</u>	2.47
4	<u>6.2</u>	2.49	42.67	<u>4.0</u>	2.00
5	<u>3.0</u>	1.73	29.70	<u>1.8</u>	1.34

By Linear Regression of Y on X

Slope, mw = 0.0583 Intercept, bw = -0.4226
 Correlation coefficient* = 0.9987

*If Correlation Coefficient < 0.990, check and recalibrate.

Set Point Calculation


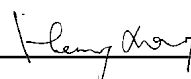
From the TSP Field Calibration Curve, take Qstd = 43 CFM

From the Regression Equation, the "Y" value according to

$$mw \times Qstd + bw = [\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$$

Therefore, Set Point; W = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.34

Remarks: _____

Conducted by: SK Wong Signature:  Date: 6 May 2021
 Checked by: Henry Leung Signature:  Date: 6 May 2021

Certificate of Calibration - Wind Monitoring Station

Description: BM3 - Control Room at SWHSTW
 Manufacturer: Global Water Instrumentation
 Model No.: WE800 Weather Station
 Serial No.: 1517001963
 Equipment No.: SA-03-01
 Date of Calibration: 29-Apr-2021
 Next Due Date: 29-Oct-2021

1. Performance check of Wind Speed

Wind Speed, m/s		Difference D (m/s)
Wind Speed Reading (V1)	Anemometer Value (V1)	$D = V1 - V2$
0.0	0.0	0.0
1.5	1.5	0.0
2.0	2.2	-0.2
3.0	3.0	0.0

2. Performance check of Wind Direction

Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

Test Specification:

1. Performance Wind Speed Test - The wind meter was on-site calibrated against the anemometer
2. Performance Wind Direction Test - The wind meter was on-site calibrated against the marine compass at four direction

Calibrated by: _____

Wong Shing Kwai

Approved by: _____

Henry Leung

APPENDIX D
WEATHER INFORMATION

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

I. General Information from Hong Kong Observatory

Date	Mean Air Temperature (°C)	Mean Relative Humidity (%)	Precipitation (mm)
1-Jun-21	26.5	91	45.8
2-Jun-21	28.3	85	2.4
3-Jun-21	30.3	77	0
4-Jun-21	28.4	84	7.5
5-Jun-21	27.3	73	Trace
6-Jun-21	28.2	74	Trace
7-Jun-21	28.7	78	Trace
8-Jun-21	29.3	79	0.9
9-Jun-21	27.9	87	48.6
10-Jun-21	28.8	83	29.4
11-Jun-21	29.1	82	31.2
12-Jun-21	27.7	89	30.3
13-Jun-21	28.9	85	2.8
14-Jun-21	29.3	81	0.3
15-Jun-21	29.6	79	6.2
16-Jun-21	30.6	76	0
17-Jun-21	30.4	77	9.6
18-Jun-21	30.6	77	3.9
19-Jun-21	30.6	77	Trace
20-Jun-21	30.7	78	0
21-Jun-21	30.4	80	1.2
22-Jun-21	27.0	87	75.3
23-Jun-21	26.4	88	66.4
24-Jun-21	26.0	91	20.8
25-Jun-21	27.1	87	6.8
26-Jun-21	27.9	90	61.3
27-Jun-21	29.4	84	5.8
28-Jun-21	27.7	89	166.5
29-Jun-21	29.6	82	4.6
30-Jun-21	30.1	79	0.4

* The above information was extracted from the daily extract of Ta Kwu Ling Station in Hong Kong Observatory Climate Information Service.

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
1-Jun-21	0:00	172.4	0.1
1-Jun-21	1:00	174.2	0.1
1-Jun-21	2:00	32.3	0.1
1-Jun-21	3:00	30.9	0.1
1-Jun-21	4:00	31.8	0.1
1-Jun-21	5:00	20.8	0.1
1-Jun-21	6:00	64.9	0.1
1-Jun-21	7:00	213.1	1.1
1-Jun-21	8:00	218.2	0.7
1-Jun-21	9:00	230.6	0.8
1-Jun-21	10:00	194.6	1.2
1-Jun-21	11:00	209.1	1.3
1-Jun-21	12:00	222.7	3.4
1-Jun-21	13:00	221.6	2.2
1-Jun-21	14:00	196.1	0.1
1-Jun-21	15:00	203.0	0.2
1-Jun-21	16:00	220.2	0.1
1-Jun-21	17:00	208.3	0.2
1-Jun-21	18:00	197.9	0.1
1-Jun-21	19:00	231.1	0.1
1-Jun-21	20:00	203.5	0.5
1-Jun-21	21:00	215.2	0.2
1-Jun-21	22:00	206.0	0.3
1-Jun-21	23:00	286.1	0.2
2-Jun-21	0:00	185.4	0.3
2-Jun-21	1:00	116.8	0.1
2-Jun-21	2:00	73.8	0.1
2-Jun-21	3:00	68.6	0.2
2-Jun-21	4:00	102.2	0.2
2-Jun-21	5:00	55.5	0.4
2-Jun-21	6:00	106.7	0.2
2-Jun-21	7:00	213.1	0.2
2-Jun-21	8:00	235.6	0.6
2-Jun-21	9:00	207.4	0.3
2-Jun-21	10:00	231.0	0.8

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
2-Jun-21	11:00	218.3	1.4
2-Jun-21	12:00	207.2	0.4
2-Jun-21	13:00	195.3	0.8
2-Jun-21	14:00	282.9	1.8
2-Jun-21	15:00	278.8	0.3
2-Jun-21	16:00	187.6	0.4
2-Jun-21	17:00	186.2	0.3
2-Jun-21	18:00	51.2	0.2
2-Jun-21	19:00	230.1	0.2
2-Jun-21	20:00	145.1	0.2
2-Jun-21	21:00	75.7	0.2
2-Jun-21	22:00	178.5	0.2
2-Jun-21	23:00	172.6	0.4
3-Jun-21	0:00	188.0	0.2
3-Jun-21	1:00	215.1	0.6
3-Jun-21	2:00	205.2	0.6
3-Jun-21	3:00	221.2	0.8
3-Jun-21	4:00	183.1	0.2
3-Jun-21	5:00	156.2	0.3
3-Jun-21	6:00	217.7	0.1
3-Jun-21	7:00	185.3	0.1
3-Jun-21	8:00	199.3	0.2
3-Jun-21	9:00	159.3	0.3
3-Jun-21	10:00	210.0	0.5
3-Jun-21	11:00	182.7	0.6
3-Jun-21	12:00	212.4	3.5
3-Jun-21	13:00	195.9	2.7
3-Jun-21	14:00	179.0	1.1
3-Jun-21	15:00	198.8	1.1
3-Jun-21	16:00	227.9	0.6
3-Jun-21	17:00	189.4	0.2
3-Jun-21	18:00	214.9	0.1
3-Jun-21	19:00	229.6	0.1
3-Jun-21	20:00	214.0	0.1
3-Jun-21	21:00	183.3	0.2

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
3-Jun-21	22:00	200.4	0.1
3-Jun-21	23:00	206.6	0.1
4-Jun-21	0:00	222.4	0.2
4-Jun-21	1:00	247.5	0.1
4-Jun-21	2:00	193.5	0.1
4-Jun-21	3:00	231.5	0.1
4-Jun-21	4:00	213.9	0.1
4-Jun-21	5:00	172.3	0.1
4-Jun-21	6:00	186.9	0.1
4-Jun-21	7:00	203.2	0.8
4-Jun-21	8:00	207.0	0.5
4-Jun-21	9:00	215.9	1.1
4-Jun-21	10:00	222.7	1.9
4-Jun-21	11:00	242.7	1.7
4-Jun-21	12:00	210.6	2.0
4-Jun-21	13:00	273.6	0.9
4-Jun-21	14:00	224.8	0.7
4-Jun-21	15:00	207.7	2.1
4-Jun-21	16:00	222.6	1.5
4-Jun-21	17:00	234.6	1.5
4-Jun-21	18:00	244.7	0.1
4-Jun-21	19:00	222.9	0.2
4-Jun-21	20:00	203.7	0.4
4-Jun-21	21:00	213.6	0.1
4-Jun-21	22:00	209.6	0.5
4-Jun-21	23:00	194.1	0.2
5-Jun-21	0:00	202.7	0.3
5-Jun-21	1:00	195.9	0.2
5-Jun-21	2:00	262.5	0.2
5-Jun-21	3:00	190.4	0.2
5-Jun-21	4:00	204.5	0.1
5-Jun-21	5:00	235.6	0.1
5-Jun-21	6:00	238.9	0.4
5-Jun-21	7:00	228.2	1.1
5-Jun-21	8:00	216.2	0.8

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
5-Jun-21	9:00	178.8	1.4
5-Jun-21	10:00	229.4	1.0
5-Jun-21	11:00	169.6	0.5
5-Jun-21	12:00	218.4	1.1
5-Jun-21	13:00	201.0	0.3
5-Jun-21	14:00	205.0	0.7
5-Jun-21	15:00	226.2	2.0
5-Jun-21	16:00	165.5	0.5
5-Jun-21	17:00	213.6	0.3
5-Jun-21	18:00	183.8	0.1
5-Jun-21	19:00	215.8	0.1
5-Jun-21	20:00	74.1	0.2
5-Jun-21	21:00	247.8	0.1
5-Jun-21	22:00	208.9	0.2
5-Jun-21	23:00	230.3	0.1
6-Jun-21	0:00	242.1	0.2
6-Jun-21	1:00	112.3	0.1
6-Jun-21	2:00	140.8	0.1
6-Jun-21	3:00	149.6	0.1
6-Jun-21	4:00	53.7	0.2
6-Jun-21	5:00	69.2	0.2
6-Jun-21	6:00	66.5	0.1
6-Jun-21	7:00	64.0	0.2
6-Jun-21	8:00	146.9	0.3
6-Jun-21	9:00	142.9	0.3
6-Jun-21	10:00	137.1	0.4
6-Jun-21	11:00	152.8	0.4
6-Jun-21	12:00	78.5	0.4
6-Jun-21	13:00	125.0	0.6
6-Jun-21	14:00	171.9	0.7
6-Jun-21	15:00	62.8	0.6
6-Jun-21	16:00	238.1	0.5
6-Jun-21	17:00	265.0	0.5
6-Jun-21	18:00	96.2	0.4
6-Jun-21	19:00	90.4	0.4

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
6-Jun-21	20:00	199.5	0.5
6-Jun-21	21:00	37.6	0.4
6-Jun-21	22:00	53.1	0.4
6-Jun-21	23:00	66.0	0.4
7-Jun-21	0:00	92.5	0.1
7-Jun-21	1:00	77.9	0.1
7-Jun-21	2:00	95.1	0.1
7-Jun-21	3:00	40.7	0.2
7-Jun-21	4:00	272.0	0.2
7-Jun-21	5:00	49.8	0.1
7-Jun-21	6:00	131.5	0.5
7-Jun-21	7:00	123.4	0.5
7-Jun-21	8:00	182.9	0.9
7-Jun-21	9:00	217.7	2.5
7-Jun-21	10:00	69.2	0.5
7-Jun-21	11:00	76.5	0.6
7-Jun-21	12:00	83.8	0.6
7-Jun-21	13:00	86.0	0.4
7-Jun-21	14:00	96.2	0.3
7-Jun-21	15:00	107.8	0.2
7-Jun-21	16:00	88.5	0.2
7-Jun-21	17:00	71.0	0.2
7-Jun-21	18:00	106.1	0.2
7-Jun-21	19:00	104.2	0.3
7-Jun-21	20:00	58.4	0.2
7-Jun-21	21:00	180.8	0.3
7-Jun-21	22:00	49.4	0.4
7-Jun-21	23:00	63.0	0.4
8-Jun-21	0:00	142.1	0.2
8-Jun-21	1:00	166.6	0.2
8-Jun-21	2:00	162.2	0.2
8-Jun-21	3:00	69.4	0.3
8-Jun-21	4:00	229.6	0.4
8-Jun-21	5:00	64.7	0.5
8-Jun-21	6:00	262.7	0.6

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
8-Jun-21	7:00	261.0	0.5
8-Jun-21	8:00	144.0	0.5
8-Jun-21	9:00	80.2	0.6
8-Jun-21	10:00	60.8	0.7
8-Jun-21	11:00	23.1	0.7
8-Jun-21	12:00	166.3	0.5
8-Jun-21	13:00	64.4	0.5
8-Jun-21	14:00	75.6	0.4
8-Jun-21	15:00	171.6	0.2
8-Jun-21	16:00	48.1	0.2
8-Jun-21	17:00	98.5	0.2
8-Jun-21	18:00	68.0	0.2
8-Jun-21	19:00	78.9	0.2
8-Jun-21	20:00	57.8	0.2
8-Jun-21	21:00	65.1	0.3
8-Jun-21	22:00	69.9	0.2
8-Jun-21	23:00	20.7	0.3
9-Jun-21	0:00	107.0	0.3
9-Jun-21	1:00	147.9	0.2
9-Jun-21	2:00	178.9	0.2
9-Jun-21	3:00	156.3	0.1
9-Jun-21	4:00	157.2	0.1
9-Jun-21	5:00	181.8	0.1
9-Jun-21	6:00	225.8	0.2
9-Jun-21	7:00	198.2	0.2
9-Jun-21	8:00	213.9	0.1
9-Jun-21	9:00	215.4	0.4
9-Jun-21	10:00	232.0	0.8
9-Jun-21	11:00	194.7	0.4
9-Jun-21	12:00	199.3	0.8
9-Jun-21	13:00	199.1	2.4
9-Jun-21	14:00	215.1	1.5
9-Jun-21	15:00	237.3	1.1
9-Jun-21	16:00	208.6	1.4
9-Jun-21	17:00	193.0	1.0

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
9-Jun-21	18:00	204.2	0.9
9-Jun-21	19:00	201.4	0.8
9-Jun-21	20:00	178.3	0.8
9-Jun-21	21:00	63.0	0.8
9-Jun-21	22:00	13.2	0.7
9-Jun-21	23:00	50.5	0.6
10-Jun-21	0:00	66.5	0.6
10-Jun-21	1:00	60.5	0.6
10-Jun-21	2:00	44.2	0.6
10-Jun-21	3:00	30.0	0.6
10-Jun-21	4:00	55.9	0.6
10-Jun-21	5:00	45.3	0.7
10-Jun-21	6:00	43.9	0.5
10-Jun-21	7:00	271.5	0.3
10-Jun-21	8:00	206.3	2.0
10-Jun-21	9:00	196.7	2.2
10-Jun-21	10:00	211.2	2.1
10-Jun-21	11:00	239.2	1.8
10-Jun-21	12:00	205.0	1.0
10-Jun-21	13:00	236.9	1.7
10-Jun-21	14:00	205.4	0.6
10-Jun-21	15:00	192.1	1.9
10-Jun-21	16:00	199.0	0.5
10-Jun-21	17:00	235.1	1.1
10-Jun-21	18:00	220.7	0.4
10-Jun-21	19:00	223.2	0.3
10-Jun-21	20:00	214.6	0.3
10-Jun-21	21:00	193.6	0.3
10-Jun-21	22:00	23.5	0.2
10-Jun-21	23:00	14.3	0.2
11-Jun-21	0:00	12.0	0.2
11-Jun-21	1:00	21.7	0.2
11-Jun-21	2:00	41.7	0.2
11-Jun-21	3:00	22.3	0.2
11-Jun-21	4:00	33.7	0.2

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
11-Jun-21	5:00	163.4	0.2
11-Jun-21	6:00	49.8	0.1
11-Jun-21	7:00	265.6	0.1
11-Jun-21	8:00	229.3	0.1
11-Jun-21	9:00	227.8	0.4
11-Jun-21	10:00	254.6	1.1
11-Jun-21	11:00	262.5	2.3
11-Jun-21	12:00	253.9	1.5
11-Jun-21	13:00	233.4	0.3
11-Jun-21	14:00	237.0	0.8
11-Jun-21	15:00	284.6	0.7
11-Jun-21	16:00	196.1	1.2
11-Jun-21	17:00	208.6	1.3
11-Jun-21	18:00	228.6	0.2
11-Jun-21	19:00	249.6	0.1
11-Jun-21	20:00	244.4	0.1
11-Jun-21	21:00	188.1	0.1
11-Jun-21	22:00	132.3	0.1
11-Jun-21	23:00	246.3	0.1
12-Jun-21	0:00	116.1	0.1
12-Jun-21	1:00	122.2	0.1
12-Jun-21	2:00	166.8	0.1
12-Jun-21	3:00	258.2	0.1
12-Jun-21	4:00	263.5	0.1
12-Jun-21	5:00	161.9	0.1
12-Jun-21	6:00	50.7	0.1
12-Jun-21	7:00	91.7	0.1
12-Jun-21	8:00	213.5	0.2
12-Jun-21	9:00	81.5	0.1
12-Jun-21	10:00	277.4	0.2
12-Jun-21	11:00	82.3	0.1
12-Jun-21	12:00	91.2	0.3
12-Jun-21	13:00	155.0	1.0
12-Jun-21	14:00	146.1	0.2
12-Jun-21	15:00	126.9	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
12-Jun-21	16:00	138.2	0.2
12-Jun-21	17:00	61.7	0.1
12-Jun-21	18:00	149.2	0.2
12-Jun-21	19:00	133.9	0.2
12-Jun-21	20:00	66.5	0.1
12-Jun-21	21:00	73.5	0.1
12-Jun-21	22:00	58.3	0.1
12-Jun-21	23:00	63.5	0.1
13-Jun-21	0:00	40.5	0.1
13-Jun-21	1:00	46.1	0.1
13-Jun-21	2:00	48.8	0.1
13-Jun-21	3:00	47.0	0.1
13-Jun-21	4:00	20.7	0.2
13-Jun-21	5:00	63.3	0.2
13-Jun-21	6:00	39.2	0.2
13-Jun-21	7:00	47.0	0.3
13-Jun-21	8:00	51.2	0.5
13-Jun-21	9:00	106.0	0.8
13-Jun-21	10:00	42.8	0.7
13-Jun-21	11:00	82.9	0.9
13-Jun-21	12:00	120.9	0.9
13-Jun-21	13:00	92.1	0.9
13-Jun-21	14:00	87.7	1.0
13-Jun-21	15:00	104.9	0.4
13-Jun-21	16:00	94.1	0.4
13-Jun-21	17:00	88.1	1.4
13-Jun-21	18:00	108.9	0.7
13-Jun-21	19:00	77.2	0.9
13-Jun-21	20:00	77.7	0.7
13-Jun-21	21:00	72.1	0.8
13-Jun-21	22:00	101.1	0.5
13-Jun-21	23:00	49.3	0.4
14-Jun-21	0:00	136.4	2.2
14-Jun-21	1:00	147.8	1.3
14-Jun-21	2:00	87.2	0.6

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
14-Jun-21	3:00	184.2	0.5
14-Jun-21	4:00	115.0	0.4
14-Jun-21	5:00	180.2	0.6
14-Jun-21	6:00	119.2	0.6
14-Jun-21	7:00	156.4	0.5
14-Jun-21	8:00	202.3	0.4
14-Jun-21	9:00	153.2	0.8
14-Jun-21	10:00	150.1	1.3
14-Jun-21	11:00	192.6	1.2
14-Jun-21	12:00	210.8	0.9
14-Jun-21	13:00	162.0	0.9
14-Jun-21	14:00	112.5	1.0
14-Jun-21	15:00	154.7	1.0
14-Jun-21	16:00	157.3	3.1
14-Jun-21	17:00	51.0	0.5
14-Jun-21	18:00	87.9	0.9
14-Jun-21	19:00	57.0	0.8
14-Jun-21	20:00	66.3	0.5
14-Jun-21	21:00	105.3	0.3
14-Jun-21	22:00	68.1	0.4
14-Jun-21	23:00	71.1	0.5
15-Jun-21	0:00	42.4	0.6
15-Jun-21	1:00	57.0	0.4
15-Jun-21	2:00	40.2	0.4
15-Jun-21	3:00	61.3	0.4
15-Jun-21	4:00	61.6	0.4
15-Jun-21	5:00	71.1	0.4
15-Jun-21	6:00	150.2	0.6
15-Jun-21	7:00	164.7	0.7
15-Jun-21	8:00	232.4	0.8
15-Jun-21	9:00	182.4	2.8
15-Jun-21	10:00	229.5	2.6
15-Jun-21	11:00	223.0	1.2
15-Jun-21	12:00	203.0	2.6
15-Jun-21	13:00	245.4	2.2

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
15-Jun-21	14:00	241.3	1.1
15-Jun-21	15:00	199.4	2.6
15-Jun-21	16:00	200.8	1.6
15-Jun-21	17:00	227.9	1.1
15-Jun-21	18:00	222.7	0.7
15-Jun-21	19:00	219.1	0.7
15-Jun-21	20:00	224.1	0.6
15-Jun-21	21:00	247.8	0.6
15-Jun-21	22:00	142.0	0.5
15-Jun-21	23:00	197.8	0.5
16-Jun-21	0:00	111.3	0.5
16-Jun-21	1:00	244.2	0.4
16-Jun-21	2:00	171.7	0.4
16-Jun-21	3:00	350.8	0.4
16-Jun-21	4:00	35.0	0.4
16-Jun-21	5:00	166.3	0.4
16-Jun-21	6:00	196.0	0.2
16-Jun-21	7:00	166.0	0.1
16-Jun-21	8:00	260.5	1.9
16-Jun-21	9:00	210.6	0.9
16-Jun-21	10:00	235.2	1.1
16-Jun-21	11:00	228.0	2.1
16-Jun-21	12:00	192.2	0.2
16-Jun-21	13:00	217.9	0.6
16-Jun-21	14:00	199.9	1.9
16-Jun-21	15:00	226.9	4.3
16-Jun-21	16:00	188.8	1.1
16-Jun-21	17:00	250.9	1.5
16-Jun-21	18:00	159.2	0.3
16-Jun-21	19:00	89.4	0.2
16-Jun-21	20:00	205.1	0.2
16-Jun-21	21:00	48.3	0.2
16-Jun-21	22:00	162.8	0.2
16-Jun-21	23:00	44.1	0.2
17-Jun-21	0:00	41.1	0.2

