

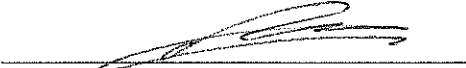
Drainage Services Department

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

Monthly EM&A Report

April 2020

(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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Ref.: DSDSWHS1EM00_0_0049L.20

13 May 2020

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 April 2020

Reference is made to the Environmental Team's submission of Monthly EM&A Report for April 2020 (Version 1) certified by the ET Leader and provided to us via e-mail on 13 May 2020.

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.

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

Ray Yan
Independent Environmental Checker

c.c.

DSD
Cinotech

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

(By Fax: 3104 6420)
(By Fax: 3107 1388)

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EXECUTIVE SUMMARY**Introduction**

1. This is the 4th 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 April 2020.

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"> • Piling installation • Sheet piling installation • Drainage diversion 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"> • Site cleaning tidy up and clearance • Predrilling works • Demolition works • Drainage and underground utilities
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	No construction activities in the reporting month.
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	No construction activities in the reporting month.

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

Air Quality

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

Water Quality

- Ponding water was pumped and collected in the sedimentation tank.
- Manholes were covered by impervious sheets to prevent muddy water flowing into the drainage system.
- The water pump drainage was repaired and well-maintained to prevent water accumulation on-site.

Waste Management

- General refuse was removed to avoid waste accumulation.
- Waste stockpile was covered by tarpaulin sheets.

Summary of Exceedances, Investigation and Follow-up

4. Exceedance of Action/Limit levels during the reporting month (April 2020) 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 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"> • Piling installation • Sheet piling installation • Drainage diversion 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"> • Site cleaning tidy up and clearance • Demolition works • Drainage and underground utilities • Sheet pile construction
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"> • Site clearance and fencing work
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"> • Preparation work of E&M installation at temporary filtrate lifting well and equalization tank • Preparation work of 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 4th Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in April 2020.

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	Mr. Henry Tai	3792 0580
Cinotech	Environmental Team	Mr. KS Lee (ET Leader)	2151 2091
		Ms. Betty Choi	2151 2072
Ramboll	Independent Environmental Checker	Mr. Ray Yan	3465 2836
KLCWJV	Contractor (DC/2018/06)	Mr. Yip Yun Lam	9532 7174
KLCWJV	Contractor (DC/2018/07)	Mr. Karsten Kwong	9771 0059
JEC	Contractor (DE/2018/03)	Mr. Lau Kim Hung	2947 1125
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"> • Piling installation • Sheet piling installation • Drainage diversion 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"> • Site cleaning tidy up and clearance • Predrilling works • Demolition works • Drainage and underground utilities
DE/2018/03	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - Sidestream Treatment Facilities and E&M Works for Sludge Treatment Facilities	No construction activities in the reporting month.
DE/2018/04	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 - E&M Works for Sewage Treatment Facilities	No construction activities in the reporting month.

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 April 2020.

Statues 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
All	EP-474/2013	21 Nov 2013	N/A	Valid
Notification of Construction Works under Air Pollution Control Ordinance (APCO)				
DC/2018/06	449210 (Portion A & C)	23 Sep 2019	11 Mar 2024	Valid
DC/2018/06	449211 (WM1)	23 Sep 2019	11 Mar 2024	Valid
DC/2018/07	N/A	11 Nov 2019	31 Dec 2024	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
Effluent Discharge License				
DC/2018/06	WT00035431-2019 (Portion C)	20 Jan 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

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
Construction Noise Permit (Water Pump)				
DC/2018/06	GW-RN0044-20	15 Feb 2020	14 Apr 2020	Expired on 14 Apr 2020
Admission Ticket for Disposal of Special Waste				
DC/2018/07	15646	27 Apr 2020	26 Jul 2020	Valid

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 (Wellab Ltd.) 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 (April 2020), $\mu\text{g}/\text{m}^3$
AM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	24.0 - 93.6
AM2 - Fu Tei Au	FLN-E28	255	24.0 - 122.4

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 (April 2020), $\mu\text{g}/\text{m}^3$
AM1a - Site Boundary of the Shek Wu Hui STW (East)	N/A ⁽¹⁾	37.7 - 79.6
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A ⁽¹⁾	35.2 - 76.2

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	2
	SVAN 957	1
Calibrator	ST-120	1

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 (April 2020), Leq (30min) dB(A)
NM1 - Wai Loi Tsuen	N/A	N/A ⁽¹⁾	53.8 – 59.9
NM2 - Fu Tei Au	N/A	N/A ⁽¹⁾	57.6 - 66.4
NM3 – Man Kok Village	FN-18	66-75	53.4 - 62.1

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	普通鷓鴣
<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	57	632
Waterbirds	20	221

- 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	80
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	0
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	47
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鷓鴣	1
<i>Ardea alba</i>	Great Egret	大白鷺	23
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	44

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	0.808	✓	✓
	Seasonal	1.256	✓	✓

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	-0.310	✓	✓	0.000	✓	✓	✓
Grey Heron	N/A*						
Chinese Pond Heron	-0.899	✓	✓	-1.446	✓	✓	✓
Great Cormorant	N/A*						
Great Egret	3.806	✓	✓	3.761	✓	✓	✓
Eastern Cattle Egret	0.835	✓	✓	1.790	✓	✓	✓

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.

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

Observations

4.16 Waterbird behaviour observed during ecological monitoring are listed below:

- Flying
- Foraging
- Singing
- Soaring
- Resting
- Fighting

4.17 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)	Excavation	Oil stain, excavation, fishing
T2 (PC3, PC4)	Vibration hammer, excavation, drilling	Helicopter, mowing, oil stain
PC5	N/A	Jaywalking
T3 (PC6, PC7)	N/A	Singing, fishing, oil stain, logging

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 were conducted on 9, 14, 21 & 28 April 2020 in the reporting month. Joint site inspection with the representative of IEC was conducted on 9 April 2020. 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 and 8.2**. 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>	9 Apr 2020	Stockpile should be covered with impervious materials to prevent dust generation at Portion C.	The condition was observed to be improved/rectified by the contractor during the audit session on 14 Apr 2020.
	14 Apr 2020	Dusty materials were observed on the haul road at Portion C when a truck passed by. More frequent water spraying should be provided to avoid dust generation.	The condition was observed to be improved/rectified by the contractor during the audit session on 21 Apr 2020.
	28 Apr 2020	Dust generation was observed in the unpaved area at the western side of Portion C. Water spraying should be provided to minimize air quality impact in the area.	Follow-up actions will be reported in the next month.
<i>Noise</i>	N/A	There was no observation in the reporting period.	N/A
<i>Waste / Chemical Management</i>	14 & 21 Apr 2020	Waste deposited should be removed and tidied up as soon as possible at Portion A.	The condition was observed to be improved/rectified by the contractor during the audit session on 28 Apr 2020.

Parameters	Date	Observations and Recommendations	Follow-up
	28 Apr 2020	General refuse and construction waste was deposited at Portion A. The Contractor should clear and separate the general refuse and construction waste or cover them with impervious materials to prevent waste accumulation.	Follow-up actions will be reported in the next month.
	28 Apr 2020	Chemicals should be stored inside the drip tray properly at Portion C.	Follow-up actions will be reported in the next month.
<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>	14 Apr 2020	General refuse and waste stockpile accumulated should be removed or covered by impervious materials at Portion B.	The condition was observed to be improved/rectified by the contractor during the audit session on 21 Apr 2020.
<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. The summary of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix O**.
- 9.2 One (1) environmental complaint regarding muddy water discharge near SWHEPP from the previous reporting period was required to be followed up in this reporting month. The investigation details and follow-up actions are provided in **Table 9.1**.

Table 9.1 Summary of Complaint Follow-up Actions in the Reporting Month

Received Date	Date of Incident / Location	Summary	Follow-up/ Remedial Actions	Status/ Remarks
18 March 2020	Mid-February – March 2020/ Expansion Site of SWHSTP	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 	Complaint Investigation Report was submitted in April 2020

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"> • Piling installation • Sheet piling installation • Drainage diversion 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"> • Site cleaning tidy up and clearance • Demolition works • Drainage and underground utilities • Sheet pile construction
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"> • Site clearance and fencing work
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"> • Preparation work of E&M installation at temporary filtrate lifting well and equalization tank • Preparation work of 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;
- Appropriate design of drainage system in order to facilitate storm flow;
- Control of sediment runoff after rainstorms;
- Minimization of soil excavation works during rainstorms to prevent dirty runoff flowing into surrounding waters;
- 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 4th 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/Limit Level was triggered for all ecological monitoring in the reporting month.

Site Audit

- 11.5 4 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.
- 11.7 1 environmental complaint from the previous reporting period was required to be followed up in the reporting month.

Recommendations

11.8 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.
- The public road should keep free from dust and soil.

Water Quality

- Ponding water should be removed and pumped through the sedimentation tank.
- The drainage pipes and system should be well-maintained.
- Water from road washing should not fall into the manholes and drainage system.
- 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.

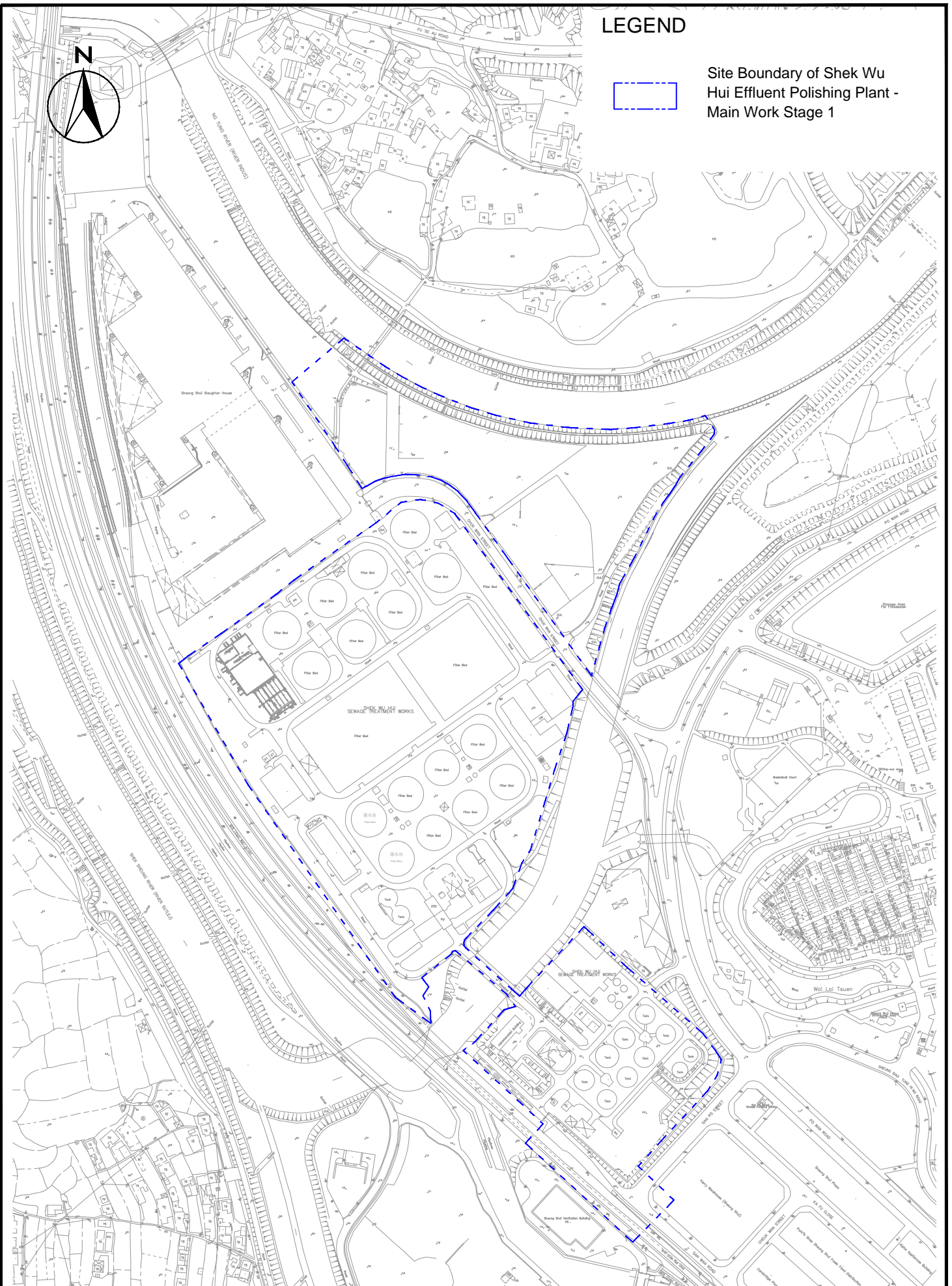
FIGURES



LEGEND



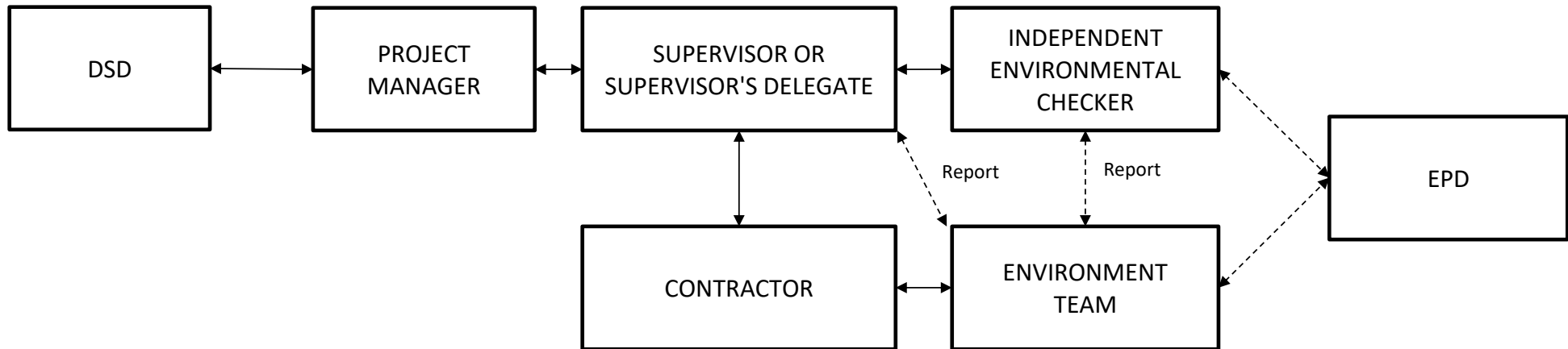
Site Boundary of Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1



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

Site Layout

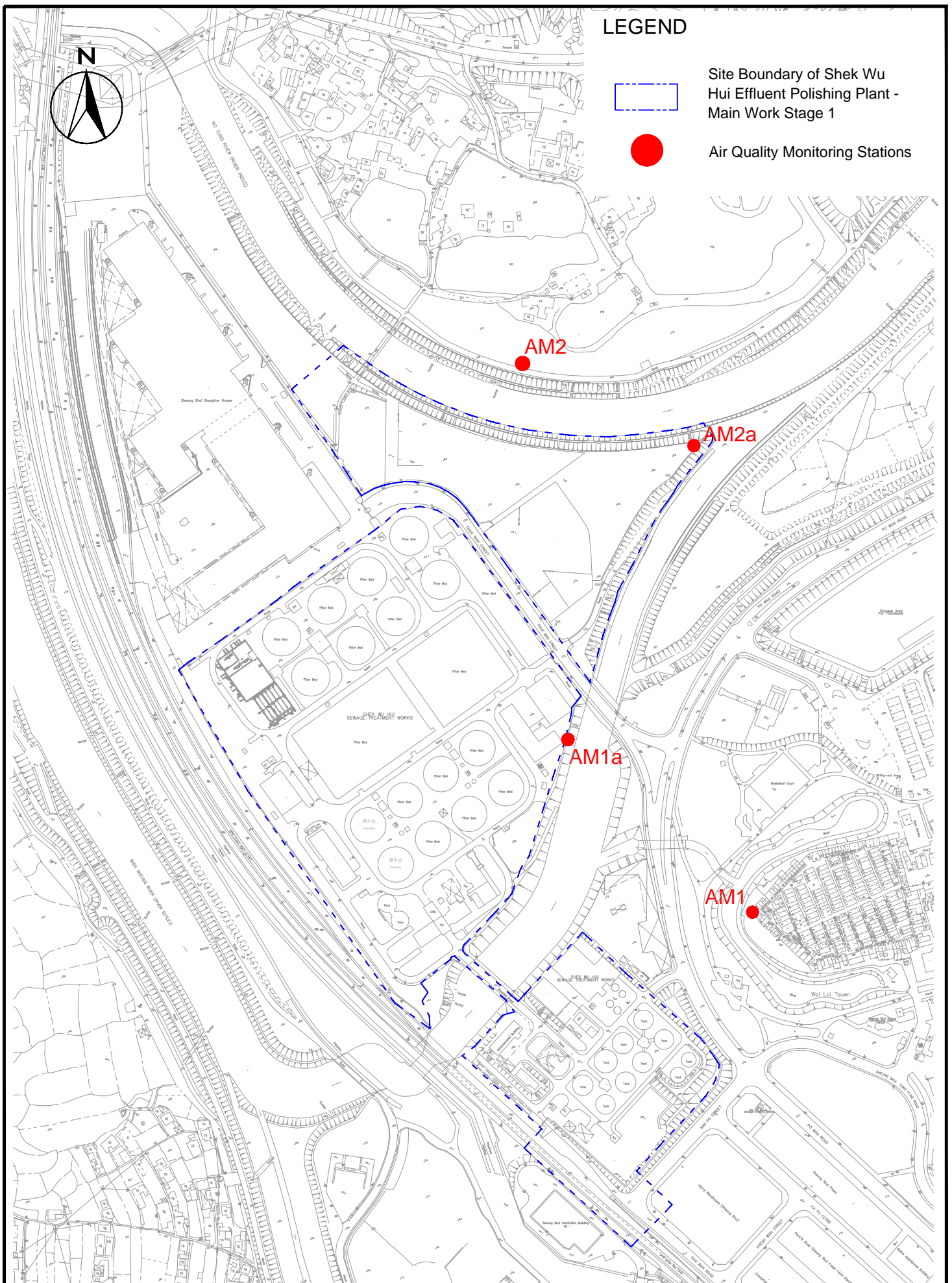
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CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	1.1
		REV	-



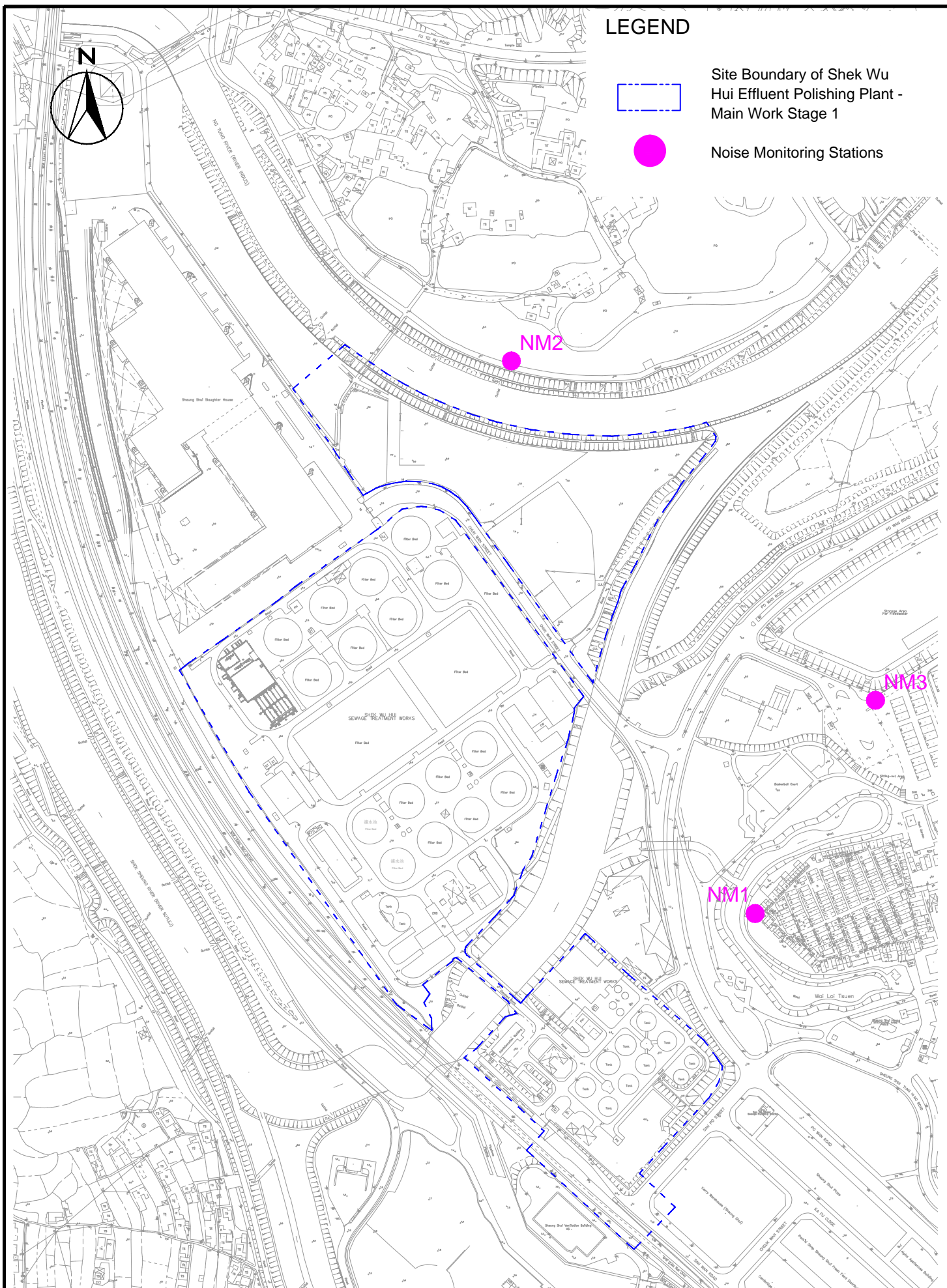
CINOTECH

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

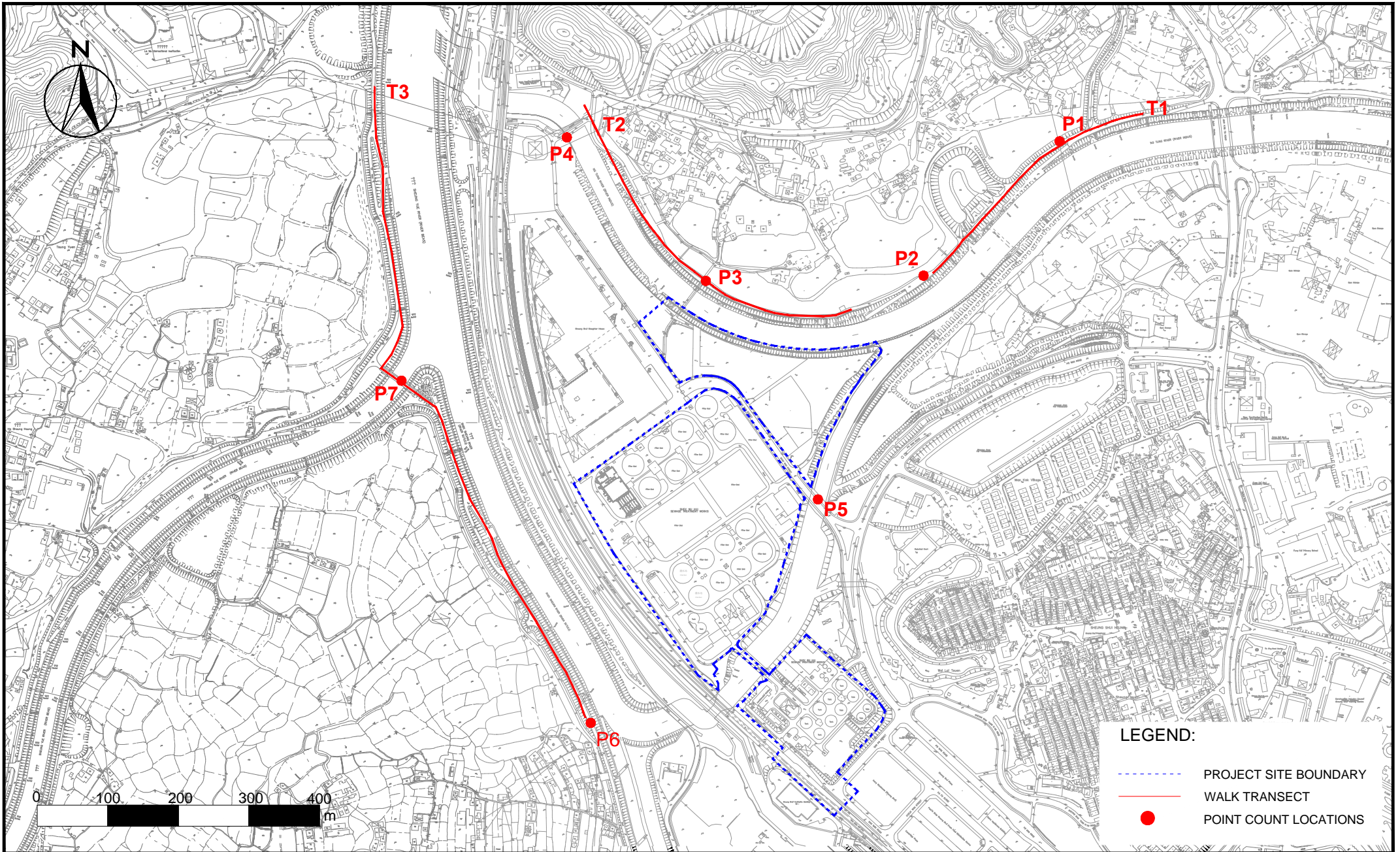
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JOB No.	MA19019	FIGURE NO.	2
		REV	-



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



LEGEND:

- - - - - PROJECT SITE BOUNDARY
- WALK TRANSECT
- POINT COUNT LOCATIONS



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) ⁽¹⁾

Note:

(1) 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.

