


# Drainage Services Department

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

### Monthly EM&A Report February 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\_0035L.20

12 March 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 February 2020**

Reference is made to the Environmental Team's submission of Monthly EM&A Report for February 2020 (Version 1) certified by the ET Leader and provided to us via e-mail on 12 March 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)  
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**EXECUTIVE SUMMARY****Introduction**

1. This is the 2<sup>nd</sup> 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 February 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**

<b>Contract No.</b>	<b>Contract Title</b>	<b>Site Activities</b>
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"> <li>• Underground utility detection</li> <li>• Demolition of existing structure</li> <li>• Tree felling works</li> <li>• Hoarding installation</li> <li>• Trial pit excavation for underground utility</li> <li>• Predrilling works</li> <li>• H-piles installation</li> <li>• Sheet piling installation</li> <li>• Drainage diversion work</li> </ul>
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"> <li>• Trial pit works</li> <li>• Underground utilities detection</li> <li>• Site clearance</li> </ul>
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.
- The public road was kept free from dust and soil.

*Water Quality*

- Ponding water was pumped and collected in the sedimentation tank.

*Waste Management*

- Waste pile was covered by impervious sheets.
- Unused waste and materials were removed to maintain the tidiness of the site.

**Summary of Exceedances, Investigation and Follow-up**

4. Exceedance of Action/Limit levels during the reporting month (February 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**

<b>Contract No.</b>	<b>Contract Title</b>	<b>Site Activities</b>
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"> <li>• Underground utility detection</li> <li>• Tree felling works</li> <li>• Hoarding installation</li> <li>• Predrilling works</li> <li>• H-piles installation</li> <li>• Sheet piling installation</li> <li>• Drainage diversion work</li> </ul>
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"> <li>• Trial pit works</li> <li>• Underground utilities detection</li> <li>• Site clearance</li> <li>• Trench excavation</li> <li>• Sheet pile construction</li> <li>• Demolition works</li> <li>• Predrilling works</li> </ul>
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"> <li>• Site clearance and fencing work</li> </ul>
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"> <li>• Preparation work of E&amp;M installation at temporary filtrate lifting well and equalization tank</li> <li>• Modification of existing emergency generator electrical works</li> </ul>

## 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 93,000m<sup>3</sup>/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 190,000m<sup>3</sup>/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 2<sup>nd</sup> Monthly EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period in February 2020.

### Project Organizations

- 1.6 Different Parties with different levels of involvement in the project organization include:
  - Permit Holder – Drainage Service 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 (ETL)	2151 2091
		Ms. Jennifer Mok	2151 2076
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"> <li>• Underground utility detection</li> <li>• Demolition of existing structure</li> <li>• Tree felling works</li> <li>• Hoarding installation</li> <li>• Trial pit excavation for underground utility</li> <li>• Predrilling works</li> <li>• H-piles installation</li> <li>• Sheet piling installation</li> <li>• Drainage diversion work</li> </ul>
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"> <li>• Trial pit works</li> <li>• Underground utilities detection</li> <li>• Site clearance</li> </ul>
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.

Contract No.	Contract Title	Site Activities
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 February 2020.

### Statuses of Environmental Licensing and Permitting

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

**Table 1.3 Summary of Environmental License and Permit**

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
<b>Environmental Permit (EP)</b>				
All	FEP-02/474/2013	15 Feb 2018	N/A	Valid
All	EP-474/2013	21 Nov 2013	N/A	Valid
<b>Notification of Construction Works under Air Pollution Control Ordinance (APCO)</b>				
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
<b>Billing Account for Construction Waste Disposal</b>				
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