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
17-Jun-21	1:00	253.0	0.1
17-Jun-21	2:00	98.3	0.2
17-Jun-21	3:00	67.4	0.2
17-Jun-21	4:00	43.6	0.2
17-Jun-21	5:00	90.8	0.4
17-Jun-21	6:00	57.7	0.2
17-Jun-21	7:00	138.8	0.4
17-Jun-21	8:00	233.3	0.6
17-Jun-21	9:00	213.1	0.5
17-Jun-21	10:00	195.6	2.1
17-Jun-21	11:00	207.0	1.3
17-Jun-21	12:00	239.9	0.6
17-Jun-21	13:00	212.1	1.5
17-Jun-21	14:00	217.7	2.1
17-Jun-21	15:00	198.4	1.2
17-Jun-21	16:00	228.8	1.5
17-Jun-21	17:00	217.8	0.9
17-Jun-21	18:00	192.0	0.3
17-Jun-21	19:00	222.3	0.3
17-Jun-21	20:00	124.7	0.4
17-Jun-21	21:00	52.6	0.4
17-Jun-21	22:00	33.0	0.4
17-Jun-21	23:00	35.8	0.4
18-Jun-21	0:00	206.0	0.4
18-Jun-21	1:00	20.9	0.4
18-Jun-21	2:00	131.9	0.4
18-Jun-21	3:00	207.8	0.4
18-Jun-21	4:00	210.7	0.4
18-Jun-21	5:00	203.7	0.5
18-Jun-21	6:00	246.0	0.2
18-Jun-21	7:00	225.2	0.2
18-Jun-21	8:00	217.1	1.9
18-Jun-21	9:00	187.5	0.4
18-Jun-21	10:00	205.8	0.3
18-Jun-21	11:00	212.5	0.3

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
18-Jun-21	12:00	179.2	1.2
18-Jun-21	13:00	201.4	1.7
18-Jun-21	14:00	190.6	2.5
18-Jun-21	15:00	202.9	3.8
18-Jun-21	16:00	200.9	0.9
18-Jun-21	17:00	166.6	0.2
18-Jun-21	18:00	226.7	0.3
18-Jun-21	19:00	199.0	0.2
18-Jun-21	20:00	214.4	0.1
18-Jun-21	21:00	193.2	0.1
18-Jun-21	22:00	210.4	0.1
18-Jun-21	23:00	194.5	0.1
19-Jun-21	0:00	179.7	0.1
19-Jun-21	1:00	223.4	0.1
19-Jun-21	2:00	148.9	0.1
19-Jun-21	3:00	157.3	0.1
19-Jun-21	4:00	89.1	0.1
19-Jun-21	5:00	122.3	0.1
19-Jun-21	6:00	241.8	0.1
19-Jun-21	7:00	235.3	0.3
19-Jun-21	8:00	204.8	0.8
19-Jun-21	9:00	173.9	0.8
19-Jun-21	10:00	164.5	1.4
19-Jun-21	11:00	230.6	2.0
19-Jun-21	12:00	269.5	2.4
19-Jun-21	13:00	230.8	1.7
19-Jun-21	14:00	259.4	1.1
19-Jun-21	15:00	199.3	0.2
19-Jun-21	16:00	218.2	1.7
19-Jun-21	17:00	210.6	0.3
19-Jun-21	18:00	200.9	0.2
19-Jun-21	19:00	221.7	0.2
19-Jun-21	20:00	196.9	0.1
19-Jun-21	21:00	215.4	0.1
19-Jun-21	22:00	226.9	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
19-Jun-21	23:00	129.7	0.1
20-Jun-21	0:00	115.1	0.5
20-Jun-21	1:00	249.9	1.1
20-Jun-21	2:00	205.4	1.8
20-Jun-21	3:00	202.8	2.2
20-Jun-21	4:00	259.1	0.8
20-Jun-21	5:00	154.7	0.9
20-Jun-21	6:00	33.2	0.2
20-Jun-21	7:00	237.2	0.3
20-Jun-21	8:00	225.2	0.1
20-Jun-21	9:00	252.7	0.2
20-Jun-21	10:00	286.2	0.1
20-Jun-21	11:00	218.9	0.2
20-Jun-21	12:00	204.6	0.1
20-Jun-21	13:00	193.9	0.9
20-Jun-21	14:00	189.9	0.1
20-Jun-21	15:00	208.5	0.1
20-Jun-21	16:00	226.3	0.1
20-Jun-21	17:00	235.8	0.1
20-Jun-21	18:00	219.9	0.2
20-Jun-21	19:00	205.9	0.2
20-Jun-21	20:00	220.2	0.1
20-Jun-21	21:00	211.7	0.1
20-Jun-21	22:00	211.3	0.1
20-Jun-21	23:00	204.1	0.1
21-Jun-21	0:00	197.2	0.1
21-Jun-21	1:00	198.5	0.1
21-Jun-21	2:00	199.1	0.1
21-Jun-21	3:00	207.9	0.1
21-Jun-21	4:00	221.8	0.1
21-Jun-21	5:00	235.5	0.1
21-Jun-21	6:00	214.7	0.1
21-Jun-21	7:00	238.8	0.4
21-Jun-21	8:00	220.4	3.2
21-Jun-21	9:00	254.1	0.5

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
21-Jun-21	10:00	222.9	2.3
21-Jun-21	11:00	251.6	2.3
21-Jun-21	12:00	230.4	1.6
21-Jun-21	13:00	222.9	1.1
21-Jun-21	14:00	228.5	0.8
21-Jun-21	15:00	199.5	0.9
21-Jun-21	16:00	227.5	0.6
21-Jun-21	17:00	235.1	0.3
21-Jun-21	18:00	207.5	0.2
21-Jun-21	19:00	189.3	0.1
21-Jun-21	20:00	211.0	0.1
21-Jun-21	21:00	207.0	0.2
21-Jun-21	22:00	228.0	0.4
21-Jun-21	23:00	195.5	0.1
22-Jun-21	0:00	188.7	0.5
22-Jun-21	1:00	208.9	0.2
22-Jun-21	2:00	204.1	1.3
22-Jun-21	3:00	186.0	0.1
22-Jun-21	4:00	207.7	0.1
22-Jun-21	5:00	211.4	0.1
22-Jun-21	6:00	173.2	0.2
22-Jun-21	7:00	166.2	0.7
22-Jun-21	8:00	214.3	0.6
22-Jun-21	9:00	210.3	1.6
22-Jun-21	10:00	226.7	1.6
22-Jun-21	11:00	189.2	0.6
22-Jun-21	12:00	212.8	0.5
22-Jun-21	13:00	215.3	1.7
22-Jun-21	14:00	202.2	1.0
22-Jun-21	15:00	207.5	1.5
22-Jun-21	16:00	220.5	1.3
22-Jun-21	17:00	185.9	0.9
22-Jun-21	18:00	208.6	0.2
22-Jun-21	19:00	229.9	0.1
22-Jun-21	20:00	220.3	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
22-Jun-21	21:00	169.1	0.1
22-Jun-21	22:00	228.1	0.1
22-Jun-21	23:00	172.5	0.7
23-Jun-21	0:00	237.0	0.1
23-Jun-21	1:00	217.4	0.2
23-Jun-21	2:00	225.9	0.1
23-Jun-21	3:00	194.4	0.1
23-Jun-21	4:00	220.4	0.1
23-Jun-21	5:00	268.3	0.1
23-Jun-21	6:00	247.5	0.2
23-Jun-21	7:00	247.4	0.8
23-Jun-21	8:00	254.2	1.8
23-Jun-21	9:00	256.1	0.8
23-Jun-21	10:00	212.7	1.2
23-Jun-21	11:00	208.5	0.6
23-Jun-21	12:00	257.2	1.8
23-Jun-21	13:00	228.0	1.3
23-Jun-21	14:00	215.0	3.1
23-Jun-21	15:00	227.2	0.7
23-Jun-21	16:00	221.0	0.8
23-Jun-21	17:00	230.2	2.4
23-Jun-21	18:00	214.0	1.2
23-Jun-21	19:00	220.4	0.2
23-Jun-21	20:00	247.8	0.1
23-Jun-21	21:00	220.9	0.1
23-Jun-21	22:00	218.2	0.1
23-Jun-21	23:00	224.6	0.2
24-Jun-21	0:00	240.4	0.1
24-Jun-21	1:00	275.2	0.3
24-Jun-21	2:00	221.4	0.1
24-Jun-21	3:00	199.4	0.1
24-Jun-21	4:00	214.9	0.1
24-Jun-21	5:00	217.8	0.1
24-Jun-21	6:00	290.0	0.1
24-Jun-21	7:00	228.0	0.3

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
24-Jun-21	8:00	220.6	0.7
24-Jun-21	9:00	258.4	2.4
24-Jun-21	10:00	288.7	0.4
24-Jun-21	11:00	235.5	1.7
24-Jun-21	12:00	216.6	0.3
24-Jun-21	13:00	189.9	1.9
24-Jun-21	14:00	216.7	2.3
24-Jun-21	15:00	232.1	1.9
24-Jun-21	16:00	211.6	0.5
24-Jun-21	17:00	258.6	0.5
24-Jun-21	18:00	216.7	0.2
24-Jun-21	19:00	194.9	0.1
24-Jun-21	20:00	219.2	0.4
24-Jun-21	21:00	202.3	0.4
24-Jun-21	22:00	209.1	0.9
24-Jun-21	23:00	207.8	1.0
25-Jun-21	0:00	206.6	0.4
25-Jun-21	1:00	240.3	0.1
25-Jun-21	2:00	206.2	0.6
25-Jun-21	3:00	227.9	0.5
25-Jun-21	4:00	186.5	0.4
25-Jun-21	5:00	191.8	0.6
25-Jun-21	6:00	224.7	0.3
25-Jun-21	7:00	206.9	0.7
25-Jun-21	8:00	221.4	0.2
25-Jun-21	9:00	187.7	1.2
25-Jun-21	10:00	195.8	0.6
25-Jun-21	11:00	198.0	1.5
25-Jun-21	12:00	206.2	2.6
25-Jun-21	13:00	221.2	4.4
25-Jun-21	14:00	212.4	1.8
25-Jun-21	15:00	190.5	1.4
25-Jun-21	16:00	195.3	3.0
25-Jun-21	17:00	216.6	2.7
25-Jun-21	18:00	192.1	0.5

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
25-Jun-21	19:00	173.0	0.1
25-Jun-21	20:00	232.5	0.1
25-Jun-21	21:00	213.3	0.1
25-Jun-21	22:00	212.2	0.3
25-Jun-21	23:00	210.3	0.6
26-Jun-21	0:00	178.6	0.2
26-Jun-21	1:00	184.9	0.1
26-Jun-21	2:00	181.2	0.2
26-Jun-21	3:00	240.4	0.1
26-Jun-21	4:00	186.1	0.1
26-Jun-21	5:00	167.6	0.1
26-Jun-21	6:00	249.6	0.3
26-Jun-21	7:00	213.8	0.1
26-Jun-21	8:00	227.7	0.3
26-Jun-21	9:00	184.2	0.3
26-Jun-21	10:00	191.8	0.2
26-Jun-21	11:00	197.7	0.4
26-Jun-21	12:00	264.2	0.6
26-Jun-21	13:00	175.6	1.4
26-Jun-21	14:00	238.7	2.0
26-Jun-21	15:00	206.7	0.3
26-Jun-21	16:00	198.0	1.0
26-Jun-21	17:00	216.5	1.8
26-Jun-21	18:00	214.0	0.4
26-Jun-21	19:00	195.3	0.2
26-Jun-21	20:00	242.2	0.2
26-Jun-21	21:00	223.5	0.1
26-Jun-21	22:00	219.6	0.1
26-Jun-21	23:00	212.5	0.1
27-Jun-21	0:00	225.6	0.1
27-Jun-21	1:00	214.6	0.1
27-Jun-21	2:00	230.4	0.1
27-Jun-21	3:00	181.6	0.1
27-Jun-21	4:00	212.4	0.1
27-Jun-21	5:00	219.9	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
27-Jun-21	6:00	39.4	0.1
27-Jun-21	7:00	222.4	0.1
27-Jun-21	8:00	236.0	0.4
27-Jun-21	9:00	220.8	0.1
27-Jun-21	10:00	217.7	0.5
27-Jun-21	11:00	197.9	0.8
27-Jun-21	12:00	191.9	1.7
27-Jun-21	13:00	179.8	1.0
27-Jun-21	14:00	199.0	1.3
27-Jun-21	15:00	218.2	2.0
27-Jun-21	16:00	163.1	0.9
27-Jun-21	17:00	207.1	0.3
27-Jun-21	18:00	256.7	0.2
27-Jun-21	19:00	196.2	0.2
27-Jun-21	20:00	223.3	0.1
27-Jun-21	21:00	208.0	0.1
27-Jun-21	22:00	219.9	0.1
27-Jun-21	23:00	213.2	0.3
28-Jun-21	0:00	237.3	0.1
28-Jun-21	1:00	207.8	0.1
28-Jun-21	2:00	106.4	0.1
28-Jun-21	3:00	229.5	0.1
28-Jun-21	4:00	107.8	0.1
28-Jun-21	5:00	65.4	0.1
28-Jun-21	6:00	210.4	0.2
28-Jun-21	7:00	243.6	0.2
28-Jun-21	8:00	174.3	0.9
28-Jun-21	9:00	218.1	2.6
28-Jun-21	10:00	203.4	2.5
28-Jun-21	11:00	205.4	2.1
28-Jun-21	12:00	255.7	0.5
28-Jun-21	13:00	273.0	0.2
28-Jun-21	14:00	231.1	0.5
28-Jun-21	15:00	169.5	1.4
28-Jun-21	16:00	226.7	0.8

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
28-Jun-21	17:00	213.4	0.7
28-Jun-21	18:00	224.1	0.3
28-Jun-21	19:00	227.7	0.2
28-Jun-21	20:00	214.7	0.3
28-Jun-21	21:00	150.4	0.1
28-Jun-21	22:00	226.9	0.1
28-Jun-21	23:00	231.9	0.1
29-Jun-21	0:00	116.8	0.1
29-Jun-21	1:00	200.4	0.1
29-Jun-21	2:00	123.0	0.1
29-Jun-21	3:00	69.5	0.1
29-Jun-21	4:00	54.3	0.1
29-Jun-21	5:00	117.4	0.1
29-Jun-21	6:00	59.7	0.1
29-Jun-21	7:00	162.9	0.1
29-Jun-21	8:00	126.0	0.3
29-Jun-21	9:00	190.8	0.3
29-Jun-21	10:00	170.6	0.2
29-Jun-21	11:00	209.6	0.7
29-Jun-21	12:00	190.3	0.4
29-Jun-21	13:00	242.4	0.8
29-Jun-21	14:00	189.6	0.2
29-Jun-21	15:00	222.3	0.4
29-Jun-21	16:00	246.7	1.5
29-Jun-21	17:00	211.5	0.5
29-Jun-21	18:00	206.7	0.2
29-Jun-21	19:00	177.8	0.1
29-Jun-21	20:00	119.4	0.1
29-Jun-21	21:00	69.5	0.2
29-Jun-21	22:00	133.9	0.1
29-Jun-21	23:00	194.8	0.1
30-Jun-21	0:00	50.8	0.1
30-Jun-21	1:00	39.6	0.1
30-Jun-21	2:00	149.1	0.1
30-Jun-21	3:00	250.2	0.1

**APPENDIX D –
WEATHER CONDITIONS DURING THE MONITORING PERIOD**

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
30-Jun-21	4:00	131.9	0.1
30-Jun-21	5:00	244.6	0.1
30-Jun-21	6:00	143.0	0.1
30-Jun-21	7:00	229.4	0.1
30-Jun-21	8:00	183.3	0.2
30-Jun-21	9:00	208.0	0.6
30-Jun-21	10:00	98.9	0.5
30-Jun-21	11:00	222.9	0.4
30-Jun-21	12:00	208.1	0.3
30-Jun-21	13:00	239.7	1.0
30-Jun-21	14:00	280.4	0.7
30-Jun-21	15:00	289.7	0.6
30-Jun-21	16:00	185.6	0.2
30-Jun-21	17:00	140.0	0.1
30-Jun-21	18:00	145.8	0.1
30-Jun-21	19:00	44.1	0.1
30-Jun-21	20:00	78.1	0.1
30-Jun-21	21:00	72.1	0.1
30-Jun-21	22:00	93.7	0.1
30-Jun-21	23:00	75.1	0.1

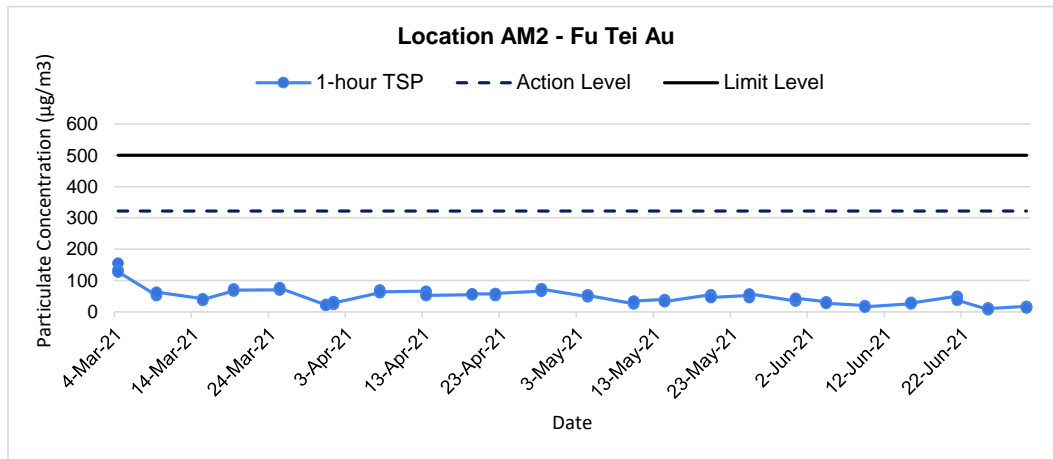
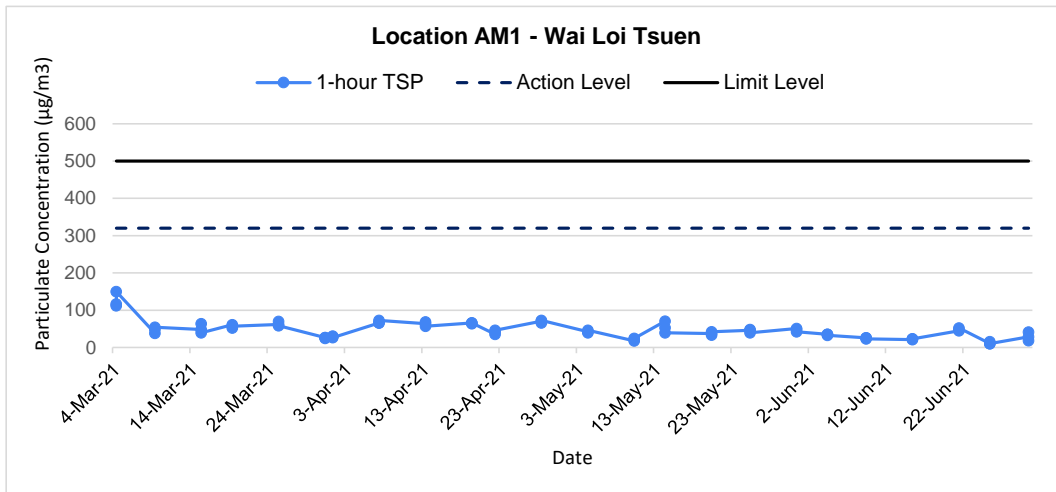
**APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Wai Loi Tsuen			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Jun-21	9:05	Cloudy	35.0
4-Jun-21	10:05	Cloudy	35.0
4-Jun-21	11:05	Cloudy	32.5
9-Jun-21	10:00	Rainy	26.0
9-Jun-21	11:00	Rainy	26.0
9-Jun-21	12:00	Rainy	23.4
15-Jun-21	13:35	Sunny	20.7
15-Jun-21	14:35	Sunny	23.0
15-Jun-21	15:35	Sunny	23.0
21-Jun-21	9:00	Sunny	45.0
21-Jun-21	10:00	Sunny	47.5
21-Jun-21	11:00	Sunny	52.5
25-Jun-21	9:35	Fine	10.4
25-Jun-21	10:35	Fine	15.6
25-Jun-21	11:35	Fine	10.4
30-Jun-21	9:00	Sunny	28.6
30-Jun-21	10:00	Sunny	18.2
30-Jun-21	11:00	Sunny	41.6
		Average	28.6
		Maximum	52.5
		Minimum	10.4