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. SPW07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Impact Air, Noise and Ecology Monitoring Schedule (April 2020)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1-Apr	2-Apr	3-Apr	4-Apr
					24 hrs TSP	
5-Apr	6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr
	1 hr TSP x 3 Noise		Ecology	1 hr TSP x 3 24 hrs TSP		
12-Apr	13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr
		1 hr TSP x 3 Noise Ecology	24 hrs TSP			
19-Apr	20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr
	1 hr TSP x 3 Noise	24 hrs TSP			1 hr TSP x 3 Ecology	
26-Apr	27-Apr	28-Apr	29-Apr	30-Apr		
	24 hrs TSP Ecology		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. SPW07/2019
Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1
Tentative Impact Air, Noise and Ecology Monitoring Schedule (May 2020)

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

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

**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 6-Feb-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 6-Apr-20
 Model No.: LD-5R
 Serial No.: 972778
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 735 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 735 CPM

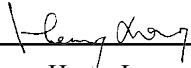
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	48.0	112.5
2	38.0	108.0
3	27.0	102.5
Average	37.7	107.7
By Linear Regression of Y on X Slope , mw = <u>0.4766</u> Intercept, bw = <u>89.7153</u> Correlation coefficient* = <u>0.9995</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)	107.7	
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)	37.7	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]	<u>2.9</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 (Wellab Litimed)

Calibrated by: 
 .Wong Shing Kwai

Approved by: 
 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 6-Apr-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 6-Jun-20
 Model No.: LD-5R
 Serial No.: 972778
 Equipment No.: SA-01-07 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 735 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 735 CPM

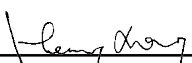
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	44.0	84.5
2	34.0	81.0
3	25.0	76.8
Average	34.3	80.8
By Linear Regression of Y on X Slope , mw = <u>0.4042</u> Intercept, bw = <u>66.8876</u> Correlation coefficient* = <u>0.9966</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)	80.8	
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)	34.3	
Measureing time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]	<u>2.4</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 (Wellab Litimed)

Calibrated by: 
 Wong Shing Kwai

Approved by: 
 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 6-Feb-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 6-Apr-20
 Model No.: LD-5R
 Serial No.: 972779
 Equipment No.: SA-01-08 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 744 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 744 CPM

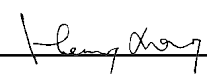
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	52.0	112.5
2	36.0	108.0
3	19.0	102.5
Average	35.7	107.7
By Linear Regression of Y on X Slope , mw = <u>0.3032</u> Intercept, bw = <u>96.8510</u> Correlation coefficient* = <u>0.9992</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)	107.7	
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)	35.7	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]	<u>3.0</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 (Wellab Litimed)

Calibrated by: 
 Wong Shing Kwai

Approved by: 
 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 6-Apr-20
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 6-Jun-20
 Model No.: LD-5R
 Serial No.: 972779
 Equipment No.: SA-01-08 Sensitivity 0.001 mg/m3
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 744 CPM
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 744 CPM

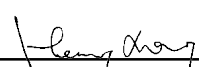
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ($\mu\text{g}/\text{m}^3$) X-axis	Mass concentration ($\mu\text{g}/\text{m}^3$) Y-axis
1	45.0	84.5
2	32.0	81.0
3	18.0	76.8
Average	31.7	80.8
By Linear Regression of Y on X Slope , mw = <u>0.2854</u> Intercept, bw = <u>71.7298</u> Correlation coefficient* = <u>0.9995</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ($\mu\text{g}/\text{m}^3$)	80.8	
Particulate Concentration by Dust Meter ($\mu\text{g}/\text{m}^3$)	31.7	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [K=High Volume Sampler / Dust Meter, ($\mu\text{g}/\text{m}^3$)]	<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 (Wellab Litimed)

Calibrated by: 
 Wong Shing Kwai

Approved by: 
 Henry Leung

Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 17, 2020	Rootsmeter S/N: 438320	Ta: 295 °K	
Operator: Jim Tisch		Pa: 744.2 mm Hg	
Calibration Model #: TE-5025A	Calibrator S/N: 3746		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4340	3.2	2.00
2	3	4	1	1.0180	6.4	4.00
3	5	6	1	0.9080	7.9	5.00
4	7	8	1	0.8700	8.7	5.50
5	9	10	1	0.7150	12.6	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)
0.9849	0.6868	1.4066	0.9957	0.6944	0.8904
0.9807	0.9633	1.9892	0.9914	0.9739	1.2592
0.9787	1.0779	2.2240	0.9894	1.0896	1.4078
0.9776	1.1237	2.3325	0.9883	1.1360	1.4765
0.9724	1.3601	2.8131	0.9831	1.3749	1.7808
QSTD	m=	2.09221	QA	m=	1.31010
	b=	-0.02779		b=	-0.01759
	r=	0.99994		r=	0.99994

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. MA19019/17/0003

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)
 Date: 5-Mar-20 Next Due Date: 5-May-20 Operator: SK
 Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	<u>291.2</u>	Pressure, Pa (mmHg)	<u>764.4</u>

Orifice Transfer Standard Information					
Serial No.	<u>3746</u>	Slope, mc	<u>0.0592</u>	Intercept, bc	<u>-0.02740</u>
Last Calibration Date:	<u>17-Jan-20</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>17-Jan-21</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>16.0</u>	4.06	69.01	<u>10.4</u>	3.27
2	<u>12.5</u>	3.59	61.05	<u>7.8</u>	2.83
3	<u>9.2</u>	3.08	52.44	<u>6.2</u>	2.53
4	<u>5.5</u>	2.38	40.65	<u>4.0</u>	2.03
5	<u>3.2</u>	1.81	31.12	<u>2.4</u>	1.57

By Linear Regression of Y on X

Slope, mw = 0.0436 Intercept, bw = 0.2268
 Correlation coefficient* = 0.9984

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.30

Remarks: _____

Conducted by: SK Wong Signature: Date: 05 March 2020

Checked by: Henry Leung Signature: Date: 05 March 2020

High-Volume TSP Sampler

5-POINT CALIBRATION DATA SHEET



File No. MA19019/24/0003

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)
 Date: 5-Mar-20 Next Due Date: 5-May-20 Operator: SK
 Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	<u>291.2</u>	Pressure, Pa (mmHg)	<u>764.4</u>

Orifice Transfer Standard Information					
Serial No.	<u>3746</u>	Slope, mc	<u>0.0592</u>	Intercept, bc	<u>-0.02740</u>
Last Calibration Date:	<u>17-Jan-20</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>17-Jan-21</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>14.5</u>	3.86	65.72	<u>9.9</u>	3.19
2	<u>11.0</u>	3.36	57.30	<u>7.6</u>	2.80
3	<u>8.1</u>	2.89	49.24	<u>6.1</u>	2.51
4	<u>5.1</u>	2.29	39.16	<u>4.3</u>	2.10
5	<u>3.2</u>	1.81	31.12	<u>3.1</u>	1.79

By Linear Regression of Y on X

Slope, mw = 0.0402 Intercept, bw = 0.5261
 Correlation coefficient* = 0.9993

*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 = $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$ 4.94

Remarks: _____

Conducted by: SK Wong Signature: Date: 05 March 2020

Checked by: Henry Leung Signature: Date: 05 March 2020

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: 30-Oct-2019
 Next Due Date: 30-Apr-2020

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
2.5	2.7	-0.2
4.0	4.3	-0.3


2. Performance check of Wind Direction

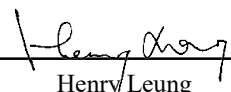
Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

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-Apr-20	19.7	91	0.2
2-Apr-20	19.9	86	0.4
3-Apr-20	20.4	88	0.6
4-Apr-20	20.8	89	1.1
5-Apr-20	18.2	88	4.6
6-Apr-20	17.1	92	21.5
7-Apr-20	19.1	86	Trace
8-Apr-20	20.6	71	0
9-Apr-20	21.6	69	0
10-Apr-20	21.7	73	0
11-Apr-20	22.5	88	20.5
12-Apr-20	20.8	59	0.4
13-Apr-20	20.2	44	0
14-Apr-20	21.1	65	0
15-Apr-20	22.2	66	0
16-Apr-20	23.3	77	0
17-Apr-20	24.1	79	0
18-Apr-20	24.4	81	Trace
19-Apr-20	25.9	80	0
20-Apr-20	26.4	81	0
21-Apr-20	26.7	82	0
22-Apr-20	22.1	94	25.8
23-Apr-20	20.6	89	1.3
24-Apr-20	19.4	84	0.6
25-Apr-20	20.5	83	0.1
26-Apr-20	23.1	75	0.7
27-Apr-20	24.4	65	0
28-Apr-20	24.3	64	0
29-Apr-20	24.2	72	0
30-Apr-20	25.3	74	0

* 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-Apr-20	1:00	63.4	0.1
1-Apr-20	2:00	101.5	0.1
1-Apr-20	3:00	120.5	0.1
1-Apr-20	4:00	42.1	0.3
1-Apr-20	5:00	56.1	0.4
1-Apr-20	6:00	96.8	0.1
1-Apr-20	7:00	134.6	0.1
1-Apr-20	8:00	84.9	0.7
1-Apr-20	9:00	78.6	0.5
1-Apr-20	10:00	101.6	0.6
1-Apr-20	11:00	43.9	0.3
1-Apr-20	12:00	58.9	0.2
1-Apr-20	13:00	46.2	0.2
1-Apr-20	14:00	96.7	0.1
1-Apr-20	15:00	54.1	0.4
1-Apr-20	16:00	109.8	0.3
1-Apr-20	17:00	36.1	0.1
1-Apr-20	18:00	65.0	0.1
1-Apr-20	19:00	146.8	0.1
1-Apr-20	20:00	53.9	0.2
1-Apr-20	21:00	46.7	0.2
1-Apr-20	22:00	85.6	0.1
1-Apr-20	23:00	94.3	0.3
2-Apr-20	0:00	56.7	0.1
2-Apr-20	1:00	59.6	0.1
2-Apr-20	2:00	106.5	0.4
2-Apr-20	3:00	71.6	0.1
2-Apr-20	4:00	49.5	0.5
2-Apr-20	5:00	62.3	0.4
2-Apr-20	6:00	119.5	0.7
2-Apr-20	7:00	45.6	0.3
2-Apr-20	8:00	78.0	0.3
2-Apr-20	9:00	95.6	0.3
2-Apr-20	10:00	78.6	0.4
2-Apr-20	11:00	45.1	0.2
2-Apr-20	12:00	126.9	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)
2-Apr-20	13:00	67.8	0.4
2-Apr-20	14:00	45.9	0.3
2-Apr-20	15:00	83.6	0.1
2-Apr-20	16:00	46.5	0.2
2-Apr-20	17:00	137.4	0.1
2-Apr-20	18:00	89.5	0.2
2-Apr-20	19:00	96.1	0.3
2-Apr-20	20:00	81.2	0.4
2-Apr-20	21:00	64.0	0.1
2-Apr-20	22:00	42.3	0.2
2-Apr-20	23:00	71.3	0.2
3-Apr-20	0:00	92.5	0.1
3-Apr-20	1:00	89.8	0.1
3-Apr-20	2:00	45.2	0.2
3-Apr-20	3:00	30.6	0.1
3-Apr-20	4:00	50.2	0.1
3-Apr-20	5:00	64.8	0.1
3-Apr-20	6:00	63.1	0.1
3-Apr-20	7:00	83.2	0.3
3-Apr-20	8:00	101.6	0.2
3-Apr-20	9:00	34.5	0.2
3-Apr-20	10:00	61.5	0.1
3-Apr-20	11:00	55.1	0.2
3-Apr-20	12:00	125.2	0.1
3-Apr-20	13:00	54.1	0.1
3-Apr-20	14:00	31.5	0.1
3-Apr-20	15:00	50.4	0.2
3-Apr-20	16:00	30.9	0.1
3-Apr-20	17:00	83.8	0.1
3-Apr-20	18:00	107.7	0.2
3-Apr-20	19:00	70.0	0.2
3-Apr-20	20:00	63.2	0.3
3-Apr-20	21:00	125.9	0.2
3-Apr-20	22:00	140.0	0.2
3-Apr-20	23:00	85.8	0.2
4-Apr-20	0:00	71.4	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)
4-Apr-20	1:00	80.5	0.2
4-Apr-20	2:00	52.2	0.3
4-Apr-20	3:00	53.3	0.3
4-Apr-20	4:00	85.2	0.3
4-Apr-20	5:00	30.2	0.3
4-Apr-20	6:00	99.2	0.3
4-Apr-20	7:00	60.7	0.3
4-Apr-20	8:00	34.8	0.3
4-Apr-20	9:00	31.5	0.4
4-Apr-20	10:00	72.3	0.5
4-Apr-20	11:00	40.5	0.6
4-Apr-20	12:00	91.3	0.7
4-Apr-20	13:00	72.0	0.9
4-Apr-20	14:00	121.4	1.0
4-Apr-20	15:00	154.5	1.1
4-Apr-20	16:00	174.5	1.1
4-Apr-20	17:00	83.2	0.9
4-Apr-20	18:00	100.0	0.7
4-Apr-20	19:00	69.1	0.6
4-Apr-20	20:00	78.4	0.6
4-Apr-20	21:00	58.1	0.4
4-Apr-20	22:00	111.2	0.3
4-Apr-20	23:00	73.4	0.3
5-Apr-20	0:00	72.7	0.3
5-Apr-20	1:00	63.1	0.3
5-Apr-20	2:00	43.9	0.3
5-Apr-20	3:00	78.0	0.3
5-Apr-20	4:00	149.1	0.3
5-Apr-20	5:00	32.6	0.4
5-Apr-20	6:00	35.5	0.3
5-Apr-20	7:00	54.6	0.4
5-Apr-20	8:00	29.8	0.4
5-Apr-20	9:00	58.3	0.3
5-Apr-20	10:00	82.4	0.5
5-Apr-20	11:00	93.8	0.5
5-Apr-20	12:00	88.5	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)
5-Apr-20	13:00	100.0	0.6
5-Apr-20	14:00	67.0	0.4
5-Apr-20	15:00	67.5	0.4
5-Apr-20	16:00	70.8	0.4
5-Apr-20	17:00	62.1	0.4
5-Apr-20	18:00	63.2	0.4
5-Apr-20	19:00	90.1	0.3
5-Apr-20	20:00	45.3	0.3
5-Apr-20	21:00	78.6	0.3
5-Apr-20	22:00	57.3	0.3
5-Apr-20	23:00	79.6	0.3
6-Apr-20	0:00	103.6	0.3
6-Apr-20	1:00	81.7	0.3
6-Apr-20	2:00	78.3	0.3
6-Apr-20	3:00	83.3	0.3
6-Apr-20	4:00	81.5	0.3
6-Apr-20	5:00	60.9	0.3
6-Apr-20	6:00	90.4	0.3
6-Apr-20	7:00	100.7	0.3
6-Apr-20	8:00	82.0	0.4
6-Apr-20	9:00	95.0	0.4
6-Apr-20	10:00	54.3	0.5
6-Apr-20	11:00	58.7	0.3
6-Apr-20	12:00	71.0	0.4
6-Apr-20	13:00	62.7	0.4
6-Apr-20	14:00	81.7	0.4
6-Apr-20	15:00	311.7	0.4
6-Apr-20	16:00	49.3	0.4
6-Apr-20	17:00	55.9	0.4
6-Apr-20	18:00	97.0	0.4
6-Apr-20	19:00	67.5	0.4
6-Apr-20	20:00	89.5	0.4
6-Apr-20	21:00	42.2	0.4
6-Apr-20	22:00	47.8	0.3
6-Apr-20	23:00	77.5	0.3
7-Apr-20	0:00	70.2	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)
7-Apr-20	1:00	49.2	0.3
7-Apr-20	2:00	33.4	0.3
7-Apr-20	3:00	32.4	0.3
7-Apr-20	4:00	196.6	0.3
7-Apr-20	5:00	180.3	0.4
7-Apr-20	6:00	236.6	0.4
7-Apr-20	7:00	44.6	0.4
7-Apr-20	8:00	59.1	0.8
7-Apr-20	9:00	22.3	0.7
7-Apr-20	10:00	27.2	0.9
7-Apr-20	11:00	74.4	0.8
7-Apr-20	12:00	286.9	1.0
7-Apr-20	13:00	299.1	1.1
7-Apr-20	14:00	44.0	1.2
7-Apr-20	15:00	138.2	1.1
7-Apr-20	16:00	84.8	1.1
7-Apr-20	17:00	79.9	1.0
7-Apr-20	18:00	97.8	0.9
7-Apr-20	19:00	64.7	0.7
7-Apr-20	20:00	81.7	0.6
7-Apr-20	21:00	93.1	0.5
7-Apr-20	22:00	88.2	0.5
7-Apr-20	23:00	80.9	0.4
8-Apr-20	0:00	57.0	0.4
8-Apr-20	1:00	112.4	0.4
8-Apr-20	2:00	81.9	0.3
8-Apr-20	3:00	80.4	0.3
8-Apr-20	4:00	57.8	0.3
8-Apr-20	5:00	63.8	0.3
8-Apr-20	6:00	69.4	0.3
8-Apr-20	7:00	96.5	0.3
8-Apr-20	8:00	105.9	0.3
8-Apr-20	9:00	97.4	0.4
8-Apr-20	10:00	64.7	0.5
8-Apr-20	11:00	135.1	0.7
8-Apr-20	12:00	111.0	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)
8-Apr-20	13:00	164.7	0.8
8-Apr-20	14:00	152.9	0.8
8-Apr-20	15:00	154.3	0.8
8-Apr-20	16:00	103.1	0.7
8-Apr-20	17:00	113.1	0.7
8-Apr-20	18:00	87.6	0.5
8-Apr-20	19:00	108.0	0.4
8-Apr-20	20:00	90.0	0.4
8-Apr-20	21:00	71.1	0.3
8-Apr-20	22:00	99.7	0.3
8-Apr-20	23:00	84.5	0.3
9-Apr-20	0:00	81.3	0.2
9-Apr-20	1:00	72.2	0.2
9-Apr-20	2:00	107.2	0.2
9-Apr-20	3:00	60.5	0.2
9-Apr-20	4:00	72.3	0.2
9-Apr-20	5:00	85.5	0.2
9-Apr-20	6:00	85.0	0.2
9-Apr-20	7:00	80.1	0.2
9-Apr-20	8:00	75.5	0.1
9-Apr-20	9:00	52.8	0.1
9-Apr-20	10:00	200.4	0.1
9-Apr-20	11:00	116.6	0.2
9-Apr-20	12:00	177.3	0.3
9-Apr-20	13:00	138.8	0.4
9-Apr-20	14:00	147.1	0.5
9-Apr-20	15:00	131.7	0.4
9-Apr-20	16:00	153.6	0.4
9-Apr-20	17:00	78.9	0.2
9-Apr-20	18:00	96.4	0.2
9-Apr-20	19:00	93.7	0.3
9-Apr-20	20:00	105.5	0.3
9-Apr-20	21:00	66.0	0.3
9-Apr-20	22:00	72.0	0.2
9-Apr-20	23:00	92.2	0.2
10-Apr-20	0:00	102.1	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)
10-Apr-20	1:00	90.0	0.2
10-Apr-20	2:00	84.1	0.2
10-Apr-20	3:00	80.5	0.2
10-Apr-20	4:00	83.3	0.2
10-Apr-20	5:00	77.4	0.2
10-Apr-20	6:00	71.3	0.2
10-Apr-20	7:00	88.7	0.2
10-Apr-20	8:00	97.2	0.1
10-Apr-20	9:00	121.0	1.0
10-Apr-20	10:00	219.1	2.2
10-Apr-20	11:00	163.4	0.3
10-Apr-20	12:00	111.8	1.5
10-Apr-20	13:00	138.2	0.8
10-Apr-20	14:00	122.9	1.2
10-Apr-20	15:00	115.8	0.3
10-Apr-20	16:00	93.1	1.1
10-Apr-20	17:00	88.6	0.8
10-Apr-20	18:00	108.8	0.2
10-Apr-20	19:00	83.3	0.2
10-Apr-20	20:00	82.9	0.2
10-Apr-20	21:00	52.5	0.1
10-Apr-20	22:00	87.0	0.1
10-Apr-20	23:00	91.1	0.2
11-Apr-20	0:00	86.1	0.4
11-Apr-20	1:00	139.7	0.2
11-Apr-20	2:00	45.5	0.3
11-Apr-20	3:00	65.5	0.1
11-Apr-20	4:00	71.2	0.1
11-Apr-20	5:00	115.7	0.1
11-Apr-20	6:00	129.6	0.2
11-Apr-20	7:00	88.7	0.1
11-Apr-20	8:00	86.6	0.1
11-Apr-20	9:00	80.0	0.1
11-Apr-20	10:00	164.9	0.1
11-Apr-20	11:00	81.3	0.2
11-Apr-20	12:00	83.2	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-Apr-20	13:00	106.6	0.1
11-Apr-20	14:00	176.1	0.2
11-Apr-20	15:00	92.3	0.1
11-Apr-20	16:00	69.8	0.1
11-Apr-20	17:00	71.0	0.1
11-Apr-20	18:00	81.2	0.1
11-Apr-20	19:00	83.8	0.1
11-Apr-20	20:00	81.4	0.1
11-Apr-20	21:00	78.3	0.1
11-Apr-20	22:00	27.7	0.1
11-Apr-20	23:00	68.8	0.6
12-Apr-20	0:00	71.2	0.7
12-Apr-20	1:00	65.2	0.4
12-Apr-20	2:00	63.4	0.3
12-Apr-20	3:00	71.8	0.2
12-Apr-20	4:00	59.1	0.2
12-Apr-20	5:00	64.1	0.2
12-Apr-20	6:00	71.0	0.2
12-Apr-20	7:00	39.5	0.7
12-Apr-20	8:00	88.7	0.2
12-Apr-20	9:00	108.7	1.1
12-Apr-20	10:00	10.8	1.0
12-Apr-20	11:00	24.8	0.4
12-Apr-20	12:00	60.5	1.0
12-Apr-20	13:00	30.9	0.4
12-Apr-20	14:00	159.5	1.2
12-Apr-20	15:00	94.3	0.8
12-Apr-20	16:00	82.6	0.3
12-Apr-20	17:00	63.9	0.8
12-Apr-20	18:00	64.8	0.2
12-Apr-20	19:00	68.9	0.3
12-Apr-20	20:00	49.0	0.2
12-Apr-20	21:00	44.0	0.2
12-Apr-20	22:00	67.9	0.2
12-Apr-20	23:00	70.2	0.1
13-Apr-20	0:00	69.4	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)
13-Apr-20	1:00	69.3	0.3
13-Apr-20	2:00	45.8	0.5
13-Apr-20	3:00	64.1	2.0
13-Apr-20	4:00	69.2	1.8
13-Apr-20	5:00	19.2	0.7
13-Apr-20	6:00	93.8	1.1
13-Apr-20	7:00	81.9	0.1
13-Apr-20	8:00	60.0	0.3
13-Apr-20	9:00	39.3	0.6
13-Apr-20	10:00	64.0	0.3
13-Apr-20	11:00	218.6	0.2
13-Apr-20	12:00	148.0	0.2
13-Apr-20	13:00	195.6	0.2
13-Apr-20	14:00	171.0	0.3
13-Apr-20	15:00	273.2	0.9
13-Apr-20	16:00	303.1	1.8
13-Apr-20	17:00	253.2	0.5
13-Apr-20	18:00	189.8	0.2
13-Apr-20	19:00	206.4	0.2
13-Apr-20	20:00	85.2	0.1
13-Apr-20	21:00	62.7	0.1
13-Apr-20	22:00	73.1	0.1
13-Apr-20	23:00	86.7	0.1
14-Apr-20	0:00	81.9	0.2
14-Apr-20	1:00	169.6	0.1
14-Apr-20	2:00	228.2	0.1
14-Apr-20	3:00	143.8	0.1
14-Apr-20	4:00	216.4	0.1
14-Apr-20	5:00	224.7	0.1
14-Apr-20	6:00	142.5	0.1
14-Apr-20	7:00	59.5	0.1
14-Apr-20	8:00	77.3	0.1
14-Apr-20	9:00	118.8	0.1
14-Apr-20	10:00	156.7	0.2
14-Apr-20	11:00	116.9	0.7
14-Apr-20	12:00	60.5	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)
14-Apr-20	13:00	77.7	0.2
14-Apr-20	14:00	125.9	0.2
14-Apr-20	15:00	96.3	0.2
14-Apr-20	16:00	155.9	0.1
14-Apr-20	17:00	134.4	0.1
14-Apr-20	18:00	114.6	0.1
14-Apr-20	19:00	59.1	0.1
14-Apr-20	20:00	87.5	0.2
14-Apr-20	21:00	69.5	0.2
14-Apr-20	22:00	89.3	0.2
14-Apr-20	23:00	68.4	0.1
15-Apr-20	0:00	71.9	0.1
15-Apr-20	1:00	104.8	0.1
15-Apr-20	2:00	224.9	0.2
15-Apr-20	3:00	226.0	0.1
15-Apr-20	4:00	257.0	0.1
15-Apr-20	5:00	288.0	0.1
15-Apr-20	6:00	115.5	0.1
15-Apr-20	7:00	83.2	0.1
15-Apr-20	8:00	310.1	0.1
15-Apr-20	9:00	249.9	0.1
15-Apr-20	10:00	267.9	0.3
15-Apr-20	11:00	98.6	0.2
15-Apr-20	12:00	310.7	0.2
15-Apr-20	13:00	232.5	0.4
15-Apr-20	14:00	246.3	0.3
15-Apr-20	15:00	248.7	0.5
15-Apr-20	16:00	290.3	2.0
15-Apr-20	17:00	267.3	0.4
15-Apr-20	18:00	244.6	0.6
15-Apr-20	19:00	227.4	0.1
15-Apr-20	20:00	158.7	0.1
15-Apr-20	21:00	56.5	0.1
15-Apr-20	22:00	249.4	0.1
15-Apr-20	23:00	248.0	0.1
16-Apr-20	0:00	271.4	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)
16-Apr-20	1:00	180.0	0.1
16-Apr-20	2:00	220.0	0.1
16-Apr-20	3:00	165.1	0.1
16-Apr-20	4:00	264.5	0.1
16-Apr-20	5:00	218.3	0.1
16-Apr-20	6:00	25.7	0.1
16-Apr-20	7:00	98.5	0.1
16-Apr-20	8:00	103.1	0.1
16-Apr-20	9:00	181.3	0.2
16-Apr-20	10:00	260.7	0.5
16-Apr-20	11:00	246.5	0.6
16-Apr-20	12:00	238.2	1.3
16-Apr-20	13:00	226.2	1.6
16-Apr-20	14:00	252.8	2.2
16-Apr-20	15:00	254.3	0.8
16-Apr-20	16:00	148.6	0.6
16-Apr-20	17:00	122.5	0.2
16-Apr-20	18:00	108.3	0.1
16-Apr-20	19:00	65.9	0.1
16-Apr-20	20:00	81.4	0.1
16-Apr-20	21:00	87.2	0.1
16-Apr-20	22:00	93.2	0.1
16-Apr-20	23:00	78.5	0.1
17-Apr-20	0:00	73.2	0.1
17-Apr-20	1:00	142.3	0.1
17-Apr-20	2:00	61.8	0.1
17-Apr-20	3:00	33.9	0.1
17-Apr-20	4:00	102.7	0.1
17-Apr-20	5:00	83.3	0.1
17-Apr-20	6:00	62.5	0.1
17-Apr-20	7:00	60.3	0.1
17-Apr-20	8:00	88.1	0.2
17-Apr-20	9:00	71.5	0.5
17-Apr-20	10:00	98.8	0.2
17-Apr-20	11:00	102.2	0.5
17-Apr-20	12:00	64.3	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)
17-Apr-20	13:00	143.6	0.1
17-Apr-20	14:00	160.8	0.2
17-Apr-20	15:00	253.5	0.5
17-Apr-20	16:00	225.5	0.3
17-Apr-20	17:00	96.1	0.1
17-Apr-20	18:00	106.4	0.1
17-Apr-20	19:00	77.4	0.1
17-Apr-20	20:00	106.2	0.1
17-Apr-20	21:00	83.4	0.1
17-Apr-20	22:00	77.4	0.1
17-Apr-20	23:00	83.7	0.1
18-Apr-20	0:00	56.7	0.1
18-Apr-20	1:00	76.0	0.1
18-Apr-20	2:00	73.5	0.1
18-Apr-20	3:00	91.2	0.1
18-Apr-20	4:00	79.0	0.1
18-Apr-20	5:00	72.9	0.1
18-Apr-20	6:00	78.2	0.1
18-Apr-20	7:00	87.0	0.1
18-Apr-20	8:00	76.6	0.1
18-Apr-20	9:00	97.1	0.1
18-Apr-20	10:00	176.6	0.1
18-Apr-20	11:00	87.4	0.1
18-Apr-20	12:00	259.8	0.1
18-Apr-20	13:00	280.3	0.4
18-Apr-20	14:00	270.5	0.6
18-Apr-20	15:00	56.5	0.1
18-Apr-20	16:00	328.1	0.4
18-Apr-20	17:00	239.8	0.6
18-Apr-20	18:00	60.1	0.1
18-Apr-20	19:00	83.2	0.1
18-Apr-20	20:00	86.6	0.1
18-Apr-20	21:00	91.7	0.2
18-Apr-20	22:00	90.2	0.1
18-Apr-20	23:00	77.5	0.2
19-Apr-20	0:00	110.4	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-Apr-20	1:00	46.7	0.1
19-Apr-20	2:00	129.8	0.1
19-Apr-20	3:00	237.5	0.1
19-Apr-20	4:00	98.9	0.1
19-Apr-20	5:00	51.0	0.1
19-Apr-20	6:00	78.6	0.1
19-Apr-20	7:00	44.3	0.1
19-Apr-20	8:00	80.3	0.1
19-Apr-20	9:00	285.1	0.3
19-Apr-20	10:00	113.4	0.2
19-Apr-20	11:00	257.0	0.4
19-Apr-20	12:00	230.0	1.5
19-Apr-20	13:00	250.5	1.4
19-Apr-20	14:00	282.2	0.8
19-Apr-20	15:00	223.0	0.4
19-Apr-20	16:00	276.9	0.5
19-Apr-20	17:00	254.0	1.0
19-Apr-20	18:00	128.6	0.1
19-Apr-20	19:00	168.8	0.1
19-Apr-20	20:00	136.0	0.1
19-Apr-20	21:00	209.7	0.1
19-Apr-20	22:00	229.0	0.1
19-Apr-20	23:00	278.3	0.1
20-Apr-20	0:00	209.8	0.1
20-Apr-20	1:00	242.3	0.1
20-Apr-20	2:00	221.9	0.1
20-Apr-20	3:00	208.6	0.1
20-Apr-20	4:00	147.2	0.1
20-Apr-20	5:00	146.3	0.1
20-Apr-20	6:00	253.5	0.1
20-Apr-20	7:00	287.3	0.1
20-Apr-20	8:00	270.9	0.1
20-Apr-20	9:00	132.1	0.1
20-Apr-20	10:00	294.0	0.8
20-Apr-20	11:00	257.2	1.0
20-Apr-20	12:00	262.6	0.7