Contract No.	Permit / License No.	Valid Period		Status
		From	To	
<b>Registration of Chemical Waste Producer</b>				
DC/2018/06	5213-624-K3371-01	14 Nov 2019	N/A	Valid
DC/2018/07	5213-624-K3371-02	N/A	N/A	Valid
<b>Effluent Discharge License</b>				
DC/2018/06	WT00035431-2019 (Portion C)	20 Jan 2020	31 Jan 2025	Valid
<b>Construction Noise Permit (Water Pump)</b>				
DC/2018/06	GW-RN0044-20	15 Feb 2020	14 Apr 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 <sup>(1)</sup>	Wai Loi Tsuen	Ground Level
AM2 <sup>(1)</sup>	Fu Tei Au	Ground Level
AM1a <sup>(2)</sup>	Site Boundary of the Shek Wu Hui STW (East)	Ground Level
AM2a <sup>(2)</sup>	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 m<sup>3</sup>/min. and 1.4 m<sup>3</sup>/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-5028A 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 (February 2020), $\mu\text{g}/\text{m}^3$
AM1 - Wai Loi Tsuen	N/A	N/A <sup>(1)</sup>	31.9– 87.0
AM2 - Fu Tei Au	FLN-E28	255	36.4– 104.0

Remarks:

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

**Table 2.6 Comparison of 24-hr TSP Monitoring Data with Predictions in EIA Report (as approved in 2013)**

Monitoring Stations	Predicted 24-hr TSP Concentration in EIA Report (as approved in 2013), dB(A), $\mu\text{g}/\text{m}^3$	Reporting Month (February 2020), $\mu\text{g}/\text{m}^3$
AM1a - Site Boundary of the Shek Wu Hui STW (East)	N/A <sup>(1)</sup>	35.4– 66.2
AM2a - Site Boundary of the Shek Wu Hui STW (North)	N/A <sup>(1)</sup>	28.0 - 53.4

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 <sub>10</sub> (30 min.) dB(A)	Free Field
NM2				L <sub>90</sub> (30 min.) dB(A)	Free Field
NM3				L <sub>eq</sub> (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<sub>eq</sub>) and percentile sound pressure level (L<sub>x</sub>) 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 (February 2020), Leq (30min) dB(A)
NM1 - Wai Loi Tsuen	N/A	N/A <sup>(1)</sup>	53.4 – 55.5
NM2 - Fu Tei Au	N/A	N/A <sup>(1)</sup>	63.9 – 67.8
NM3 – Man Kok Village	FN-18	66-75	55.6 – 61.1

Remarks:

(1) No construction noise level was predicted in EIA Report (as approved in 2013).

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



## 4 ECOLOGY

### Monitoring Requirements

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

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

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

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

### Monitoring Locations

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

**Table 4.2 Ecological Monitoring Stations**

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

### **Monitoring Parameters, Frequency and Duration**

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

### **Monitoring Methodology**

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

### **Analytical Methodology**

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

**Table 4.3 Representative Waterbirds**

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

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

## Results

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

**Table 4.4 Total Bird Species and Abundance in the Reporting Month**

	Number of Species	Abundance
All Avifauna	58	720
Waterbirds	27	329

- 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	59
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	81
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	18
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鷗鷺	49
<i>Ardea alba</i>	Great Egret	大白鷺	30
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	30

**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	3.459	✓	✓
	Seasonal	2.185	✓	✓

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	1.101	✓	✓	0.038	✓	✓	✓
Grey Heron	0.771	✓	✓	1.225	✓	✓	✓
Chinese Pond Heron	-2.261	✓	✓	-2.853	✗	✓	✓
Great Cormorant	0.772	✓	✓	1.090	✓	✓	✓
Great Egret	0.840	✓	✓	0.614	✓	✓	✓
Eastern Cattle Egret	1.216	✓	✓	0.800	✓	✓	✓

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.