Location AM2 - Fu Tei Au			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
4-Jun-21	13:00	Cloudy	32.5
4-Jun-21	14:00	Cloudy	30.0
4-Jun-21	15:00	Cloudy	27.5
9-Jun-21	13:10	Rainy	20.7
9-Jun-21	14:10	Rainy	16.1
9-Jun-21	15:10	Rainy	16.1
15-Jun-21	9:30	Sunny	26.0
15-Jun-21	10:30	Sunny	31.2
15-Jun-21	11:30	Sunny	28.6
21-Jun-21	13:00	Sunny	50.0
21-Jun-21	14:00	Sunny	42.5
21-Jun-21	15:00	Sunny	37.5
25-Jun-21	15:00	Fine	7.8
25-Jun-21	16:00	Fine	13.0
25-Jun-21	17:00	Fine	10.4
30-Jun-21	13:30	Sunny	18.2
30-Jun-21	14:30	Sunny	15.6
30-Jun-21	15:30	Sunny	13.0
		Average	24.3
		Maximum	50.0
		Minimum	7.8

1-hr TSP Concentration Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of 1-hour TSP Monitoring Results	Date Jun 2021	Project No. MA19019	
		Appendix E	

**APPENDIX F
24-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS**

Appendix F - 24-hour TSP Monitoring Results

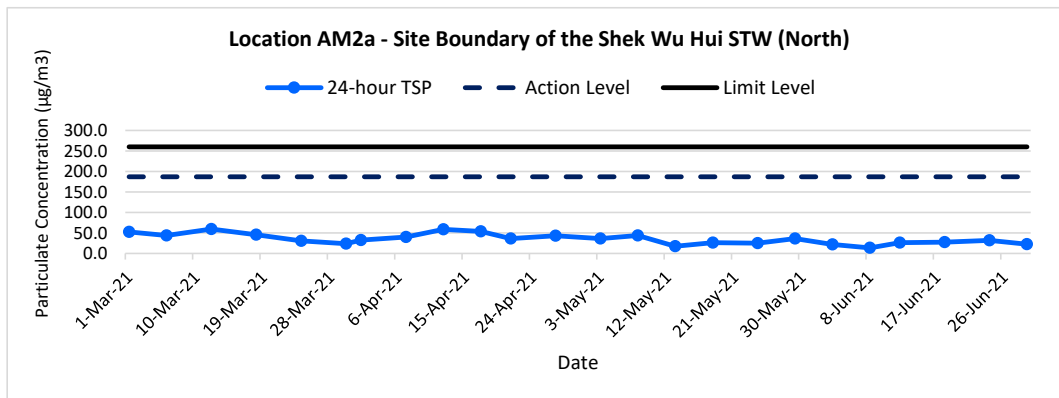
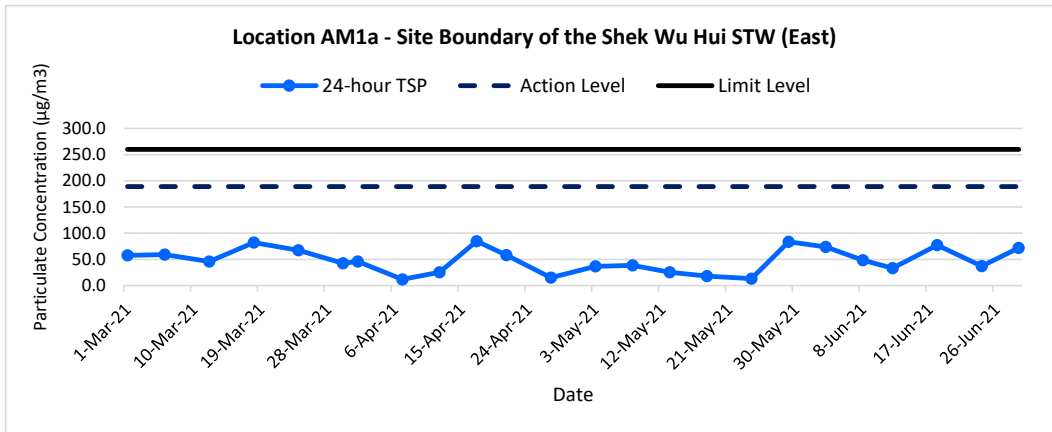
Location AM1a - Site Boundary of the Shek Wu Hui STW (East)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m ³ /min.)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Jun-21	Cloudy	302.4	755.1	3.6616	3.7898	0.1282	10364.8	10388.8	24.0	1.20	1.21	1.21	1736.5	73.8
8-Jun-21	Rainy	301.6	756.7	3.6696	3.7535	0.0839	10388.8	10412.8	24.0	1.21	1.21	1.21	1740.1	48.2
12-Jun-21	Sunny	301.3	757.0	3.6945	3.7527	0.0582	10412.8	10436.8	24.0	1.21	1.21	1.21	1741.2	33.4
18-Jun-21	Sunny	303.6	755.4	3.6559	3.7899	0.1340	10436.8	10460.8	24.0	1.20	1.20	1.20	1733.6	77.3
24-Jun-21	Fine	299.6	755.6	3.6956	3.7601	0.0645	10460.8	10484.8	24.0	1.21	1.21	1.21	1744.3	37.0
29-Jun-21	Sunny	302.9	755.2	3.6758	3.8005	0.1247	10484.8	10508.8	24.0	1.21	1.20	1.21	1735.3	71.9
													Min	33.4
													Max	77.3
													Average	56.9

Location AM2a - Site Boundary of the Shek Wu Hui STW (North)

Start Date	Weather Condition	Air Temp. (K)	Atmospheric Pressure, Pa (mmHg)	Filter Weight (g)		Particulate weight (g)	Elapse Time		Sampling Time (hrs.)	Flow Rate (m ³ /min.)		Av. Flow (m ³ /min)	Total vol. (m ³)	Conc. (µg/m ³)
				Initial	Final		Initial	Final		Initial	Final			
3-Jun-21	Cloudy	302.4	755.1	3.6449	3.6826	0.0376	20583.3	20607.3	24.0	1.20	1.21	1.21	1736.5	21.7
8-Jun-21	Rainy	301.6	756.7	3.6526	3.6761	0.0235	20607.3	20631.3	24.0	1.21	1.21	1.21	1739.7	13.5
12-Jun-21	Sunny	301.3	757.0	3.6968	3.7423	0.0455	20631.3	20655.3	24.0	1.21	1.21	1.21	1740.8	26.2
18-Jun-21	Sunny	303.6	755.4	3.6894	3.7369	0.0476	20655.3	20679.3	24.0	1.20	1.20	1.20	1733.7	27.4
24-Jun-21	Fine	299.6	755.6	3.7018	3.7571	0.0552	20679.3	20703.3	24.0	1.21	1.21	1.21	1743.6	31.7
29-Jun-21	Cloudy	302.9	755.2	3.6984	3.7370	0.0386	20703.3	20727.3	24.0	1.21	1.20	1.21	1735.4	22.2
													Min	13.5
													Max	31.7
													Average	23.8

24-hr TSP Concentration Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Date Jun 2021	Project No. MA19019	
Graphical Presentation of 24-hour TSP Monitoring Results		Appendix F	

**APPENDIX G
COPIES OF CALIBRATION
CERTIFICATES FOR NOISE
MONITORING**



Equipment no.: N-12-01

Calibration Certificate

0024993

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570183 / 550233 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024993 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.4dB	-0.6dB	+/- 1.5dB	1
114.0dB	113.2dB	-0.8dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager



Equipment no.: N-12-02

Calibration Certificate

0024995

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong Customer Code : SVEC09005	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570187 / 550841 Object 2 : Serial No. /Ref. No. : Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024995 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.1dB	-0.9dB	+/- 1.5dB	1
114.0dB	113.1dB	-0.9dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Mr. K.S. Ng

Quality Manager



Equipment no.: N-12-03

Calibration Certificate

0024996

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570188 / 550850 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 07/10/2020 Date of the recommended re-calibration: 07/10/2021	Certificate No.: 0024996 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	92.9dB	-1.1dB	+/- 1.5dB	1
114.0dB	112.8dB	-1.2dB	+/- 1.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Calibrator with Master Sound Level Meter under 1kHz Frequency.

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Quality Manager

Mr. K.S. Ng



Equipment no.: N-13-01

Calibration Certificate**0025247**

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001608 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : Soundtek
Date of calibration: 05/11/2020 Date of the recommended re-calibration: 05/11/2021	Certificate No.: 0025247 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 0.3dB	1
114.0dB	113.6dB	-0.4dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** the allowable deviation.

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Quality Manager



Equipment no. : N-13-02

Calibration Certificate**0025249**

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : ST-120 sound calibrator Serial No. /Ref. No. : 181001636 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : Soundtek
Date of calibration: 05/11/2020 Date of the recommended re-calibration: 05/11/2021	Certificate No.: 0025249 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 0.3dB	1
114.0dB	113.6dB	-0.4dB	+/- 0.5dB	1

Measuring equipment

index	Calibrator / Master	Traceability
1	Master Sound Meter, SVAN949,sn:8571	IEC61672
2	Sound Calibrator, SV30A sn:32580	IEC60942

Ambient conditions

Temperature (20...26)°C

Humidity (20...60)%RH

Measuring procedure

Calibrated by Type 1 Sound Level Meter and 1kHz Sound Source .

Uncertainty

+/- 0.2dB for probability not less than 95%.

Conformity

- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring system.
- 3.The equipment being used in this calibration are regularly calibrated by laboratory according to ISO/IEC17025.
- 4.HKAS has accredited this laboratory (HOKLAS 267) for specific calibration activities as listed in the HOKLAS directory of accredited laboratories.
- 5.The calibrations certificate may not be reproduced.

Measured value(s) **within** **the allowable deviation.**

Performed by

Calibration Technician

Mr. K.L. Ng

Approved by

Quality Manager

**APPENDIX H
NOISE MONITORING RESULTS AND
GRAPHICAL PRESENTATIONS**

Appendix H - Noise Monitoring Results

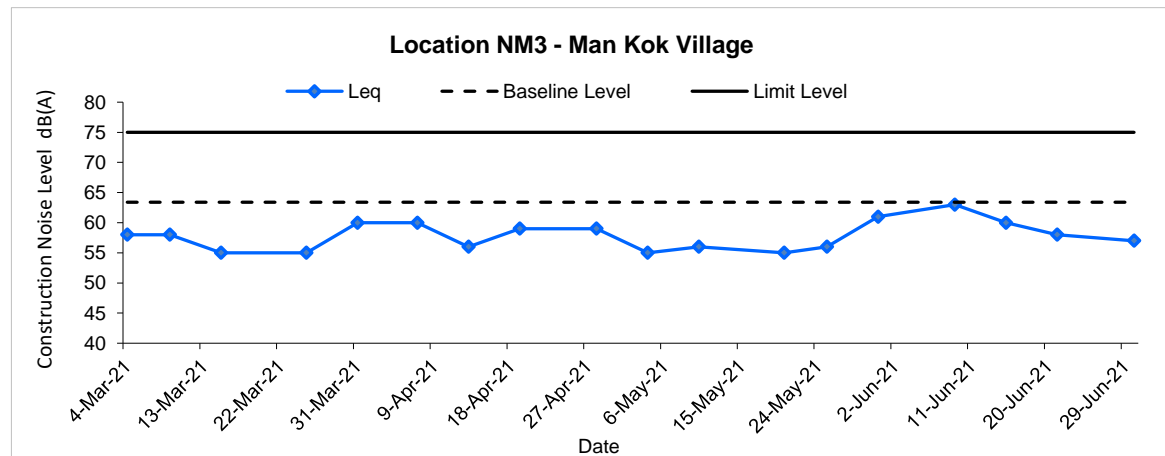
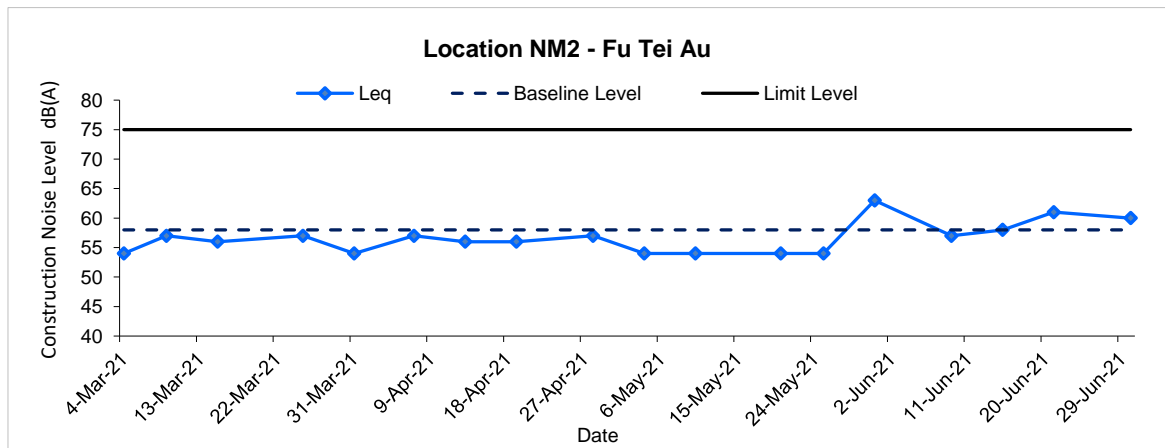
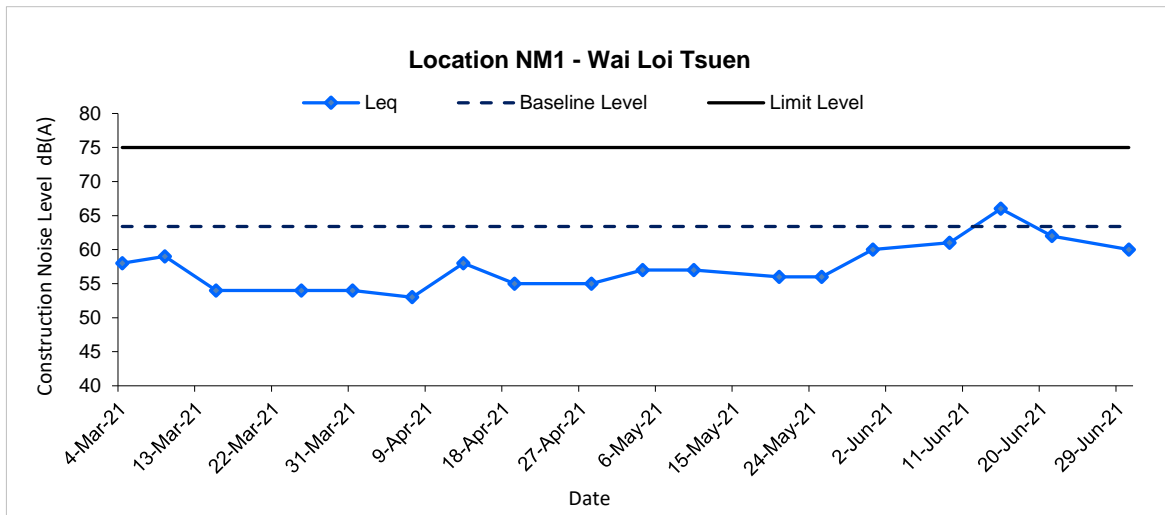
(0700-1900 hrs on Normal Weekdays)

Location NM1 - Wai Loi Tsuen							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
9-Jun-21	11:20	Rainy	61.3	63.7	57.7	63.4	61.3 Measured ≤ Baseline
15-Jun-21	13:00	Sunny	67.6	69.3	59.7	63.4	65.5
21-Jun-21	10:00	Sunny	62.1	63.9	55.2	63.4	62.1 Measured ≤ Baseline
30-Jun-21	9:00	Sunny	59.7	63.9	52.5	63.4	59.7 Measured ≤ Baseline

Location NM2 - Fu Tei Au							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
9-Jun-21	13:20	Rainy	56.5	56.6	52.5	58.0	56.5 Measured ≤ Baseline
15-Jun-21	11:30	Rainy	61.0	62.6	58.7	58.0	58.0
21-Jun-21	11:25	Sunny	62.9	63.3	57.5	58.0	61.2
30-Jun-21	13:30	Sunny	62.1	64.1	59.2	58.0	60.0

Location NM3 - Man Kok Village							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L _{eq}	L ₁₀	L ₉₀	L _{eq}	L _{eq}
9-Jun-21	14:00	Rainy	63.1	65.6	51.2	63.4	63.1 Measured ≤ Baseline
15-Jun-21	14:10	Sunny	65.0	65.7	57.1	63.4	59.9
21-Jun-21	10:45	Sunny	64.6	66.4	55.8	63.4	58.4
30-Jun-21	10:00	Sunny	57.4	58.9	55.5	63.4	57.4 Measured ≤ Baseline

Noise Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of Construction Noise Monitoring Results	Date Jun 2021	Project No. MA19019	
		Appendix H	

**APPENDIX I
ECOLOGICAL MONITORING RESULTS
AND ANALYSIS**

MA19019 - Ecological Monitoring Result and Analysis

Table I: Recorded Bird Species and their Abundance in the Reporting Month

Scientific Name	Common Name	Chinese Name	Waterbird	Point Count Abundance	Transect Abundance
<i>Acridotheres cristatellus</i>	Crested Myna	八哥		237	+++++
<i>Actitis hypoleucos</i>	Common Sandpiper	磯鵲	*	1	
<i>Anthus hodgsoni</i>	Olive Backed Pipit	樹鵲		6	+
<i>Apus nipalensis</i>	House Swift	小白腰雨燕		3	+
<i>Ardea alba</i>	Great Egret	大白鷺	*	10	+
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	*	22	++
<i>Buteo japonicus</i>	Eastern Buzzard	普通鵟	*	0	+
<i>Centropus sinensis</i>	Greater Coucal	褐翅鴉鵂		7	+
<i>Ceryle rudis</i>	Pied Kingfisher	斑魚狗	*	0	+
<i>Copsychus saularis</i>	Magpie Robin	鵲鴝		6	+
<i>Corvus macrorhynchos</i>	Jungle Crow	大嘴烏鴉		14	++
<i>Corvus torquatus</i>	Collared Crow	白頸鴉	*	1	+
<i>Dicrurus macrocercus</i>	Black Drongo	黑卷尾		0	+
<i>Egretta garzetta</i>	Little Egret	小白鷺	*	71	+++++
<i>Egretta intermedia</i>	Intermediate Egret	中白鷺	*	3	
<i>Eudynamis scolopacea</i>	Common Koel	噪鵲		10	++
<i>Garrulax perspicillatus</i>	Masked Laughing Thrush	黑臉噪鵲		9	+
<i>Halcyon smyrnensis</i>	White-throated Kingfisher	白胸翡翠	*	2	
<i>Hierococcyx sparverioides</i>	Large Hawk Cuckoo	大鷹鵂		2	
<i>Hirundo rustica</i>	Barn Swallow	家燕		84	+++++
<i>Lonchura punctulata</i>	Spotted Munia	斑文鳥		9	+
<i>Lonchura striata</i>	White-rumped Munia	白腰文鳥		9	+
<i>Milvus migrans</i>	Black Kite	黑鳶	*	0	+
<i>Motacilla alba</i>	White Wagtail	白鶺鴒		28	+
<i>Motacilla cinerea</i>	Grey Wagtail	灰鶺鴒		0	+
<i>Myophonus caeruleus</i>	Blue Whistling Thrush	紫嘯鶇		0	+
<i>Orthotomus sutorius</i>	Common Tailorbird	長尾縫葉鶇		28	++
<i>Parus cinereus</i>	Cinereous Tit	蒼背山雀		1	+
<i>Passer montanus</i>	Eurasian Tree Sparrow	樹麻雀		33	+++
<i>Phylloscopus fuscatus</i>	Dusky Warbler	褐柳鶇		0	+
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	黃眉柳鶇		1	
<i>Phylloscopus proregulus</i>	Pallas's Leaf Warbler	黃腰柳鶇		2	
<i>Pica pica</i>	Magpie	喜鵲		4	+
<i>Prinia flaviventris</i>	Yellow-bellied Prinia	黃腹鷓鴣		2	+
<i>Pycnonotus jocosus</i>	Crested bulbul	紅耳鶇		36	+++
<i>Pycnonotus sinensis</i>	Chinese Bulbul	白頭鶇		31	+++
<i>Streptopelia chinensis</i>	Spotted Dove	珠頸斑鳩		53	+++
<i>Sturnus nigricollis</i>	Black-necked Starling	黑領棕鳥		37	+++
<i>Turdus hortulorum</i>	Grey-backed Thrush	灰背鶇		1	
<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie	紅咀藍鶇		1	+
<i>Zosterops japonicus</i>	Japanese White-eye	暗綠繡眼鳥		8	+
Total Point Count Abundance				831	
Total Waterbirds				169	

*For waterbird

For transect abundance, +: <10, ++: 11-20, +++: 21-30, ++++: 31-40, +++++: >40

Remarks: (1) According to S4.7 of the approved Baseline Monitoring Report (Ecology), "waterbirds" was defined as "waterbirds and wetland-dependent species", which was referenced to Monthly Waterbird Monitoring Biannual Reports prepared by the Hong Kong Bird Watching Society (Anon, 2018). Also, S.13.11.3.2 of NENT NDA EIA Study requires "Monitoring of Measures to Mitigate for Impacts of the Project on Wetland-dependent Fauna using the Ng Tung, Sheung Yue and Shek Sheung Rivers". Therefore, "wetland-dependent birds" should be considered as "waterbirds". As raptors and Collared Crow are "wetland-dependent species", they should be taken into consideration in data analysis and impact assessment on waterbirds.