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

II. Mean Wind Speed and Wind Direction

Date	Time	Wind Direction (°)	Wind Speed (m/s)
20-Apr-20	13:00	209.4	0.3
20-Apr-20	14:00	271.6	0.7
20-Apr-20	15:00	249.1	1.1
20-Apr-20	16:00	314.8	0.5
20-Apr-20	17:00	236.0	1.3
20-Apr-20	18:00	238.0	0.2
20-Apr-20	19:00	222.6	0.2
20-Apr-20	20:00	170.4	0.2
20-Apr-20	21:00	123.6	0.1
20-Apr-20	22:00	80.6	0.1
20-Apr-20	23:00	101.0	0.1
21-Apr-20	0:00	256.7	0.1
21-Apr-20	1:00	117.8	0.1
21-Apr-20	2:00	85.1	0.1
21-Apr-20	3:00	76.5	0.1
21-Apr-20	4:00	58.7	0.1
21-Apr-20	5:00	81.4	0.1
21-Apr-20	6:00	69.7	0.1
21-Apr-20	7:00	76.2	0.1
21-Apr-20	8:00	110.7	0.1
21-Apr-20	9:00	72.1	0.1
21-Apr-20	10:00	64.8	0.8
21-Apr-20	11:00	124.3	0.1
21-Apr-20	12:00	231.2	0.2
21-Apr-20	13:00	141.0	0.1
21-Apr-20	14:00	176.1	0.1
21-Apr-20	15:00	223.2	1.0
21-Apr-20	16:00	234.7	1.4
21-Apr-20	17:00	174.1	0.1
21-Apr-20	18:00	120.8	0.2
21-Apr-20	19:00	80.0	0.2
21-Apr-20	20:00	84.3	0.1
21-Apr-20	21:00	68.1	0.1
21-Apr-20	22:00	81.3	0.1
21-Apr-20	23:00	72.7	0.1
22-Apr-20	0:00	66.0	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-Apr-20	1:00	93.2	0.1
22-Apr-20	2:00	59.7	0.1
22-Apr-20	3:00	70.2	0.1
22-Apr-20	4:00	83.5	0.1
22-Apr-20	5:00	127.0	0.1
22-Apr-20	6:00	61.1	0.1
22-Apr-20	7:00	71.8	0.2
22-Apr-20	8:00	136.2	0.1
22-Apr-20	9:00	66.5	0.3
22-Apr-20	10:00	143.7	0.5
22-Apr-20	11:00	106.3	1.8
22-Apr-20	12:00	90.7	0.4
22-Apr-20	13:00	98.0	0.1
22-Apr-20	14:00	96.1	0.1
22-Apr-20	15:00	103.0	0.5
22-Apr-20	16:00	60.0	1.1
22-Apr-20	17:00	102.8	0.3
22-Apr-20	18:00	87.3	0.1
22-Apr-20	19:00	80.6	0.1
22-Apr-20	20:00	208.5	0.1
22-Apr-20	21:00	209.2	0.2
22-Apr-20	22:00	82.9	0.1
22-Apr-20	23:00	93.7	0.1
23-Apr-20	0:00	114.9	0.2
23-Apr-20	1:00	104.5	0.2
23-Apr-20	2:00	69.5	0.3
23-Apr-20	3:00	114.9	0.3
23-Apr-20	4:00	142.5	0.1
23-Apr-20	5:00	76.4	0.1
23-Apr-20	6:00	68.1	0.1
23-Apr-20	7:00	114.2	0.1
23-Apr-20	8:00	45.6	0.1
23-Apr-20	9:00	66.5	0.1
23-Apr-20	10:00	63.5	0.1
23-Apr-20	11:00	66.8	0.1
23-Apr-20	12:00	52.3	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)
23-Apr-20	13:00	100.9	0.3
23-Apr-20	14:00	45.6	0.1
23-Apr-20	15:00	64.6	0.1
23-Apr-20	16:00	77.1	0.2
23-Apr-20	17:00	65.8	0.1
23-Apr-20	18:00	79.5	0.1
23-Apr-20	19:00	91.9	0.1
23-Apr-20	20:00	62.4	0.1
23-Apr-20	21:00	102.7	0.1
23-Apr-20	22:00	68.9	0.1
23-Apr-20	23:00	62.6	0.1
24-Apr-20	0:00	79.8	0.1
24-Apr-20	1:00	35.1	0.2
24-Apr-20	2:00	24.7	0.1
24-Apr-20	3:00	58.6	0.1
24-Apr-20	4:00	30.8	0.2
24-Apr-20	5:00	42.8	0.4
24-Apr-20	6:00	38.1	0.9
24-Apr-20	7:00	206.0	0.8
24-Apr-20	8:00	40.2	0.3
24-Apr-20	9:00	75.4	0.1
24-Apr-20	10:00	68.9	0.1
24-Apr-20	11:00	84.6	0.2
24-Apr-20	12:00	57.9	0.2
24-Apr-20	13:00	76.6	0.1
24-Apr-20	14:00	104.9	0.1
24-Apr-20	15:00	66.7	0.1
24-Apr-20	16:00	25.6	0.1
24-Apr-20	17:00	52.7	0.1
24-Apr-20	18:00	62.5	0.1
24-Apr-20	19:00	56.5	0.1
24-Apr-20	20:00	72.5	0.3
24-Apr-20	21:00	85.9	0.6
24-Apr-20	22:00	50.2	0.2
24-Apr-20	23:00	55.4	0.1
25-Apr-20	0:00	66.5	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)
25-Apr-20	1:00	64.6	0.1
25-Apr-20	2:00	55.3	0.1
25-Apr-20	3:00	43.9	0.1
25-Apr-20	4:00	42.3	0.1
25-Apr-20	5:00	45.6	0.1
25-Apr-20	6:00	53.7	0.1
25-Apr-20	7:00	219.7	0.1
25-Apr-20	8:00	47.7	0.1
25-Apr-20	9:00	73.2	0.1
25-Apr-20	10:00	77.5	0.2
25-Apr-20	11:00	26.7	0.1
25-Apr-20	12:00	76.1	0.1
25-Apr-20	13:00	268.1	0.1
25-Apr-20	14:00	204.4	0.1
25-Apr-20	15:00	117.2	0.1
25-Apr-20	16:00	119.1	0.1
25-Apr-20	17:00	191.2	0.1
25-Apr-20	18:00	250.7	0.1
25-Apr-20	19:00	201.3	0.1
25-Apr-20	20:00	243.6	0.1
25-Apr-20	21:00	216.8	0.1
25-Apr-20	22:00	258.1	0.1
25-Apr-20	23:00	157.4	0.1
26-Apr-20	0:00	168.2	0.1
26-Apr-20	1:00	243.0	0.1
26-Apr-20	2:00	223.7	0.1
26-Apr-20	3:00	139.3	0.1
26-Apr-20	4:00	198.8	0.1
26-Apr-20	5:00	249.2	0.1
26-Apr-20	6:00	208.1	0.1
26-Apr-20	7:00	269.2	0.1
26-Apr-20	8:00	212.0	0.1
26-Apr-20	9:00	99.2	0.2
26-Apr-20	10:00	313.8	0.7
26-Apr-20	11:00	79.0	0.1
26-Apr-20	12:00	34.3	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)
26-Apr-20	13:00	199.7	0.5
26-Apr-20	14:00	312.4	0.7
26-Apr-20	15:00	255.0	0.2
26-Apr-20	16:00	183.5	0.2
26-Apr-20	17:00	174.5	0.1
26-Apr-20	18:00	231.3	0.2
26-Apr-20	19:00	166.2	0.1
26-Apr-20	20:00	44.7	0.1
26-Apr-20	21:00	81.4	0.1
26-Apr-20	22:00	239.5	0.1
26-Apr-20	23:00	166.2	0.1
27-Apr-20	0:00	214.8	0.1
27-Apr-20	1:00	295.9	0.1
27-Apr-20	2:00	43.8	0.1
27-Apr-20	3:00	252.8	0.1
27-Apr-20	4:00	124.1	0.1
27-Apr-20	5:00	62.0	0.1
27-Apr-20	6:00	61.9	0.1
27-Apr-20	7:00	51.4	0.1
27-Apr-20	8:00	106.3	0.1
27-Apr-20	9:00	141.1	0.3
27-Apr-20	10:00	96.1	0.3
27-Apr-20	11:00	77.0	0.3
27-Apr-20	12:00	80.2	0.5
27-Apr-20	13:00	191.3	0.9
27-Apr-20	14:00	101.7	0.1
27-Apr-20	15:00	187.5	0.2
27-Apr-20	16:00	108.5	0.2
27-Apr-20	17:00	75.0	0.1
27-Apr-20	18:00	120.6	0.2
27-Apr-20	19:00	73.6	0.4
27-Apr-20	20:00	74.9	0.1
27-Apr-20	21:00	89.8	0.1
27-Apr-20	22:00	76.0	0.1
27-Apr-20	23:00	70.4	0.1
28-Apr-20	0:00	58.3	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)
28-Apr-20	1:00	76.8	0.1
28-Apr-20	2:00	79.0	0.1
28-Apr-20	3:00	60.9	0.2
28-Apr-20	4:00	42.8	0.2
28-Apr-20	5:00	76.2	0.3
28-Apr-20	6:00	69.5	0.2
28-Apr-20	7:00	68.7	0.1
28-Apr-20	8:00	87.0	0.1
28-Apr-20	9:00	104.7	0.1
28-Apr-20	10:00	130.2	0.1
28-Apr-20	11:00	119.8	0.7
28-Apr-20	12:00	192.4	1.0
28-Apr-20	13:00	134.2	0.4
28-Apr-20	14:00	175.4	0.7
28-Apr-20	15:00	241.9	0.8
28-Apr-20	16:00	165.4	0.5
28-Apr-20	17:00	147.5	0.2
28-Apr-20	18:00	264.3	0.3
28-Apr-20	19:00	141.0	0.4
28-Apr-20	20:00	137.6	0.2
28-Apr-20	21:00	83.7	0.1
28-Apr-20	22:00	131.3	0.1
28-Apr-20	23:00	156.1	0.1
29-Apr-20	0:00	64.8	0.1
29-Apr-20	1:00	100.7	0.1
29-Apr-20	2:00	75.5	0.3
29-Apr-20	3:00	77.0	0.1
29-Apr-20	4:00	101.0	0.1
29-Apr-20	5:00	82.9	0.1
29-Apr-20	6:00	67.6	0.2
29-Apr-20	7:00	75.6	0.2
29-Apr-20	8:00	98.4	0.8
29-Apr-20	9:00	87.0	0.1
29-Apr-20	10:00	60.0	0.6
29-Apr-20	11:00	161.3	0.2
29-Apr-20	12:00	174.0	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)
29-Apr-20	13:00	92.5	0.2
29-Apr-20	14:00	69.5	0.4
29-Apr-20	15:00	125.5	0.6
29-Apr-20	16:00	68.7	0.5
29-Apr-20	17:00	87.5	0.1
29-Apr-20	18:00	119.1	0.1
29-Apr-20	19:00	100.8	0.1
29-Apr-20	20:00	99.7	0.1
29-Apr-20	21:00	101.9	0.1
29-Apr-20	22:00	92.5	0.1
29-Apr-20	23:00	70.2	0.1
30-Apr-20	0:00	73.2	0.1
30-Apr-20	1:00	62.4	0.1
30-Apr-20	2:00	71.8	0.1
30-Apr-20	3:00	66.3	0.1
30-Apr-20	4:00	42.9	0.1
30-Apr-20	5:00	73.9	0.2
30-Apr-20	6:00	121.2	0.3
30-Apr-20	7:00	103.9	0.3
30-Apr-20	8:00	79.4	0.3
30-Apr-20	9:00	179.5	0.1
30-Apr-20	10:00	190.1	0.4
30-Apr-20	11:00	307.7	0.2
30-Apr-20	12:00	197.2	0.1
30-Apr-20	13:00	199.3	0.5
30-Apr-20	14:00	99.1	0.2
30-Apr-20	15:00	102.3	0.1
30-Apr-20	16:00	105.2	0.2
30-Apr-20	17:00	131.4	0.1
30-Apr-20	18:00	232.5	0.3
30-Apr-20	19:00	80.9	0.1
30-Apr-20	20:00	116.5	0.1
30-Apr-20	21:00	139.3	0.1
30-Apr-20	22:00	86.7	0.1
30-Apr-20	23:00	81.8	0.1

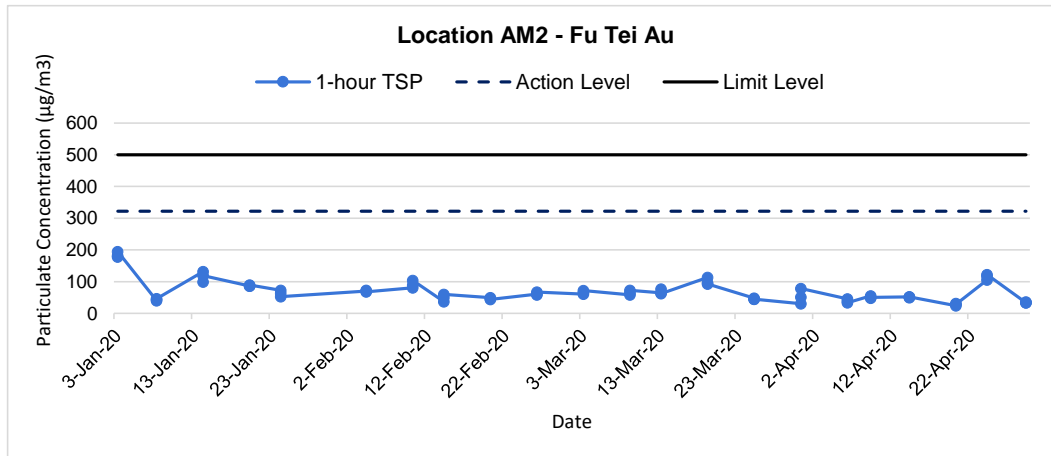
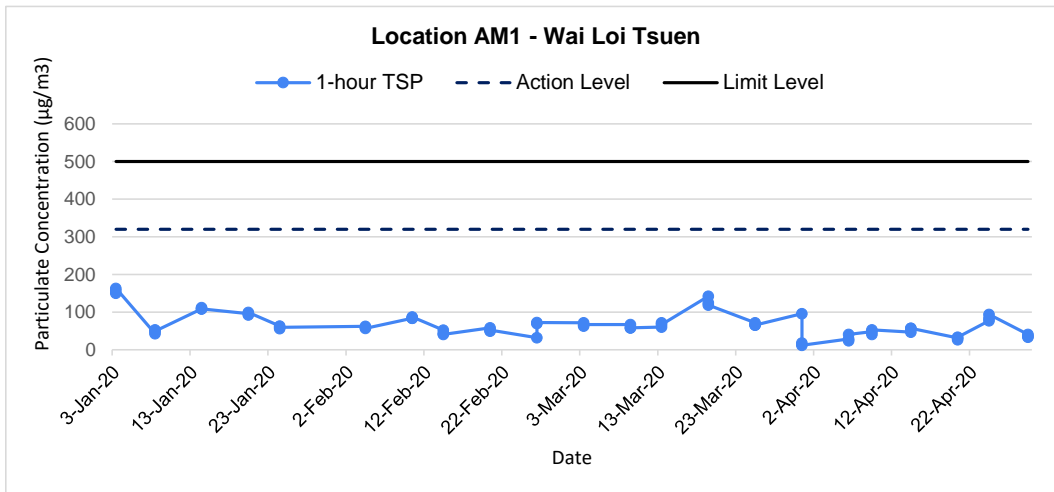
APPENDIX E
1-HOUR TSP MONITORING RESULTS
AND GRAPHICAL PRESENTATIONS

Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Wai Loi Tsuen			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
6-Apr-20	9:00	Rainy	28.8
6-Apr-20	10:00	Rainy	24.0
6-Apr-20	11:00	Rainy	40.8
9-Apr-20	9:00	Sunny	48.0
9-Apr-20	10:00	Sunny	40.8
9-Apr-20	11:00	Sunny	52.8
14-Apr-20	9:00	Fine	46.8
14-Apr-20	10:00	Fine	57.2
14-Apr-20	11:00	Fine	57.2
20-Apr-20	9:00	Sunny	31.2
20-Apr-20	10:00	Sunny	26.4
20-Apr-20	11:00	Sunny	33.6
24-Apr-20	9:00	Cloudy	76.8
24-Apr-20	10:00	Cloudy	84.0
24-Apr-20	11:00	Cloudy	93.6
29-Apr-20	9:00	Sunny	40.8
29-Apr-20	10:00	Sunny	33.6
29-Apr-20	11:00	Sunny	36.0
		Average	47.4
		Maximum	93.6
		Minimum	24.0

Location AM2 - Fu Tei Au			
Date	Time	Weather	Particulate Concentration ($\mu\text{g}/\text{m}^3$)
6-Apr-20	13:00	Rainy	45.6
6-Apr-20	14:00	Rainy	38.4
6-Apr-20	15:00	Rainy	33.6
9-Apr-20	13:00	Sunny	55.2
9-Apr-20	14:00	Sunny	48.0
9-Apr-20	15:00	Sunny	50.4
14-Apr-20	13:00	Fine	52.0
14-Apr-20	14:00	Fine	49.4
14-Apr-20	15:00	Fine	52.0
20-Apr-20	13:00	Sunny	24.0
20-Apr-20	14:00	Sunny	31.2
20-Apr-20	15:00	Sunny	28.8
24-Apr-20	13:00	Cloudy	105.6
24-Apr-20	14:00	Cloudy	117.6
24-Apr-20	15:00	Cloudy	122.4
29-Apr-20	13:00	Sunny	33.6
29-Apr-20	14:00	Sunny	33.6
29-Apr-20	15:00	Sunny	36.0
		Average	53.2
		Maximum	122.4
		Minimum	24.0

1-hr TSP Concentration Levels



Title	Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Date	Apr 2020	Project No.	MA19019	CINOTECH
	Graphical Presentation of 1-hour TSP Monitoring Results			Appendix	E	

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

Appendix F - 24-hour TSP Monitoring Results

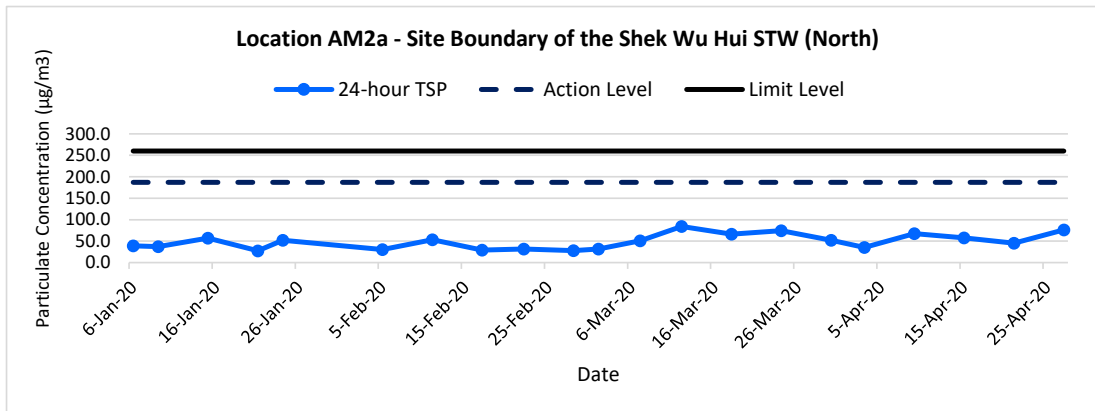
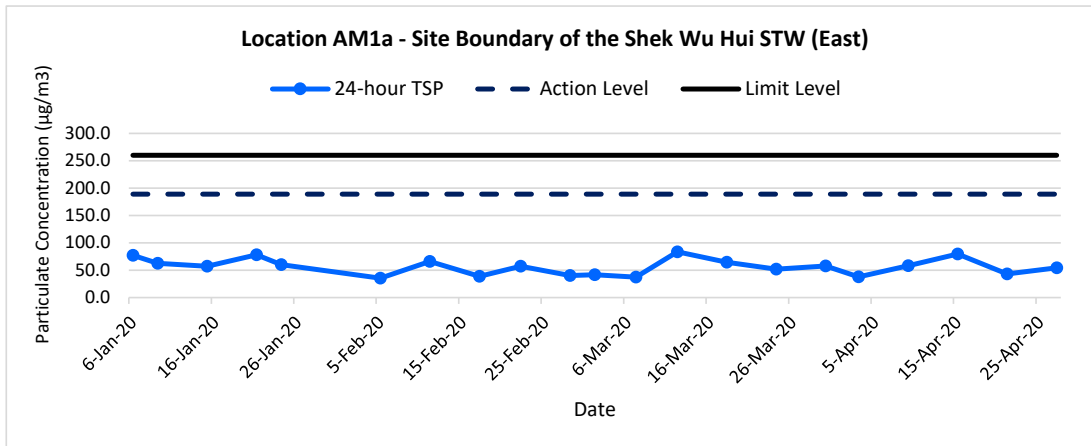
Location AM1a - Site Boundary of the Shek Wu Hui STW (East)

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-Apr-20	Rainy	293.6	764.2	3.4786	3.5445	0.0659	8442.6	8466.6	24.0	1.21	1.21	1.21	1746.1	37.7
9-Apr-20	Sunny	294.7	764.4	3.4754	3.5772	0.1018	8466.6	8490.6	24.0	1.21	1.21	1.21	1742.8	58.4
15-Apr-20	Sunny	295.8	762.2	3.4766	3.6148	0.1382	8490.6	8514.6	24.0	1.21	1.20	1.21	1736.4	79.6
21-Apr-20	Cloudy	297.4	761.2	3.4816	3.5561	0.0745	8514.6	8538.6	24.0	1.20	1.21	1.20	1729.8	43.1
27-Apr-20	Sunny	297.3	764.0	3.4530	3.5476	0.0946	8538.6	8562.6	24.0	1.20	1.20	1.20	1733.7	54.6
													Min	37.7
													Max	79.6
													Average	54.7

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-Apr-20	Rainy	293.6	764.2	3.4730	3.5343	0.0613	18660.9	18684.9	24.0	1.21	1.21	1.21	1742.9	35.2
9-Apr-20	Sunny	294.7	764.4	3.4599	3.5777	0.1178	18684.9	18708.9	24.0	1.21	1.21	1.21	1739.1	67.7
15-Apr-20	Sunny	295.8	762.2	3.4693	3.5694	0.1001	18708.9	18732.9	24.0	1.20	1.20	1.20	1731.7	57.8
21-Apr-20	Cloudy	297.4	761.2	3.4565	3.5343	0.0778	18732.9	18756.9	24.0	1.19	1.20	1.20	1724.0	45.1
27-Apr-20	Sunny	297.3	764.0	3.4617	3.5935	0.1318	18756.9	18780.9	24.0	1.20	1.20	1.20	1728.5	76.2
													Min	35.2
													Max	76.2
													Average	56.4

24-hr TSP Concentration Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of 24-hour TSP Monitoring Results	Date Apr 2020	Project No. MA19019	
		Appendix F	

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



Equipment no.: N-12-01

Calibration Certificate

0022524

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: 23/09/2019 Date of the recommended re-calibration: 23/09/2020	Certificate No.: 0022524 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	114.0dB	0.0dB	+/- 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

+/- 0.2 dB 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

Approved by

Quality Manager

**Calibration Certificate**

0022522

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. : 570187 / 550841 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 23/09/2019 Date of the recommended re-calibration: 23/09/2020	Certificate No.: 0022522 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	113.9dB	-0.1dB	+/- 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

Approved by

Quality Manager



Calibration Certificate

0022999

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : SVAN957 SLM Serial No. /Ref. No. : 23851 / N-08-12 Object 2 : Microphone Serial No. /Ref. No. : 43676
Customer Code : SVEC09005	Manufacturer : Svantek
Date of calibration: 19/12/2019 Date of the recommended re-calibration: 19/12/2020	Certificate No.: 0022999 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 1.5dB	1
114.0dB	114.0dB	0.0dB	+/- 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

Approved by

Quality Manager



Calibration Certificate

0022676

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: 24/10/2019 Date of the recommended re-calibration: 24/10/2020	Certificate No.: 0022676 Handle by: E0002

Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.7dB	-0.3dB	+/- 0.3dB	1
114.0dB	113.7dB	-0.3dB	+/- 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

Approved by



Quality Manager

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

Appendix H - Noise Monitoring Results

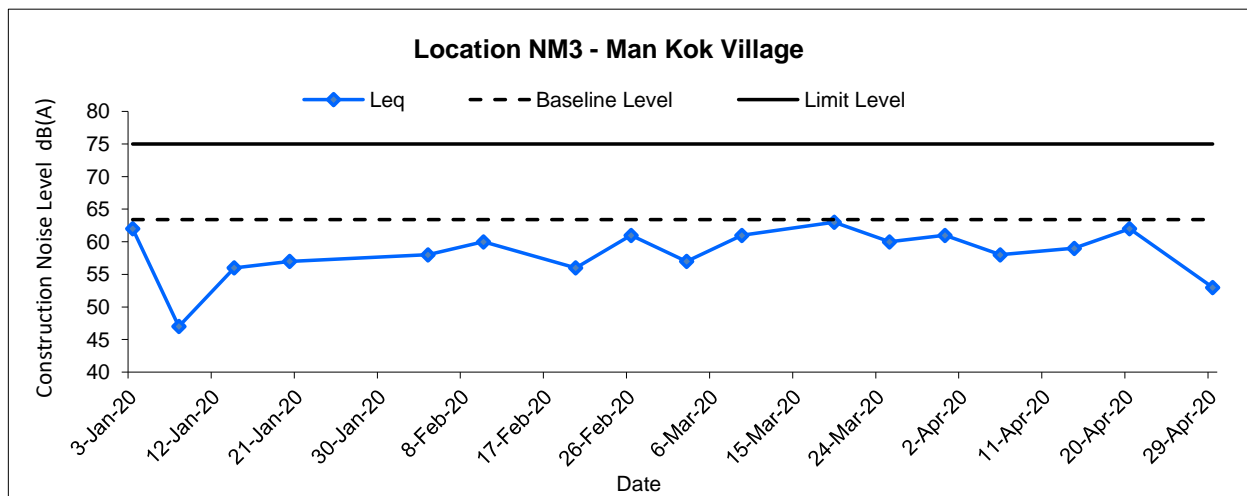
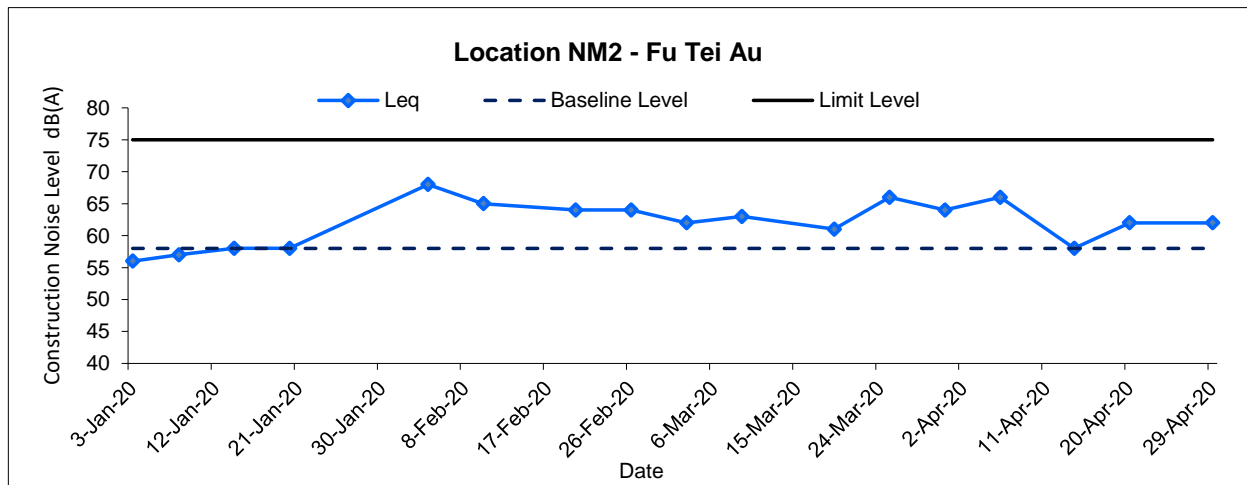
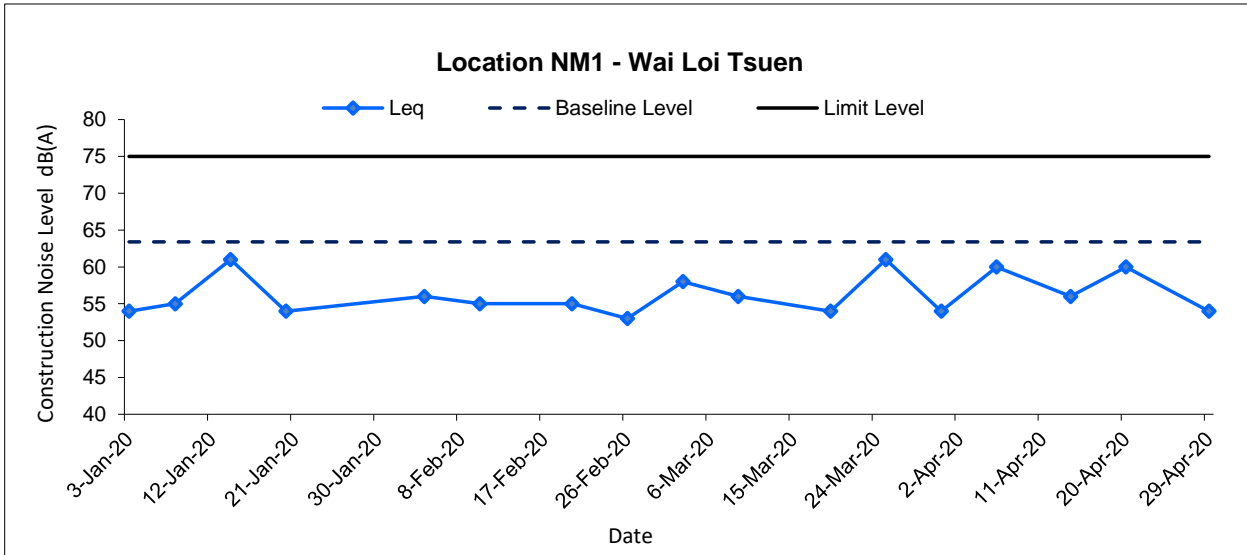
(0700-1900 hrs on Normal Weekdays)