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
- 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)	Breaking	Fishing, dogs, jaywalking
T2 (PC3, PC4)	Breaking, drilling, sheet-piling, excavation and vibration hammer	Fishing, jaywalking, breaking
PC5	Sheet-piling	Moving of shrubs
T3 (PC6, PC7)	N/A	Fishing, dogs, filming

## **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 clearance and tree felling works were undertaken during the reporting period as per **Table I** and **Table 1.2**, 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 6, 13, 19 & 25 February 2020 in the reporting month. Joint site inspection with the representative of IEC was conducted on 19 February 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>	14 Jan 2020	Ponding water was found at several points within Portion C. It should be removed or pumped through the sedimentation tank before discharge.	The condition was observed to be improved/rectified by the contractor during the audit session on 19 Feb 2020.
	25 Feb 2020	Muddy water was accumulated at the eastern side of Portion C. It should be removed to prevent leaking into the river nearby.	Follow-up actions will be reported in the next month.
<i>Air Quality</i>	21 Jan 2020	Soil was observed on the public road outside Portion C. The Contractor should clean it up as soon as possible.	The condition was observed to be improved/rectified by the contractor during the audit session on 13 Feb 2020.
	6 Feb 2020	The haul road appeared to be dry and dirty at Portion A. It should be sprayed with water to avoid dust generation.	The condition was observed to be improved/rectified by the contractor during the audit session on 13 Feb 2020.
	19 Feb 2020	Stockpiles should be covered by impervious materials to avoid dust generation at Portion A and C.	The condition was observed to be improved/rectified by the contractor during the audit session on 25 Feb 2020.
	19 Feb 2020	The haul road appeared to be dry at Portion C. Water spraying should be provided to prevent excessive dust generation.	The condition was observed to be improved/rectified by the contractor during the audit session on 25 Feb 2020.



<b>Parameters</b>	<b>Date</b>	<b>Observations and Recommendations</b>	<b>Follow-up</b>
	25 Feb 2020	The haul road appeared to be dry and dirty at Portion A. The Contractor should clean the haul road to prevent excessive dust generation.	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 Jan 2020	Waste was deposited on the road at Portion A. The Contractor should remove the waste as soon as possible.	The condition was observed to be improved/rectified by the contractor during the audit session on 6 Feb 2020.
	13 Feb 2020	Unused nylon bags and fences were deposited at Portion A. The Contractor should remove them to avoid waste accumulation.	The condition was observed to be improved/rectified by the contractor during the audit session on 19 Feb 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

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

<b>Parameters</b>	<b>Date</b>	<b>Observations and Recommendations</b>	<b>Follow-up</b>
<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 Jan 2020	Waste stockpile is accumulated at Portion B. Contractor is reminded to remove the waste pile and cover it with impervious sheeting until disposal.	The condition was observed to be improved/rectified by the contractor during the audit session on 6 Feb 2020.
	25 Feb 2020	Waste stockpile accumulated should be removed at Portion B.	Follow-up actions will be reported in the next month.

<b>Parameters</b>	<b>Date</b>	<b>Observations and Recommendations</b>	<b>Follow-up</b>
<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 The summaries of environmental complaint, warning, summon and notification of successful prosecution for the Project is presented in **Appendix O**.

**Summary of Exceedance**

9.2 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**

<b>Contract No.</b>	<b>Contract Title</b>	<b>Site Activities</b>
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"> <li>• Underground utility detection</li> <li>• Tree felling works</li> <li>• Hoarding installation</li> <li>• Predrilling works</li> <li>• H-piles installation</li> <li>• Sheet piling installation</li> <li>• Drainage diversion work</li> </ul>
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"> <li>• Trial pit works</li> <li>• Underground utilities detection</li> <li>• Site clearance</li> <li>• Trench excavation</li> <li>• Sheet pile construction</li> <li>• Demolition works</li> <li>• Predrilling works</li> </ul>
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"> <li>• Site clearance and fencing work</li> </ul>
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"> <li>• Preparation work of E&amp;M installation at temporary filtrate lifting well and equalization tank</li> <li>• Modification of existing emergency generator electrical works</li> </ul>

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;
- Coverage of open manholes to avoid dirty runoff to drainage system;
- Noise from operation of the equipment, especially for excavation works and machinery onsite;
- Accumulation of general refuse and construction waste on-site;
- Proper storage of construction materials on-site; and
- Storage of chemicals/fuel and chemical waste/waste oil on-site.

### **Monitoring Schedule**

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

## 11 CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 11.1 This is the 2<sup>nd</sup> 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.