Agreement No. SPW 07/2019		Project No.	CINOTECH
Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		MA19019	
Monthly Data Analysis for Ecological Monitoring	Date	Appendix	
	June 2021	I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Jun
Season Summer

Table II : Total Bird Abundance from Point Count						
Survey Information				Total Bird Abundance from Point Count		
No.	Date	Time	Tide Level	Individuals Recorded	Total	Species Recorded
#1	3 Jun 2021	15:00	High	113	204	18
		13:00	Low	91		11
#2	7 Jun 2021	9:00	High	85	181	14
		12:30	Low	96		10
#3	18 Jun 2021	14:00	High	105	230	13
		10:00	Low	125		14
#4	21 Jun 2021	9:00	High	118	216	14
		13:30	Low	98		21
Overall Total					831	

Table III: Total Waterbird Abundance from Point Count						
Survey Information				Numbers of Waterbirds		
No.	Date	Time	Tide Level	Individuals Recorded	Total	
#1	3 Jun 2021	15:00	High	19	50	
		13:00	Low	31		
#2	7 Jun 2021	9:00	High	15	41	
		12:30	Low	26		
#3	18 Jun 2021	14:00	High	12	34	
		10:00	Low	22		
#4	21 Jun 2021	9:00	High	15	44	
		13:30	Low	29		
Overall Total					169	
Average					42	

Table IV: T-Test Analysis for All Waterbirds

Baseline Data

Monthly Average Abundance (Jun) 50.33
Seasonal Average Abundance (Summer) 45.34

T-test

The following hypothesis was made and a one-tail t-test will be used to test the data collected from the monitoring:

- H₀ The data collected in the reporting month falls within the normal distribution when compared to the baseline monitoring data.
H₁ The data collected does not falls within the normal distribution when compared to the baseline monitoring data.

If t-test value is smaller than the critical value, then rejects H₀.

For the data in the reporting month, the critical values are:

Crit. Value = -2.353 (95% Confidence Level)
Crit. Value = -4.541 (99% Confidence Level)

		Confidence Level		
T-values of Data in Reporting Month		95%	99%	
Abundance	Monthly	-2.430	✗	✓
	Season	-0.930	✓	✓

Overall: ✓ ✓

Remarks:

- ✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.
✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

Agreement No. SPW 07/2019		Project No.	CINOTECH
Shek Wu Hui Effluent Polishing Plant - Main Work Stage		MA19019	
Monthly Data Analysis for Ecological Monitoring	Date	Appendix	
	June 2021	I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month June
 Season Summer

Table V: Abundance of Representative Waterbirds from Point Count											
Representative Species			Recorded Abundance					Baseline Data			
Species Name	Common Name	Chinese Name	3 Jun 2021	7 Jun 2021	18 Jun 2021	21 Jun 2021		Total	Average	Avg (June)	Avg (Summer)
<i>Egretta garzetta</i>	Little Egret	小白鷺	22	18	16	15		71	18	22	21
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	0	0	0	0		0	0	0	1
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	13	16	14	16		59	15	20	16
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿	0	0	0	0		0	0	0	0
<i>Ardea alba</i>	Great Egret	大白鷺	4	2	1	3		10	3	3	3
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	7	5	2	8		22	6	4	3

Table VI: T-test Analysis for Representative Waterbirds from Point Count

The following hypothesis was made and a one-tail t-test will be used to test the data collected from the monitoring:

H₀ The data collected in the reporting month falls within the normal distribution when compare to the baseline monitoring data.

H₁ The data collected does not falls within the normal distribution when compare to the baseline monitoring data.

If t-test value for a specific representative is smaller than the critical value, then rejects H₀.

For the data in the reporting month, the critical values are:

Crit. Value = -2.353 (95% Confidence Level)

Crit. Value = -4.541 (99% Confidence Level)


Representative Species			T-value	Confidence Level		T-value	Confidence Level		Overall
Species Name	Common Name	Chinese Name	Monthly	95%	99%	Seasonal	95%	99%	
<i>Egretta garzetta</i>	Little Egret	小白鷺	-2.746	✗	✓	-1.794	✓	✓	✓
<i>Ardea cinerea</i>	Grey Heron	蒼鷺				N/A*			
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	-7.444	✗	✗	-1.912	✓	✓	✓
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿				N/A*			
<i>Ardea alba</i>	Great Egret	大白鷺	-0.602	✓	✓	-0.163	✓	✓	✓
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	1.134	✓	✓	1.651	✓	✓	✓

Remarks

* Great Cormorant (*Phalacrocorax carbo*) and Grey Heron (*Ardea cinerea*) were not recognised as representative waterbird species during Summer.

✓ = T-value falls within the confidence level, the impact monitoring data shows no significant difference to the baseline data.

✗ = T-value falls outside the confidence level, the impact monitoring data shows significant difference to the baseline data.

Agreement No. SPW 07/2019 Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		Project No. MA19019	
Monthly Data Analysis for Ecological Monitoring		Date June 2021	

**APPENDIX J
PHOTO RECORDS OF ECOLOGICAL
MONITORING**

Appendix J - Photo Records of Ecological Monitoring

Part A - Conditions of Rivers



Sheung Yue River (Taken on 3 June 2021)



Ng Tung River (Taken on 3 June 2021)



Shek Sheung River (Taken on 3 June 2021)

Part B – Waterbird Species

	
<p><i>Ardea alba</i> (Taken on 3 June 2021)</p>	<p><i>Egretta garzetta</i> (Taken on 3 June 2021)</p>
	
<p><i>Ardeola bacchus</i> (Taken on 3 June 2021)</p>	<p><i>Bubulcus coromandus</i> (Taken on 3 June 2021)</p>
	
<p><i>Milvus migrans</i> (Taken on 3 June 2021)</p>	

Part C – Human Activities & Site Conditions



Excavation & Crane (Project-related, taken on 3 June 2021)



Sheet-piling, generator & welding works (Non-project-related, taken on 3 June 2021)



Jaywalking & Fishing (Project-related, taken on 18 June 2021)



APPENDIX K
SITE AUDIT SUMMARY

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210601
Date	1 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 210526): Item 210526-R1 was rectified/improved by the Contractor.	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		1 June 2021
Checked by	Ms. Betty Choi		2 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210610
Date	10 June 2021 (Thursday)
Time	9:30 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210601).	



	Name	Signature	Date
Recorded by	Mr. Macavity Yau		10 June 2021
Checked by	Ms. Betty Choi		11 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210615
Date	15 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210610).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		15 June 2021
Checked by	Ms. Betty Choi		16 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210622
Date	22 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210615).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		22 June 2021
Checked by	Ms. Betty Choi		23 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/06

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210629
Date	29 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210622).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		29 June 2021
Checked by	Ms. Betty Choi		30 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210601
Date	1 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210526).	


	Name	Signature	Date
Recorded by	Ms. Echo Hung		1 June 2021
Checked by	Ms. Betty Choi		2 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210610
Date	10 June 2021 (Thursday)
Time	9:30 – 12:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210601).	

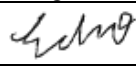

	Name	Signature	Date
Recorded by	Mr. Macavity Yau		10 June 2021
Checked by	Ms. Betty Choi		11 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210615
Date	15 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210610).	

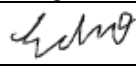

	Name	Signature	Date
Recorded by	Ms. Echo Hung		15 June 2021
Checked by	Ms. Betty Choi		16 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210622
Date	22 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210615).	

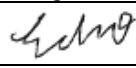

	Name	Signature	Date
Recorded by	Ms. Echo Hung		22 June 2021
Checked by	Ms. Betty Choi		23 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DC/2018/07

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210629
Date	29 June 2021 (Tuesday)
Time	9:30 – 11:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210622).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		29 June 2021
Checked by	Ms. Betty Choi		30 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/03

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210601
Date	1 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210526).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		1 June 2021
Checked by	Ms. Betty Choi		2 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/03

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210608
Date	8 June 2021 (Tuesday)
Time	10:00 – 11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210601).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		8 June 2021
Checked by	Ms. Betty Choi		9 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/03

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210615
Date	15 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210608).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		15 June 2021
Checked by	Ms. Betty Choi		16 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/03

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210622
Date	22 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210615).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		22 June 2021
Checked by	Ms. Betty Choi		23 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/03

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210629
Date	29 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210622).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		29 June 2021
Checked by	Ms. Betty Choi		30 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/04

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210601
Date	1 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210526).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		1 June 2021
Checked by	Ms. Betty Choi		2 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/04

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210608
Date	8 June 2021 (Tuesday)
Time	10:00 – 11:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210601).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		8 June 2021
Checked by	Ms. Betty Choi		9 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/04

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210615
Date	15 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210608).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		15 June 2021
Checked by	Ms. Betty Choi		16 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/04

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210622
Date	22 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210615).	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		22 June 2021
Checked by	Ms. Betty Choi		23 June 2021

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1
Contract No. DE/2018/04

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	210629
Date	29 June 2021 (Tuesday)
Time	10:30 – 11:30

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<i>B. Water Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during the site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 210622).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		29 June 2021
Checked by	Ms. Betty Choi		30 June 2021

**APPENDIX L
WASTE FLOW TABLE**

Monthly Summary Waste Flow Table for 2021

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000m3)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m3)
Jan	10.034	0.000	0.000	8.257	1.777	0.606	0.000	0.000	0.002	0.000	0.038
Feb	3.703	0.000	0.000	2.871	0.833	0.071	2.120	0.000	0.000	0.000	0.024
Mar	4.644	0.000	0.000	2.190	2.454	0.037	0.000	0.000	0.006	0.000	0.044
Apr	0.211	0.000	0.023	0.000	0.188	0.167	0.000	0.000	0.008	0.000	0.042
May	0.557	0.000	0.218	0.000	0.340	0.149	0.001	0.002	0.008	0.000	0.081
Jun	0.348	0.000	0.000	0.000	0.348	0.074	8.210	0.000	0.000	0.000	0.069
Sub-total	19.497	0.000	0.240	13.317	5.939	1.103	10.331	0.002	0.023	0.000	0.299
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	19.497	0.000	0.240	13.317	5.939	1.103	10.331	0.002	0.023	0.000	0.299

- Notes:
1. Assume the density of soil fill is 2 ton/m³.
 2. Assume the density of rock and broken concrete is 2.5 ton/m³.
 3. Assume the density of general refuse is 0.9 ton/m³.
 4. Assume density of waste oil is assumed to be 0.8 kg/L.
 5. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38.
 6. The slurry and bentonite are disposed at Tseung Kwun O 137.
 7. The non-inert C&D wastes are disposed at NENT.

Monthly Summary Waste Flow Table for 2021

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	0.836	0.000	0.000	0.000	0.836	0.301	21.25	0.000	0.002	0.000	0.006
Feb	0.911	0.000	0.000	0.000	0.911	0.376	39.35	0.000	0.000	0.000	0.007
Mar	0.954	0.000	0.000	0.000	0.954	0.202	0.00	0.000	0.003	0.000	0.016
Apr	0.550	0.000	0.000	0.046	0.504	0.000	0.00	0.000	0.008	0.000	0.009
May	1.368	0.000	0.000	0.149	1.220	0.000	0.00	0.000	0.008	0.000	0.012
Jun	0.670	0.000	0.000	0.074	0.596	0.000	0.00	0.010	0.000	0.000	0.012
Sub-total	5.290	0.000	0.000	0.269	5.021	0.879	60.60	0.010	0.020	0.000	0.062
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	5.290	0.000	0.000	0.269	5.021	0.879	60.60	0.010	0.020	0.000	0.062

- Notes:
1. Assume the density of soil fill and special waste (i.e. sediment from DSD sedimentation tank) is 2 ton/m³.
 2. Assume the density of rock and broken concrete is 2.5 ton/m³
 3. Assume the density of general refuse is 0.9 ton/m³
 4. Density of waste oil is assumed to be 0.8 kg/L. Chemical waste includes waste oil.
 5. The inert C&D materials except slurry and bentonite are disposed at Tuen Mun 38
 6. The slurry and bentonite are disposed at Tseung Kwun O 137
 7. The non-inert C&D wastes, including general refuse & special waste (i.e. sediment from DSD sedimentation tank) are disposed at NENT

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

Contract No.: DE/2018/03

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000m ³)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m ³)
Jan	9.53 T	0	0	0	9.53 T	0	0	0	0	0	0
Feb	3.47T	0	0	0	3.47 T	0	0	0	0	0	0
Mar	14.79T	0	0	0	14.79T	0	0	0	0	0	0
Apr	7.21T	0	0	0	7.21T	0	0	0	0	0	0
May	11.34T	0	0	0	11.34T	0	0	0	0	0	0
June	328.08T	0	0	0	328.08T	0	0	0	0	0	0
Sub-total	374.42T	0	0	0	374.42T	0	0	0	0	0	0
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	374.42T	0	0	0	374.42T	0	0	0	0	0	0

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

- Notes:
- (1) The performance targets are given in PS Clause 6A.27.8(14).
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material
 - (4) The *Contractor* shall also submit the latest forecast of the total amount of C&D materials expected to be generated from the Works, together with a breakdown of the nature where the total amount of C&D materials expected to be generated from the Works is equal to or exceeding 50,000 m³. (PS Clause 6.21.7(4)(b) refer

Monthly Summary Waste Flow Table for 2021 (year)

Month	Actual Quantities of Inert C&D Materials Generated Monthly						Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse
	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
Jan	230.16	0	0	0	230.16	0	0	0	0	0	1.54
Feb	175.98	0	100	0	75.98	0	0	0	0	0	3.63
Mar	11.98	0	0	0	11.98	0	0	0	0	0	1.35
Apr	0	0	0	0	0	0	0	0	0	0	1.48
May	0	0	0	0	0	0	0	0	0	0	3.25
June	0	0	0	0	0	0	0	0	0	0	2.01
Sub-total	418.12	0	100	0	318.12	0	0	0	0	0	13.26
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	418.12	0	100	0	318.12	0	0	0	0	0	13.26

Forecast of Total Quantities of C&D Materials to be Generated from the Contract										
Total Quantity Generated	Hard Rock and Large Broken Concrete	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 kg)
918.24	0	200	0	718.24	0	0	5	0	0	39.52

- Notes:
- (1) The performance targets are given in PS Clause 6.21.8(14).
 - (2) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
 - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material

**APPENDIX M
EVENT AND ACTION PLANS**

Appendix M - Event Action Plans

Table M-1 Event/Action Plan for Air Quality

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

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
	<p>arrange meeting with IEC and ER;</p> <p>8. If exceedance stops, cease additional monitoring.</p>			
Limit level being exceeded by one sampling	<ol style="list-style-type: none"> 1. Identify source, investigate the causes of exceedance and propose remedial measures; 2. Inform Contractor, IEC, ER, and EPD; 3. Repeat measurement to confirm finding; 4. Increase monitoring frequency to daily; 5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results. 	<ol style="list-style-type: none"> 1. Check monitoring data submitted by ET; 2. Check Contractor's working method; 3. Discuss with ET and Contractor on possible remedial measures; 4. Advise the ER on the effectiveness of the proposed remedial measures; 5. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. Ensure remedial measures properly implemented. 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification; 3. Implement the agreed proposals; 4. Amend proposal if appropriate.
Limit level being exceeded by two or more consecutive sampling	<ol style="list-style-type: none"> 1. Notify IEC, ER, Contractor and EPD; 2. Identify source; 3. Repeat measurement to confirm findings; 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractor's remedial actions whenever 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of exceedance in writing; 2. Notify Contractor; 3. In consolidation with the 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within three working days of notification;

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
	<p>4. Increase monitoring frequency to daily;</p> <p>5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>6. Arrange meeting with IEC and ER to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>necessary to assure their effectiveness and advise the ER accordingly;</p> <p>3. Supervise the implementation of remedial measures.</p>	<p>IEC, agree with the Contractor on the remedial measures to be implemented;</p> <p>4. Ensure remedial measures properly implemented;</p> <p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>3. Implement the agreed proposals;</p> <p>4. Resubmit proposals if problem still not under control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Appendix M - Event Action Plans

Table M-2 Event/Action Plan for Construction Noise

Event	Action			
	ET	IEC	ER	Contractor
Action Level	<ol style="list-style-type: none"> 1. Notify IEC and Contractor; 2. Carry out investigation; 3. Report the results of investigation to the IEC, ER and Contractor; 4. Discuss with the Contractor and formulate remedial measures; 5. Increase monitoring frequency to check mitigation effectiveness. 	<ol style="list-style-type: none"> 1. Review the analysed results submitted by the ET; 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly; 3. Supervise the implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 4. Ensure remedial measures are properly implemented. 	<ol style="list-style-type: none"> 1. Submit noise mitigation proposals to IEC; 2. Implement noise mitigation proposals.
Limit Level	<ol style="list-style-type: none"> 1. Identify source; 2. Inform IEC, ER, EPD and Contractor; 3. Repeat measurements to confirm findings; 4. Increase monitoring frequency; 5. Carry out analysis of 	<ol style="list-style-type: none"> 1. Discuss amongst ER, ET, and Contractor on the potential remedial actions; 2. Review Contractors remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of failure in writing; 2. Notify Contractor; 3. Require Contractor to propose remedial measures for the analysed noise problem; 	<ol style="list-style-type: none"> 1. Take immediate action to avoid further exceedance; 2. Submit proposals for remedial actions to IEC within 3 working days of notification; 3. Implement the agreed proposals;

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
	<p>Contractor's working procedures to determine possible mitigation to be implemented;</p> <p>6. Inform IEC, ER and EPD the causes and actions taken for the exceedances;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results;</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>3. Supervise the implementation of remedial measures.</p>	<p>4. Ensure remedial measures properly implemented;</p> <p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>4. Resubmit proposals if problem still not under control;</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Appendix M - Event Action Plans

Table M-3 Event/Action Plan for Ecology

Action Level	Response	Limit Level	Response
<i>Construction Phase</i>			
Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to the Project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of all waterbird species relative to numbers during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to the Project instigate remedial action.
Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Action Level response is triggered.	Investigate cause and if cause identified as related to the Project instigate remedial action to remove or reduce source of disturbance.	Decline in numbers of any one waterbird species occurring in significant numbers* during Baseline Monitoring such that the Limit Level response is triggered.	Investigate cause and if caused identified as related to the Project instigate remedial action.

Appendix M - Event Action Plans

Table M-4 Event/Action Plan for Landscape and Visual

Event	Action			
	ET	IEC	ER	Contractor
Non-conformity on one occasion	<ol style="list-style-type: none"> 1. Inform the Contractor, IEC and ER; 2. Discuss remedial actions with IEC, ER and Contractor 3. Monitor remedial actions until rectification has been completed. 	<ol style="list-style-type: none"> 1. Check inspection report; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Confirm receipt of notification of non-conformity in writing; 2. Review and agree on the remedial measures proposed by the Contractor; 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the non-conformity; 2. Implement remedial measures; 3. Amend working methods agreed with ER as appropriate; 4. Rectify damage and undertake any necessary replacement.

Appendix M - Event Action Plans

Event	Action			
	ET	IEC	ER	Contractor
Repeated Non-conformity	<ol style="list-style-type: none"> 1. Identify source; 2. Inform the Contractor, IEC and ER; 3. Discuss inspection frequency; 4. Discuss remedial actions with IEC, ER and Contractor; 5. Monitor remedial actions until rectification has been completed; 6. If non-conformity stops, cease additional monitoring. 	<ol style="list-style-type: none"> 1. Check inspection report; 2. Check Contractor's working method; 3. Discuss with ET, ER and Contractor on possible remedial measures; 4. Advise ER on effectiveness of proposed remedial measures. 	<ol style="list-style-type: none"> 1. Notify the Contractor; 2. In consultation with the ET and IEC, agree with the Contractor on the remedial measures to be implemented; 3. Supervise implementation of remedial measures. 	<ol style="list-style-type: none"> 1. Identify source and investigate the non-conformity; 2. Implement remedial measures; 3. Amend working methods agreed with ER as appropriate; 4. Rectify damage and undertake any necessary replacement. Stop relevant portion of works as determined by ER until the non-conformity is abated.