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}
6-Apr-20	13:20	Rainy	59.8	60.9	58.4	63.4	59.8 Measured \leq Baseline
14-Apr-20	9:30	Fine	56.4	58.2	52.4	63.4	56.4 Measured \leq Baseline
20-Apr-20	13:45	Sunny	59.9	61.6	51.4	63.4	59.9 Measured \leq Baseline
29-Apr-20	13:30	Sunny	53.8	55.6	51.2	63.4	53.8 Measured \leq 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}
6-Apr-20	15:30	Rainy	67.0	69.9	63.2	58.0	66.4
14-Apr-20	11:00	Fine	60.8	61.2	54.4	58.0	57.6
20-Apr-20	16:00	Sunny	63.6	65.2	61.1	58.0	62.2
29-Apr-20	15:45	Sunny	63.5	64.9	61.8	58.0	62.1

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}
6-Apr-20	14:30	Rainy	64.5	65.6	63.4	63.4	58.0
14-Apr-20	10:10	Fine	59.0	61.8	52.1	63.4	59 Measured \leq Baseline
20-Apr-20	15:15	Sunny	62.1	63.8	53.5	63.4	62.1 Measured \leq Baseline
29-Apr-20	14:30	Sunny	53.4	54.6	47.7	63.4	53.4 Measured \leq Baseline

Noise Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1 Graphical Presentation of Construction Noise Monitoring Results	Date Apr 2020	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		100	+++++
<i>Acridotheres tristis</i>	Common Myna	家八哥		0	+
<i>Actitis hypoleucos</i>	Common Sandpiper	磯鶺	*	5	+
<i>Alcedo atthis</i>	Common Kingfisher	普通翠鳥	*	1	+
<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	白胸苦惡鳥	*	0	+
<i>Anthus hodgsoni</i>	Olive Backed Pipit	樹鵲		30	+++
<i>Apus nipalensis</i>	House Swift	小白腰雨燕		8	+
<i>Ardea alba</i>	Great Egret	大白鷺	*	23	++
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	*	47	+++++
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	*	44	++
<i>Cacomantis merulinus</i>	Plaintive cuckoo	八聲杜鵑		1	+
<i>Centropus sinensis</i>	Greater Coucal	褐翅鴉鵂		3	+
<i>Ceryle rudis</i>	Pied Kingfisher	斑魚狗	*	0	+
<i>Charadrius dubius</i>	Little Ringed Plover	金眶鸕	*	1	
<i>Copsychus saularis</i>	Magpie Robin	鵲鴝		1	+
<i>Corvus macrorhynchos</i>	Jungle Crow	大嘴烏鴉		5	+
<i>Corvus torquatus</i>	Collared Crow	白頸鴉	*	2	+
<i>Dicrurus hottentottus</i>	Hair-crested Drogon	髮冠卷尾		2	+
<i>Egretta garzetta</i>	Little Egret	小白鷺	*	80	+++++
<i>Eudynamis scolopacea</i>	Common Koel	噪鵲		12	++
<i>Gallinula chloropus</i>	Common Moorhen	黑水雞	*	0	+
<i>Garrulax perspicillatus</i>	Masked Laughing Thrush	黑臉噪鵲		40	+++++
<i>Glareola maldivarum</i>	Oriental pratincole	普通燕鴿	*	1	
<i>Hierococcyx sparveriioides</i>	Large Hawk Cuckoo	大鷹鴝		13	++
<i>Himantopus himantopus</i>	Black-winged Stilt	黑翅長腳鸕	*	5	+
<i>Hirundo rustica</i>	Barn Swallow	家燕		49	+++
<i>Lanius cristatus</i>	Brown Shrinke	紅尾伯勞		1	
<i>Lanius schach</i>	Rufous-backed Shrike	棕背伯勞		0	+
<i>Lonchura punctulata</i>	Spotted Munia	斑文鳥		7	++
<i>Lonchura striata</i>	White-rumped Munia	白腰文鳥		12	
<i>Milvus migrans</i>	Black Kite	黑鳶	*	2	+
<i>Motacilla alba</i>	White Wagtail	白鶺鴒		22	++++
<i>Motacilla cinerea</i>	Grey Wagtail	灰鶺鴒		2	
<i>Orthotomus sutorius</i>	Common Tailorbird	長尾縫葉鶯		8	+++
<i>Pandion haliaetus</i>	Osprey	魚鷹	*	1	+
<i>Parus cinereus</i>	Cinereous Tit	蒼背山雀		1	+
<i>Passer montanus</i>	Eurasian Tree Sparrow	樹麻雀		2	+
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶺	*	1	
<i>Phylloscopus fuscatus</i>	Dusky Warbler	褐柳鶯		2	+
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	黃眉柳鶯		9	+
<i>Phylloscopus proregulus</i>	Pallas's Leaf Warbler	黃腰柳鶯		5	+
<i>Pica pica</i>	Magpie	喜鵲		2	+
<i>Prinia flaviventris</i>	Yellow-bellied Prinia	黃腹鷓鴣		3	+
<i>Prinia inornata</i>	Plain Prinia	純色鷓鴣		1	+
<i>Psittacula eupatria</i>	Alexandrine Parakeet	亞歷山大鸚鵡		2	+
<i>Pycnonotus jocosus</i>	Crested bulbul	紅耳鸚		2	+
<i>Pycnonotus sinensis</i>	Chinese Bulbul	白頭鸚		4	+
<i>Saxicola stejnegeri</i>	Stejneger's Stonechat	黑喉石鸕		1	+
<i>Streptopelia chinensis</i>	Spotted Dove	珠頸斑鳩		31	+++
<i>Sturnus nigricollis</i>	Black-necked Starling	黑領椋鳥		15	+++++
<i>Tachybaptus ruficollis</i>	Little Grebe	小鸕鶺	*	1	
<i>Tringa glareola</i>	Wood Sandpiper	林鶺	*	2	+
<i>Tringa nebularia</i>	Common Greenshank	青腳鶺	*	5	+
<i>Tringa ochropus</i>	Green Sandpiper	白腰草鶺	*	0	+
<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie	紅咀藍鸕		4	+
<i>Zitting cisticola</i>	Streaked Fantail Warbler	棕扇尾鶯		2	+
<i>Zosterops japonicus</i>	Japanese White-eye	暗綠繡眼鳥		4	++
Total Point Count Abundance				632	
Total Waterbirds				221	

*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 Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		Project No. MA19019	CINOTECH
Monthly Data Analysis for Ecological Monitoring	Date April 2020	Appendix I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Apr
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	8 Apr 2020	11:00	High	59	141	16
		15:00	Low	82		14
#2	14 Apr 2020	10:30	High	78	189	19
		8:00	Low	111		23
#3	24 Apr 2020	10:00	High	71	175	20
		8:00	Low	104		23
#4	27 Apr 2020	11:00	High	42	127	17
		7:45	Low	85		19
Overall Total				632		

Table III: Total Waterbird Abundance from Point Count						
Survey Information				Numbers of Waterbirds		
No.	Date	Time	Tide Level	Individuals Recorded	Total	
#1	8 Apr 2020	11:00	High	41	81	
		15:00	Low	40		
#2	14 Apr 2020	10:30	High	13	50	
		8:00	Low	37		
#3	24 Apr 2020	10:00	High	16	49	
		8:00	Low	33		
#4	27 Apr 2020	11:00	High	19	41	
		7:45	Low	22		
Overall Total				221		
Average				55		

Table IV: T-Test Analysis for All Waterbirds

Baseline Data

Monthly Average Abundance (Apr) 48.13
Seasonal Average Abundance (Summer) 44.18

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	0.808	✓	✓
	Season	1.256	✓	✓

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 1		MA19019	
Monthly Data Analysis for Ecological Monitoring	Date	Appendix	
	April 2020	I	

MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month Apr
 Season Summer

Table V: Abundance of Representative Waterbirds from Point Count											
Representative Species			Recorded Abundance					Baseline Data			
Species Name	Common Name	Chinese Name	8 Apr 2020	14 Apr 2020	24 Apr 2020	27 Apr 2020		Total	Average	Avg (Apr)	Avg (Summer)
<i>Egretta garzetta</i>	Little Egret	小白鷺	23	28	11	18		80	20	21	20
<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	17	4	14	12		47	12	14	16
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿	0	1	0	0		1	0	0	0
<i>Ardea alba</i>	Great Egret	大白鷺	6	4	8	5		23	6	3	3
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	21	13	10	0		44	11	7	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	-0.310	✓	✓	0.000	✓	✓	✓
<i>Ardea cinerea</i> *	Grey Heron*	蒼鷺*				N/A*			
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	-0.899	✓	✓	-1.446	✓	✓	✓
<i>Phalacrocorax carbo</i> *	Great Cormorant*	普通鸕鶿*				N/A*			
<i>Ardea alba</i>	Great Egret	大白鷺	3.806	✓	✓	3.761	✓	✓	✓
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	0.835	✓	✓	1.790	✓	✓	✓

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	CINOTECH
Monthly Data Analysis for Ecological Monitoring		Date April 2020 Appendix I	

**APPENDIX J
PHOTO RECORDS OF ECOLOGICAL
MONITORING**

Appendix J - Photo Records of Ecological Monitoring

Part A - Conditions of Rivers



Sheung Yue River (Taken on 14 Apr 20)



Ng Tung River (Taken on 8 Apr 20)



Shek Sheung River (Taken on 8 Apr 20)

Part B – Waterbird Species



Actitis hypoleucos (Taken on 24 Apr 20)

(Calling was heard)

Amaurornis phoenicurus (Heard on 8 Apr 20)



Ardea alba (Taken on 24 Apr 20)



Ardea cinerea (Taken on 27 Apr 20)



Ardeola bacchus (Taken on 14 Apr 20)



Bubulcus coromandus (Taken on 8 Apr 20)



Egretta garzetta (Taken on 8 Apr 20)



Himantopus himantopus (Taken on 8 Apr 20)



Tringa glareola (Taken on 8 Apr 20)



Tringa nebularia (Taken on 8 Apr 20)

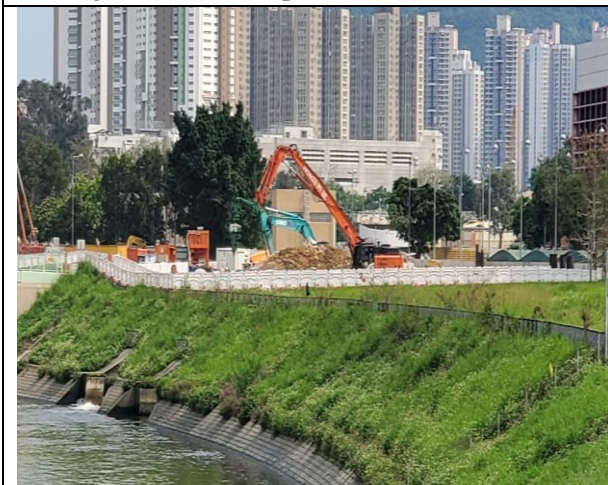
Part C – Human Activities & Site Conditions



Fishing (Taken on 8 Apr 20)



Singing (Taken on 8 Apr 20)



Excavation (Taken on 8 Apr 20)



Helicopter (Taken on 8 Apr 20)



Jaywalking (Taken on 27 Apr 20)



Vibration Hammer (Taken on 24 Apr 20)



Oil stain (Taken on 14 Apr 20)



Logging (Taken on 14 Apr 20)

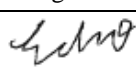

APPENDIX K
SITE AUDIT SUMMARY

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200409
Date	9 April 2020
Time	14:00 – 15:45

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 site inspection.	
	<i>C. Air Quality</i>	
200409-R1	• Stockpile should be covered with impervious materials to prevent dust generation at Portion C.	C1
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 200331): Item 200331-R1 was rectified/improved by the Contractor.	



	Name	Signature	Date
Recorded by	Ms. Echo Hung		9 April 2020
Checked by	Mr. Samson Yuen		14 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200414
Date	14 April 2020
Time	14:30 – 16:45

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 site inspection.	
	<i>C. Air Quality</i>	
200414-R2	• Dusty materials were observed on the haul road at Portion C when a truck passed by. More frequent water spraying should be provided to avoid dust generation.	C5
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
200414-R1	• Waste deposited should be removed and tidied up as soon as possible at Portion A.	E2iii
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 200409): Item 200409-R1 was rectified/improved by the Contractor.	

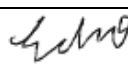

	Name	Signature	Date
Recorded by	Ms. Echo Hung		14 April 2020
Checked by	Mr. Samson Yuen		16 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200421
Date	21 April 2020
Time	14:00 – 15:30

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 site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
200414-R1	• Waste deposited should be removed and tidied up as soon as possible at Portion A.	E2iii
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 200414): Follow-up actions are needed to be reviewed for item 200414-R1. Item 200414-R2 was rectified/improved by the Contractor.	

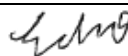

	Name	Signature	Date
Recorded by	Ms. Echo Hung		21 April 2020
Checked by	Mr. Samson Yuen		22 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200428
Date	28 April 2020 (Tuesday)
Time	14:00 – 15:30

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 site inspection.	
	<i>C. Air Quality</i>	
200428-R3	• Dust generation was observed in the unpaved area at the western side of Portion C. Water spraying should be provided to minimize air quality impact in the area.	C12
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
200428-R1	• General refuse and construction waste was deposited at Portion A. The Contractor should clear and separate the general refuse and construction waste or cover them with impervious materials to prevent waste accumulation.	E2iii
200428-R2	• Chemicals should be stored inside the drip tray properly at Portion C.	E6iv
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 200421): Item 200414-R1 was rectified/improved by the Contractor.	

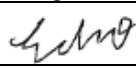

	Name	Signature	Date
Recorded by	Ms. Echo Hung		28 April 2020
Checked by	Mr. Samson Yuen		29 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200409
Date	9 April 2020
Time	14:00 – 15:45

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 site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200331).	

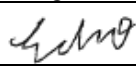

	Name	Signature	Date
Recorded by	Ms. Echo Hung		9 April 2020
Checked by	Mr. Samson Yuen		14 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200414
Date	14 April 2020
Time	14:30 – 16:45

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 site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
200414-R1	• General refuse and waste stockpile accumulated should be removed or covered by impervious materials at Portion B.	E2iii, iv
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200409).	

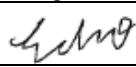

	Name	Signature	Date
Recorded by	Ms. Echo Hung		14 April 2020
Checked by	Mr. Samson Yuen		16 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200421
Date	21 April 2020
Time	14:00 – 15:30

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 site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	Following up on the previous site inspection (ref no.: 200414): Item 200414-R1 was rectified/improved by the Contractor.	

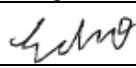

	Name	Signature	Date
Recorded by	Ms. Echo Hung		21 April 2020
Checked by	Mr. Samson Yuen		22 April 2020

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

Weekly Site Inspection Record Summary
Inspection Information

Checklist Reference Number	200428
Date	28 April 2020 (Tuesday)
Time	14:00 – 15:30

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 site inspection.	
	<i>C. Air Quality</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>D. Noise</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>E. Waste / Chemical Management</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>F. Ecology and Fisheries</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>G. Landscape and Visual</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>H. Permits /Licences</i>	
	• No environmental deficiency was identified during site inspection.	
	<i>I. Others</i>	
	No follow-up items from the previous site inspection (ref no.: 200421).	

	Name	Signature	Date
Recorded by	Ms. Echo Hung		28 April 2020
Checked by	Mr. Samson Yuen		29 April 2020

**APPENDIX L
WASTE FLOW TABLE**

Monthly Summary Waste Flow Table for 2020 (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	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 '000m ³)	(in '000m ³)
Jan	0.376	0.000	0.000	0.000	0.376	0.000	0.000	0.000	0.000	0.000	0.040
Feb	1.122	0.000	0.000	0.250	0.872	0.000	0.000	0.000	0.000	0.000	0.082
Mar	2.289	0.000	0.000	0.350	1.939	0.000	0.000	0.000	0.000	0.000	0.057
Apr	2.707	0.000	0.000	0.165	2.542	0.000	0.000	0.000	0.000	0.000	0.008
May											
Jun											
Sub-total	6.494	0.000	0.000	0.765	5.729	0.000	0.000	0.000	0.000	0.000	0.187
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	6.494	0.000	0.000	0.765	5.729	0.000	0.000	0.000	0.000	0.000	0.187

- 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 mixed rock and soil is 1.9 ton/m³.
 4. Assume the density of slurry and bentonite is 2.8 ton/m³.
 5. The slurry and bentonite are disposed at Tseung Kwan O Area 137 Fill Bank.
 6. The non-inert C&D wastes are disposed at NENT.

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	Diposal as Public Fill	Imported Fill	Metals	Paper/card board packaging	Plastics (see Note 2)	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 '000m ³)	(in '000m ³)
26.2	0.0	6.3	0.0	20.0	1.5	50.0	50.0	20.0	0.1	0.4

Notes:

- (1) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
- (3) 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 if equal to or exceed 50,000 m³.
- (4) The density of soil fill is 2.24 ton/m³.

SUMMARY TABLE FOR WORK PROCESSES OR ACTIVITIES REQUIRING TIMBER FOR TEMPORARY WORKS

Contract No.: DC/2018/06

Contract Title: Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1 Civil Works for Sludge Treatment Facilities and 132kV Primary Substation

Item No.	Month.	Description of Works Process or Activity [see note (a) below]	Justifications for Using Timber in Temporary Construction Works	Est. Quantities of Timber Used (m³)	Est. Quantities of Timber reused (m³)	Actual Quantities Used (m³)	Remarks
1	Oct-19	N/A	N/A	0	0	0	N/A
2	Nov-19	N/A	N/A	0	0	0	N/A
3	Dec-19	N/A	N/A	0	0	0	N/A
4	Jan-20	N/A	N/A	0	0	0	N/A
5	Feb-20	N/A	N/A	0	0	0	N/A
6	Mar-20	N/A	N/A	0	0	0	N/A
7	Apr-20	N/A	N/A	0	0	0	N/A
Total Estimated Quantity of Timber Used				0			

Notes: (a) The Contractor shall list out all the work items requiring timber for use in temporary construction works. Several minor work items may be grouped into one for ease of updating.

Monthly Summary Waste Flow Table for 2020 (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	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 kg)	(in '000kg)
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.760
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.490
Mar	150.170	0.000	0.000	0.000	150.170	0.000	0.000	0.000	0.000	0.000	0.000
Apr	135.570	0.000	0.000	0.000	135.570	0.000	19.090	0.000	0.000	0.000	2.540
May											
Jun											
Sub-total	285.740	0.000	0.000	0.000	285.740	0.000	19.090	0.000	0.000	0.000	12.790
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
Total	285.740	0.000	0.000	0.000	285.740	0.000	19.090	0.000	0.000	0.000	12.790

- 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 mixed rock and soil is 1.9 ton/m³.
 4. Assume the density of slurry and bentonite is 2.8 ton/m³.
 5. The slurry and bentonite are disposed at Tseung Kwan O Area 137 Fill Bank.
 6. The non-inert C&D wastes are disposed at NENT.

Environmental Aspect Evaluation Form

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) refers)

Monthly Summary Waste Flow Table for 2020 (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 '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	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0
May											
June											
Sub-total	0	0	0	0	0	0	0	0	0	0	0
July											
Aug											
Sept											
Oct											
Nov											
Dec											
Total	0	0	0	0	0	0	0	0	0	0	0

- 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.

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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.

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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	<p>^</p> <p>*</p> <p>*</p> <p>^</p> <p>^</p> <p>^</p> <p>^</p> <p>^</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
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;						^
	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;						^
	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						^
	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)	N/A
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	<p>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.</p> <p>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.</p>	Minimize the impact to the landscape and visual	Contractor	Work Sites	Prior to construction and construction phase		N/A
S7.3.2.1	<p>MM4 – Tree Protection & Preservation</p> <p>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.</p>	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>N/A</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>

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>Rhodomyrtus 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**

Agreement No. SPW 07/2019
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: April 2020

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 	Complaint Investigation Report was submitted in April 2020

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

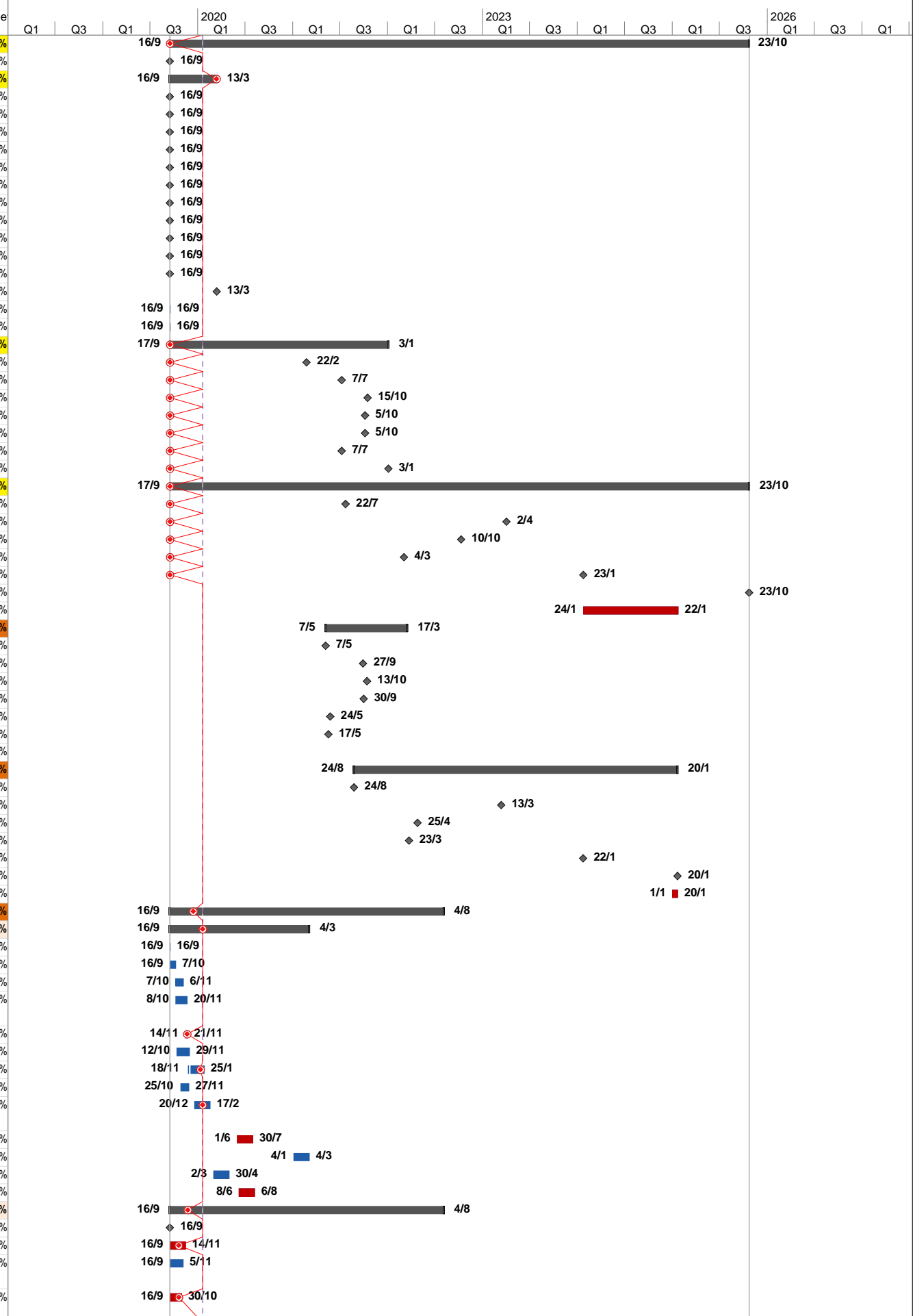
Appendix P – Summary of Exceedance

Reporting Month: April 2020

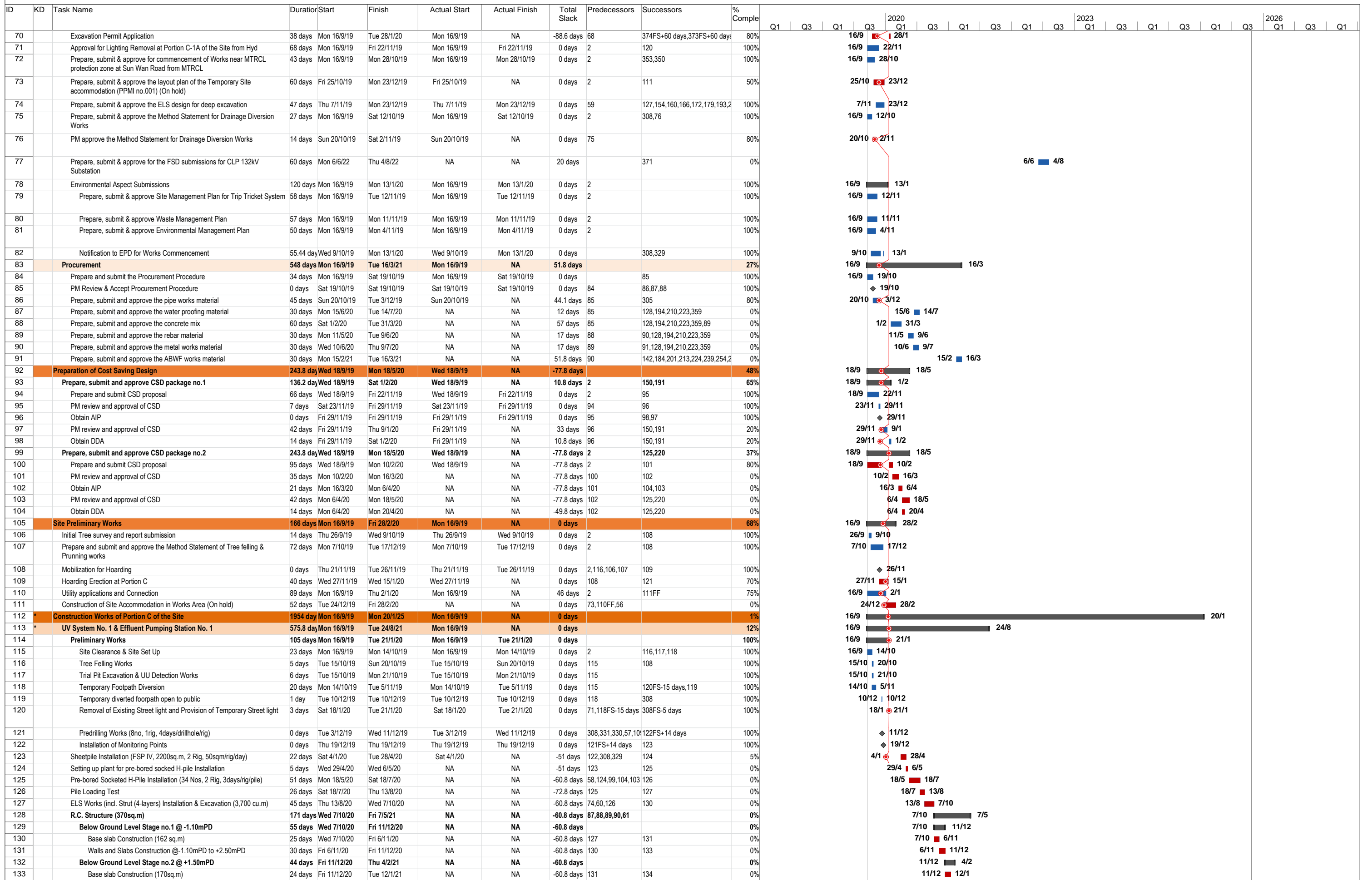
- (A) Exceedance Report for Air Quality**
(NIL in the reporting month)
- (B) Exceedance Report for Construction Noise**
(NIL in the reporting month)
- (C) Exceedance Report for Ecology**
(NIL in the reporting month)