### Recommendations

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

#### *Air Quality*

- Regular water spraying on haul road and dry surfaces should be applied to minimize dust generation.
- Stockpiles should be covered by impervious materials.
- The public road should keep free from dust and soil.

#### *Water Quality*

- Ponding water should be removed.
- Muddy water should pump through the sedimentation tank.

#### *Waste Management*

- Waste accumulation should be avoided.

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## FIGURES

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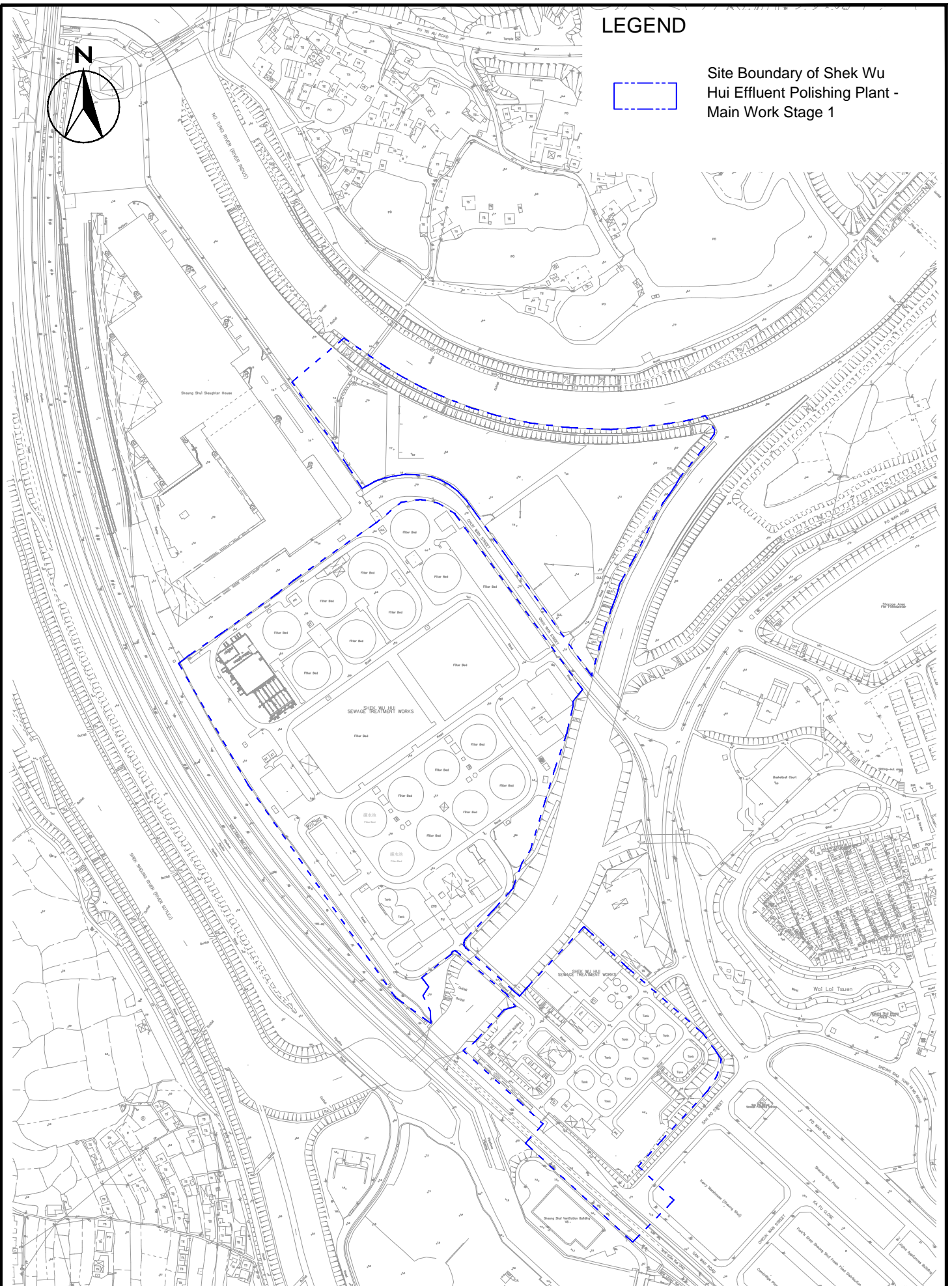
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**LEGEND**