**APPENDIX N
ENVIRONMENTAL MITIGATION
IMPLEMENTATION SCHEDULE (EMIS)**

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Air Quality Impact							
S2.3.1.3	<p>Dust suppression measures stipulated in the Air Pollution Control (Construction Dust) Regulation and good site practices:</p> <p>Any excavated or stockpile of dusty material should be covered entirely by impervious sheeting or sprayed with water to maintain the entire surface wet and then removed or backfilled or reinstated where practicable within 24 hours of the excavation or unloading;</p> <p>Any dusty material remaining after a stockpile is removed should be wetted with water and cleared from the surface of roads;</p> <p>A stockpile of dusty material should not be extended beyond the pedestrian barriers, fencing or traffic cones;</p> <p>The load of dusty materials on a vehicle leaving a construction site should be covered entirely by impervious sheeting to ensure that the dusty materials do not leak from the vehicle;</p> <p>Where practicable, vehicle washing facilities with high pressure water jet should be provided at every discernible or designated vehicle exit point. The area where vehicle washing takes place and the road section between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores;</p> <p>When there are open excavation and reinstatement works, hoarding of not less than 2.4m high should be provided as far as practicable along the site boundary with provision for public crossing. Good site practice shall also be adopted by the Contractor to ensure the conditions of the hoardings are properly maintained throughout the construction period.</p> <p>The portion of any road leading only to construction site that is within 30m of a vehicle entrance or exit should be kept clear of dusty materials;</p>	To minimize the dust impact	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Air Pollution Control Ordinance (APCO) and Air Pollution Control (Construction Dust) Regulation	^ ^ ^ ^ ^ ^ ^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S2.3.1.3	Surfaces where any pneumatic or power-driven drilling, cutting, polishing or other mechanical breaking operation takes place should be sprayed with water or a dust suppression chemical continuously;	To minimize the dust impact	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Air Pollution Control Ordinance (APCO) and Air Pollution Control (Construction Dust) Regulation	^
	Any area that involves demolition activities should be sprayed with water or a dust suppression chemical immediately prior to, during and immediately after the activities so as to maintain the entire surface wet;						^
	Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or a canopy should be provided from the first floor level up to the highest level of the scaffolding;						N/A
	Any skip hoist for material transport should be totally enclosed by impervious sheeting;						N/A
	Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides;						N/A
	Cement or dry PFA delivered in bulk should be 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;						N/A
	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 an effective fabric filter or equivalent air pollution control system; and						N/A
	Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Noise Impact							
S3.2.1.1	Use of movable barrier, enclosure, acoustic mat and quiet plant. Use of wooden frames barrier with a small-cantilevered upper portion of superficial density not less than 14kg/m ² on a skid footing with 25mm thick internal sound absorptive lining.	To minimize construction noise impact arising from the Project at the affected noise sensitive receivers (NSRs)	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, Noise Control Ordinance (NCO)	^
S3.2.1.2	Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program.	To minimize construction noise impact arising from the Project at the affected NSRs	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, NCO	^
Silencers or mufflers on construction equipment should be utilized and should be properly maintained during the construction program.	^						
Mobile plant, if any, should be sited as far away from NSRs as possible.	^						
Machines and plant (such as trucks) that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum.	^						
Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs.	^						
Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	N/A						

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Ecological Impact							
S4.2.1.1	Solid dull green noise/visual barriers of at least 2m high shall be erected and maintained between active works area and all areas of ecological importance.	Minimize noise and human disturbances during construction phase.	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
S4.2.1.2	Avoid unnecessary lighting.	Minimize mortality impacts on birds.	Design / Contractor/ Plant Operator	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
S4.2.1.3	Good construction site practice to minimise dust generation should be followed on all construction sites. Measures to avoid, minimise and mitigate impacts on air quality are detailed in this schedule	Minimize dust generation from construction sites.	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
S4.2.1.4	Temporary sewerage and drainage to be designed and installed to collect wastewater and prevent it from entering water bodies;	Avoid, minimise and mitigate impact on water quality	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
	Proper locations well away from nearby water bodies should be used for temporary storage of materials (i.e. equipment, filling materials, chemicals and fuel) and temporary stockpiles of construction debris and spoil, and these should be identified before commencement of works;						^
	To prevent muddy water entering nearby water bodies, work sites close to nearby water bodies should be isolated, using such items as sandbags or silt curtains with lead edge at bottom and properly supported props. Other protective measures should also be taken to ensure that no pollution or siltation occurs to the water gathering grounds of the work sites;						^
	Construction debris and spoil should be covered and/or properly disposed of as soon as possible to avoid these being washed into nearby water bodies;						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S4.2.1.4	Proper locations for discharge outlets of temporary wastewater treatment facilities well away from sensitive receivers should be identified;	Avoid, minimise and mitigate impact on water quality	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM	^
	Adequate lateral support should be erected where necessary in order to prevent soil/mud from slipping into water bodies;						^
	Site boundaries should be clearly marked and any works beyond the boundary strictly prohibited;						^
	Regular water monitoring and site audit should be carried out at adequate points along any watercourses where construction works are underway upstream within their catchments and also on the Ng Tung, Sheung Yue and Shek Sheung Rivers. If the monitoring and audit results show that pollution occurs, adequate measures including temporarily cessation of works should be considered;						^
	Excavation profiles should be properly designed and executed with attention to the relevant requirements for environment, health and safety;						^
	Where soil to be excavated is situated beneath the groundwater table, it may be necessary to lower the groundwater table by installing well points or similar means;						N/A
	Stockpiling sites should be lined with impermeable sheeting and banded. Stockpiles should be properly covered by impermeable sheeting to reduce dust emission during dry season or contaminated run-off during rainy season. Watering should be avoided on stockpiles of contaminated soil to minimize contaminated runoff and construction materials should be properly covered and located away from nearby water bodies; and						^
	Supply of suitable clean backfill material after excavation, if required.						N/A
	Vehicles containing any excavated materials should be suitably covered to limit potential dust emissions or contaminated run-off, and truck bodies and tailgates should be sealed to prevent discharge during transport or during wet season;						^
	Speed control for the trucks carrying contaminated materials should be enforced;						^
	Vehicle wheel washing facilities at construction sites' exit points should be established and used, where necessary						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Water Quality Impact							
S5.2.2.1	Construction Site Runoff Practices and measures provided in the Practice Note for Professional Persons on Construction Site Drainage, (PROPECC PN1/94) should be followed where applicable.	Control construction runoff	Contractors	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, WPCO, EIAO	^
S5.2.2.2 – S5.2.2.3	<p>Portable chemical toilets and sewage holding tanks should be provided for handling the construction sewage generated by the workforce. A licensed Contractor should be employed to provide appropriate and adequate portable toilets and be responsible for appropriate disposal and maintenance.</p> <p>Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the Project. Regular environmental audit on construction site should be conducted in order to provide an effective control of any malpractices and achieve continual improvement of environmental performance on site. It is anticipated that sewage generation during the construction phase of the Project would not cause water quality impact after undertaking all required measures</p>	Handling of site sewage	Contractors	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	EIAO-TM, WPCO, EIAO	^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Waste Management							
S6.2.2.1	Nomination of an approved person, such as a site manager, to be responsible for the implementation of good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site;	Minimize waste generation during construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Waste Disposal Ordinance (WDO)	^
	Training of site personnel in site cleanliness, appropriate waste management procedures and concepts of waste reduction, reuse and recycling;						^
	Provision of sufficient waste disposal points and regular collection for disposal;						^
	Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers;						^
	Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors;						^
	An Environmental Management Plan (EMP) should be prepared by the contractor and submitted to the Supervisor for approval.						^
S6.2.3.1	Segregate and store different types of waste in different containers, skip or stockpiles to enhance reuse or recycling of materials and their proper disposal;	Reduce waste generation	Contractor	Work Sites	Prior to the commencement of construction of Main Works Stage 1, Stage 2 and Stage 3	WDO	^
	Proper storage and site practices to minimize the potential for damage and contamination of construction materials;						^
	Plan and stock construction materials carefully to minimize amount of waste generated and avoid unnecessary generation of waste;						^
	Sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); and						^
	Provide training to workers on the importance of appropriate waste management procedures, including waste reduction, reuse and recycling.						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
6.2.4.1	Waste, such as soil, should be handled and stored well to ensure secure containment, thus minimizing the potential of pollution;	Minimize waste impacts arising from waste storage	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	WDO	^
	Stockpiling area should be provided with covers and water spraying system to prevent materials from wind-blown or being washed away; and						^
	Different locations should be designated to stockpile each material to enhance reuse.						^
S6.2.4.2	Remove waste in timely manner;	Minimize waste impacts arising from waste storage	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	WDO	^
	Employ the trucks with cover or enclosed containers for waste transportation						^
	Obtain relevant waste disposal permits from the appropriate authorities						^
	Disposal of waste should be done at licensed waste disposal facilities.						^
S6.2.5.2	Maintain temporary stockpiles and reuse excavated fill material for backfilling;	Minimize waste impacts from excavated and C&D materials	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Land (Miscellaneous Provisions) Ordinance, WDO, ETWB TCW No. 19/2005	^
	Carry out on-site sorting;						^
	Make provisions in the Contract documents to allow and promote the use of recycled aggregates where appropriate;						^
	Adopt “selective demolition” technique to demolish the existing structure and facilities with a view to recovering broken concrete effectively for recycling purpose, where possible; and						N/A
	Implement a trip-ticket system for each works contract to ensure that the disposal of C&D materials are properly documented and verified.						^
S6.2.5.3	The Contractor should recycle as much as possible of the C&DM on-site. Public fill and C&DM waste should be segregated and stored in different containers or skips to enhance reuse or recycling of materials and their proper disposal. For example, concrete and masonry can be crushed and used as fill, and steel reinforcing bar can be used by scrap steel mills. Different areas of the work sites should be designated for such segregation and storage.	Minimize waste impacts from building demolition and new building construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Land (Miscellaneous Provisions) Ordinance, WDO, ETWB TCW No. 19/2005	^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S6.2.5.3	The use of wooden hoardings shall not be allowed. An alternative material, such as metal, aluminium or alloy etc, could be used.	Minimize waste impacts from building demolition and new building construction	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Land (Miscellaneous Provisions) Ordinance, WDO, ETWB TCW No. 19/2005	^
	Government has developed a charging policy for the disposal of waste to landfill at present. It will provide additional incentive to reduce the volume of generated waste and ensure proper segregation to allow reuse of the inert material on site when implemented.						^
	In order to minimize the impacts of the demolition works, the generated wastes must be cleared as quickly as possible after demolition. Therefore, the demolition and clearance works should be undertaken simultaneously. To facilitate proper segregation of inert and non-inert C&D material arising from demolition works, selective demolition method should be adopted.						^
S6.2.5.4	If chemical wastes are produced at the construction site, the Contractors should register with EPD as chemical waste producers.	Control the chemical waste and ensure proper storage, handling and disposal	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Waste Disposal (Chemical Waste General) Regulation, Code of Practice on the Packaging, Labelling and Storage of Chemical Waste	^
	Chemical wastes should be stored in appropriate containers and collected by a licensed chemical waste contractor. Chemical wastes (e.g. spent lubricant oil) should be recycled at an appropriate facility as far as possible, while the chemical waste that cannot be recycled should be disposed of at either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.						^
S6.2.5.5	General refuse should be stored in enclosed bins separately from construction and chemical wastes.	Minimize production of the general refuse and avoid odour, pest and litter impacts	Contractor	Work Sites	Construction phase of Main Works Stage 1, Stage 2 and Stage 3	Waste Disposal (Chemical Waste General) Regulation	^
	Recycling bins should also be placed to encourage recycling.						^
	Preferably enclosed and covered areas should be provided for general refuse collection and routine cleaning for these areas should also be implemented to keep areas clean.						^
	A reputable waste collector should be employed to remove general refuse on a daily basis.						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
Landscape and Visual							
S7.3.1.1	For areas unavoidably disturbed by the Project on a short term basis e.g. works areas, the general principle to try and restore these to their former state to suit future land use, should be adhered to.	Minimize the impact to the landscape and visual	Contractor	Work Sites	Prior to construction and construction phase		N/A
	With regard to topsoil, where identified, it should be stripped, treated appropriately, and where suitable and practical stored for re-use in the construction of the soft landscape works such as roadside amenity strips, and open space sites.						N/A
S7.3.2.1	MM4 – Tree Protection & Preservation Existing trees to be retained within the Project Site should be carefully protected during construction. In particular Old and Valuable Trees (OVTs) will be preserved according to ETWB TC (Works) No. 29/2004. Detailed Tree Protection Specification shall be provided in the Contract Specification. Under this specification, the Contractor shall be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in Contractor’s works areas. A detailed tree survey will be carried out for the Tree Removal Application (TRA) process which will be carried out at the later detailed design stage of the Project. The detailed tree survey will propose which trees should be retained, transplanted or felled and will include details of tree protection measures for those trees to be retained.	Protect and Preserve Trees	Designer / Contractor	Work Sites	Prior to construction and construction phase	ETWB TCW No. 29/2004 and DEVB TC(W) No.7/2015	^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S7.3.2.1	<p>MM5 - Tree Transplantation</p> <p>Trees unavoidably affected by the Project works should be transplanted where practical. Trees should be transplanted straight to their final receptor site and not held in a temporary nursery as far as possible. A detailed Tree Transplanting Specification shall be provided in the Contract Specification, where applicable. Sufficient time for necessary tree root and crown preparation periods shall be allowed in the project programme. A detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBTC No. 2/2004 and DEVB TC(W) No. 7/2015 and final locations of transplanted trees should be agreed prior to commencement of the work. For trees associated with highways e.g. roadside planting along highways, that are unavoidably affected and should be transplanted, HyD HQ/GN/13 'Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit' should be referred to.</p>	<p>Transplant Trees where suitable for transplantation</p>	<p>Designer / Contractor</p>	<p>Work Sites where possible. Otherwise consider offsite locations</p>	<p>Prior to construction, construction phase and operation phase</p>	<p>DEVB TC(W) No. 7/2015 and ETWB TCW No.2/2004</p> <p>HyD HQ/GN/13 Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit</p>	<p>^</p>
S7.3.2.1	<p>MM6 - Slope Landscaping</p> <p>Site formation should be reduced as far as possible. Hydroseeding of modified slopes should be done as soon as grading works are completed to prevent erosion and subsequent loss of landscape resources and character. Woodland tree seedings and/or shrubs should be planted where slope gradient and site conditions allow.</p> <p>In addition, landscape planting should be provided for the retaining structures associated with modified slopes where conditions allow. All slope landscaping works should comply with GWO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes.</p>	<p>To avoid substantial slope cutting and fill slopes.</p> <p>To prevent erosion and subsequent loss of landscape resources and character.</p> <p>To ensure man-made slopes are as visually amenable as possible.</p>	<p>Designer / Contractor</p>	<p>Work Sites</p>	<p>Prior to construction, construction phase and operation phase</p>	<p>GEO Publication (1999) - Use of Vegetation as Surface Protection on Slope; GEO Publication No. 1/2011-Technical Guidelines on Landscape Treatment for Slopes</p>	<p>N/A</p> <p>N/A</p>

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S7.3.2.1	MM7 - Compensatory Planting Compensatory tree planting for felled trees shall be provided to the satisfaction of relevant Government departments. Required numbers and locations of compensatory trees shall be determined and agreed separately with Government during the Tree Removal Application process under DEVB TC(W) No. 7/2015.	Compensate for trees and shrubs lost due to the Project	Designer / Contractor	Work Sites where possible. Otherwise consider offsite locations	Prior to construction, construction phase and operation phase	DEVB TC(W) No. 7/2015 and ETWB TCW No. 2/2004	N/A
	Compensatory planting is proposed at the potential open areas such as open spaces, amenity areas, open areas of the streetscapes, as well as the open areas within development lots.						N/A
	Compensatory planting for shrubs should be considered in suitable locations. Native species such as <i>Melastoma malabathricum</i> , <i>Diospyros vaccinioides</i> , <i>Gardenia jasminoides</i> , <i>Ixora chinensis</i> , <i>Ligustrum sinense</i> , <i>Litsea rotundifolia</i> , <i>Melastoma dodecandrum</i> , <i>Atalantia buxifolia</i> , <i>Rhodymyrtus tomentosa</i> , <i>Rhaphiolepis indica</i> , and <i>Rhododendron simsii</i> are suggested.						N/A
S7.3.2.1	MM9 - Vertical Greening Planting of climbers to grow up vertical surfaces were appropriate.	Soften hard surfaces and facilities	Designer / Contractor	On appropriate structures	Prior to construction, construction phase and operation phase	ETWB TCW No.11/2004 – Cyber Manual for Greening	N/A
S7.3.2.1	MM10 - Green Roof Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to visually sensitive receivers (VSRs) at high levels. Provide greening.	Designer / Contractor	On appropriate buildings	Prior to construction, construction phase and operation phase	CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011); ArchSD/Urbis Study on Green Roof Application in HK (2007)	N/A

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
S7.3.2.1	MM11 - Screen Planting Tall screen/buffer trees and shrubs should be planted. This measure may additionally form part of the compensatory planting.	To screen proposed structures such as roads and buildings. Improve compatibility with the surrounding environment and create a pleasant pedestrian environment	Designer / Contractor	Along roads, around suitable built structures, or around VSRs to contain their view out to the structures.	Prior to construction, construction phase and operation phase	ETWB TCW No. 10/2013 and 3/2006	N/A
S7.3.2.1	MM16 - Screen Hoarding Screen hoarding shall be erected along areas of the construction works site boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs). It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used. Any works areas near the ecological sensitive areas should erect 2m high dull green site boundary fence.	To screen undesirable views of the works site.	Designer	Work Sites	Construction phase		^
S7.3.2.1	MM17 - Light Control Construction day and night time lighting should be controlled to minimize glare impact to adjacent VSRs during the Construction phase. Street and night time lighting shall also be controlled to minimize glare impact to adjacent VSRs during the operation phase.	To minimize glare impact to adjacent VSRs.	Designer / Contractor	Work Sites and/or the Plant	Construction phase and operation phase		^

Remarks: EM&A Programme under FEP-02/474/2013	
^	Compliance of mitigation measure;
N/A	Not applicable at this stage;
N/A(1)	Not observed;
*	Recommendation was made during site audit but improved/rectified by the contractor;
#	Recommendation was made during site audit but not yet improved/rectified by the contractor;
X	Non-compliance of mitigation measure;
●	Non-compliance but rectified by the contractor.

**APPENDIX O
SUMMARIES OF ENVIRONMENTAL
COMPLAINT, WARNING, SUMMON
AND NOTIFICATION OF SUCCESSFUL
PROSECUTION**

Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1

Appendix O – Summary of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution

Reporting Month: June 2021

Log Ref.	Location	Received Date	Details of Complaint/Warning/Summon and Prosecution	Investigation/Mitigation Action	Status
1	Expansion Site of SWHSTP (Portion C)	18 March 2020	Muddy water was suspected to be discharged from the expansion site of SWHSTP to Shek Sheung River, manholes and foul drains nearby	<ul style="list-style-type: none"> • Employed suction truck and dump truck to clear the silt and mud at Shek Sheung River • Arranged to repair the wastewater treatment system • Installed additional sedimentation tanks and wastewater treatment system to increase the on-site treatment capacity • Clean the slurry sediment released from the outlet regularly by suction trucks • Avoid damage of underground drains and pipes caused by existing construction works • Avoid illegal discharge from the Site into foul drains and manholes 	Closed

Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1

Appendix O – Summary of Environmental Complaint, Warning, Summon and Notification of Successful Prosecution

Log Ref.	Location	Received Date	Details of Complaint/Warning/Summon and Prosecution	Investigation/Mitigation Action	Status
2	SWHEPP	19 February 2021	Significant odour nuisance was suspected to be emitted from the construction activities of SWHEPP	<ul style="list-style-type: none"> • Ensured only PMEs with valid NRMM label were used on-site • Conducted regular visual checking against emission quality of exhaust pipe of equipment by using the Ringlemann Chart • Used ULSD for diesel-powered equipment • Provided water spraying and water sprinklers system for haul road access and demolition works • Used battery powered solution to provide power to the tower crane • Provided cover for all rubbish bins on-site • Separated general refuse from construction waste 	Closed

Remarks: No environmental complaint/warning/summon and prosecution was received in the reporting period.

APPENDIX P
SUMMARY OF EXCEEDANCE

Agreement No. SPW 07/2019
Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1

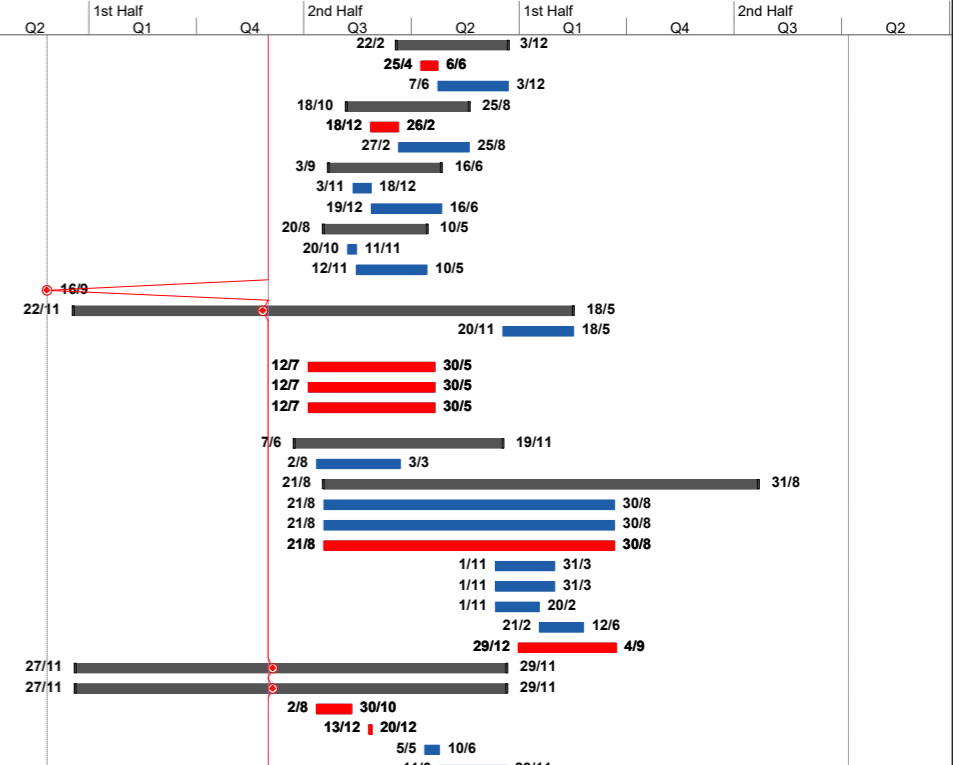
Appendix P – Summary of Exceedance

Reporting Month: June 2021

- (A) Exceedance Report for Air Quality**
(NIL in the reporting month)
- (B) Exceedance Report for Construction Noise**
(NIL in the reporting month)
- (C) Exceedance Report for Ecology**
(NIL in the reporting month)