**APPENDIX Q
TENTATIVE CONSTRUCTION
PROGRAMME**

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete
1		Contract Dates	2229.2 days	Mon 16/9/19	Thu 23/10/25	Mon 16/9/19	NA	0 days			0%
2		Starting Date	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	4,5FS+180 days,6,7,8,9,11,12,1		100%
3		Access Date (cal. day)	180 days	Mon 16/9/19	Fri 13/3/20	Mon 16/9/19	NA	0 days			99%
4		Portion A-1	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
5		Portion A-2	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2FS+180 days		100%
6		Portion C-1A	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
7		Portion C-1B	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
8		Portion C-2A	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
9		Portion C-2B	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
10		Portion C-2C	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
11		Portion C-2D	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
12		Portion C-3	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
13		Portion C-4	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
14		Portion C-5	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
15		Portion C-6	0 days	Fri 13/3/20	Fri 13/3/20	NA	NA	0 days	2FS+180 days	311,303	0%
16		Works Area WA1	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
17		Works Area WA2-A	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
18		Key Date (cal. day)	840 days	Tue 17/9/19	Mon 3/1/22	NA	NA	0 days			0%
19		KD1A (525 days after starting date)	525 days	Tue 17/9/19	Mon 22/2/21	NA	NA	0 days			0%
20		KD2A (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	NA	NA	0 days			0%
21		KD3A (760 days after starting date)	760 days	Tue 17/9/19	Fri 15/10/21	NA	NA	0 days			0%
22		KD3B (750 days after starting date)	750 days	Tue 17/9/19	Tue 5/10/21	NA	NA	0 days			0%
23		KD3C (750 days after starting date)	750 days	Tue 17/9/19	Tue 5/10/21	NA	NA	0 days			0%
24		KD3D (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	NA	NA	0 days			0%
25		KD3E (840 days after starting date)	840 days	Tue 17/9/19	Mon 3/1/22	NA	NA	0 days			0%
26		Completion Date (cal. day)	2228.2 days	Tue 17/9/19	Thu 23/10/25	NA	NA	0 days			0%
27		Section 1 of Works (675 days after starting date)	675 days	Tue 17/9/19	Thu 22/7/21	NA	NA	0 days			0%
28		Section 2 of Works (1,295 days after starting date)	1294 days	Tue 17/9/19	Sun 2/4/23	NA	NA	0 days			0%
29		Section 3 of Works (1,120 days after starting date)	1120 days	Tue 17/9/19	Mon 10/10/22	NA	NA	0 days			0%
30		Section 4 of Works (900 days after starting date)	900 days	Tue 17/9/19	Fri 4/3/22	NA	NA	0 days			0%
31		Section 5 of Works (1,590 days after starting date)	1590 days	Tue 17/9/19	Tue 23/1/24	NA	NA	0 days	32,33		0%
32		Defect Liability Period	365 days	Wed 24/1/24	Thu 23/10/25	NA	NA	0 days	31		0%
33		Soft Landscape Establishment Works	365 days	Wed 24/1/24	Wed 22/1/25	NA	NA	0 days	31		0%
34	*	Planned Completion - Key Date (cal. day)	314 days	Fri 7/5/21	Thu 17/3/22	NA	NA	-74.8 days			0%
35	KD1A	KD1A (525 days after starting date)	0 days	Fri 7/5/21	Fri 7/5/21	NA	NA	-74.8 days	140FF,138FF,330,		0%
36	KD2A	KD2A (660 days after starting date)	0 days	Mon 27/9/21	Mon 27/9/21	NA	NA	-83 days	366FF		0%
37	KD3A	KD3A (760 days after starting date)	0 days	Wed 13/10/21	Wed 13/10/21	NA	NA	0 days	180FF,181FF		0%
38	KD3B	KD3B (750 days after starting date)	0 days	Thu 30/9/21	Thu 30/9/21	NA	NA	4 days	198FF,199FF		0%
39	KD3C	KD3C (750 days after starting date)	0 days	Mon 24/5/21	Mon 24/5/21	NA	NA	133 days	210FF,211FF		0%
40	KD3D	KD3D (660 days after starting date)	0 days	Mon 17/5/21	Mon 17/5/21	NA	NA	50 days	236FF,237FF		0%
41	KD3E	KD3E (840 days after starting date)	0 days	Thu 17/3/22	Thu 17/3/22	NA	NA	-73.8 days	253FF,248FF,284F		0%
42	*	Planned Completion - Section of the Works (cal. day)	1245.2 days	Tue 24/8/21	Mon 20/1/25	NA	NA	-33.8 days			0%
43	SW1	Section 1 of Works (675 days after starting date)	0 days	Tue 24/8/21	Tue 24/8/21	NA	NA	-33.8 days	142FF,309FF,141F		0%
44	SW2	Section 2 of Works (1,295 days after starting date)	0 days	Mon 13/3/23	Mon 13/3/23	NA	NA	20 days	371FF,368FF,370F		0%
45	SW3	Section 3 of Works (1,120 days after starting date)	0 days	Mon 25/4/22	Mon 25/4/22	NA	NA	167 days	212FF,213FF,238F		0%
46	SW4	Section 4 of Works (900 days after starting date)	0 days	Wed 23/3/22	Wed 23/3/22	NA	NA	-20 days	269FF,273FF,304F		0%
47	SW5	Section 5 of Works (1,590 days after starting date)	0 days	Mon 22/1/24	Mon 22/1/24	NA	NA	0 days	341FF,339FF,340F		0%
48		Defect Liability Period	0 days	Mon 20/1/25	Mon 20/1/25	NA	NA	0 days	343FF		0%
49		Soft Landscape Establishment Works	20 days	Wed 1/1/25	Mon 20/1/25	NA	NA	0 days	343FF		0%
50		Submissions (cal. day)	1054 days	Mon 16/9/19	Thu 4/8/22	Mon 16/9/19	NA	20 days			62%
51		Subletting Package	536 days	Mon 16/9/19	Thu 4/3/21	Mon 16/9/19	NA	63.8 days			52%
52		Prepare & Submit Subletting Procedures	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2	53	100%
53		PM Review & Accept Subletting Procedures	21 days	Mon 16/9/19	Mon 7/10/19	Mon 16/9/19	Mon 7/10/19	0 days	52	55,57,54,56	100%
54		Subletting for Preliminary Works (Instrumentation Monitoring etc.)	30 days	Mon 7/10/19	Wed 6/11/19	Mon 7/10/19	Wed 6/11/19	0 days	53	311	100%
55		Subletting for Drainage Diversion Works for UV System no.1& Effluent Pumping Station No.1	44 days	Tue 8/10/19	Wed 20/11/19	Tue 8/10/19	Wed 20/11/19	0 days	53	308	100%
56		Subletting for the Temporary Site accommodation (On hold)	8 days	Thu 14/11/19	Thu 21/11/19	Thu 14/11/19	NA	32 days	53	111	99%
57		Subletting for Pre-drilling Works	49 days	Sat 12/10/19	Fri 29/11/19	Sat 12/10/19	Fri 29/11/19	0 days	53	58SS+15 days,59SS+15 days,1	100%
58		Subletting for Pre-bored Socketed Steel H-Pile	45 days	Mon 18/11/19	Sat 25/1/20	Mon 18/11/19	NA	7.25 days	57SS+15 days	355,150,191,207,220,230,245,1	90%
59		Subletting for Contractor's Designer for Temporary Works	32 days	Fri 25/10/19	Wed 27/11/19	Fri 25/10/19	Wed 27/11/19	0 days	57SS+15 days	61,60,74,62,63,64	100%
60		Subletting for ELS Works	60 days	Fri 20/12/19	Mon 17/2/20	Fri 20/12/19	NA	105 days	59	127,154,160,166,172,179,193,2	80%
61		Subletting for R.C Works	60 days	Mon 1/6/20	Thu 30/7/20	NA	NA	-4 days	59	128,194,210,223,359,272,252,2	0%
62		Subletting for ABWS & BS Works	60 days	Mon 4/1/21	Thu 4/3/21	NA	NA	63.8 days	59	142,184,201,213,224,239,254,2	0%
63		Subletting for Pipeworks, Utilities, and Roadworks	60 days	Mon 2/3/20	Thu 30/4/20	NA	NA	227 days	59	336,333,334,335,332	0%
64		Subletting for Hard Landscape, Soft Landscape, and others	60 days	Mon 8/6/20	Thu 6/8/20	NA	NA	0 days	59	339,340,341,343	0%
65		Statutory Submission, Submission & Approval	1054 days	Mon 16/9/19	Thu 4/8/22	Mon 16/9/19	NA	20 days			82%
66		Prepare and Submit Subcontractor Management Plan (SMP)	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%
67		Prepare and Submit Interface Management Plan	60 days	Mon 16/9/19	Thu 14/11/19	Mon 16/9/19	NA	0 days	2		58%
68		Prepare TTA Plan, submit & approve for footpath for Stage 1 - Drainage Diversion	51 days	Mon 16/9/19	Tue 5/11/19	Mon 16/9/19	Tue 5/11/19	0 days	2	308,70	100%
69		Prepare TTA Plan, submit & approve for carriageway at Chuk Wan Road for CLP 13kV substation	45 days	Mon 16/9/19	Wed 30/10/19	Mon 16/9/19	NA	0 days	2		78%

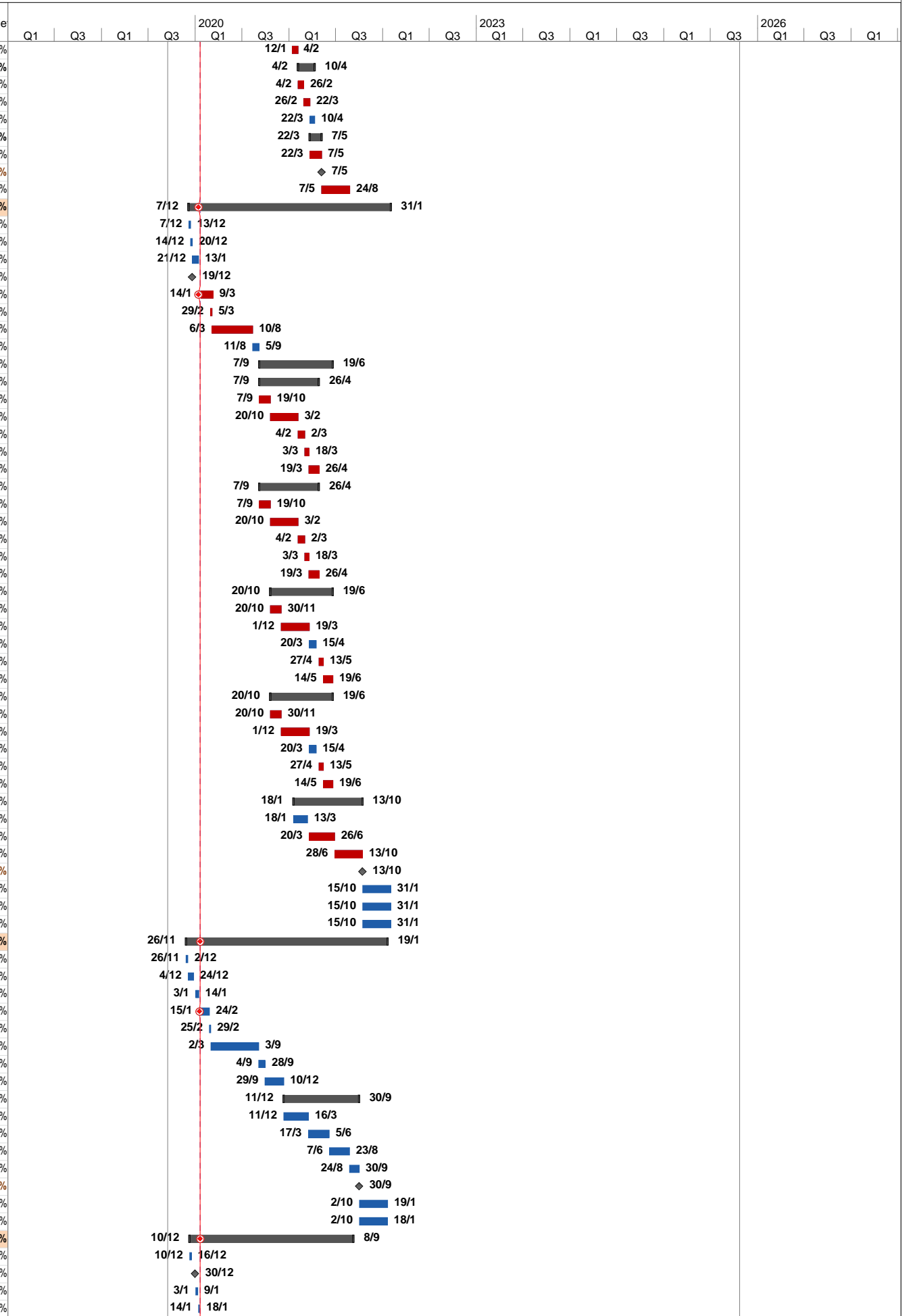


Task  Milestone  Summary  Critical 

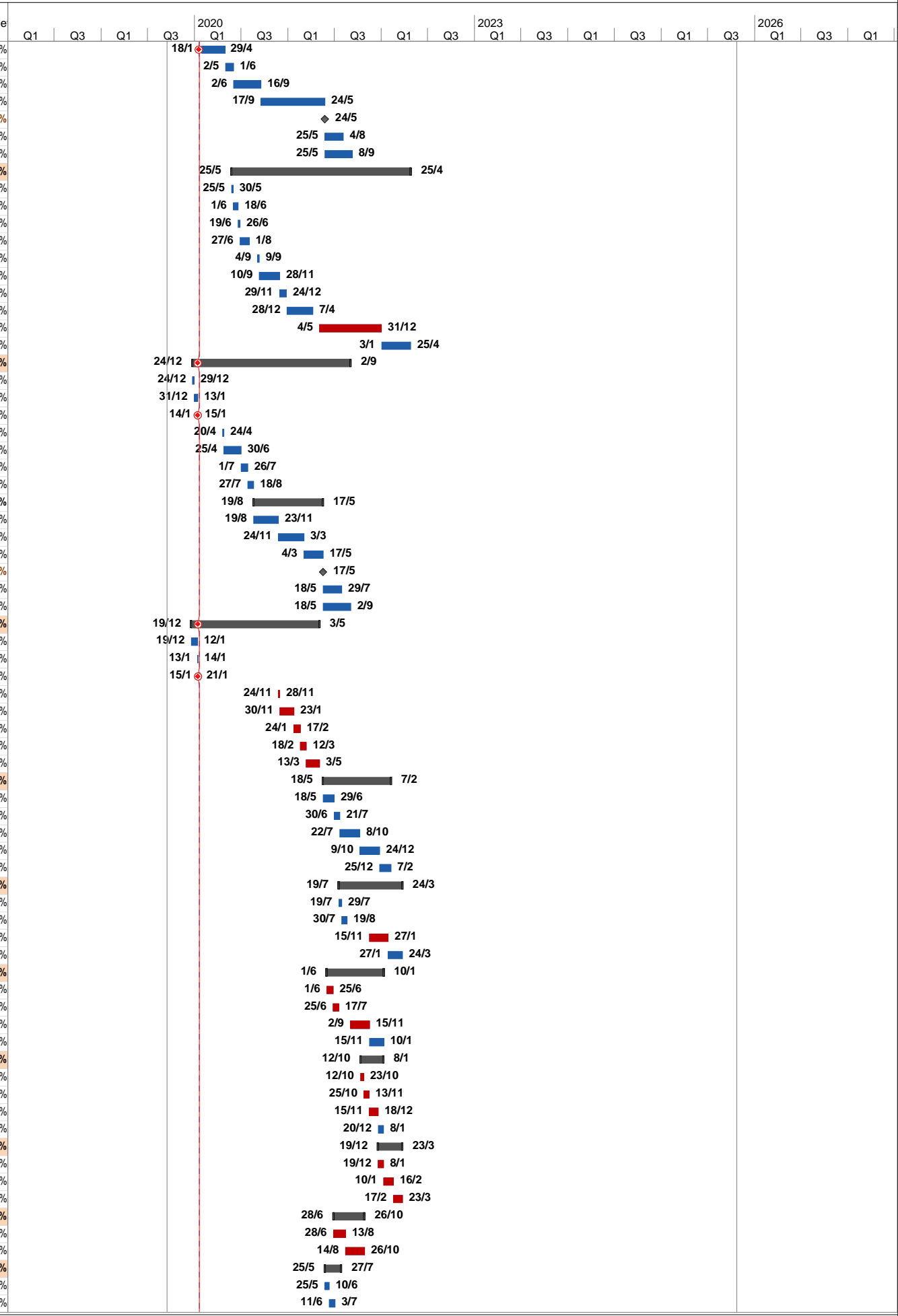


Task Milestone Summary Critical

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete
134		Walls and Slabs Construction @+1.5mPD to +4.9mPD	20 days	Tue 12/1/21	Thu 4/2/21	NA	NA	-60.8 days	133	136	0%
135		Below Ground Level Stage no.3 @ +3.80mPD	50 days	Thu 4/2/21	Sat 10/4/21	NA	NA	-60.8 days			0%
136		Base slab Construction (15 sq.m + 40 sq.m)	16 days	Thu 4/2/21	Fri 26/2/21	NA	NA	-60.8 days	134	137	0%
137		Walls and Slabs Construction @+3.80mPD to +7.4mPD	20 days	Fri 26/2/21	Mon 22/3/21	NA	NA	-60.8 days	136	138,140	0%
138		Extraction of Sheetpiles	14 days	Mon 22/3/21	Sat 10/4/21	NA	NA	22 days	137	35FF	0%
139		Above Ground Level @ +7.4mPD	36 days	Mon 22/3/21	Fri 7/5/21	NA	NA	-60.8 days			0%
140	KD1A	Walls, Slabs and staircase Construction @+7.4mPD to 16.4mPD	36 days	Mon 22/3/21	Fri 7/5/21	NA	NA	-60.8 days	137	35FF,141,142,282	0%
141		Allow access to Contarctor DE/2018/03 for E&M Installation	0 days	Fri 7/5/21	Fri 7/5/21	NA	NA	90 days	140	43FF	0%
142	SW1	ABWF Works + BS Works	90 days	Fri 7/5/21	Tue 24/8/21	NA	NA	0 days	91,62,140	43FF	0%
143	*	Sludge Digesters and Distribution Chamber	638 days	Sat 7/12/19	Mon 31/1/22	Sat 7/12/19	NA	201 days			2%
144		Site Clearance & Site Set Up	6 days	Sat 7/12/19	Fri 13/12/19	Sat 7/12/19	Fri 13/12/19	0 days	145SF		100%
145		Trial Pit Excavation & UU Detection Works	6 days	Sat 14/12/19	Fri 20/12/19	Sat 14/12/19	Fri 20/12/19	0 days	146SF	144SF	100%
146		Predrilling Works (23no., 3rig, 4days/drillhole/rig)	17 days	Sat 21/12/19	Mon 13/1/20	Sat 21/12/19	Mon 13/1/20	0 days	57FS+14 days	147,145SF,148	100%
147		Installation of Monitoring Points	0 days	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	Thu 19/12/19	0 days	146	150	100%
148		Sheet Pile Installation	45 days	Tue 14/1/20	Mon 9/3/20	NA	NA	0 days	146	150FS-23 days,178	0%
149		Setting up plant for pre-bored socked H-pile Installation	5 days	Sat 29/2/20	Thu 5/3/20	NA	NA	-20 days		150	0%
150		Pre-bored Socketed H-Pile Installation (127nos, 3 Rig, 3days/rig/pile)	127 days	Fri 6/3/20	Mon 10/8/20	NA	NA	-20 days	58,147,148FS-23 d	151,303	0%
151		Pile Load Test (2no.)	26 days	Tue 11/8/20	Sat 5/9/20	NA	NA	1 day	150	154,160,153,159,165,171	0%
152		Construction of Digesters	231 days	Mon 7/9/20	Sat 19/6/21	NA	NA	0 days			0%
153		Digester No. 1	187 days	Mon 7/9/20	Mon 26/4/21	NA	NA	0 days	151		0%
154		ELS Works (incl. Strut (3-layers) Installation & Excavation (4,440 cu.m))	35 days	Mon 7/9/20	Mon 19/10/20	NA	NA	0 days	74,60,151	166,155	0%
155		Construction of Digesters	88 days	Tue 20/10/20	Wed 3/2/21	NA	NA	0 days	154	156,179,167FS-58 days	0%
156		Water Test	20 days	Thu 4/2/21	Tue 2/3/21	NA	NA	0 days	155	157	0%
157		Apply Internal Anti-corrosion Protective Lining	14 days	Wed 3/3/21	Thu 18/3/21	NA	NA	0 days	156	158	0%
158		Construction of Roof Slab	30 days	Fri 19/3/21	Mon 26/4/21	NA	NA	0 days	157	169	0%
159		Digester No. 2	187 days	Mon 7/9/20	Mon 26/4/21	NA	NA	0 days	151		0%
160		ELS Works (incl. Strut (3-layers) Installation & Excavation (4,440 cu.m))	35 days	Mon 7/9/20	Mon 19/10/20	NA	NA	0 days	74,60,151	172,161	0%
161		Construction of Digesters	88 days	Tue 20/10/20	Wed 3/2/21	NA	NA	0 days	160	162,179,173FS-58 days	0%
162		Water Test	20 days	Thu 4/2/21	Tue 2/3/21	NA	NA	0 days	161	163	0%
163		Apply Internal Anti-corrosion Protective Lining	14 days	Wed 3/3/21	Thu 18/3/21	NA	NA	0 days	162	164	0%
164		Construction of Roof Slab	30 days	Fri 19/3/21	Mon 26/4/21	NA	NA	0 days	163	175	0%
165		Digester No. 3	196 days	Tue 20/10/20	Sat 19/6/21	NA	NA	0 days	151		0%
166		ELS Works (incl. Strut (3-layers) Installation & Excavation (4,440 cu.m))	35 days	Tue 20/10/20	Mon 30/11/20	NA	NA	0 days	74,60,154	167,332,333,334,336,335	0%
167		Construction of Digesters	88 days	Tue 1/12/20	Fri 19/3/21	NA	NA	0 days	166,155FS-58 days	168,179	0%
168		Water Test	20 days	Sat 20/3/21	Thu 15/4/21	NA	NA	9 days	167	169	0%
169		Apply Internal Anti-corrosion Protective Lining	14 days	Tue 27/4/21	Thu 13/5/21	NA	NA	0 days	168,158	170	0%
170		Construction of Roof Slab	30 days	Fri 14/5/21	Sat 19/6/21	NA	NA	0 days	169		0%
171		Digester No. 4	196 days	Tue 20/10/20	Sat 19/6/21	NA	NA	0 days	151		0%
172		ELS Works (incl. Strut (3-layers) Installation & Excavation (4,440 cu.m))	35 days	Tue 20/10/20	Mon 30/11/20	NA	NA	0 days	74,60,160	173,332,333,334,336,335	0%
173		Construction of Digesters	88 days	Tue 1/12/20	Fri 19/3/21	NA	NA	0 days	172,161FS-58 days	174,179,180	0%
174		Water Test	20 days	Sat 20/3/21	Thu 15/4/21	NA	NA	9 days	173	175	0%
175		Apply Internal Anti-corrosion Protective Lining	14 days	Tue 27/4/21	Thu 13/5/21	NA	NA	0 days	174,164	176	0%
176		Construction of Roof Slab	30 days	Fri 14/5/21	Sat 19/6/21	NA	NA	0 days	175		0%
177		Construction of Distribution Chamber	219 days	Mon 18/1/21	Wed 13/10/21	NA	NA	0 days			0%
178	SP	Sheet Pile Installation	45 days	Mon 18/1/21	Sat 13/3/21	NA	NA	5 days	148	179	0%
179		ELS Works (incl. Strut (3-layers) Installation & Excavation (8,880 cu.m))	79 days	Sat 20/3/21	Sat 26/6/21	NA	NA	0 days	167,173,161,155,7	180,275	0%
180	KD3A	Construction of Distribution Chamber	90 days	Mon 28/6/21	Wed 13/10/21	NA	NA	0 days	179,173	184,181,37FF,183,182	0%
181	KD3A	Allow access to Contarctor DE/2018/03 for E&M Installation	0 days	Wed 13/10/21	Wed 13/10/21	NA	NA	0 days	180	37FF	0%
182		Drainage System (within Bldg/ Structure) Installation	90 days	Fri 15/10/21	Mon 31/1/22	NA	NA	201 days	180	45FF	0%
183		FRP Walkway & Miscellaneous Installation	90 days	Fri 15/10/21	Mon 31/1/22	NA	NA	201 days	180	45FF	0%
184	SW3	ABWF Works & BS Works, incl. External Lining	90 days	Fri 15/10/21	Mon 31/1/22	NA	NA	201 days	180,91,62	45FF	0%
185	*	Sludge Dewatering Building	638 days	Tue 26/11/19	Wed 19/1/22	Tue 26/11/19	NA	211 days			5%
186		Site Clearance & Site Set Up	6 days	Tue 26/11/19	Mon 2/12/19	Tue 26/11/19	Mon 2/12/19	0 days	2	187	100%
187		Predrilling Works (39no.4rig, 4days/drillhole/rig))	18 days	Wed 4/12/19	Tue 24/12/19	Wed 4/12/19	Tue 24/12/19	0 days	57FS+14 days,186	188	100%
188		Installation of Monitoring Points	10 days	Fri 3/1/20	Fri 3/1/20	Fri 3/1/20	Tue 14/1/20	0 days	187	189	100%
189		Sheet Pile Installation	30 days	Wed 15/1/20	Mon 24/2/20	Wed 15/1/20	NA	3 days	188	191,303,190	10%
190		Setting up plant for pre-bored socked H-pile Installation	5 days	Tue 25/2/20	Sat 29/2/20	NA	NA	3 days	189	191,302SS-14 days	0%
191		Pre-bored Socketed H-Pile Installation (202 Nos, 4 Rig, 3days/rig/pile)	152 days	Mon 2/3/20	Thu 3/9/20	NA	NA	3 days	189,58,190,93,98,9	219,192	0%
192		Pile Loading Test	25 days	Fri 4/9/20	Mon 28/9/20	NA	NA	4 days	191	193	0%
193		ELS Works (incl. Strut (3-layers) Installation & Excavation (25,000 cu.m))	60 days	Tue 29/9/20	Thu 10/12/20	NA	NA	2 days	74,60,192	194,195,332,333,334,336,335	0%
194		R.C. Structure	238 days	Fri 11/12/20	Thu 30/9/21	NA	NA	2 days	87,88,89,90,61,193	201,200,199	0%
195		Basement Consturction @	76 days	Fri 11/12/20	Tue 16/3/21	NA	NA	2 days	193	196	0%
196		Ground Floor Construction @ +7.55mPD	65 days	Wed 17/3/21	Sat 5/6/21	NA	NA	2 days	195	197	0%
197		1F Construction @ +15.3m mPD	65 days	Mon 7/6/21	Mon 23/8/21	NA	NA	2 days	196	198	0%
198	KD3B	Roof Construction @ +25.65mPD	32 days	Tue 24/8/21	Thu 30/9/21	NA	NA	2 days	197	38FF,286	0%
199	KD3B	Allow access to Contarctor DE/2018/03 for E&M Installation	0 days	Thu 30/9/21	Thu 30/9/21	NA	NA	2 days	194	38FF	0%
200		Drainage System (within Bldg/ Structure) Installation	90 days	Sat 2/10/21	Wed 19/1/22	NA	NA	211 days	194	45FF	0%
201	SW5	ABWF Works & BS Works	89 days	Sat 2/10/21	Tue 18/1/22	NA	NA	212 days	194,91,62	45FF	0%
202	*	Combined Heat Power Building	518 days	Tue 10/12/19	Wed 8/9/21	Tue 10/12/19	NA	319 days			4%
203		Site Clearance & Site Set Up	6 days	Tue 10/12/19	Mon 16/12/19	Tue 10/12/19	Mon 16/12/19	0 days	2,204SF		100%
204		Predrilling Works (15no. 2rig, 4days/drillhole/rig)	0 days	Tue 17/12/19	Mon 30/12/19	Tue 17/12/19	Mon 30/12/19	0 days	57FS+28 days	205,203SF	100%
205		Installation of Monitoring Points	6 days	Fri 3/1/20	Thu 9/1/20	Fri 3/1/20	Thu 9/1/20	0 days	204	207	100%
206		Setting up plant for pre-bored socked H-pile Installation	5 days	Tue 14/1/20	Sat 18/1/20	Tue 14/1/20	Sat 18/1/20	0 days		207	100%



ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete
207		Pre-bored Socketed H-Pile Installation (50 Nos, 2 Rig, 3days/rig/pile)	75 days	Sat 18/1/20	Wed 29/4/20	Sat 18/1/20	NA	110 days	58,205,206	208	5%
208		Pile Loading Test	26 days	Sat 2/5/20	Mon 1/6/20	NA	NA	110 days	207	209	0%
209		Excavation for Pile Cap (2,060 cu.m)	90 days	Tue 2/6/20	Wed 16/9/20	NA	NA	110 days	74,60,208	210	0%
210	KD3C	R.C. Structure	200 days	Thu 17/9/20	Mon 24/5/21	NA	NA	110 days	87,88,89,90,61,209,39FF,212,213,211,278		0%
211	KD3C	Allow access to Contarctor DE/2018/03 for E&M Installation	0 days	Mon 24/5/21	Mon 24/5/21	NA	NA	110 days	210	39FF	0%
212		Drainage System (within Bldg/ Structure) Installation	60 days	Tue 25/5/21	Wed 4/8/21	NA	NA	349 days	210	45FF	0%
213	SW3	ABWF Works & BS Works	90 days	Tue 25/5/21	Wed 8/9/21	NA	NA	319 days	210,91,62	45FF	0%
214	*	Sewage Pumping Station	570 days	Mon 25/5/20	Mon 25/4/22	NA	NA	55 days			0%
215		Site Clearance & Site Set Up	6 days	Mon 25/5/20	Sat 30/5/20	NA	NA	55 days	2	216	0%
216		Predrilling Works (4no.1rig, 4days/drillhole/rig)	16 days	Mon 1/6/20	Thu 18/6/20	NA	NA	55 days	57FS+14 days,215	217	0%
217		Installation of Monitoring Points	6 days	Fri 19/6/20	Fri 26/6/20	NA	NA	55 days	216	218	0%
218		Sheet Pile Installation	30 days	Sat 27/6/20	Sat 1/8/20	NA	NA	55 days	217	220	0%
219		Setting up plant for pre-bored socked H-pile Installation	5 days	Fri 4/9/20	Wed 9/9/20	NA	NA	22 days	191	220	0%
220		Pre-bored Socketed H-Pile Installation (22 Nos, 1 Rig, 3days/rig/pile)	66 days	Thu 10/9/20	Sat 28/11/20	NA	NA	22 days	58,218,219,99,104	221	0%
221		Pile Loading Test	26 days	Sun 29/11/20	Thu 24/12/20	NA	NA	28 days	220	222	0%
222		ELS Works (incl. Strut (3-layers) Installation & Excavation (1,440 cu.m))	80 days	Mon 28/12/20	Wed 7/4/21	NA	NA	21 days	74,60,221	223	0%
223	KD3E	R.C. Structure	200 days	Tue 4/5/21	Fri 31/12/21	NA	NA	100 days	87,88,89,90,61,246,41FF,224		0%
224	SW3	ABWF Works & BS Works	90 days	Mon 3/1/22	Mon 25/4/22	NA	NA	136 days	91,62,223	45FF	0%
225	*	Workshop No. 2	501 days	Tue 24/12/19	Thu 2/9/21	Tue 24/12/19	NA	324 days			3%
226		Site Clearance & Site Set Up	3 days	Tue 24/12/19	Sun 29/12/19	Tue 24/12/19	Sun 29/12/19	0 days	2	227	100%
227		Predrilling Works (10no.1rig, 4days/drillhole/rig)	11 days	Tue 31/12/19	Mon 13/1/20	Tue 31/12/19	Mon 13/1/20	0 days	57,226	228	100%
228		Installation of Monitoring Points	2 days	Tue 14/1/20	Wed 15/1/20	NA	NA	77 days	227	230,229	0%
229		Setting up plant for pre-bored socked H-pile Installation	5 days	Mon 20/4/20	Fri 24/4/20	NA	NA	3 days	228	230	0%
230		Pre-bored Socketed H-Pile Installation (36 Nos, 2 Rig, 3days/rig/pile)	54 days	Sat 25/4/20	Tue 30/6/20	NA	NA	3 days	58,228,229	231	0%
231		Pile Loading Test	26 days	Wed 1/7/20	Sun 26/7/20	NA	NA	4 days	230	232	0%
232		Excavation for Pile Cap (1,800 cu.m)	20 days	Mon 27/7/20	Tue 18/8/20	NA	NA	4 days	74,60,231	234,332,333,334,336,335	0%
233		R.C. Structure	220 days	Wed 19/8/20	Mon 17/5/21	NA	NA	4 days			0%
234		Ground Floor Construction @ +6.30mpD	80 days	Wed 19/8/20	Mon 23/11/20	NA	NA	4 days	232	235	0%
235		First Floor Construction @ +13.50mpD	80 days	Tue 24/11/20	Wed 3/3/21	NA	NA	4 days	234	236	0%
236	KD3D	Roof Construction @+19.00mpD	60 days	Thu 4/3/21	Mon 17/5/21	NA	NA	4 days	235	238,239,40FF,237,250	0%
237	KD3D	Allow access to Contarctor DE/2018/03 for E&M Installation	0 days	Mon 17/5/21	Mon 17/5/21	NA	NA	40 days	236	40FF	0%
238		Drainage System (within Bldg/ Structure) Installation	60 days	Tue 18/5/21	Thu 29/7/21	NA	NA	354 days	236	45FF	0%
239	SW3	ABWF Works & BS Works	90 days	Tue 18/5/21	Thu 2/9/21	NA	NA	324 days	91,62,236	45FF	0%
240	*	Thermal Hydrolysis Pretreatment	403 days	Thu 19/12/19	Mon 3/5/21	Thu 19/12/19	NA	0 days			11%
241		Site Clearance & Site Set Up	16.12 day	Thu 19/12/19	Sun 12/1/20	Thu 19/12/19	Sun 12/1/20	0 days	2	242	100%
242		Predrilling Works (3no.1rig, 4days/drillhole/rig)	2 days	Mon 13/1/20	Tue 14/1/20	Mon 13/1/20	Tue 14/1/20	0 days	57FS+24 days,241	243	100%
243		Installation of Monitoring Points	6 days	Wed 15/1/20	Tue 21/1/20	NA	NA	254 days	242	245	0%
244		Setting up plant for pre-bored socked H-pile Installation	5 days	Tue 24/1/20	Sat 28/1/20	NA	NA	0 days		245	0%
245		Pre-bored Socketed H-Pile Installation (15 Nos, 1 Rig, 3days/rig/pile)	45 days	Mon 30/1/20	Sat 23/1/21	NA	NA	0 days	58,243,244	246	0%
246		Pile Loading Test	25 days	Sun 24/1/21	Wed 17/2/21	NA	NA	0 days	245	247	0%
247		Excavation for Pile Cap (160 cu.m)	20 days	Thu 18/2/21	Fri 12/3/21	NA	NA	0 days	74,60,246	248	0%
248	KD3E	R.C. Plinth	40 days	Sat 13/3/21	Mon 3/5/21	NA	NA	0 days	247	41FF,223	0%
249	*	Ferric Chloride Dosing Facilities	216 days	Tue 18/5/21	Mon 7/2/22	NA	NA	4 days			0%
250		Excavation for Raft Footing (105 cu.m)	35 days	Tue 18/5/21	Tue 29/6/21	NA	NA	4 days	2,236	251	0%
251		Plate Load Test	18 days	Wed 30/6/21	Wed 21/7/21	NA	NA	4 days	250	252	0%
252		R.C. Structure	66 days	Thu 22/7/21	Fri 8/10/21	NA	NA	4 days	251,61	253	0%
253	KD3E	Steel Roof Structure (On-site Fabrication)	65 days	Sat 9/10/21	Fri 24/12/21	NA	NA	4 days	252	41FF,254	0%
254	SW3	ABWF Works & BS Works	45 days	Sat 25/12/21	Mon 7/2/22	NA	NA	244 days	253,91,62	45FF	0%
255	*	Fire Hydrant and Booster Pump Room	204.8 day	Mon 19/7/21	Thu 24/3/22	NA	NA	11 days			0%
256		Excavation for Raft Footing (160 cu.m)	10 days	Mon 19/7/21	Thu 29/7/21	NA	NA	11 days	2,261	257,294	0%
257		Plate Load Test	18 days	Fri 30/7/21	Thu 19/8/21	NA	NA	11 days	256	258	0%
258	KD3E	R.C. Structure	60 days	Mon 15/11/21	Thu 27/1/22	NA	NA	-60.8 days	257,61,263	259,41FF,296FS-1 day	0%
259	SW3	ABWF Works & BS Works	45 days	Thu 27/1/22	Thu 24/3/22	NA	NA	159.2 days	258,91,62	45FF	0%
260	*	Transformer and Switchroom	183 days	Tue 1/6/21	Mon 10/1/22	NA	NA	-20.8 days			0%
261		Excavation for Raft Footing (310 cu.m)	20 days	Tue 1/6/21	Fri 25/6/21	NA	NA	-20.8 days	2,282	262,256	0%
262		Plate Load Test	18 days	Fri 25/6/21	Sat 17/7/21	NA	NA	-20.8 days	261	263	0%
263	KD3E	R.C. Structure	60 days	Thu 2/9/21	Mon 15/11/21	NA	NA	-60.8 days	262,61,284	264,41FF,258	0%
264	SW3	ABWF Works & BS Works	45 days	Mon 15/11/21	Mon 10/1/22	NA	NA	219.2 days	263,91,62	45FF	0%
265	*	Water Meter Cabinet	73 days	Tue 12/10/21	Sat 8/1/22	NA	NA	-20 days			0%
266		Excavation for Raft Footing (6 cu.m)	10 days	Tue 12/10/21	Sat 23/10/21	NA	NA	-20 days	2,304	267	0%
267		Plate Load Test	18 days	Mon 25/10/21	Sat 13/11/21	NA	NA	-20 days	266	268	0%
268		R.C. Structure	30 days	Mon 15/11/21	Sat 18/12/21	NA	NA	-20 days	267,61	269,271	0%
269	SW4	ABWF Works & BS Works	15 days	Mon 20/12/21	Sat 8/1/22	NA	NA	43 days	268,91,62	46FF	0%
270	*	Guard House	75 days	Sun 19/12/21	Wed 23/3/22	NA	NA	-20 days			0%
271		Excavation to Formation	21 days	Sun 19/12/21	Sat 8/1/22	NA	NA	-23 days	2,268	272	0%
272		R.C. Structure	30 days	Mon 10/1/22	Wed 16/2/22	NA	NA	-17 days	61,271	273	0%
273	SW4	ABWF Works & BS Works	30 days	Thu 17/2/22	Wed 23/3/22	NA	NA	-17 days	272,91,62	46FF	0%
274	*	Coolers Pumping Station	100 days	Mon 28/6/21	Tue 26/10/21	NA	NA	0 days			0%
275		Excavation for Raft Footing (185 cu.m)	40 days	Mon 28/6/21	Fri 13/8/21	NA	NA	0 days	2,179	276,290	0%
276	SW4	R.C. Structure	60 days	Sat 14/8/21	Tue 26/10/21	NA	NA	0 days	275,61	41FF,292	0%
277	*	Waste Gas Buner	53 days	Tue 25/5/21	Tue 27/7/21	NA	NA	110 days			0%
278		Excavation for Raft Footing (75cu.m)	15 days	Tue 25/5/21	Thu 10/6/21	NA	NA	110 days	2,210	279,298	0%
279		Plate Load Test	18 days	Fri 11/6/21	Sat 3/7/21	NA	NA	110 days	278	280	0%



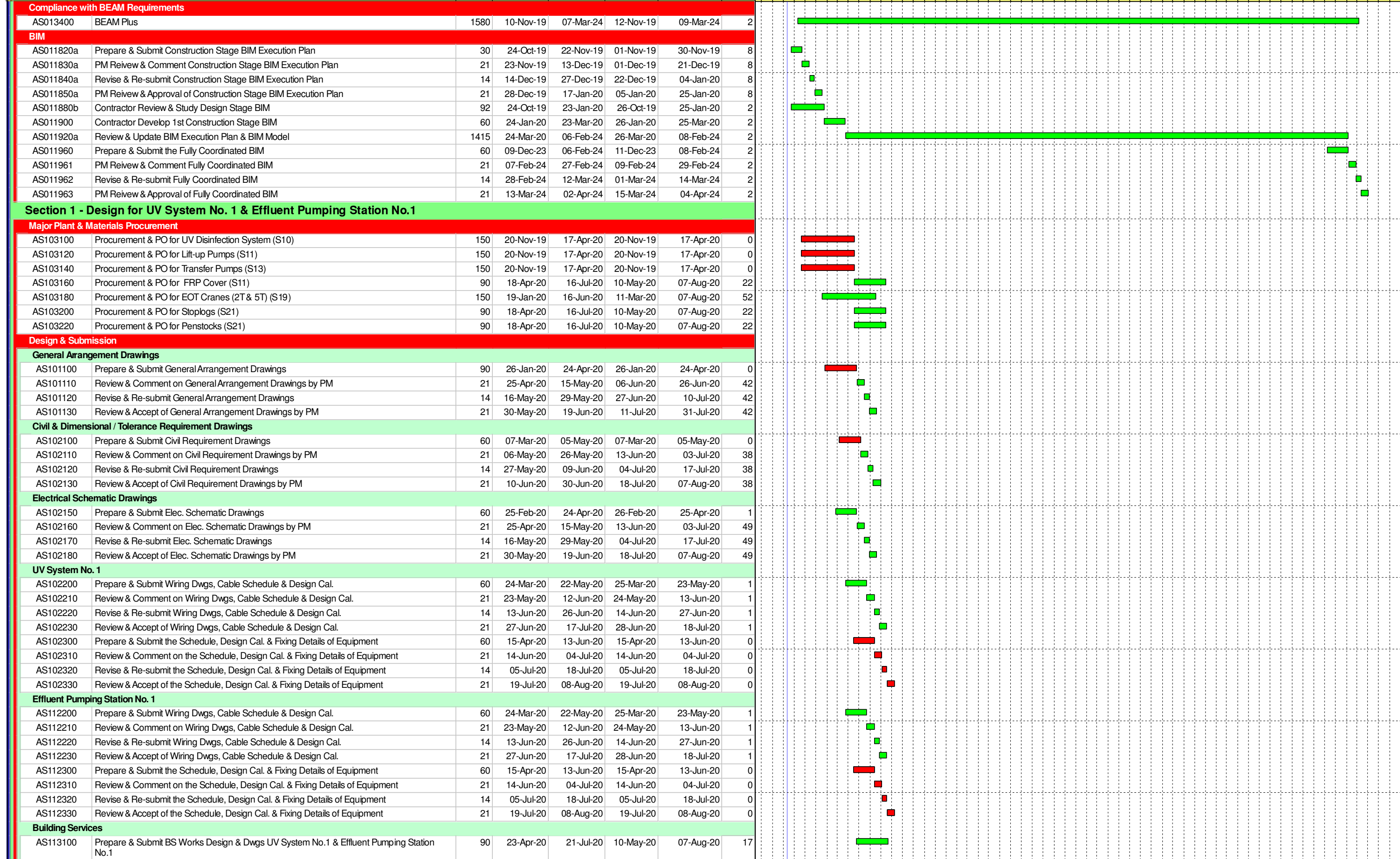
Task  Milestone  Summary  Critical 

ID	KD	Task Name	Duration	Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Gantt Chart																				
												Q1	Q3	Q1	Q3	2020				2023				2026								
																Q1	Q3	Q1	Q3	Q1	Q3	Q1	Q3	Q1	Q3	Q1	Q3	Q1	Q3			
348		Additional tree felling works (NCE no. xx)	4 days	Fri 20/12/19	Mon 23/12/19	Fri 20/12/19	Mon 23/12/19	0 days	347	350,349	100%					20/12	23/12															
349		Trial Pit Excavation & UU Detection Works	10 days	Mon 2/12/19	Thu 12/12/19	Mon 2/12/19	Thu 12/12/19	0 days	348	351	100%					2/12	12/12															
350		Additional demolition of existing warehouse structures (NCE no. xx)	27 days	Wed 27/11/19	Tue 31/12/19	Wed 27/11/19	Tue 31/12/19	0 days	72,348	353,351	100%					27/11	31/12															
351		Predrilling Works (11no., 1rig, 4days/drillhole/rig)	10 days	Sat 4/1/20	Thu 16/1/20	Sat 4/1/20	Thu 16/1/20	0 days	57,350,349	352	100%					4/1	16/1															
352		Installation of Monitoring Points	5 days	Thu 16/1/20	Wed 22/1/20	Thu 16/1/20	NA	16 days	351	354	70%					16/1	22/1															
353		Demolition of Existing Boundary Wall for Temporary Access	25 days	Thu 2/1/20	Mon 3/2/20	NA	NA	9 days	72,350	354	0%					2/1	3/2															
354		Setting up plant for pre-bored socketed H-pile Installation	5 days	Tue 4/2/20	Sat 8/2/20	NA	NA	9 days	352,353	355	0%					4/2	8/2															
355		Pre-bored Socketed H-Pile Installation (41 Nos, 2 Rig, 3days/rig/pile)	62 days	Mon 10/2/20	Sat 25/4/20	NA	NA	9 days	58,354	356	0%					10/2	25/4															
356		Pile Load Test	25 days	Sun 26/4/20	Wed 20/5/20	NA	NA	13 days	355	357	0%					26/4	20/5															
357		Additional Sheetpile Installation (NCE no.xx)	25 days	Thu 21/5/20	Thu 18/6/20	NA	NA	11 days	356	358	0%					21/5	18/6															
358		ELS Works (incl. Strut (3-layers) Installation & Excavation (NCE no.xx)	45 days	Fri 19/6/20	Wed 12/8/20	NA	NA	11 days	357	359	0%					19/6	12/8															
359		R.C. Structure (880 sq.m)	194 days	Thu 19/11/20	Sat 17/7/21	NA	NA	-70 days	87,88,89,90,61,376		0%					19/11	17/7															
360		Basement	60 days	Thu 19/11/20	Sat 30/1/21	NA	NA	-70 days		361	0%					19/11	30/1															
361		Ground Floor	60 days	Mon 1/2/21	Sat 17/4/21	NA	NA	-70 days	360	362	0%					1/2	17/4															
362		First Floor	44 days	Mon 19/4/21	Thu 10/6/21	NA	NA	-70 days	361	363	0%					19/4	10/6															
363		Roof Floor (461sq.m)	30 days	Fri 11/6/21	Sat 17/7/21	NA	NA	-70 days	362	364,366	0%					11/6	17/7															
364		ABWF Works & BS Works	60 days	Mon 19/7/21	Mon 27/9/21	NA	NA	0 days	363,91,62	365SS	0%					19/7	27/9															
365		Installation of telephone line/ direct link for FSD Inspection	60 days	Mon 19/7/21	Mon 27/9/21	NA	NA	0 days	364SS		0%					19/7	27/9															
366	KD2A	Architectural Works	60 days	Mon 19/7/21	Mon 27/9/21	NA	NA	-70 days	363	367,36FF	0%					19/7	27/9															
367		Handover to CLP for Electrical System Installation	30 days	Tue 28/9/21	Wed 27/10/21	NA	NA	301 days	366	368,370,371,369	0%					28/9	27/10															
368		E&M Installation, Testing & Commissioning by CLP	180 days	Thu 28/10/21	Mon 25/4/22	NA	NA	342 days	367	44FF	0%					28/10	25/4															
369		Testing & Commissioning of the E&M Works	90 days	Thu 28/10/21	Tue 25/1/22	NA	NA	432 days	367	44FF	0%					28/10	25/1															
370		ABWF Works - External Finishing & BS Works	90 days	Thu 28/10/21	Wed 16/2/22	NA	NA	334 days	367,91,62	44FF	0%					28/10	16/2															
371	SW2	Building Services Installation Works (incl. Fire Services, Plumbing, Drainage, etc.) & FS Inspection	180 days	Fri 5/8/22	Mon 13/3/23	NA	NA	17 days	367,77	44FF	0%					5/8	13/3															
372		External Works	302 days	Thu 9/4/20	Sat 17/4/21	NA	NA	-70 days			0%					9/4	17/4															
373		Road Widening Works	152 days	Thu 9/4/20	Tue 13/10/20	NA	NA	-70 days	70FS+60 days		0%					9/4	13/10															
374		Drainage Works	76 days	Thu 9/4/20	Tue 14/7/20	NA	NA	-70 days	70FS+60 days	375	0%					9/4	14/7															
375		Road Works	76 days	Wed 15/7/20	Tue 13/10/20	NA	NA	-70 days	374	376	0%					15/7	13/10															
376		Temporary Site Access	30 days	Wed 14/10/20	Wed 18/11/20	NA	NA	-70 days	375	377,359	0%					14/10	18/11															
377	SW2	Construction of New Boundary Wall	120 days	Thu 19/11/20	Sat 17/4/21	NA	NA	582 days	376	44FF	0%					19/11	17/4															

First Programme

ID	Key Date	Task Name	Duration	Start	Finish	Predecessors	Successors	Total Slack	Task Calendar	trade	Gantt Chart																							
											Qtr 2	Qtr 3	Qtr 4	2020	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2021	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2022	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2023	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2024
1		Contract Dates	1585 days	Mon 18/11/19	Thu 27/3/25			0 days	None		18/11 27/3																							
2		Starting Date	0 days	Mon 18/11/19	Mon 18/11/19		35FS+1 day, 36FS+1 day, 30 days		Calendar Day		18/11 18/11																							
3		Access Dates (cal. day)	310 days	Mon 18/11/19	Tue 22/9/20			0 days	Calendar Day		18/11 22/9																							
4		Portion B-1 (Access Road AR3)	0 days	Mon 18/11/19	Mon 18/11/19		118	77 days	Calendar Day		18/11 18/11																							
5		Portion B-1A (Area for the works for Sidestream Treatment Facilities by Others)	0 days	Mon 18/11/19	Mon 18/11/19			1957 days	Calendar Day		18/11 18/11																							
6		Portion B-2 (Inlet Works No.1)	0 days	Mon 18/11/19	Mon 18/11/19		122,143,148	105 days	Calendar Day		18/11 18/11																							
7		Portion B-2A (Area for the pipe-jacking works by others)	0 days	Mon 18/11/19	Mon 18/11/19			1957 days	Calendar Day		18/11 18/11																							
8		Portion B-3 (Primary Sedimentation Tanks No. 1-4)	0 days	Mon 18/11/19	Mon 18/11/19		177	0 days	Calendar Day		18/11 18/11																							
9		Portion B-4 (Bioreactor No. 2A & 2B)	0 days	Mon 18/11/19	Mon 18/11/19		189	0 days	Calendar Day		18/11 18/11																							
10		Portion B-5 (Membrane Facilities Building No.2)	0 days	Mon 18/11/19	Mon 18/11/19		203	49 days	Calendar Day		18/11 18/11																							
11		Portion B-6 (SAS Pumping Station)	0 days	Mon 18/11/19	Mon 18/11/19		224	184 days	Calendar Day		18/11 18/11																							
12		Portion B-7 (Ancillary structures)	0 days	Mon 18/11/19	Mon 18/11/19		233	299 days	Calendar Day		18/11 18/11																							
13		Portion B-7A (Alternation works for existing Power House)	0 days	Wed 2/9/20	Wed 2/9/20		280,29FS+1 day	0 days	Calendar Day		2/9 2/9																							
14		Portion B-8 (Alternation for existing Membrane Facilities Building No.1)	0 days	Tue 22/9/20	Tue 22/9/20		281	838 days	Calendar Day		22/9 22/9																							
15		Portion B-8A (Alternation of air supply main for existing Air Blower House No.2)	0 days	Mon 18/11/19	Mon 18/11/19		279	72 days	Calendar Day		18/11 18/11																							
16		Portion B-9 (remainder works in Zone B)	0 days	Mon 18/11/19	Mon 18/11/19		282,290	98 days	Calendar Day		18/11 18/11																							
17		Portion B-9A (Area for the pipe-jacking works by others)	0 days	Mon 18/11/19	Mon 18/11/19			1957 days	Calendar Day		18/11 18/11																							
18		Portion B-9B (Area for underground pipework modification and connection works by others)	0 days	Mon 18/11/19	Mon 18/11/19			1957 days	Calendar Day		18/11 18/11																							
19		Portion B-9C (Area for the works for pipeworks)	0 days	Wed 22/7/20	Wed 22/7/20		282,290	1709 days	Calendar Day		22/7 22/7																							
20		Key Dates (cal. day)	1440 days	Tue 19/11/19	Sat 28/10/23			0 days	Calendar Day		19/11 28/10 28/10																							
21	KD1A	KD1A completion of AR3 in Portion B-1 (300days after starting date)	300 days	Tue 19/11/19	Sun 13/9/20	2FS+1 day, 41FF		0 days	Calendar Day		19/11 13/9																							
22	KD1B	KD1B completion of utilities diversion for commencement of Inlet Works No.1 in Portion B-2 (360days after starting date)	360 days	Tue 19/11/19	Thu 12/11/20	2FS+1 day, 42FF		0 days	Calendar Day		19/11 12/11																							
23	KD1C	KD1C completion of civil and structural works of Inlet Works No.1 in Portion B-2 (990days after starting date)	990 days	Tue 19/11/19	Thu 4/8/22	2FS+1 day, 43FF		0 days	Calendar Day		19/11 4/8																							
24	KD1D	KD1D completion of civil and structural works of Primary Sedimentation Tanks in Portion B-3 (1190days after starting date)	1190 days	Tue 19/11/19	Mon 20/2/23	2FS+1 day, 44FF		0 days	Calendar Day		19/11 20/2																							
25	KD1E	KD1E completion of civil and structural works of Bioreactor in Portion B-4 (1,140days after starting date)	1140 days	Tue 19/11/19	Sun 1/1/23	2FS+1 day, 45FF		0 days	Calendar Day		19/11 1/1																							
26	KD1F	KD1F completion of civil and structural works of MFB from B2 floor to 1st floor level in Portion B-5 (800days after starting date)	800 days	Tue 19/11/19	Wed 26/1/22	2FS+1 day, 46FF		0 days	Calendar Day		19/11 26/1																							
27	KD1G	KD1G completion of civil and structural works of MFB in Portion B-5 (950days after starting date)	950 days	Tue 19/11/19	Sat 25/6/22	2FS+1 day, 47FF		0 days	Calendar Day		19/11 25/6																							
28	KD1H	KD1H completion of civil and structural works of SAS Pumping Station in Portion B-6 (630days after starting date)	630 days	Tue 19/11/19	Mon 9/8/21	2FS+1 day, 48FF		0 days	Calendar Day		19/11 9/8																							
29	KD1I	KD1I completion alternation works for existing Power House in Portion B-7A (150days after access date of B-7A)	150 days	Fri 4/9/20	Sun 31/1/21	13FS+1 day, 49FF		0 days	Calendar Day		4/9 31/1																							
30	KD1J	KD1J completion of auxiliary facilities in Portion B-7 (800days after starting date)	800 days	Tue 19/11/19	Wed 26/1/22	2FS+1 day, 50FF		0 days	Calendar Day		19/11 26/1																							
31	KD2A	KD2A completion of effluent pipes to UV system and connection to its downstream in Portion B-9 (495days after starting date)	495 days	Tue 19/11/19	Sat 27/3/21	2FS+1 day, 51FF		0 days	Calendar Day		19/11 27/3																							
32	KD2B	KD2B completion of air supply main alternation to existing air blower house No.2 in Portion B-8A (420days after starting date)	420 days	Tue 19/11/19	Mon 11/1/21	2FS+1 day, 52FF		0 days	Calendar Day		19/11 11/1																							
33	KD3A	KD3A completion of all utilities and road works (1440days after starting date)	1440 days	Tue 19/11/19	Sat 28/10/23	2FS+1 day, 53FF		0 days	Calendar Day		19/11 28/10																							
34		Completion Date (cal. Day)	1956 days	Tue 19/11/19	Thu 27/3/25			0 days	Calendar Day		19/11 27/3 27/3																							
35	SW1	Section 1 of the Works (1,460 after starting date)	1460 days	Tue 19/11/19	Fri 17/11/23	2FS+1 day, 55FF		0 days	Calendar Day		19/11 17/11 27/3																							
36	SW2	Section 2 of the Works (900 after starting date)	900 days	Tue 19/11/19	Fri 6/5/22	2FS+1 day, 56FF		0 days	Calendar Day		19/11 6/5 26/3																							
37	SW3	Section 3 of the Works (1,590 after starting date)	1590 days	Tue 19/11/19	Tue 26/3/24	2FS+1 day, 57FF, 38FS+1 day		0 days	Calendar Day		19/11 26/3 27/3																							
38	DLP	Defects Liability Period and Landscape Establishment Works	365 days	Thu 28/3/24	Thu 27/3/25	37FS+1 day, 59FF		0 days	Calendar Day		27/3 27/3																							
39		Planned Completion	1686 days	Fri 14/8/20	Thu 27/3/25			0 days	Calendar Day		14/8 27/3 27/3																							
40		Planned Completion - Key Dates (cal. day)	1170 days	Fri 14/8/20	Sat 28/10/23			0 days	Calendar Day		14/8 28/10 28/10																							
41	KD1A	KD1A completion of AR3 in Portion B-1 (300days after starting date)	0 days	Sat 12/9/20	Sat 12/9/20	121FF	21FF	0 days	Calendar Day		12/9 14/8																							
42	KD1B	KD1B completion of utilities diversion for commencement of Inlet Works No.1 in Portion B-2 (360days after starting date)	0 days	Fri 14/8/20	Fri 14/8/20	123FF	22FF	90 days	Calendar Day		14/8 14/8																							
43	KD1C	KD1C completion of civil and structural works of Inlet Works No.1 in Portion B-2 (990days after starting date)	0 days	Thu 4/8/22	Thu 4/8/22	175FF, 174FF	23FF	0 days	Calendar Day		4/8 4/8																							
44	KD1D	KD1D completion of civil and structural works of Primary Sedimentation Tanks in Portion B-3 (1190days after starting date)	0 days	Mon 20/2/23	Mon 20/2/23	186FF, 185FF	24FF	0 days	Calendar Day		20/2 20/2																							
45	KD1E	KD1E completion of civil and structural works of Bioreactor in Portion B-4 (1,140days after starting date)	0 days	Sat 31/12/22	Sat 31/12/22	197FF, 198FF	25FF	0 days	Calendar Day		31/12 31/12																							
46	KD1F	KD1F completion of civil and structural works of MFB from B2 floor to 1st floor level in Portion B-5 (800days after starting date)	0 days	Tue 25/1/22	Tue 25/1/22	219FF, 220FF	26FF	0 days	Calendar Day		25/1 25/1																							
47	KD1G	KD1G completion of civil and structural works of MFB in Portion B-5 (950days after starting date)	0 days	Sat 25/6/22	Sat 25/6/22	221FF, 222FF	27FF	0 days	Calendar Day		25/6 25/6																							
48	KD1H	KD1H completion of civil and structural works of SAS Pumping Station in Portion B-6 (630days after starting date)	0 days	Mon 9/8/21	Mon 9/8/21	231FF, 230FF	28FF	0 days	Calendar Day		9/8 9/8																							
49	KD1I	KD1I completion alternation works for existing Power House in Portion B-7A (150days after access date of B-7A)	0 days	Sat 30/1/21	Sat 30/1/21	280FF	29FF	0 days	Calendar Day		30/1 30/1																							
50	KD1J	KD1J completion of auxiliary facilities in Portion B-7 (800days after starting date)	0 days	Wed 26/1/22	Wed 26/1/22	276FF, 275FF, 2730FF		0 days	Calendar Day		26/1 26/1																							
51	KD2A	KD2A completion of effluent pipes to UV system and connection to its downstream in Portion B-9 (495days after starting date)	0 days	Sat 27/3/21	Sat 27/3/21	283FF	31FF	0 days	Calendar Day		27/3 27/3																							
52	KD2B	KD2B completion of air supply main alternation to existing air blower house No.2 in Portion B-8A (420days after starting date)	0 days	Thu 3/9/20	Thu 3/9/20	279FF	32FF	130 days	Calendar Day		3/9 3/9																							
53	KD3A	KD3A completion of all utilities and road works (1440days after starting date)	0 days	Sat 28/10/23	Sat 28/10/23	289FF	33FF	0 days	Calendar Day		28/10 28/10																							
54		Planned Completion Date (cal. Day)	1056 days	Fri 6/5/22	Thu 27/3/25			0 days	Calendar Day		6/5 27/3 27/3																							
55	SW1	Section 1 of the Works (1,460 after starting date)	0 days	Wed 23/8/23	Wed 23/8/23	277FF, 271FF, 2E35FF	86 days	Calendar Day		23/8 23/8																								
56	SW2	Section 2 of the Works (900 after starting date)	0 days	Fri 6/5/22	Fri 6/5/22	284FF, 287FF, 2E36FF		Calendar Day		6/5 6/5																								
57	SW3	Section 3 of the Works (1,590 after starting date)	0 days	Tue 26/3/24	Tue 26/3/24	281FF, 291FF, 2E37FF, 58FF		Calendar Day		26/3 26/3																								
58		Planned Time Risk Allowance (14days per 365day)	60 days	Sat 13/1/24	Tue 26/3/24	57FF	294 days	None		13/1 26/3																								
59	DLP	Defects Liability Period and Landscape Establishment Works	0 days	Thu 27/3/25	Thu 27/3/25	294FF	38FF	0 days	Calendar Day		27/3 27/3																							
60		Submissions (cal.day)	880 days	Mon 18/11/19	Fri 15/4/22			0 days	Calendar Day		18/11 15/4 27/3																							
61		Subletting Package	96 days	Mon 18/11/19	Fri 21/2/20			0 days	Calendar Day		18/11 21/2 29/11																							
62		Prepare & submit subletting procedure	12 days	Mon 18/11/19	Fri 29/11/19		63	0 days	Calendar Day		18/11 29/11																							
63		PM review and accept subletting procedure	12 days	Sat 30/11/19	Wed 11/12/19	62	64,65,68,69,70,71,72,73,70	0 days	Calendar Day		30/11 11/12																							
64		Subletting for Preliminary Works (surveying, condition survey, site clearance etc)	14 days	Thu 12/12/19	Wed 25/12/19	63,82	87,116	1 day	Calendar Day		12/12 25/12																							
65		Subletting for Contractor designer for temporary works and ICE	24 days	Thu 12/12/19	Sat 4/1/20	63,82	71,72,66	212 days	Calendar Day		12/12 4/1																							
66		Subletting for independent BIM consultant	24 days	Mon 6/1/20	Wed 5/2/20	65	112	1474 days	None		6/1 5/2																							
67		Subletting for demolition works	24 days	Thu 12/12/19	Sat 4/1/20	62,63	179,191,234,143,204,207,1	1 day	Calendar Day	dem	12/12 4/1																							
68		Subletting for AR3 access road and UU diversion for Inlet Works No.1	24 days	Thu 12/12/19	Sat 4/1/20	63,82	119	29 days	Calendar Day		12/12 4/1																							
69		Subletting for pre-drilling works	24 days	Thu 12/12/19	Sat 4/1/20	63,82	225,150,180,192,208	136 days	Calendar Day	pd	12/12 4/1																							
70		Subletting for pre-bored H pile works	36 days	Thu 12/12/19	Thu 16/1/20	63,82	151,181,193,209,226	143 days	Calendar Day	hp	12/12 16/1																							