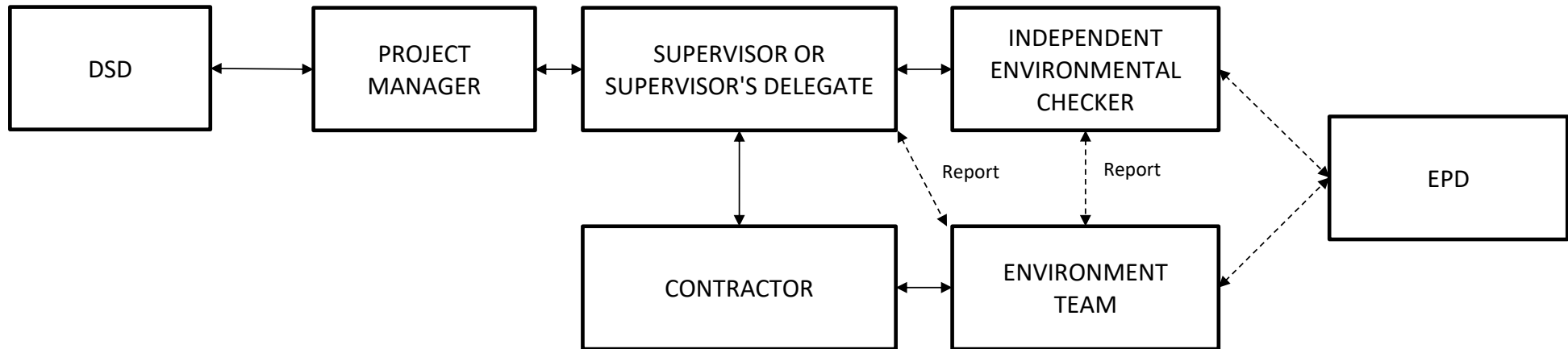
Site Boundary of Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1



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

Site Layout

SCALE	1:4000@A4	DATE	OCT 2019
CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	1.1
		REV	-