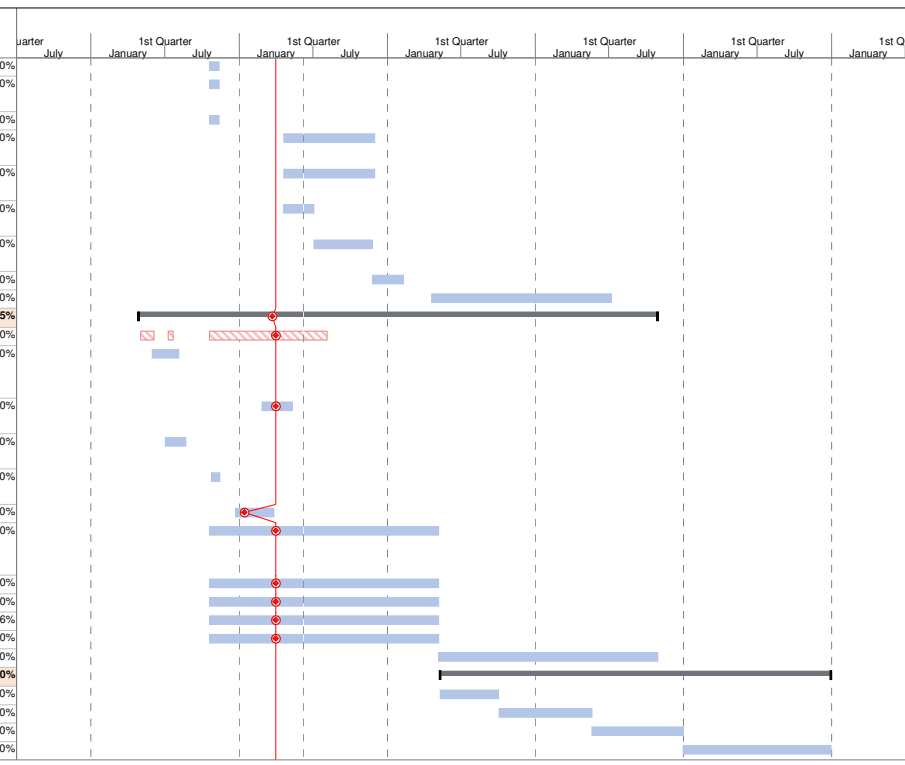
**APPENDIX Q
TENTATIVE CONSTRUCTION
PROGRAMME**

ID	Activity ID	KD	Task Name	Inclment Weather CE no. (NCE no.)	PMI & CE no. (NCE no.)	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Risk Allowance	2nd Half Q3	Q2	1st Half Q1	Q4	2nd Half Q3	Q2	1st Half Q1	Q4	2nd Half Q3	Q2	
410	CDS11-00000	*	Deodorization System No. 11			234 days	Tue 22/2/22	Sat 31/12/22		NA	-67 days				0%											
414	CDS11-03000	KD3E	R.C. Plinth			34 days	Mon 25/4/22	Mon 6/6/22		NA	-78 days	412,133,413SS-2 emons	415,42FF	0%												
415	CDS11-04000	SW5	Surrounding Site formation works and road works			180 days	Tue 7/6/22	Sat 31/12/22		NA	275 days	414	48FF	0%												
416	CBGH-00000	*	Biogas Holder (7)			254 days	Mon 18/10/21	Thu 25/8/22		NA	15 days			0%												
420	CBGH-03000	KD3E	R.C. Plinth			55 days	Sat 18/12/21	Sat 26/2/22		NA	0 days	418,133,419SS-2 emons	421,42FF	0%												
421	CBGH-04000	SW5	Surrounding Site formation works and road works			180 days	Sun 27/2/22	Thu 25/8/22		NA	375 days	420	48FF	0%												
422	CH2S-00000	*	H2S Removal System (12)			230 days	Fri 3/9/21	Thu 16/6/22		NA	73 days			0%												
426	CH2S-03000	KD3E	R.C. Plinth			40 days	Wed 3/11/21	Sat 18/12/21		NA	54 days	424,425SS-2 emons	427,42FF	0%												
427	CH2S-04000	SW5	Surrounding Site formation works and road works			180 days	Sun 19/12/21	Thu 16/6/22		NA	445 days	426	48FF	0%												
428	CDS12-00000	*	Deodorization System No. 12 (19)			211 days	Fri 20/8/21	Tue 10/5/22		NA	97 days			0%												
432	CDS12-03000	KD3E	R.C. Plinth			20 days	Wed 20/10/21	Thu 11/11/21		NA	86 days	430,133,402,431SS-2 emons	433,42FF	0%												
433	CDS12-04000	SW5	Surrounding Site formation works and road works			180 days	Fri 12/11/21	Tue 10/5/22		NA	482 days	432	48FF	0%												
434	CUPH-00000	±	Underpass & Pump House (Omitted)		332	0 days	Mon 16/9/19	Mon 16/9/19		NA	NA			0%												
435	CPWU-00000	*	Pipe Works and Utility Installation			1030 days	Fri 22/11/19	Thu 18/5/23	Fri 22/11/19		NA	90 days		15%												
466	CPWU-01020	SW5	Surrounding Site formation works and road works			180 days	Sun 20/11/22	Thu 18/5/23		NA	109 days	465,478,479,480,481,482	48FF	0%												
479	CPWU-02130	SW4	Stormdrain Pipeworks & testing works			262 days	Mon 12/7/21	Mon 30/5/22		NA	0 days	138,287,337,188	47FF,466	0%												
480	CPWU-02140	SW4	Sewerage Pipeworks, manhole, protective lining & testing works		210	262 days	Mon 12/7/21	Mon 30/5/22		NA	0 days	138,287,337,194	47FF,466	0%												
481	CPWU-02150	SW4	Watermain Pipeworks & testing works		205, 206, 207, 216, 219, 220, 221, 221-1, 222	262 days	Mon 12/7/21	Mon 30/5/22		NA	0 days	138,287,337,191,194	47FF,466	0%												
482	CPWU-02160	SW4	Cable & Other Underground Utility Pipeworks			434 days	Mon 7/6/21	Sat 19/11/22		NA	-317 days	138,287,337	466	0%												
516	CPWU-02200	SW4	Pipe Bridge No.1			175 days	Mon 2/8/21	Thu 3/3/22		NA	69 days	2	47FF	0%												
517	CRWL-00000	*	Remaining Works & Landscape Works			891 days	Sat 21/8/21	Sat 31/8/24		NA	0 days			0%												
518	CRWL-01000	SW5	Irrigation System		218	600 days	Sat 21/8/21	Wed 30/8/23		NA	4 days	141	48FF	0%												
519	CRWL-02000	SW5	Hard Landscape Works			600 days	Sat 21/8/21	Wed 30/8/23		NA	4 days	141	48FF	0%												
520	CRWL-03000	SW5	Soft Landscape Works			600 days	Sat 21/8/21	Wed 30/8/23		NA	0 days	141	526,48FF	0%												
521	CRWL-04000	SW5	Outfall for Effluent Pipes			124 days	Tue 1/11/22	Fri 31/3/23		NA	126 days	180	48FF	0%												
522	CRWL-05000	SW5	Slope Formation Works near Outfall			124 days	Tue 1/11/22	Fri 31/3/23		NA	126 days	180	48FF	0%												
523	CRWL-06000	SW5	Removal of invasive trees along River Embankment		(37)	90 days	Tue 1/11/22	Mon 20/2/23		NA	70 days	180	524,48FF	0%												
524	CRWL-07000	SW5	Retaining Wall along River Embankment, street furniture & road works			90 days	Tue 21/2/23	Mon 12/6/23		NA	70 days	180,523	48FF	0%												
525	CRWL-08000	SW5	Remaining Site formation works, road works and boundary fence wall			250 days	Thu 29/12/22	Mon 4/9/23		NA	0 days	46	48FF	0%												
527	CWPA-00000	*	Construction of Portion A of the Site			891 days	Wed 27/11/19	Tue 29/11/22	Wed 27/11/19		NA	167 days		42%												
528	C132S-00000	*	132kV Substation			891 days	Wed 27/11/19	Tue 29/11/22	Wed 27/11/19		NA	167 days		42%												
555	C132SI-28000	KD2A	Architectural Works			75 days	Mon 2/8/21	Sat 30/10/21		NA	-30 days	549FF,550FF,551FF,552F137FF		0%												
558	C132SI-31000	KD2A	Handover to CLP for Electrical System Installation			7 days	Mon 13/12/21	Mon 20/12/21		NA	-73 days	556,557	559,37FF	0%												
560	C132SI-33000	SW2	Inspection and Handover to CLP			30 days	Thu 5/5/22	Fri 10/6/22		NA	167 days	559	577,45FF	0%												
577	C132SE-03000	SW2	Construction of New Boundary Wall		(155)	143 days	Sat 11/6/22	Tue 29/11/22		NA	167 days	560,576	45FF	0%												



Main table with columns: ID, Activity ID, Key Date, Task Name, Implement Weather CE no., PMI & CE no. (NCE no.), Baseline Duration, Baseline Start, Baseline Finish, Duration, Start, Finish, Actual Start, Actual Finish, Predecessors, Successors, Total Slack, Risk Allowance, % Complete. Includes a Gantt chart on the right side of the table.

ID	Activity ID	Key Date	Task Name	Incliment Weather CE no. (NCE no.)	PMI & CE no. (NCE no.)	Baseline Duration	Baseline Start	Baseline Finish	Duration	Start	Finish	Actual Start	Actual Finish	Predecessors	Successors	Total Slack	Risk Allowance	% Complete
498	CAA-1100		Change of pipe bridge design		(057)	0 days	NA	NA	135 days	Mon 1/6/20	Tue 10/11/20	Mon 1/6/20	Tue 10/11/20		501,502,503	0 days		100%
499	CAA-1200		Additional inspection pit to verify the connection point to existing (CE xxx)			0 days	NA	NA	135 days	Mon 1/6/20	Tue 10/11/20	Mon 1/6/20	Tue 10/11/20		501,502,503	0 days		100%
500	CAA-1300		Additional MBV installation (CE xxx)			0 days	NA	NA	135 days	Mon 1/6/20	Tue 10/11/20	Mon 1/6/20	Tue 10/11/20		501,502,503	0 days		100%
501	CAA-1400					180 days	Wed 29/1/20	Thu 3/9/20	185 days	Tue 20/4/21	Mon 29/11/21			NA 498,499,500	53FF	1330 days		0%
502	CAA-1500	KD2B	Alteration works for existing Air Blower House No.2 (Pipeline CHTA, approx. 133m DN800 D.I.)		064	0 days	NA	NA	185 days	Tue 20/4/21	Mon 29/11/21			NA 498,499,500	53FF	1330 days		0%
503	CAA-1600	KD2B	Re-alignmnet of DN800 Temporary Air Main (CHTA) and Provision of FRP Staircases		062	0 days	NA	NA	60 days	Tue 20/4/21	Fri 2/7/21			NA 498,499,500	53FF,504	1275 days		0%
504	CAA-2000	KD11	Elevated Section of DN800 Temporary Air Main (CHTA) across existing Bioreactor's Distribution Chamber No. 2			122 days	Fri 4/9/20	Sat 30/1/21	120 days	Sat 3/7/21	Tue 23/11/21			NA 13FS-1 day,118,156,158,166,503	50FF,505	1275 days		0%
505	CAA-2100		Additional works for Power House		224	0 days	NA	NA	60 days	Wed 24/11/21	Tue 8/2/22			NA 504	50FF	1275 days		0%
506	CAA-3000	SW3	Alteration works for existing Membrane Facilities Building No.1			360 days	Mon 1/2/21	Fri 22/4/22	360 days	Tue 19/4/22	Thu 6/7/23			NA 14FS-1 day,165	58FF	269 days		0%
507	CUU-0000	*	External Underground Service, Utilities, Road/Drain			1091 days	Mon 24/2/20	Sat 28/10/23	1041 days	Mon 27/4/20	Sat 28/10/23	Mon 27/4/20	NA 16			64 days		35%
508	CUU-1000	KD2A	Process Pipes CHR and CHS (approx. 93m twin DN900 D.I.)			325 days	Mon 24/2/20	Sat 27/3/21	272 days	Mon 27/4/20	Wed 4/8/21	Mon 27/4/20		NA 174,138	518SS+48 days,516SS+48 d	39.8 days		70%
509	CUU-1000a		Special Treatment for Removing the Existing Abandoned DN1800 By-pass Pipe and the Concrete Mass in Conflict with the Proposed Sheetpile wall for trenching work of Process Pipeline CHR and CHS		(029)	0 days	NA	NA	54 days	Sat 30/5/20	Mon 3/8/20	Sat 30/5/20	Mon 3/8/20			0 days		100%
510	CUU-1000b		Trenchless work for Process Pipes CHR and CHS (approx. 7m twin DN900 D.I.) (PPMI 040)		255	0 days	NA	NA	60 days	Thu 25/2/21	Mon 10/5/21	Thu 25/2/21		NA	52FF	31 days		50%
511	CUU-1001		Removal of Abandoned DN1800 Concrete Pipe and Concrete Mass near Existing LIV Disinfection Channel at CHR & CHS Process Pipe Works Area		033	0 days	NA	NA	43 days	Thu 2/7/20	Thu 20/8/20	Thu 2/7/20	Thu 20/8/20			0 days		100%
512	CUU-1002		Grouting for Sheung Shui Slaughter House Boundary Walls along CHR & CHS Pipes Works Area (PPMI 064)			0 days	NA	NA	20 days	Fri 23/10/20	Mon 16/11/20	Fri 23/10/20	Mon 16/11/20			0 days		100%
513	CUU-1004		Delay Delivery of DI pipes due to COVID-19		(076)	0 days	NA	NA	75 days	Tue 22/12/20	Thu 25/3/21	Tue 22/12/20	Thu 25/3/21		514FF	0 days		100%
514	CUU-2000	SW2	Process Pipes, including CHT, CHX, CHY, CHPS1&2, CHS S1&2, CHDO 1&2, CHPSW 1&2, CHTPS, CHPT1&2, CHFT 1&2, CHTE, CHTD, Foam Collection & Surplus activated sludge rising main pipe			550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20		NA 174,508SS+48 days,138,513FF	57FF,519	63 days		30%
515	CUU-3000	SW2	Drainage			550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20		NA 174,508SS+48 days,138	57FF,519	63 days	5	30%
516	CUU-4000	SW2	Sewerage			550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20		NA 508SS+48 days,174,138	57FF,519	63 days	5	30%
517	CUU-5000	SW2	Waterworks			550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20		NA 508SS+48 days,174,138	521FS+2 days,57FF	63 days	5	36%
518	CUU-6000	SW2	Cable Ducts			550 days	Mon 29/6/20	Fri 6/5/22	457 days	Mon 19/10/20	Fri 6/5/22	Mon 19/10/20		NA 508SS+48 days,174,138	519,57FF	63 days	5	30%
519	CUU-7000	KD3A	Roadworks			540 days	Fri 31/12/21	Sat 28/10/23	440 days	Sat 7/5/22	Sat 28/10/23			NA 518,515,516,514	54FF	64 days	5	0%
520	CLW-0000	*	Landscaping Works			854 days	Wed 11/5/22	Thu 27/3/25	778 days	Wed 11/5/22	Sun 29/12/24	NA	NA 16			122 days		0%
521	CLW-1000	SW3	Irrigation System			120 days	Wed 11/5/22	Fri 30/9/22	120 days	Wed 11/5/22	Fri 30/9/22			NA 517FS+2 days,174	522,58FF	122 days		0%
522	CLW-2000	SW3	Hard Landscaping Works			220 days	Mon 3/10/22	Mon 3/7/23	185 days	Mon 3/10/22	Fri 19/5/23			NA 521,139	523,58FF	122 days	5	0%
523	CLW-3000	SW3	Soft Landscaping Works			220 days	Tue 4/7/23	Tue 26/3/24	185 days	Sat 20/5/23	Sat 30/12/23			NA 522,139	524,58FF	122 days	5	0%
524	CLW-4000	DLP	Establishment Works (365 days)			294 days	Wed 27/3/24	Thu 27/3/25	365 days	Sun 31/12/23	Sun 29/12/24			NA 523,139	59FF,60FF	495 days	5	0%

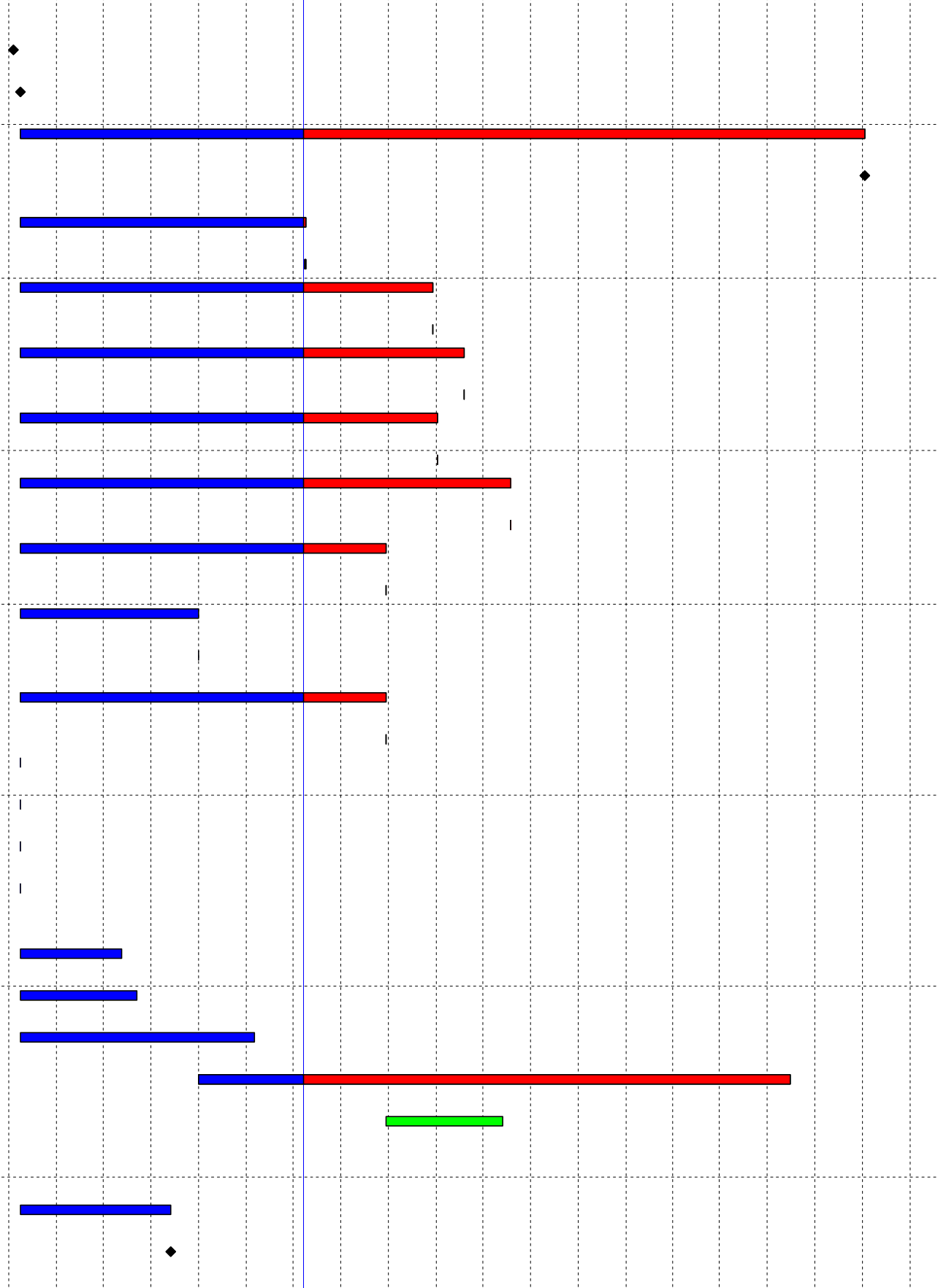


Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	2020				2021				2022				2023				2024													
								J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D

SWH - Main Works Stage 1 Sidestream Treatment Facilities & E&M Works for Sludge Treatment Facilities