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



File Name: DE/2018/03 R2-2
 Layout: DE1803 (R2) - WBS
 TASK filter: All Activities

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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
Master Programme

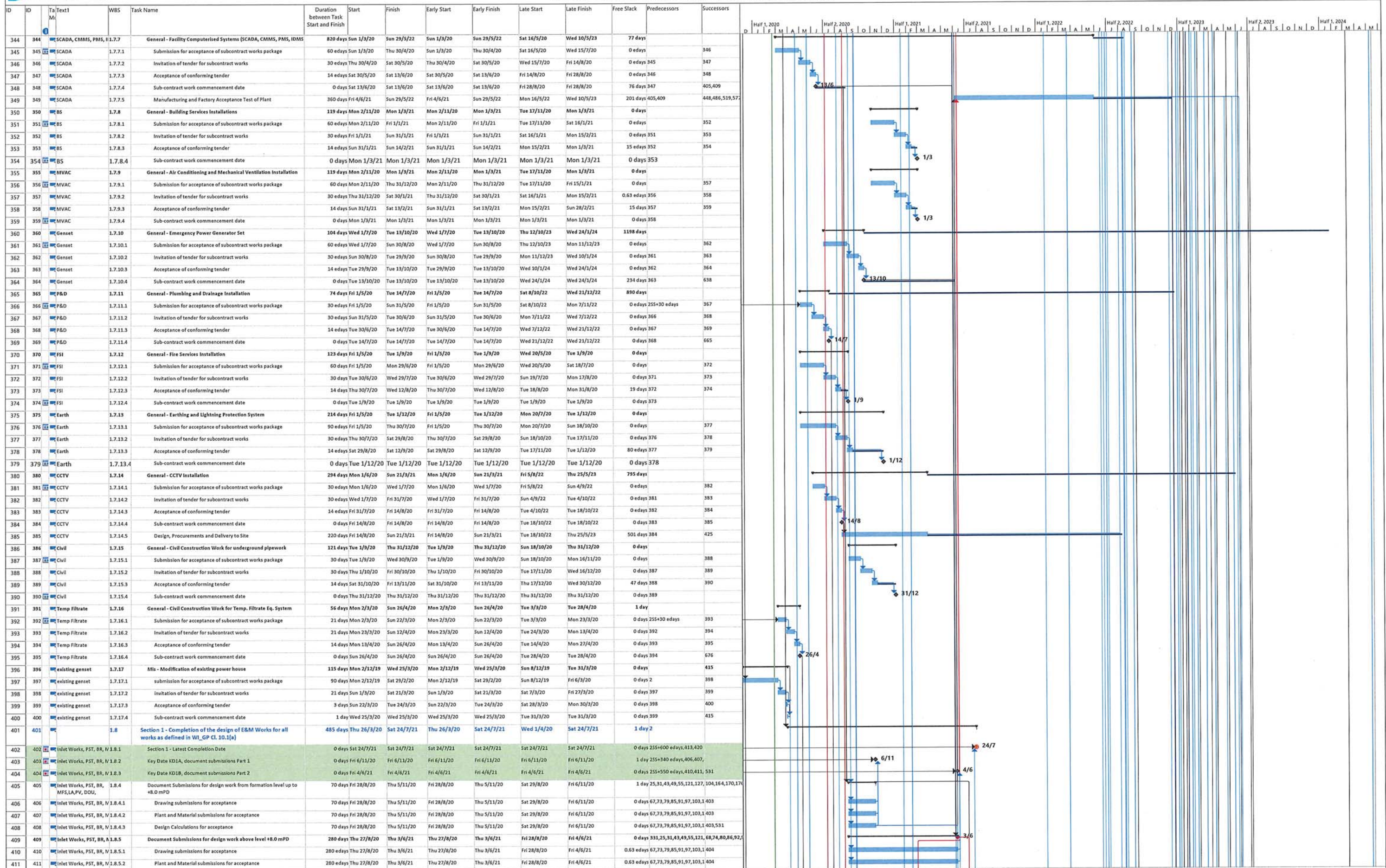
Date	Revision	Checked	Approved
24-Oct-19	Rev. 0	AI	KM
10-Feb-20	Rev. 1	AI	KM
21-Apr-20	Rev. 2	AI	KM

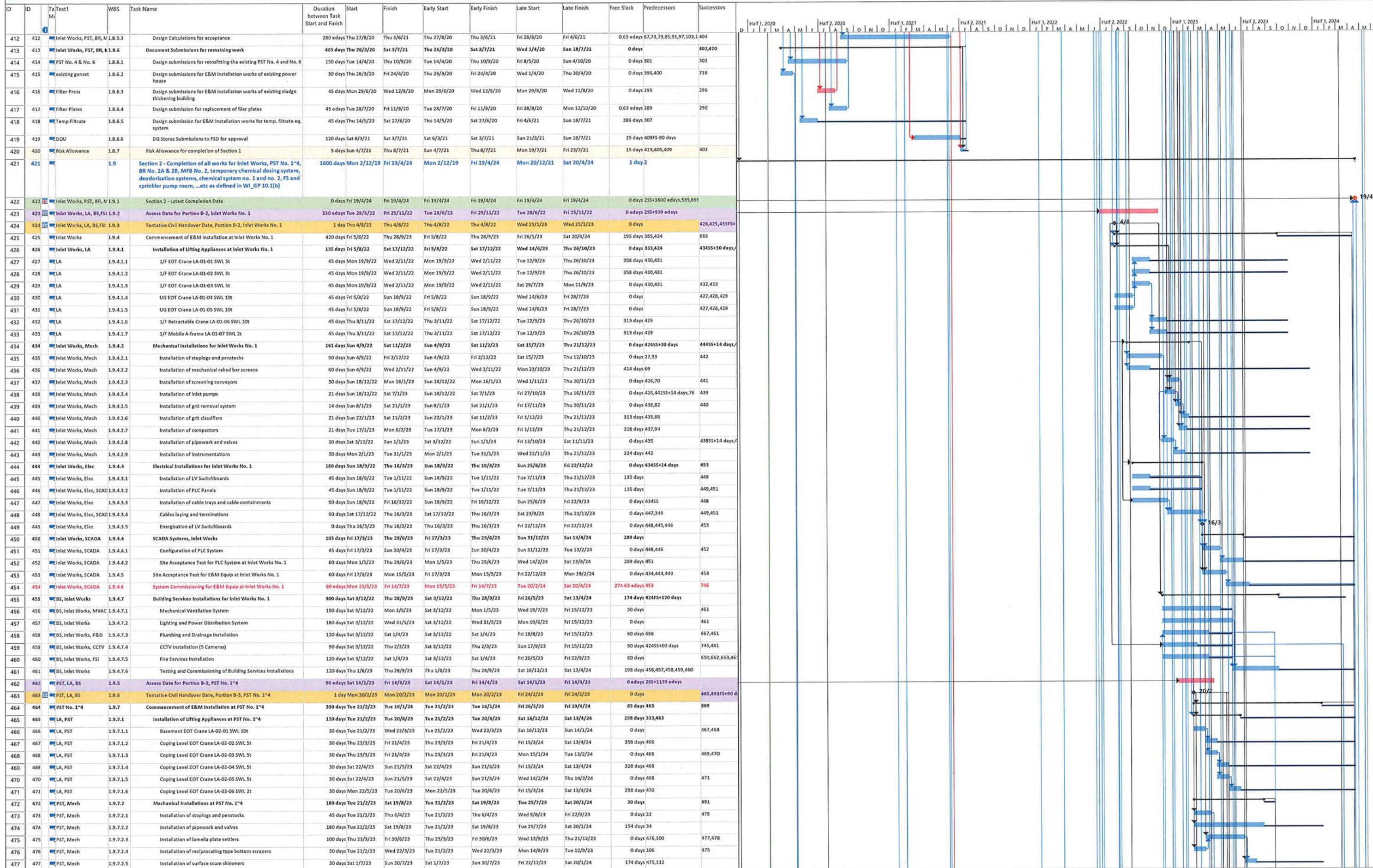


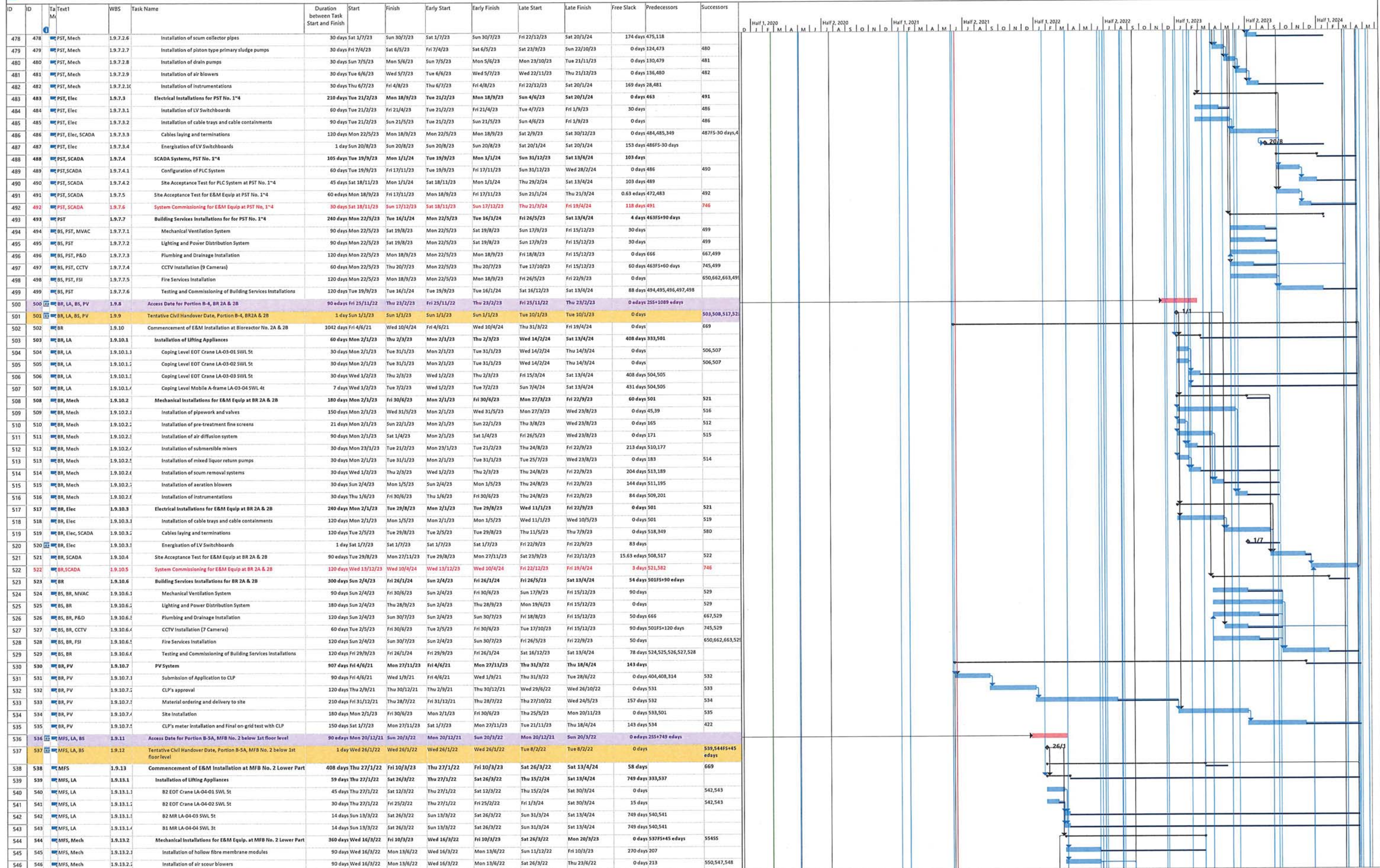
Main project schedule table with columns for ID, WBS, Task Name, Duration, Start, Finish, Early Start, Early Finish, Late Start, Late Finish, Free Slack, Predecessors, Successors, and a Gantt chart showing task progress across time periods from Half 1, 2020 to Half 1, 2024.

ID	ID	Task 1	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Free Slack	Predecessors	Successors	Gantt Chart (Half 1, 2020 to Half 1, 2024)																							
208	208	MFS	1.6.33	MFS - air scour blowers	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Fri 25/3/22	1 day			[Gantt Chart]																							
209	209	MFS	1.6.33.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	210	211	[Gantt Chart]																							
210	210	MFS	1.6.33.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	209	211	[Gantt Chart]																							
211	211	MFS	1.6.33.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	210	405,409	[Gantt Chart]																							
212	212	MFS	1.6.33.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Mon 14/6/21	Tue 8/2/22	0 days	405,409	213	[Gantt Chart]																							
213	213	MFS	1.6.33.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Wed 9/2/22	Fri 25/3/22	0 days	212	546,568	[Gantt Chart]																							
214	214	MFS	1.6.34	MFS - permeate pumps	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Thu 23/6/22	1 day		547	[Gantt Chart]																							
215	215	MFS	1.6.34.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	214	216	[Gantt Chart]																							
216	216	MFS	1.6.34.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	215	217	[Gantt Chart]																							
217	217	MFS	1.6.34.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	216	405,409	[Gantt Chart]																							
218	218	MFS	1.6.34.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Sun 12/9/21	Mon 9/5/22	0 days	405,409	219	[Gantt Chart]																							
219	219	MFS	1.6.34.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Tue 10/5/22	Thu 23/6/22	100 days	218		[Gantt Chart]																							
220	220	MFS	1.6.35	MFS - compressed air system	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Sat 29/7/23	1 day			[Gantt Chart]																							
221	221	MFS	1.6.35.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	220	222	[Gantt Chart]																							
222	222	MFS	1.6.35.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	221	223	[Gantt Chart]																							
223	223	MFS	1.6.35.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	222	405,409	[Gantt Chart]																							
224	224	MFS	1.6.35.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Tue 18/10/22	Wed 14/6/23	0 days	405,409	225	[Gantt Chart]																							
225	225	MFS	1.6.35.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Thu 15/6/23	Sat 29/7/23	267 days	224	569	[Gantt Chart]																							
226	226	MFS	1.6.36	MFS - instrumentation	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Wed 27/9/23	1 day			[Gantt Chart]																							
227	227	MFS	1.6.36.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	226	228	[Gantt Chart]																							
228	228	MFS	1.6.36.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	227	229	[Gantt Chart]																							
229	229	MFS	1.6.36.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	228	405,409	[Gantt Chart]																							
230	230	MFS	1.6.36.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Sat 17/12/22	Sun 13/8/23	0 days	405,409	231	[Gantt Chart]																							
231	231	MFS	1.6.36.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Mon 14/8/23	Wed 27/9/23	327 days	230	570	[Gantt Chart]																							
232	232	MFS	1.6.37	MFS - chemical storage tanks	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Wed 8/2/23	0 days		551	[Gantt Chart]																							
233	233	MFS	1.6.37.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	232	234	[Gantt Chart]																							
234	234	MFS	1.6.37.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	233	235	[Gantt Chart]																							
235	235	MFS	1.6.37.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	234	405,409	[Gantt Chart]																							
236	236	MFS	1.6.37.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Sat 30/4/22	Sun 25/12/22	0 days	405,409	237	[Gantt Chart]																							
237	237	MFS	1.6.37.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Mon 26/12/22	Wed 8/2/23	330 days	236		[Gantt Chart]																							
238	238	MFS	1.6.38	MFS - chemical dosing pumps	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Wed 8/2/23	1 day			[Gantt Chart]																							
239	239	MFS	1.6.38.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	238	240	[Gantt Chart]																							
240	240	MFS	1.6.38.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	239	241	[Gantt Chart]																							
241	241	MFS	1.6.38.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	240	405,409	[Gantt Chart]																							
242	242	MFS	1.6.38.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Sat 30/4/22	Sun 25/12/22	0 days	405,409	243	[Gantt Chart]																							
243	243	MFS	1.6.38.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Mon 26/12/22	Wed 8/2/23	0 days	242	552	[Gantt Chart]																							
244	244	MFS	1.6.39	MFS - return activated sludge pumps	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Thu 23/6/22	1 day			[Gantt Chart]																							
245	245	MFS	1.6.39.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	244	246	[Gantt Chart]																							
246	246	MFS	1.6.39.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	245	247	[Gantt Chart]																							
247	247	MFS	1.6.39.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	246	405,409	[Gantt Chart]																							
248	248	MFS	1.6.39.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Sun 12/9/21	Mon 9/5/22	0 days	405,409	249	[Gantt Chart]																							
249	249	MFS	1.6.39.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Tue 10/5/22	Thu 23/6/22	90 days	248	548	[Gantt Chart]																							
250	250	MFS	1.6.40	MFS - membrane tank drain pumps	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Tue 24/5/22	1 day			[Gantt Chart]																							
251	251	MFS	1.6.40.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	250	252	[Gantt Chart]																							
252	252	MFS	1.6.40.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	251	253	[Gantt Chart]																							
253	253	MFS	1.6.40.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	252	405,409	[Gantt Chart]																							
254	254	MFS	1.6.40.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Fri 13/8/21	Sat 9/4/22	0 days	405,409	255	[Gantt Chart]																							
255	255	MFS	1.6.40.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Sun 10/4/22	Tue 24/5/22	0 days	254	549	[Gantt Chart]																							
256	256	MFS	1.6.41	Plant Service Water System - booster pumps	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Tue 24/1/23	1 day			[Gantt Chart]																							
257	257	MFS	1.6.41.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	256	258	[Gantt Chart]																							
258	258	MFS	1.6.41.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	257	259	[Gantt Chart]																							
259	259	MFS	1.6.41.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	258	405,409	[Gantt Chart]																							
260	260	MFS	1.6.41.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Fri 15/4/22	Sat 10/12/22	0 days	405,409	261	[Gantt Chart]																							
261	261	MFS	1.6.41.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Sun 11/12/22	Tue 24/1/23	0 days	260	553	[Gantt Chart]																							
262	262	MFS	1.6.42	Plant Service Water System - hydro-pneumatic pressure tanks	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12/19	Tue 15/3/22	Tue 3/12/19	Tue 24/1/23	1 day			[Gantt Chart]																							
263	263	MFS	1.6.42.1	Submission for acceptance of purchasing package	180 days	Mon 2/12/19	Fri 29/5/20	Mon 2/12/19	Fri 29/5/20	Tue 3/12/19	Sat 30/5/20	0 days	262	264	[Gantt Chart]																							
264	264	MFS	1.6.42.2	Invitation of quotations for purchasing package	60 days	Sat 30/5/20	Tue 28/7/20	Sat 30/5/20	Tue 28/7/20	Sun 31/5/20	Wed 29/7/20	0 days	263	265	[Gantt Chart]																							
265	265	MFS	1.6.42.3	Acceptance of conforming quotation	30 days	Wed 29/7/20	Thu 27/8/20	Wed 29/7/20	Thu 27/8/20	Thu 30/7/20	Fri 28/8/20	0 days	264	405,409	[Gantt Chart]																							
266	266	MFS	1.6.42.4	Manufacturing and Factory Acceptance Test of Plant	240 days	Fri 4/6/21	Sat 29/1/22	Fri 4/6/21	Sat 29/1/22	Fri 15/4/22	Sat 10/12/22	0 days	405,409	267	[Gantt Chart]																							
267	267	MFS	1.6.42.5	Shipping and Delivery of Plant to site	45 days	Sun 30/1/22	Tue 15/3/22	Sun 30/1/22	Tue 15/3/22	Sun 11/12/22	Tue 24/1/23	0 days	266	553	[Gantt Chart]																							
268	268	DOU	1.6.43	DOU - biotrickling filter (DOU No. 1)	835 days	Mon 2/12/19	Tue 15/3/22	Mon 2/12																														