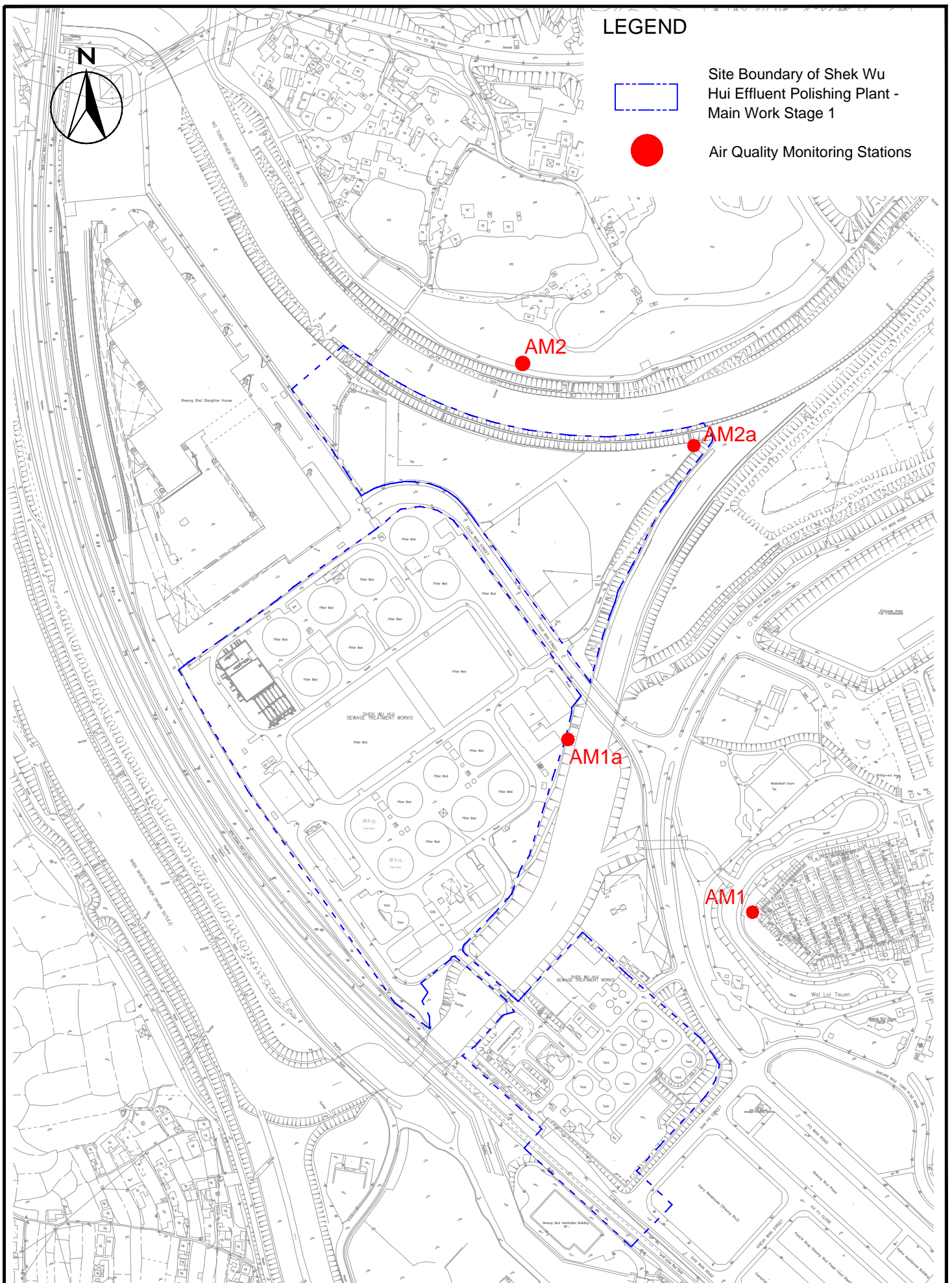


**CINOTECH**

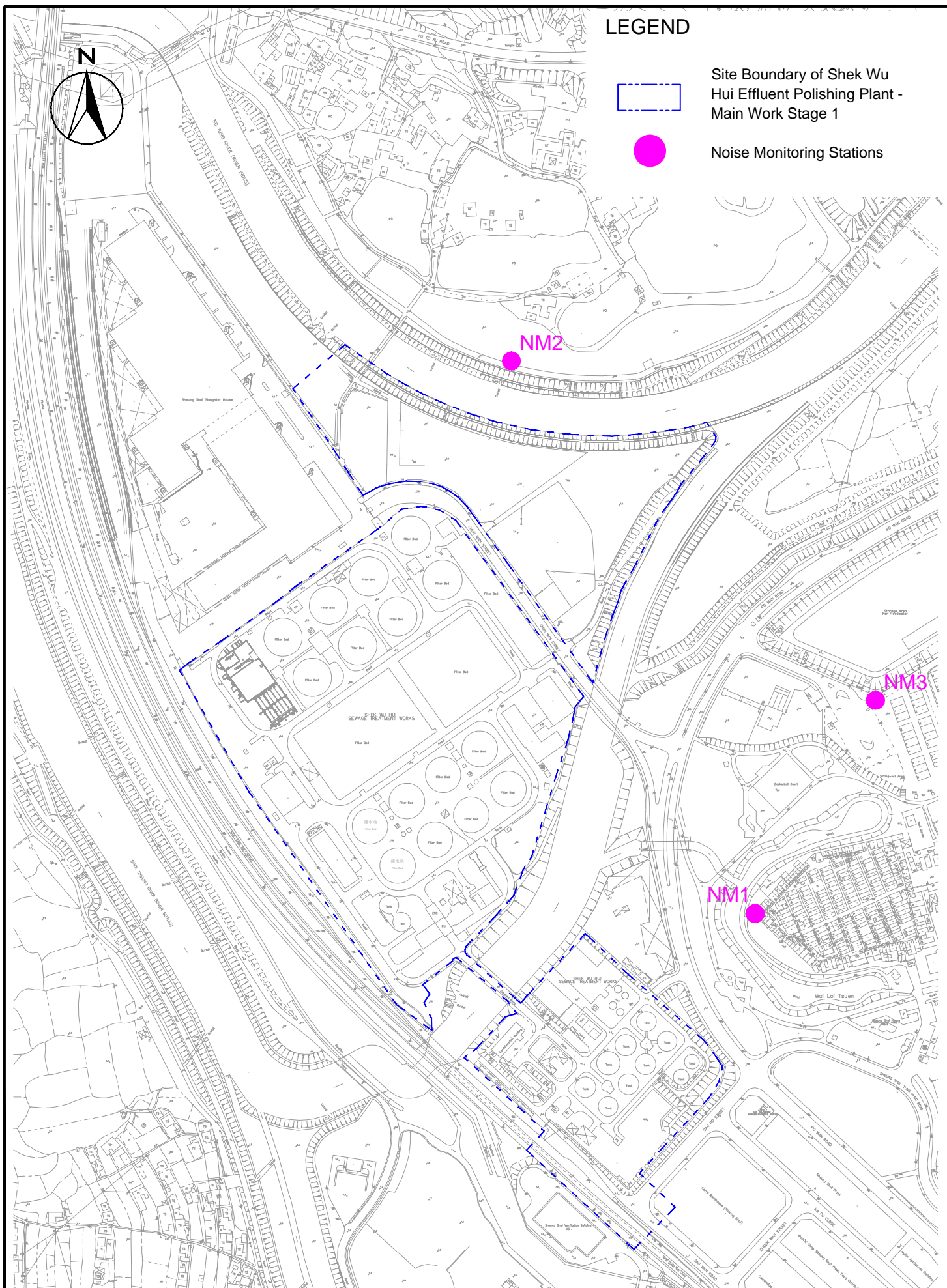
Agreement No. SPW07/2019  
 Shek Wu Hui Effluent Polishing Plant- Main Works Stage 1  
**Project Organisation For Environmental Monitoring and Audit**