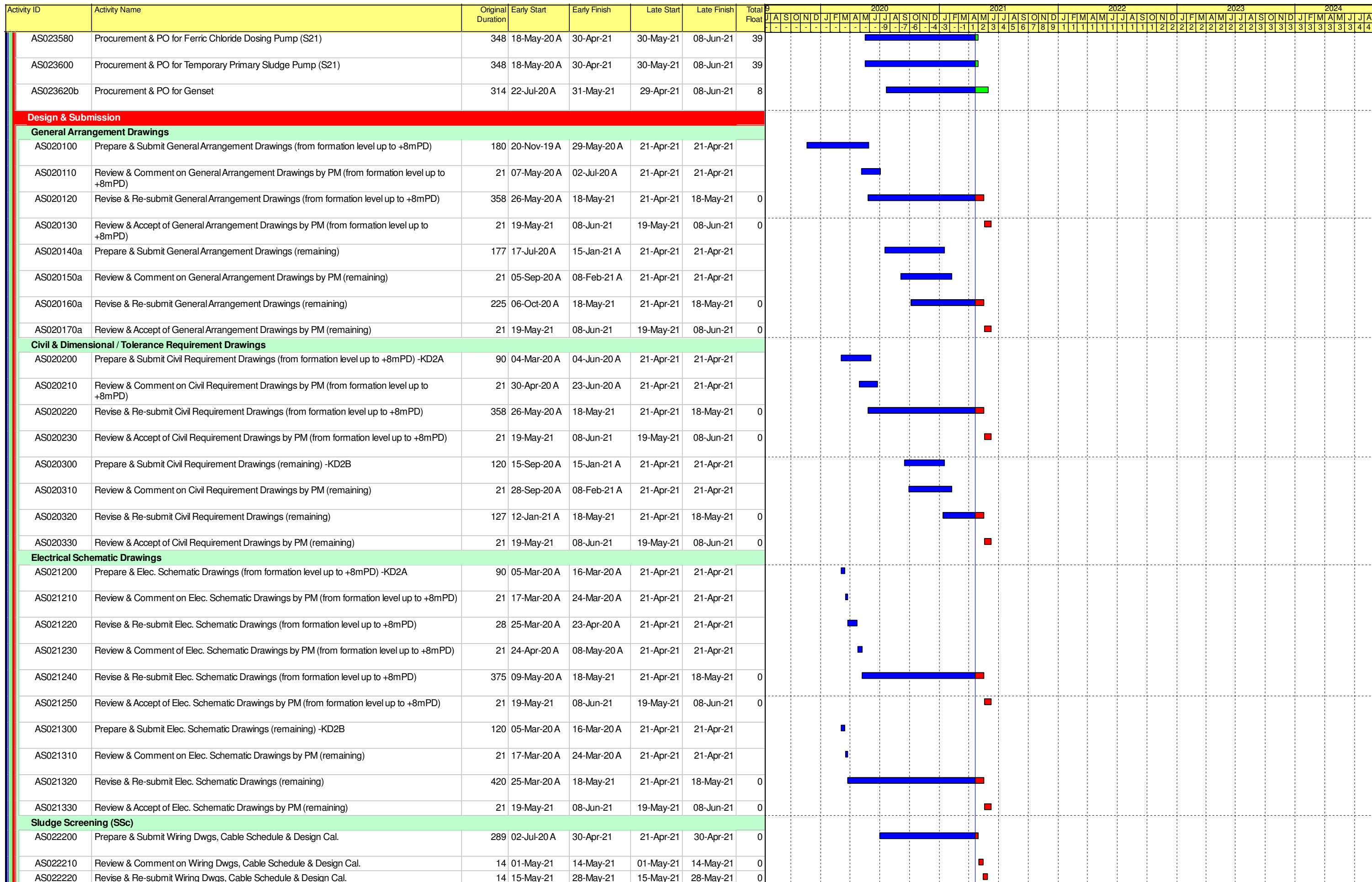
Contract Data							
Starting Date & Completion Date							
AS000010	Contract Date (LOA)	0	11-Oct-19 A		21-Apr-21		
AS000020	Starting Date	0	23-Oct-19 A		21-Apr-21		
AS000110	Whole Contract Period (1626 days from starting date)	1626	23-Oct-19 A	04-Apr-24	21-Apr-21	04-Apr-24	0
AS000220	Completion Date for the whole of the Works	0		04-Apr-24		04-Apr-24	0
Access Date							
AS001100	Portion C-1A (within 480 to 550 days from starting date)	550	23-Oct-19 A	24-Apr-21	21-Apr-21	24-Apr-21	0
AS001120	Planned Access Date for Portion C-1A	1	24-Apr-21	24-Apr-21*	24-Apr-21	24-Apr-21	0
AS001200	Portion C-2A (within 705 to 795 days from starting date)	795	23-Oct-19 A	25-Dec-21	21-Apr-21	25-Dec-21	0
AS001220	Planned Access Date for Portion C-2A	1	25-Dec-21	25-Dec-21*	25-Dec-21	25-Dec-21	0
AS001300	Portion C-2B (within 765 to 855 days from starting date)	855	23-Oct-19 A	23-Feb-22	21-Apr-21	23-Feb-22	0
AS001320	Planned Access Date for Portion C-2B	1	23-Feb-22	23-Feb-22*	23-Feb-22	23-Feb-22	0
AS001400	Portion C-2C (within 715 to 805 days from starting date)	805	23-Oct-19 A	04-Jan-22	21-Apr-21	04-Jan-22	0
AS001420	Planned Access Date for Portion C2-C	1	04-Jan-22	04-Jan-22*	04-Jan-22	04-Jan-22	0
AS001500	Portion C-2D (within 825 to 945 days from starting date)	945	23-Oct-19 A	24-May-22	21-Apr-21	24-May-22	0
AS001520	Planned Access Date for Portion C-2D	1	24-May-22	24-May-22*	24-May-22	24-May-22	0
AS001600	Portion C-3 (within 615 to 705 days from starting date)	705	23-Oct-19 A	26-Sep-21	21-Apr-21	26-Sep-21	0
AS001620	Planned Access Date for Portion C-3	1	26-Sep-21	26-Sep-21*	26-Sep-21	26-Sep-21	0
AS001700	Portion B-1 (within 285 to 345 days from starting date)	345	23-Oct-19 A	30-Sep-20 A	21-Apr-21	21-Apr-21	
AS001720	Planned Access Date for Portion B-1	1	30-Sep-20 A	30-Sep-20 A	21-Apr-21	21-Apr-21	
AS001800	Portion B-2 (within 615 to 705 days from starting date) (SS by NCE-NCE-219)	705	23-Oct-19 A	26-Sep-21	21-Apr-21	26-Sep-21	0
AS001820	Planned Access Date for Portion B-2 (SS by NCE-NCE-219)	1	26-Sep-21	26-Sep-21*	26-Sep-21	26-Sep-21	0
AS001900	Works Area WA1-B (starting date)	1	23-Oct-19 A	23-Oct-19 A	22-Apr-21	22-Apr-21	
AS001910	Planned Access Date for Works Area WA1-B	1	23-Oct-19 A	23-Oct-19 A	22-Apr-21	22-Apr-21	
AS001920	Works Area WA3 (starting date)	1	23-Oct-19 A	23-Oct-19 A	22-Apr-21	22-Apr-21	
AS001930	Planned Access Date for Works Area WA3	1	23-Oct-19 A	23-Oct-19 A	22-Apr-21	22-Apr-21	
Key Dates							
AS002010	KD1A Submission of Civil Requirement Dwgs, Elec. Schematic Dwgs of UV System No.1 and Effluent Pumping Station No.1	196	23-Oct-19 A	05-May-20 A	24-May-21	24-May-21	
AS002020	KD2A Submission of Civil Requirement Dwgs, Elec. Schematic Dwgs of SD Bldg, SD & DC, CHP Bldg, Workshop No.2, etc.	226	23-Oct-19 A	04-Jun-20 A	09-Jun-21	09-Jun-21	
AS002040	KD2B Submission of Remaining Civil Requirement Dwgs, Elec. Schematic Dwgs of SD Bldg, SD & DC, CHP Bldg, etc.	461	23-Oct-19 A	15-Jan-21 A	09-Jun-21	09-Jun-21	
AS002050	KD3A Completion of Phase 1 Commissioning of Sidestream Treatment Facilities (1140d after Portion B-1 Access)	1141	30-Sep-20 A	14-Nov-23*	21-Apr-21	14-Nov-23	0
AS002060	KD5A - Completion of the BS Fittings Installation at CLP Sub-Station at Workshop No. 2 (245d after Portion C-3 Access)	226	26-Sep-21	09-May-22*	16-Oct-21	29-May-22	20
Completion Date							
Section 1 - Complete All Design at UV System No.1 & EP Station No. 1							
AS003100	Contract Duration of Section 1	291	23-Oct-19 A	08-Aug-20 A	04-Apr-24	04-Apr-24	
AS003110	Completion date - Section 1 (290 days after starting date)	0		08-Aug-20 A		04-Apr-24	

Remarks: The Defect Date is 4 Apr 2025 (365 days after Completion of the whole of the works)



Date	Revision	Checked	Approved
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM
29-Mar-21	Rev.8	LT	KM
30-Apr-21	Rev.9	LT	KM





File Name: DE/2018/03 RP R9
 Layout: DE1803 RP (Apr 2021) - WBS
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- Remaining Work
- Critical Activity
- Milestone
- ▬ Actual Progress

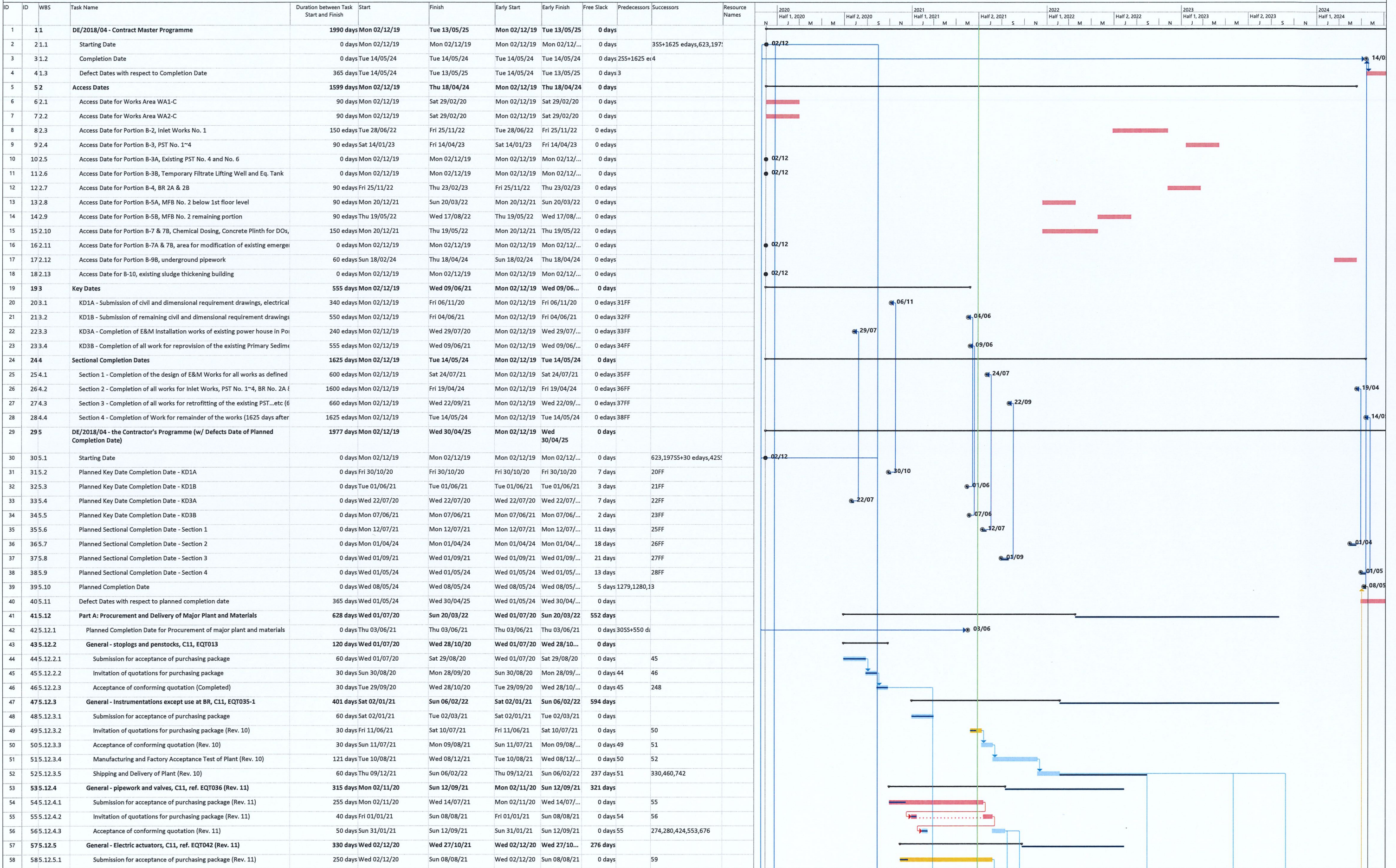
Contract No. DE/2018/03
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities
Revised Programme - as at 20 Apr 2021

Date	Revision	Checked	Approved
30-Dec-20	Rev.5	LT	KM
26-Jan-21	Rev.6	LT	KM
26-Feb-21	Rev.7	LT	KM
29-Mar-21	Rev.8	LT	KM
30-Apr-21	Rev.9	LT	KM

Activity ID	Activity Name	Original Duration	Early Start	Early Finish	Late Start	Late Finish	Total Float	2020												2021												2022												2023												2024																																															
								J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D																		
FSD Submission / Inspection																																																																																																							
AS509120	Prepare & Submit FSI/314 & FSI/501	14	06-Oct-23	19-Oct-23	20-Oct-23	02-Nov-23	14																																																																																																
AS509120a	FSD Review & Approval of FSI/314 & FSI/501	21	20-Oct-23	09-Nov-23	03-Nov-23	23-Nov-23	14																																																																																																
AS509140a	F.S. Inspection, Defects Rectification & Re-inspection	45	10-Nov-23	24-Dec-23	24-Nov-23	07-Jan-24	14																																																																																																
AS509200	Issuance of Acceptance Letter	28	25-Dec-23	21-Jan-24	08-Jan-24	04-Feb-24	14																																																																																																
AS509220	Application of D.G. Licence	0	10-Jul-22		25-Nov-22		138																																																																																																
AS509240	Processing of D.G. Licence Application	180	10-Jul-22	05-Jan-23	25-Nov-22	23-May-23	138																																																																																																
AS509250b	Apply for D.G. Inspection	45	06-Jan-23	19-Feb-23	24-May-23	07-Jul-23	138																																																																																																
AS509260	D.G. Inspection, Defects Rectification & Re-inspection (Ventilation Division)	45	20-Feb-23	05-Apr-23	08-Jul-23	21-Aug-23	138																																																																																																
AS509280b	D.G. Inspection, Defects Rectification & Re-inspection (DG Division)	45	06-Apr-23	20-May-23	22-Aug-23	05-Oct-23	138																																																																																																
AS509300b	Issue D.G. Licence	14	21-May-23	03-Jun-23	06-Oct-23	19-Oct-23	138																																																																																																
LD Submission																																																																																																							
AS509600h	Application for Boilers and Pressure Vessels to LD (Form 3)	30	26-Dec-22	24-Jan-23	20-Jan-23	18-Feb-23	25																																																																																																
Testing & Commissioning																																																																																																							
T&C of Control Monitoring System																																																																																																							
AS512380f	SAT of SCADA System	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36																																																																																																
AS512390f	SAT of PMS	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36																																																																																																
AS512400f	SAT of CMMS	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36																																																																																																
AS512410f	SAT of IDMS	180	09-May-23	04-Nov-23	14-Jun-23	10-Dec-23	36																																																																																																
AS512420f	Overall Testing for Whole System	90	05-Nov-23	02-Feb-24	11-Dec-23	09-Mar-24	36																																																																																																
T&C of E&M Process																																																																																																							
AS510100	SAT of THP System	15	24-Feb-23	10-Mar-23	21-Mar-23	04-Apr-23	25																																																																																																
AS510200a	System Commissioning Tests for THP System	30	11-Mar-23	09-Apr-23	05-Apr-23	04-May-23	25																																																																																																
AS510300	SAT for Sludge Dewatering System	15	11-Dec-22	25-Dec-22	06-Mar-23	20-Mar-23	85																																																																																																
AS510400	System Commissioning Tests for Sludge Dewatering System	30	10-Apr-23	09-May-23	20-Apr-23	19-May-23	10																																																																																																
AS510500	SAT for Biogas Storage System	30	21-Mar-23	19-Apr-23	21-Mar-23	19-Apr-23	0																																																																																																
AS510600	System Commissioning Tests for Biogas Storage System	30	20-Apr-23	19-May-23	20-Apr-23	19-May-23	0																																																																																																
AS510700	SAT for Sludge Digestion System	45	04-Feb-23	20-Mar-23	21-Mar-23	04-May-23	45																																																																																																
AS510800	System Commissioning Tests for Sludge Digestion System	30	05-May-23	03-Jun-23	05-May-23	03-Jun-23	0																																																																																																
AS510900	SAT for Gas Burning System	15	09-Apr-23	23-Apr-23	05-May-23	19-May-23	26																																																																																																
AS511000	System Commissioning Tests for Gas Burning System	30	20-May-23	18-Jun-23	20-May-23	18-Jun-23	0																																																																																																
AS511100	SAT for CHP System	30	09-Apr-23	08-May-23	20-Apr-23	19-May-23	11																																																																																																
AS511200	System Commissioning Tests for CHP System	30	20-May-23	18-Jun-23	20-May-23	18-Jun-23	0																																																																																																
AS511300b	SAT & System Commissioning Tests for Other Facilities	45	28-Apr-23	11-Jun-23	05-May-23	18-Jun-23	7																																																																																																
AS512100	Seeding	14	05-Jun-23	18-Jun-23	05-Jun-23	18-Jun-23	0																																																																																																
AS512200a	Process Start Up - Digester 1	120	19-Jun-23	16-Oct-23	19-Jun-23	16-Oct-23	0																																																																																																
AS512300a	Notice to Commence Phase 1 System Commissioning - Digester 1	3	17-Oct-23	19-Oct-23	09-Dec-23	11-Dec-23	53																																																																																																
AS512400a	Phase 1 System Commissioning - Digester 1	30	20-Oct-23	18-Nov-23	12-Dec-23	10-Jan-24	53																																																																																																
AS512500a	Process Start Up - Digester 2	120	11-Aug-23	08-Dec-23	11-Aug-23	08-Dec-23	0																																																																																																
AS512600a	Notice to Commence Phase 1 System Commissioning - Digester 2	3	09-Dec-23	11-Dec-23	09-Dec-23	11-Dec-23	0																																																																																																
AS512700a	Phase 1 System Commissioning - Digester 2	30	12-Dec-23	10-Jan-24	12-Dec-23	10-Jan-24	0																																																																																																
AS512800a	Phase 2 System Commissioning - Digester 1 & 2	7	11-Jan-24	17-Jan-24	11-Jan-24	17-Jan-24	0																																																																																																
AS512900a	Notice to Commence Plant Commissioning	7	18-Jan-24	24-Jan-24	18-Jan-24	24-Jan-24	0																																																																																																
AS513000a	Plant Commissioning Tests	45	25-Jan-24	09-Mar-24	25-Jan-24	09-Mar-24	0																																																																																																

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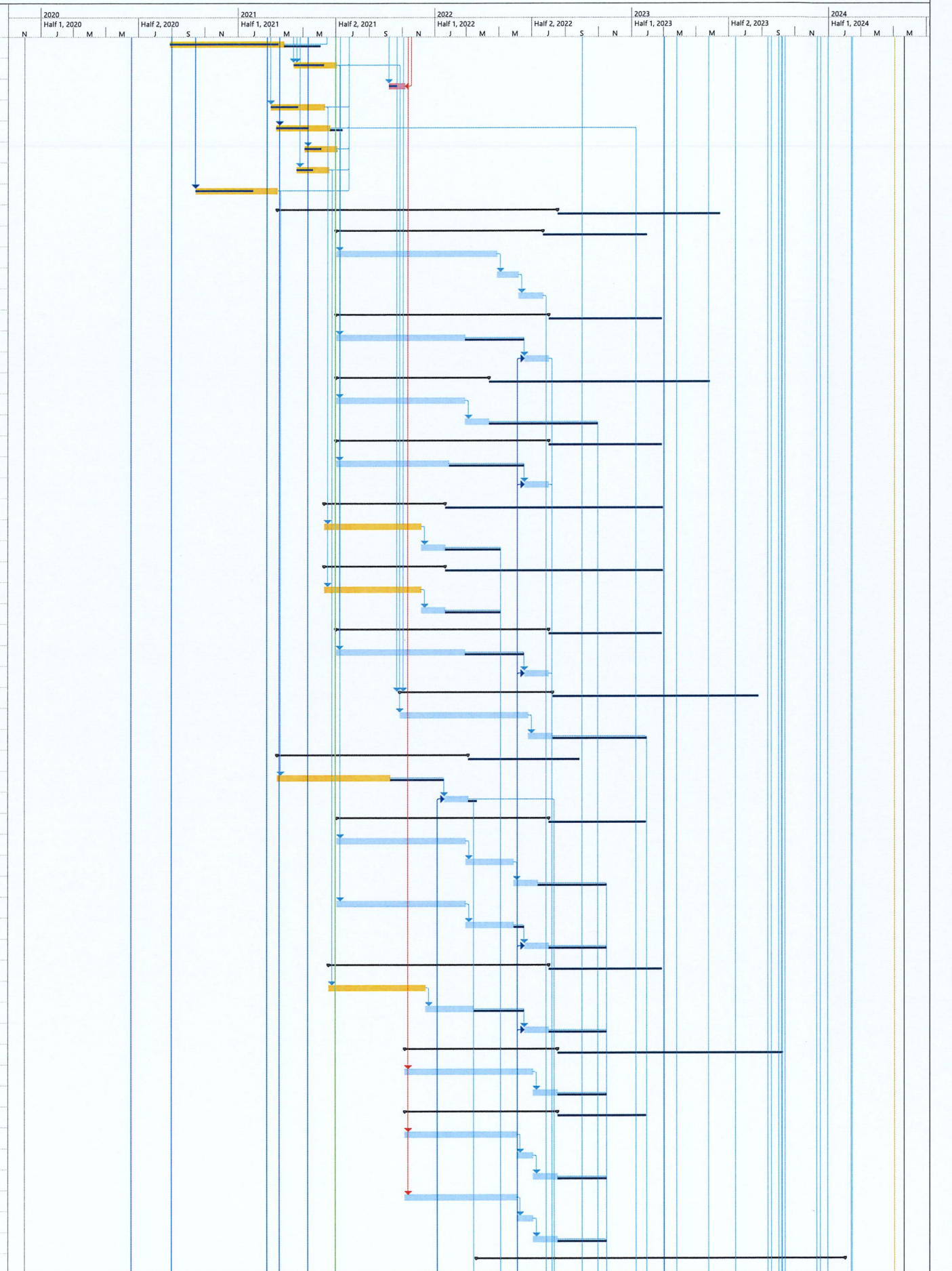
Task: Milestone: Project Summary: Late: Critical Split: Manual Progress: Milestone (Actual): Milestone, Tentative: Summary: Manual Summary: Critical: Progress: Slack (Float): Slack:

Main project schedule table with columns for ID, WBS, Task Name, Duration, Start/Finish dates, and a Gantt chart visualization for each task.