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







ID	ID	Task Name	WBS	Duration	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Free Slack	Predecessors	Successors	Gantt Chart (Half 1, 2020 to Half 1, 2024)											
547	547	MFS, Mech	1.9.13.2.1	Installation of permeate pumps	90 days	Tue 14/6/22	Sun 11/9/22	Tue 14/6/22	Sun 11/9/22	Fri 24/6/22	Wed 21/9/22	0 days 214,546	550												
548	548	MFS, Mech	1.9.13.2.4	Installation of return activated sludge pumps	90 days	Tue 14/6/22	Sun 11/9/22	Tue 14/6/22	Sun 11/9/22	Fri 24/6/22	Wed 21/9/22	0 days 249,546	550												
549	549	MFS, Mech	1.9.13.2.5	Installation of membrane tank drain pumps	120 days	Wed 16/3/22	Wed 13/7/22	Wed 16/3/22	Wed 13/7/22	Wed 25/5/22	Wed 21/9/22	60 days 255	550												
550	550	MFS, Mech	1.9.13.2.7	Installation of pipework and valves	180 days	Mon 12/9/22	Fri 10/3/23	Mon 12/9/22	Fri 10/3/23	Thu 22/9/22	Mon 20/3/23	0 days 34,546,547,548,549	571												
551	551	MFS, Mech	1.9.13.2.1	Installation of chemical storage tank	30 days	Wed 16/3/22	Thu 14/4/22	Wed 16/3/22	Thu 14/4/22	Thu 9/2/23	Fri 10/3/23	330 days 232													
552	552	MFS, Mech	1.9.13.2.1	Installation of chemical dosing pumps	30 days	Wed 16/3/22	Thu 14/4/22	Wed 16/3/22	Thu 14/4/22	Thu 9/2/23	Fri 10/3/23	330 days 243													
553	553	MFS, Mech	1.9.13.2.5	Installation of plant service water system	45 days	Wed 16/3/22	Fri 29/4/22	Wed 16/3/22	Fri 29/4/22	Wed 25/1/23	Fri 10/3/23	315 days 261,267													
554	554	MFS, Elec	1.9.13.3	Electrical Installations for E&M Equip. at MFB No. 2 Lower Part	150 days	Wed 16/3/22	Fri 12/8/22	Wed 16/3/22	Fri 12/8/22	Thu 16/11/23	Sat 13/4/24	610 days 54455													
555	555	MFS, Elec	1.9.13.3.1	Installation of cable trays and cable containments	150 days	Wed 16/3/22	Fri 12/8/22	Wed 16/3/22	Fri 12/8/22	Thu 16/11/23	Sat 13/4/24	610 days													
556	556	MFS, LA, BS	1.9.14	Access Date for Portion B-5B, MFB No. 2 remaining portion	90 edays	Thu 19/5/22	Wed 17/8/22	Thu 19/5/22	Wed 17/8/22	Thu 19/5/22	Wed 17/8/22	0 edays 255+899 edays													
557	557	MFS, LA, BS	1.9.15	Tentative Civil Handover Date, Portion B-5B, MFB No. 2 remaining portion	1 day	Sat 25/6/22	Sat 25/6/22	Sat 25/6/22	Sat 25/6/22	Tue 20/12/22	Tue 20/12/22	0 days	559,567FS+45 edays, 586FS+15 edays												
558	558	MFS	1.9.16	Commencement of E&M Installation at MFB No. 2 Upper Part	648 days	Sun 26/6/22	Wed 3/4/24	Sun 26/6/22	Wed 3/4/24	Tue 21/3/23	Fri 19/4/24	7 days	669												
559	559	MFS, LA	1.9.16.1	Installation of Lifting Appliances	135 days	Sun 26/6/22	Mon 7/11/22	Sun 26/6/22	Mon 7/11/22	Fri 1/12/23	Sat 13/4/24	523 days 333,557													
560	560	MFS, LA	1.9.16.1.1	GF EOT Crane LA-04-05 SWL 5t	45 days	Sun 26/6/22	Tue 9/8/22	Sun 26/6/22	Tue 9/8/22	Fri 1/12/23	Sun 14/1/24	0 days	562,563												
561	561	MFS, LA	1.9.16.1.2	GF Gantry Crane LA-04-06 SWL 6t	45 days	Sun 26/6/22	Tue 9/8/22	Sun 26/6/22	Tue 9/8/22	Fri 1/12/23	Sun 14/1/24	0 days	562,563												
562	562	MFS, LA	1.9.16.1.1	1F EOT Crane LA-04-07 SWL 15t	45 days	Wed 10/8/22	Fri 23/9/22	Wed 10/8/22	Fri 23/9/22	Mon 15/1/24	Wed 28/2/24	0 days 560,561	564,565,566												
563	563	MFS, LA	1.9.16.1.4	1F EOT Crane LA-04-08 SWL 15t	45 days	Wed 10/8/22	Fri 23/9/22	Wed 10/8/22	Fri 23/9/22	Mon 15/1/24	Wed 28/2/24	0 days 560,561	564,565,566												
564	564	MFS, LA	1.9.16.1.1	RF EOT Crane LA-04-09 SWL 2t	45 days	Sat 24/9/22	Mon 7/11/22	Sat 24/9/22	Mon 7/11/22	Thu 29/2/24	Sat 13/4/24	523 days 562,563													
565	565	MFS, LA	1.9.16.1.1	RF Retractable MR LA-04-10 SWL 2t	45 days	Sat 24/9/22	Mon 7/11/22	Sat 24/9/22	Mon 7/11/22	Thu 29/2/24	Sat 13/4/24	523 days 562,563													
566	566	MFS, LA	1.9.16.1.1	Mobile A-frame LA-04-11 SWL 2t	7 days	Sat 24/9/22	Fri 30/9/22	Sat 24/9/22	Fri 30/9/22	Sun 7/4/24	Sat 13/4/24	561 days 562,563													
567	567	MFS, Mech	1.9.16.2	Mechanical Installations for E&M Equip. at MFB No. 2 Upper Part	240 days	Wed 10/8/22	Thu 6/4/23	Wed 10/8/22	Thu 6/4/23	Sat 1/4/23	Sun 26/11/23	168 days 557FS+45 edays	571SS+45 edays												
568	568	MFS, Mech	1.9.16.2.1	Installation of air scour blowers	120 days	Wed 10/8/22	Wed 7/12/22	Wed 10/8/22	Wed 7/12/22	Sat 1/4/23	Sat 29/7/23	0 days 213	569												
569	569	MFS, Mech	1.9.16.2.2	Installation of compressed air system	60 days	Thu 8/12/22	Sun 5/2/23	Sun 5/2/23	Sun 5/2/23	Sun 30/7/23	Wed 27/9/23	0 days 225,568	570												
570	570	MFS, Mech	1.9.16.2.1	Installation of instrumentations	60 days	Mon 6/2/23	Thu 6/4/23	Mon 6/2/23	Thu 6/4/23	Thu 28/9/23	Sun 26/11/23	234 days 569,231													
571	571	MFS, Elec	1.9.16.3	Electrical Installations for E&M Equip. at MFB No. 2 Upper Part	240 days	Sat 11/3/23	Sun 5/11/23	Sat 11/3/23	Sun 5/11/23	Tue 21/3/23	Sun 26/11/23	0 days 567SS+45 edays, 550	584												
572	572	MFS, Elec	1.9.16.3.1	Installation of LV Switchboards	90 days	Sat 11/3/23	Thu 8/6/23	Sat 11/3/23	Thu 8/6/23	Tue 21/3/23	Sun 18/6/23	0 days 57	577												
573	573	MFS, Elec, SCADA	1.9.16.3.1	Installation of PLC Panels	90 days	Sat 11/3/23	Thu 8/6/23	Sat 11/3/23	Thu 8/6/23	Tue 21/3/23	Sun 18/6/23	0 days 57	577,580												
574	574	MFS, Elec	1.9.16.3.1	Installation of HV Switchboards	60 days	Sat 11/3/23	Tue 9/5/23	Sat 11/3/23	Tue 9/5/23	Tue 20/4/23	Sun 18/6/23	30 days 46,51	577												
575	575	MFS, Elec	1.9.16.3.4	Installation of transformer	45 days	Sat 11/3/23	Mon 24/4/23	Sat 11/3/23	Mon 24/4/23	Fri 13/10/23	Sun 26/11/23	216 days 63													
576	576	MFS, Elec	1.9.16.3.1	Installation of cable trays and cable containments	180 days	Sat 11/3/23	Wed 6/9/23	Sat 11/3/23	Wed 6/9/23	Wed 31/5/23	Sun 26/11/23	81 days													
577	577	MFS, Elec, SCADA	1.9.16.3.1	Cables laying and terminations	150 days	Fri 9/6/23	Sun 5/11/23	Fri 9/6/23	Sun 5/11/23	Mon 19/6/23	Wed 15/11/23	0 days 349,572,574,573	581												
578	578	MFS, Elec	1.9.16.3.1	Energisation of LV Switchboards	1 day	Wed 30/8/23	Wed 30/8/23	Wed 30/8/23	Wed 30/8/23	Sun 26/11/23	Sun 26/11/23	88 days													
579	579	MFS, SCADA	1.9.16.4	SCADA Systems, BR No. 1 & No. 2, MFB No. 2	218 days	Wed 30/8/23	Wed 3/4/24	Wed 30/8/23	Wed 3/4/24	Fri 8/9/23	Sat 13/4/24	9 days													
580	580	MFS, SCADA	1.9.16.4.1	Configuration of PLC System for BR No. 1 & No. 2	45 days	Wed 30/8/23	Fri 13/10/23	Wed 30/8/23	Fri 13/10/23	Fri 8/9/23	Sun 22/10/23	0 days 519,573	582												
581	581	MFS, SCADA	1.9.16.4.1	Configuration of PLC System for MFS	60 days	Mon 6/11/23	Thu 4/1/24	Mon 6/11/23	Thu 4/1/24	Thu 16/11/23	Sun 14/1/24	0 days 577	583												
582	582	MFS, SCADA	1.9.16.4.1	Site Acceptance Test for PLC System at BR No. 1 and No. 2	60 days	Sat 14/10/23	Tue 12/12/23	Sat 14/10/23	Tue 12/12/23	Mon 23/10/23	Thu 11/12/23	0 days 580	522,585												
583	583	MFS, SCADA	1.9.16.4.1	Site Acceptance Test for PLC System at MFS	90 days	Fri 5/1/24	Wed 3/4/24	Fri 5/1/24	Wed 3/4/24	Mon 15/1/24	Sat 13/4/24	10 days 581													
584	584	MFS, SCADA	1.9.16.5	Site Acceptance Test for E&M Equip at MFB No. 2	45 edays	Sun 5/11/23	Wed 20/12/23	Sun 5/11/23	Wed 20/12/23	Mon 27/11/23	Thu 11/1/24	0.63 edays 567,571	585												
585	585	MFS, SCADA	1.9.16.6	System Commissioning for E&M Equip at MFB No. 2	100 days	Thu 21/12/23	Fri 29/3/24	Thu 21/12/23	Fri 29/3/24	Thu 11/1/24	Fri 19/4/24	15 days 584,582	746												
586	586	MFS	1.9.16.7	Building Services Installations for MFB No. 2	330 days	Wed 23/11/22	Wed 18/10/23	Wed 23/11/22	Wed 18/10/23	Sat 20/5/23	Sat 13/4/24	178 days 557FS+150 edays													
587	587	BS, MFS, MVAC	1.9.16.7.1	Mechanical Ventilation System	120 days	Wed 23/11/22	Wed 22/3/23	Wed 23/11/22	Wed 22/3/23	Fri 18/8/23	Fri 15/12/23	90 days	592												
588	588	BS, MFS	1.9.16.7.2	Lighting and Power Distribution System	210 days	Wed 23/11/22	Tue 20/6/23	Wed 23/11/22	Tue 20/6/23	Sat 20/5/23	Fri 15/12/23	0 days	592												
589	589	BS, MFS, P&D	1.9.16.7.2	Plumbing and Drainage Installation	180 days	Wed 23/11/22	Sun 21/5/23	Wed 23/11/22	Sun 21/5/23	Mon 19/6/23	Fri 15/12/23	30 days 666	667,592												
590	590	BS, MFS, CCTV	1.9.16.7.4	CCTV Installation (10 Cameras)	90 days	Wed 23/11/22	Mon 20/2/23	Wed 23/11/22	Mon 20/2/23	Sun 17/9/23	Fri 15/12/23	120 days 557FS+120 edays	745,592												
591	591	BS, MFS, FSI	1.9.16.7.2	Fire Services Installation	120 days	Wed 23/11/22	Wed 22/3/23	Wed 23/11/22	Wed 22/3/23	Fri 26/5/23	Fri 22/9/23	90 days	650,662,663,592												
592	592	BS, MFS	1.9.16.7.1	Testing and Commissioning of Building Services Installations	120 days	Wed 21/6/23	Wed 18/10/23	Wed 21/6/23	Wed 18/10/23	Sat 16/12/23	Sat 13/4/24	178 days 587,588,589,590,591													
593	593	Chem	1.9.17	Access Date for Portion B-7 & 7B, Chemical Dosing, Concrete Plinth for DOs, Chemical Sys 1 & 2, FS & sprinkler pump room, Genset, FS hydrant and booster pump room, flowmeter chambers	150 edays	Mon 20/12/21	Thu 19/5/22	Mon 20/12/21	Thu 19/5/22	Tue 18/10/22	Fri 17/3/23	0 edays 255+749 edays	600FS+90 edays, 615FS+45 edays, 620FS+45 edays, 625FS+90 edays												
594	594	Temp Chemical	1.9.18	Tentative Civil Handover Date, Portion B-7 & B-7B, temporary chemical dosing system, concrete plinth for deodorisation system	1 day	Wed 26/1/22	Wed 26/1/22	Wed 26/1/22	Wed 26/1/22	Mon 16/10/23	Mon 16/10/23	48 days													
595	595	Temp Chemical	1.9.19	Commencement of E&M Installation at Temporary Chemical Dosing System	334 days	Tue 15/3/22	Sun 12/2/23	Tue 15/3/22	Sun 12/2/23	Tue 25/7/23	Sun 14/4/24	423 days 147,153,159	669												
596	596	Temp Chemical, Mech	1.9.19.1	Mechanical Installations for E&M Equip. for Chemical Dosing System	90 edays	Tue 15/3/22	Mon 13/6/22	Tue 15/3/22	Mon 13/6/22	Tue 17/10/23	Mon 15/1/24	0 edays 594	597SS+30 edays												
597	597	Temp Chemical, Elec	1.9.19.2	Electrical Installations for E&M Equip. for Chemical Dosing System	90 edays	Thu 14/4/22	Wed 13/7/22	Thu 14/4/22	Wed 13/7/22	Thu 16/11/23	Wed 14/2/24	0 edays 596SS+30 edays	598												
598	598	Temp Chemical	1.9.19.3	Site Acceptance Test for E&M Equip for Chemical Dosing System	30 edays	Wed 13/7/22	Fri 12/8/22	Wed 13/7/22	Fri 12/8/22	Wed 14/2/24	Fri 15/3/24	0 edays 596,597	599												
599	599	Temp Chemical	1.9.19.4	System Commissioning for E&M Equip for Chemical Dosing System	30 edays	Fri 12/8/22	Sun 11/9/22	Fri 12/8/22	Sun 11/9/22	Fri 15/3/24	Sun 14/4/24	580.63 edays 598													
600	600	Temp Chemical	1.9.19.5	Building Services Installations at Chemical Dosing System areas	180 days	Wed 17/8/22	Sun 12/2/23	Wed 17/8/22	Sun 12/2/23	Tue 25/7/23	Sat 13/4/24	342 days 593FS+90 edays													
601	601	Temp Chemical, BS	1.9.19.5.1	Lighting and Power Distribution System	90 days	Wed 17/8/22	Mon 14/11/22	Wed 17/8/22	Mon 14/11/22	Tue 17/10/23	Sun 14/1/24	0 days	603												
602	602	Temp Chemical, FSI	1.9.19.5.2	Fire Services Installation, DG Stores	90 days	Wed 17/8/22	Mon 14/11/22	Wed 17/8/22	Mon 14/11/22	Tue 25/7/23	Sun 22/10/23	0 days	662,663,603												
603	603	Temp Chemical, BS	1.9.19.5.1	Testing and Commissioning of Building Services Installations	90 days	Tue 15/11/22	Sun 12/2/23	Tue 15/11/22	Sun 12/2/23	Mon 15/1/24	Sat 13/4/24	426 days 601,602													
604	604	Chemical	1.9.20	Tentative Civil Handover Date, Portion chemical dosing system 1 and system 2	1 day	Sat 27/3/21	Sat 27/3/21	Sat 27/3/21	Sat 27/3/21	Mon 26/12/22	Mon 26/12/22	353 days	606												
605	605	Chemical	1.9.21	Commencement of E&M Installation at Chemical Dosing System 1 and System 2	420 days	Tue 15/3/22	Tue 9/5/23	Tue 15/3/22	Tue 9/5/23	Tue 27/12/22	Sat 13/4/24	286 days 159,153,147	669												
606	606	Chemical, Mech	1.9.21.1	Mechanical Installations for E&M Equip. for Chemical Dosing System	90 edays	Tue 15/3/22	Mon 13/6/22	Tue 15/3/22	Mon 13/6/22	Tue 27/12/22	Mon 27/3/23	0 edays 604	607												
607	607	Chemical, Elec	1.9.21.2	Electrical Installations for E&M Equip. for Chemical Dosing System	90 edays	Mon 13/6/22	Sun 11/9/22	Mon 13/6/22	Sun 11/9/22	Mon 27/3/23															

ID	ID	Task Name	WBS	Task Name	Duration between Task Start and Finish	Start	Finish	Early Start	Early Finish	Late Start	Late Finish	Free Slack	Predecessors	Successors
680	680	Temp Filtrate	1.10.5.5	Installation of Lifting Appliances	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Tue 2/2/21	Mon 8/2/21	15 days	679	
681	681	Temp Filtrate, LA	1.10.5.5.1	GF MR LA-09-01 SWL 1t	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Tue 2/2/21	Mon 8/2/21	15 days	679	
682	682	Temp Filtrate, LA	1.10.5.5.2	GF MR LA-09-02 SWL 1t	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Tue 2/2/21	Mon 8/2/21	15 days	679	
683	683	Temp Filtrate, Mech	1.10.5.6	Mechanical Installations for Temp. Filtrate Lifting Well and Eq. Tank	37 days	Sat 19/12/20	Sun 24/1/21	Sat 19/12/20	Sun 24/1/21	Sun 20/12/20	Mon 25/1/21	0 days	679	687FS-30 days, 688
684	684	Temp Filtrate, Mech	1.10.5.6.1	Installation of pipework and valves	30 days	Sat 19/12/20	Sun 17/1/21	Sat 19/12/20	Sun 17/1/21	Sun 20/12/20	Mon 18/1/21	0 days	678	685
685	685	Temp Filtrate, Mech	1.10.5.6.2	Installation of pumps	7 days	Mon 18/1/21	Sun 24/1/21	Mon 18/1/21	Sun 24/1/21	Tue 19/1/21	Mon 25/1/21	1 day	684,309	
686	686	Temp Filtrate, Mech	1.10.5.6.3	Installation of instrumentations	14 days	Sat 19/12/20	Fri 1/1/21	Sat 19/12/20	Fri 1/1/21	Tue 12/1/21	Mon 25/1/21	24 days	679	
687	687	Temp Filtrate	1.10.5.7	Electrical Installations for Temp. Filtrate Lifting Well and Eq. Tank	21 days	Sat 26/12/20	Fri 15/1/21	Sat 26/12/20	Fri 15/1/21	Tue 29/12/20	Mon 18/1/21	0 days	683FS-30 days	690,692FS-7 days
688	688	Temp Filtrate, Elec	1.10.5.7.1	Installation of cable trays and cable containments	21 days	Sat 26/12/20	Fri 15/1/21	Sat 26/12/20	Fri 15/1/21	Tue 29/12/20	Mon 18/1/21	3 days		
689	689	Temp Filtrate, Elec	1.10.5.7.2	Cables laying and terminations	21 days	Sat 26/12/20	Fri 15/1/21	Sat 26/12/20	Fri 15/1/21	Tue 29/12/20	Mon 18/1/21	3 days		
690	690	Temp Filtrate	1.10.5.8	Site Acceptance Test for E&M Equip at Filtrate Lifting Well and Eq. Tank	7 days	Mon 25/1/21	Sun 31/1/21	Mon 25/1/21	Sun 31/1/21	Tue 26/1/21	Mon 1/2/21	0 days	683,687	691
691	691	Temp Filtrate	1.10.5.9	System Commissioning for E&M Equip at Temp. Filtrate Lifting Well and Eq. Tank	7 days	Mon 1/2/21	Sun 7/2/21	Mon 1/2/21	Sun 7/2/21	Tue 2/2/21	Mon 8/2/21	1 day	690,692	
692	692	Temp Filtrate	1.10.5.10	Building Services Installations for Filtrate Lifting Well and Eq. Tank	21 days	Sat 9/1/21	Fri 29/1/21	Sat 9/1/21	Fri 29/1/21	Tue 12/1/21	Mon 1/2/21	2 days	687FS-7 days	691
693	693	Temp Filtrate	1.10.6	Work completion for Temp. Filtrate Lifting Well and Eq. Tank	0 days	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	0 days	675	
694	694	PST No. 4 & No. 6	1.10.7	Access Date for Portion B-3A, Existing PST No. 4 and No. 6	0 days	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	0 days	2	2/12
695	695	PST No. 4 & No. 6	1.10.8	Tentative Commencement Date	1 day	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Mon 8/2/21	Thu 11/2/21	Thu 11/2/21	0 days		697
696	696	PST No. 4 & No. 6	1.10.9	Commencement of retrofitting the existing PST No. 4 and No. 6	117 days	Tue 9/2/21	Sat 5/6/21	Tue 9/2/21	Sat 5/6/21	Fri 12/2/21	Tue 8/6/21	3 days		
697	697	PST No. 4 & No. 6	1.10.9.1	Site Clearance	10 days	Tue 9/2/21	Thu 18/2/21	Tue 9/2/21	Thu 18/2/21	Fri 12/2/21	Sun 21/2/21	0 days	303,695	699
698	698	PST No. 4 & No. 6, Mec	1.10.9.2	Mechanical Installations of existing PSTs	76 days	Fri 19/2/21	Wed 5/5/21	Fri 19/2/21	Wed 5/5/21	Mon 22/2/21	Tue 11/5/21	3 days		
699	699	PST No. 4 & No. 6, Mec	1.10.9.2.1	Installation of PST influent feed pipe	7 days	Fri 19/2/21	Thu 25/2/21	Fri 19/2/21	Thu 25/2/21	Mon 22/2/21	Sun 28/2/21	0 days	697	700
700	700	PST No. 4 & No. 6, Mec	1.10.9.2.2	Installation of circular baffle diffuser box	7 days	Fri 26/2/21	Thu 4/3/21	Fri 26/2/21	Thu 4/3/21	Mon 1/3/21	Sun 7/3/21	0 days	699	701
701	701	PST No. 4 & No. 6, Mec	1.10.9.2.3	Installation of scum baffle plates	7 days	Fri 5/3/21	Thu 11/3/21	Fri 5/3/21	Thu 11/3/21	Mon 8/3/21	Sun 14/3/21	0 days	700	702
702	702	PST No. 4 & No. 6, Mec	1.10.9.2.4	Installation of scum box with collection valve and pipework	7 days	Fri 12/3/21	Thu 18/3/21	Fri 12/3/21	Thu 18/3/21	Mon 15/3/21	Sun 21/3/21	0 days	701	703
703	703	PST No. 4 & No. 6, Mec	1.10.9.2.5	Installation of v-notched weir plate	10 days	Fri 19/3/21	Sun 28/3/21	Fri 19/3/21	Sun 28/3/21	Mon 22/3/21	Wed 31/3/21	0 days	702	704
704	704	PST No. 4 & No. 6, Mech	1.10.9.2.6	Installation of center bearing and slip ring assembly for rotating bridge	10 days	Mon 29/3/21	Wed 7/4/21	Mon 29/3/21	Wed 7/4/21	Thu 1/4/21	Sat 10/4/21	0 days	703	705
705	705	PST No. 4 & No. 6, Mec	1.10.9.2.7	Installation of motor and gearbox assembly for rotating bridge	7 days	Thu 8/4/21	Wed 14/4/21	Thu 8/4/21	Wed 14/4/21	Sun 11/4/21	Sat 17/4/21	0 days	704	706,709
706	706	PST No. 4 & No. 6, Mec	1.10.9.2.8	Installation of rotating bridge sludge and scum scraper assembly	7 days	Thu 15/4/21	Wed 21/4/21	Thu 15/4/21	Wed 21/4/21	Wed 21/4/21	Tue 27/4/21	0 days	705	707
707	707	PST No. 4 & No. 6, Mec	1.10.9.2.9	Installation of removable FRP covers for effluent channel	14 days	Thu 22/4/21	Wed 5/5/21	Thu 22/4/21	Wed 5/5/21	Wed 28/4/21	Tue 11/5/21	3 days	706	711
708	708	PST No. 4 & No. 6, Elec	1.10.9.3	Electrical Installations of existing PSTs	24 days	Thu 15/4/21	Sat 8/5/21	Thu 15/4/21	Sat 8/5/21	Sun 18/4/21	Tue 11/5/21	0 days		711
709	709	PST No. 4 & No. 6, Elec	1.10.9.3.1	Installation of local control panels	10 days	Thu 15/4/21	Sat 24/4/21	Thu 15/4/21	Sat 24/4/21	Sun 18/4/21	Tue 27/4/21	0 days	705	710
710	710	PST No. 4 & No. 6, Elec	1.10.9.3.2	cable laying and terminations	14 days	Sun 25/4/21	Sat 8/5/21	Sun 25/4/21	Sat 8/5/21	Wed 28/4/21	Tue 11/5/21	0 days	709	711
711	711	PST No. 4 & No. 6	1.10.9.4	Site Acceptance Test for E&M Equip at existing PST No. 4 and No. 6	21 days	Sun 9/5/21	Sat 29/5/21	Sun 9/5/21	Sat 29/5/21	Wed 12/5/21	Tue 1/6/21	0 days	708,707,710	712
712	712	PST No. 4 & No. 6	1.10.9.5	System Commissioning for E&M Equip at existing PST No. 4 and No. 6	7 days	Sun 30/5/21	Sat 5/6/21	Sun 30/5/21	Sat 5/6/21	Wed 2/6/21	Tue 8/6/21	0 days	711	673,741
713	713	existing genset	1.10.10	Access Date for Portion B-7A & 7B, area for modification of existing emergency generator electrical works	0 days	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	0 days	2	2/12
714	714	existing genset	1.10.11	Tentative Civil Handover Date, Portion B-7A & 7B area for modification of existing emergency generator electrical works	1 day	Sun 31/1/21	Sun 31/1/21	Sun 31/1/21	Sun 31/1/21	Sun 31/1/21	Sun 31/1/21	0 days		
715	715	existing genset	1.10.12	Commencement of Modification of existing emergency generator Electrical Works	89 days	Sat 25/4/20	Wed 22/7/20	Sat 25/4/20	Wed 22/7/20	Fri 1/5/20	Tue 28/7/20	6 days		
716	716	existing genset	1.10.12.1	Fabrication and delivery of material to site	60 days	Sat 25/4/20	Tue 23/6/20	Sat 25/4/20	Tue 23/6/20	Fri 1/5/20	Mon 29/6/20	0 days	415	717
717	717	existing genset	1.10.12.2	Modification of existing emergency generator electrical works	14 days	Wed 24/6/20	Tue 7/7/20	Wed 24/6/20	Tue 7/7/20	Tue 30/6/20	Mon 13/7/20	0 days	716	718
718	718	existing genset	1.10.12.3	Test the new switchgear for on-site mobile generator	10 days	Wed 8/7/20	Fri 17/7/20	Wed 8/7/20	Fri 17/7/20	Tue 14/7/20	Thu 23/7/20	0 days	717	719
719	719	existing genset	1.10.12.4	Dismantling and removal the existing power & control cables	2 days	Sat 18/7/20	Sun 19/7/20	Sat 18/7/20	Sun 19/7/20	Fri 24/7/20	Sat 25/7/20	0 days	718	720
720	720	existing genset	1.10.12.5	Take down existing generator to DSD	3 days	Mon 20/7/20	Wed 22/7/20	Mon 20/7/20	Wed 22/7/20	Sun 26/7/20	Tue 28/7/20	0 days	719	721
721	721	Risk Allowance	1.10.13	Risk Allowance for meeting Key Date KD3A	1 day	Thu 23/7/20	Thu 23/7/20	Thu 23/7/20	Thu 23/7/20	Wed 29/7/20	Wed 29/7/20	5 days	720	672
722	722	Filter Press	1.10.14	Access Date for B-10, existing sludge thickening building	0 days	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	Mon 2/12/19	0 days	2	2/12
723	723	Filter Press	1.10.15	Commencement of E&M Installation at Existing Filter Press	103 days	Tue 25/5/21	Sat 4/9/21	Tue 25/5/21	Sat 4/9/21	Tue 25/5/21	Tue 21/9/21	0 days		
739	739	Filter Plates	1.10.16	Commencement of replacement of filter plates	90 days	Tue 25/5/21	Sun 22/8/21	Tue 25/5/21	Sun 22/8/21	Thu 24/6/21	Tue 21/9/21	30 days		
740	740	Filter Plates	1.10.16.1	Replacement of filter plates	90 days	Tue 25/5/21	Sun 22/8/21	Tue 25/5/21	Sun 22/8/21	Thu 24/6/21	Tue 21/9/21	30 days	291	671
741	741	Risk Allowance	1.10.17	Risk Allowance for meeting Key Date KD3B	1 day	Sun 6/6/21	Sun 6/6/21	Sun 6/6/21	Sun 6/6/21	Wed 9/6/21	Wed 9/6/21	2 days	712	673
742	742	Section 4 - Completion of Work for remainder of the works	1.11	Section 4 - Completion of Work for remainder of the works	61 days	Thu 14/3/24	Tue 14/5/24	Thu 14/3/24	Tue 14/5/24	Wed 20/3/24	Tue 14/5/24	0 days	2	
743	743	Inlet Works, PST, BR, IV	1.11.1	Section 4 - Latest Completion Date	0 days	Tue 14/5/24	Tue 14/5/24	Tue 14/5/24	Tue 14/5/24	Tue 14/5/24	Tue 14/5/24	0 days	255+1625 edays	
744	744	CCTV, SCADA	1.11.2	Latest date for connection of optical fibres	1 day	Thu 14/3/24	Thu 14/3/24	Thu 14/3/24	Thu 14/3/24	Wed 20/3/24	Wed 20/3/24	0 days		745
745	745	CCTV	1.11.3	Overall commissioning of CCTV system	30 days	Fri 15/3/24	Sat 13/4/24	Fri 15/3/24	Sat 13/4/24	Thu 21/3/24	Fri 19/4/24	0 days	459,497,527,590,744	748,747,746
746	746	SCADA	1.11.4	Overall commissioning of Facility Computerised Systems (SCADA, CMMS, PMS, IDMS)	7 days	Sun 14/4/24	Sat 20/4/24	Sun 14/4/24	Sat 20/4/24	Sat 20/4/24	Fri 26/4/24	0 days	454,492,522,585,745	748,747
747	747	Others	1.11.5	Overall Plant Commissioning and DSD pre-handover inspections	10 days	Sun 21/4/24	Tue 30/4/24	Sun 21/4/24	Tue 30/4/24	Sat 27/4/24	Mon 6/5/24	0 days	745,746	748
748	748	Risk Allowance	1.11.6	Risk Allowance for completion of Section 4	2 days	Wed 1/5/24	Thu 2/5/24	Wed 1/5/24	Thu 2/5/24	Tue 7/5/24	Wed 8/5/24	6 days	745,746,747	4