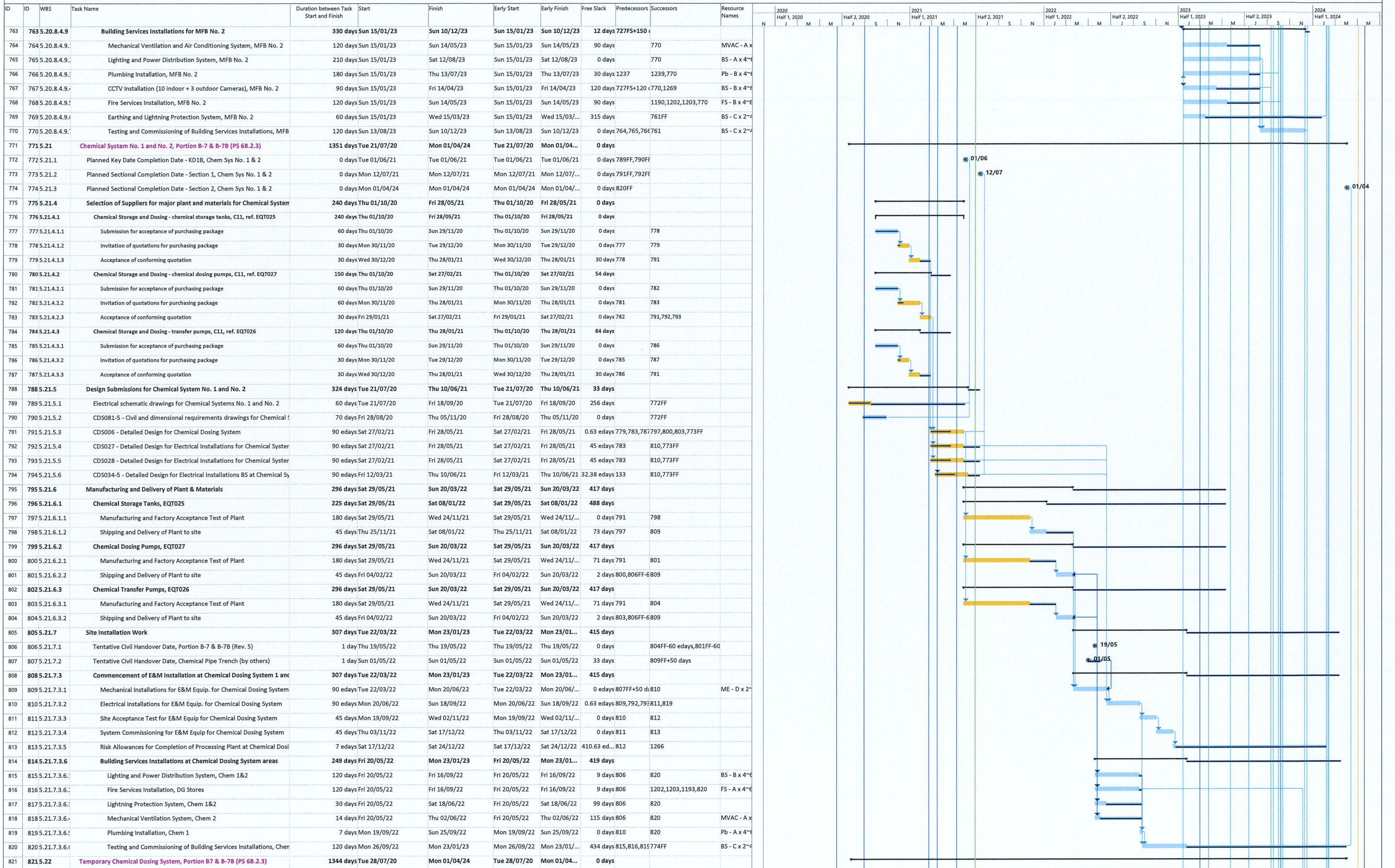
Legend for the Gantt chart symbols and colors, including Task, Milestone, Project Summary, Late, Critical Split, Manual Progress, Milestone (Actual), Slack (Float), and Slack.

Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 E&M Works for Sewage Treatment Facilities

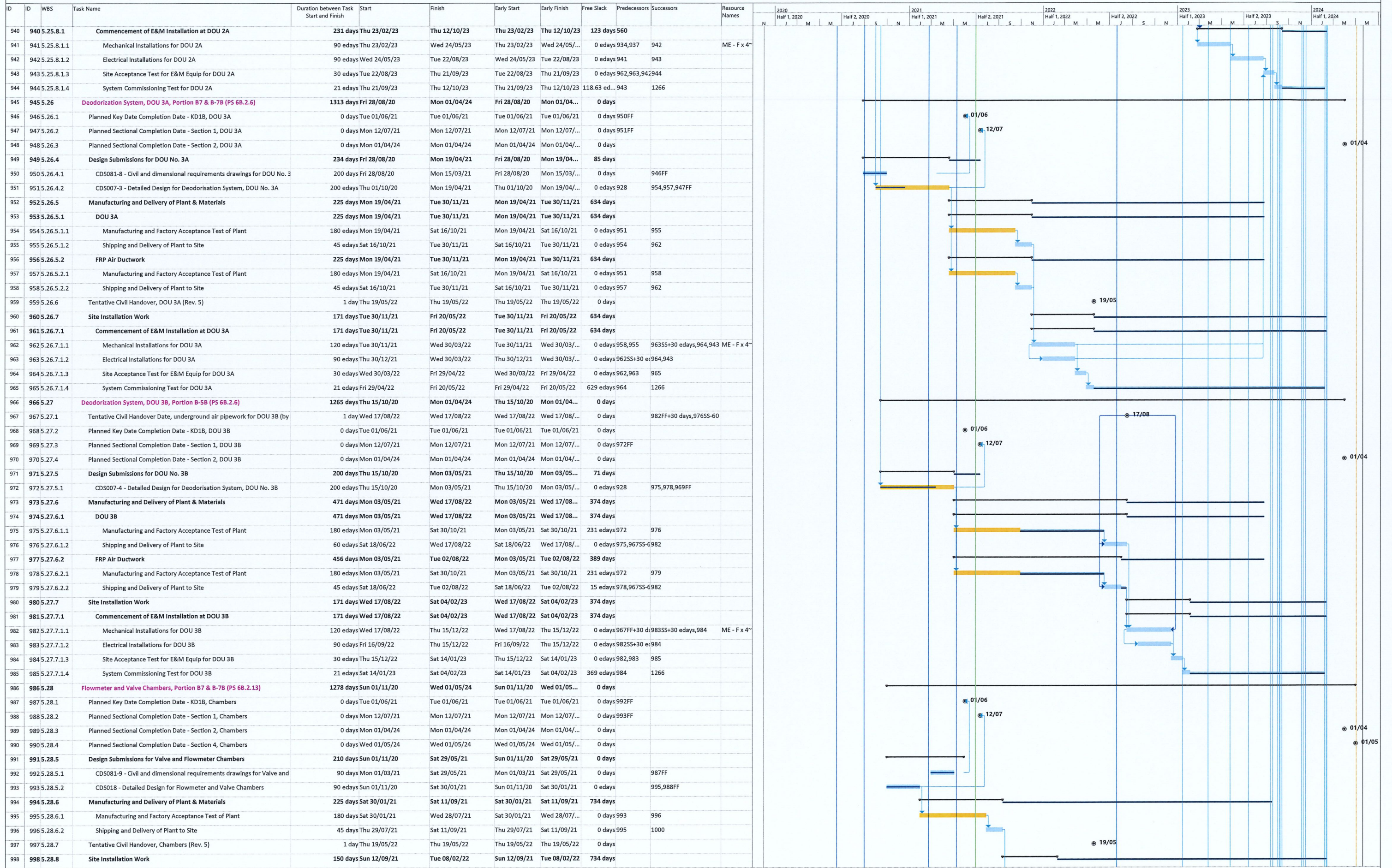
Table with columns: ID, WBS, Task Name, Duration between Task Start and Finish, Start, Finish, Early Start, Early Finish, Free Slack, Predecessors, Successors, Resource Names.



Legend table with columns: Task, Milestone, Project Summary, Late, Critical Split, Manual Progress, Milestone (Actual), Milestone, Tentative, Summary, Manual Summary, Critical, Progress, Slack (Float), Slack.



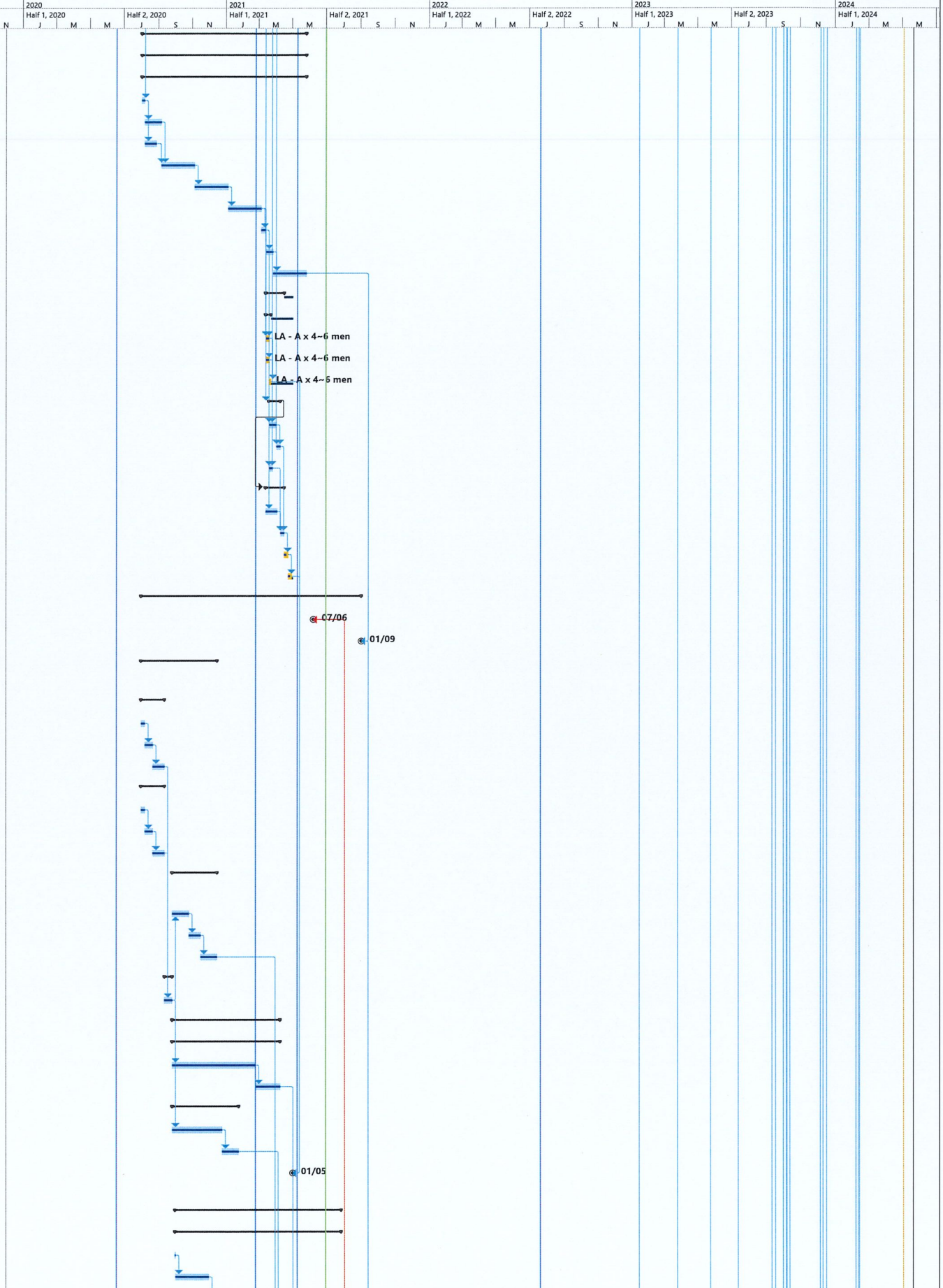
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 E&M Works for Sewage Treatment Facilities



	Task Milestone, Tentative		Milestone Summary Project Summary Manual Summary Late Critical Critical Split Progress Manual Progress Slack (Float) Slack
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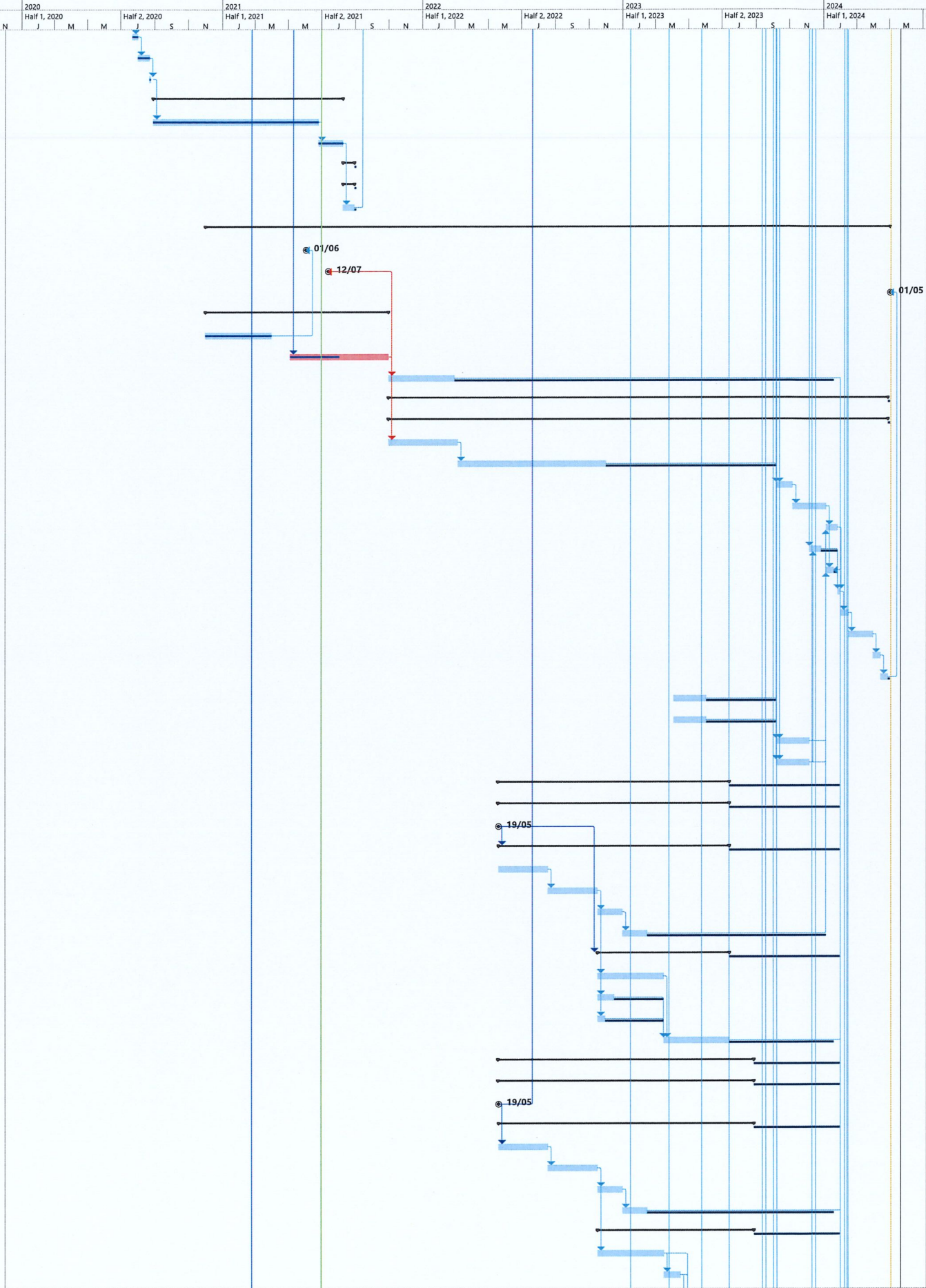
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 E&M Works for Sewage Treatment Facilities

Table with columns: ID, WBS, Task Name, Duration between Task Start and Finish, Start, Finish, Early Start, Early Finish, Free Slack, Predecessors, Successors, Resource Names. Rows include tasks like 'Site Installation Work', 'Civil Construction Work', and 'Mechanical Installations for Temp. Filtrate Lifting Well and Eq. Tank'.



Legend for project symbols and colors: Task (blue), Milestone (yellow), Project Summary (grey), Late (red), Critical Split (orange), Manual Progress (dotted), Milestone (Actual) (green), Milestone, Tentative (circle with dot), Summary (circle), Manual Summary (circle), Critical (triangle), Progress (red bar), Slack (Float) (dashed), Slack (circle), and star symbol.

Main project schedule table with columns: ID, WBS, Task Name, Duration between Task Start and Finish, Start, Finish, Early Start, Early Finish, Free Slack, Predecessors, Successors, Resource Names. Includes tasks like 'Invitation of quotations for purchasing package', 'Manufacturing and Delivery of Plant & Materials', and 'Fire Services Installation'.



Legend for the Gantt chart showing symbols for Task, Milestone, Project Summary, Late, Critical Split, Manual Progress, Milestone (Actual), Milestone, Tentative, Summary, Manual Summary, Critical, Progress, Slack (Float), and Slack.

Proposed Work Programme for DE/2018/04
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 E&M Works for Sewage Treatment Facilities

ID	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Free Slack	Predecessors	Successors	Resource Names	2020		2021		2022		2023		2024	
												Half 1, 2020	Half 2, 2020	Half 1, 2021	Half 2, 2021	Half 1, 2022	Half 2, 2022	Half 1, 2023	Half 2, 2023	Half 1, 2024	Half 2, 2024
1287	1287.6.9	MA2 - Modular and Standardized Design	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1288	1288.6.10	MA8 - Ozone Depleting Substances	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1289	1289.6.11	MA11 - Construction Waste Reduction	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1290	1290.6.12	EUP1 - Minimum Energy Performance	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1291	1291.6.13	EU1 - Reduction of CO2 Emissions	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1292	1292.6.14	EU2 - Peak Electricity Demand Reduction	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1293	1293.6.15	EU6 - Renewable Energy Systems	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1294	1294.6.16	EU9 - Energy Efficient Appliances	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1295	1295.6.17	EU10 - Testing and Commissioning	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1296	1296.6.18	EU11 - Operation and Maintenance	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1297	1297.6.19	EU12 - Meter and Monitoring	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1298	1298.6.20	WUP1 - Water Quality Survey	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1299	1299.6.21	WUP2 - Minimum Water Saving Performance	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1300	1300.6.22	WU1 / WU6 - Annual Water Use / Effluent Discharge to Foul Sewers	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1301	1301.6.23	IEQ1 - Minimum Ventilation Performance	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1302	1302.6.24	IEQ1 - Security	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1303	1303.6.25	IEQ2 - Plumbing and Drainage	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1304	1304.6.26	IEQ3 - Biological Contamination	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1305	1305.6.27	IEQ5 - Construction IAQ Management	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1306	1306.6.28	IEQ6 / IEQ7 - IAQ	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1307	1307.6.29	IEQ9 - Increased Ventilation	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1308	1308.6.30	IEQ11 - Localised Ventilation	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1309	1309.6.31	IEQ12 - Ventilation in Common Areas	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1310	1310.6.32	IEQ13 - Thermal Comfort in Air - Conditioned Premises	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1311	1311.6.33	IEQ16 / IEQ17 - Interior Lighting in Normally Occupied Area / Interior Lighting in Areas not Normally Occupied	1450 days	Fri 01/05/20	Fri 19/04/24	Fri 01/05/20	Fri 19/04/24	19 days		39											
1312	1312.7	Summary of compensation events notified	126 days?	Wed 22/04/20	Tue 25/08/20	Wed 22/04/20	Tue 25/08/20	0 days?													
1313	1313.7.1	Compensation Event (CE) No. 001, Special Arrangement in Reducing the Risk	1 day	Tue 25/08/20	Tue 25/08/20	Tue 25/08/20	Tue 25/08/20	0 days				● 25/08									
1314	1314.7.2	Compensation Event (CE) No. 002, the Contractor's Site Accommodation by	1 day	Mon 08/06/20	Mon 08/06/20	Mon 08/06/20	Mon 08/06/...	0 days				● 08/06									
1315	1315.7.3	Compensation Event (CE) No. 003, Designated Area for the Contractor's Site	1 day	Wed 22/04/20	Wed 22/04/20	Wed 22/04/20	Wed 22/04/...	0 days				● 22/04									
1316	1316.7.4	Compensation Event (CE) No. 005, Designated Area for the Contractor's Stor	1 day	Wed 22/04/20	Wed 22/04/20	Wed 22/04/20	Wed 22/04/...	0 days				● 22/04									
1317	1317.7.5	Compensation Event (CE) No. 007, Employment of Temporary Staff under Ai	1 day	Fri 10/07/20	Fri 10/07/20	Fri 10/07/20	Fri 10/07/20	0 days				● 10/07									
1318	1318.7.6	Compensation Event (CE) No. 009, Provision of an Additional Primary Sludge	1 day	Tue 14/07/20	Tue 14/07/20	Tue 14/07/20	Tue 14/07/20	0 days				● 14/07									
1319	1319.7.7	Compensation Event (CE) No. 011, Dismantling, relocating, disconnecting an	1 day?	Fri 17/07/20	Fri 17/07/20	Fri 17/07/20	Fri 17/07/20	0 days?				● 17/07									