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



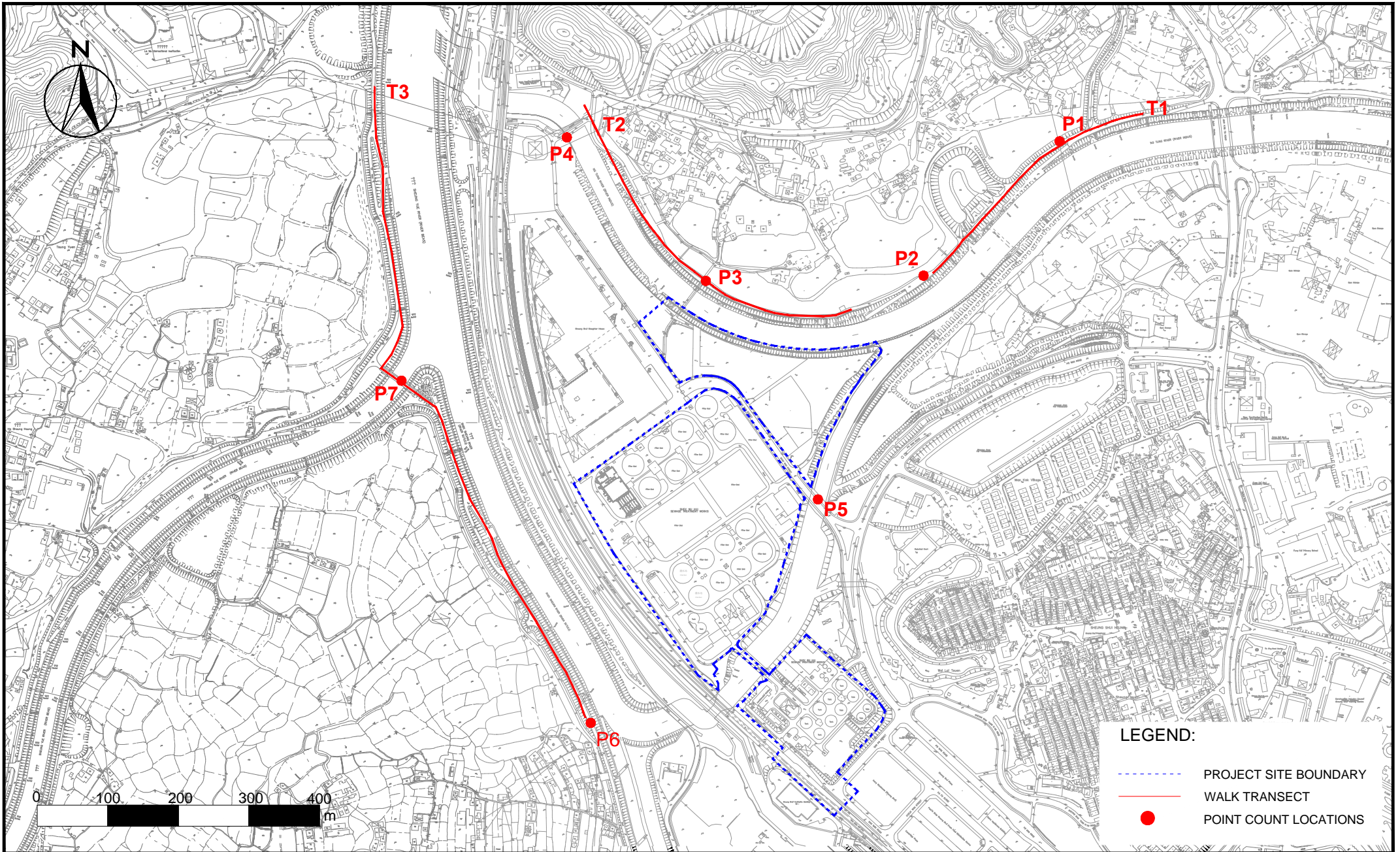


SCALE	1:4000@A4	DATE	OCT 2019
CHECK	JM	DRAWN	SY
JOB No.	MA19019	FIGURE NO.	2
		REV	-



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





**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
				-

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**APPENDIX A  
ACTION AND LIMIT LEVELS**

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## 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) <sup>(1)</sup>

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.

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**APPENDIX B  
ENVIRONMENTAL MONITORING  
SCHEDULES**

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**Agreement No. SPW07/2019**  
**Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1**  
**Impact Air, Noise and Ecology Monitoring Schedule (February 2020)**

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

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 (March 2020)**

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



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

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## 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 7-Dec-19  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 6-Feb-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

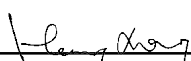
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ( $\mu\text{g}/\text{m}^3$ ) X-axis	Mass concentration ( $\mu\text{g}/\text{m}^3$ ) Y-axis
1	75.0	160.5
2	52.0	153.8
3	29.0	146.4
<b>Average</b>	<b>52.0</b>	<b>153.6</b>
<b>By Linear Regression of Y on X</b> Slope , mw = <u>0.3065</u> Intercept, bw = <u>137.6275</u> Correlation coefficient* = <u>0.9996</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )	153.6	
Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )	52.0	
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-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

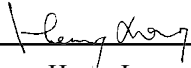
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ( $\mu\text{g}/\text{m}^3$ ) X-axis	Mass concentration ( $\mu\text{g}/\text{m}^3$ ) Y-axis
1	48.0	112.5
2	38.0	108.0
3	27.0	102.5
<b>Average</b>	<b>37.7</b>	<b>107.7</b>
<b>By Linear Regression of Y on X</b> Slope , 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	
Measureing 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 7-Dec-19  
 Manufacturer: Sibata Scientific Technology LTD. Validity of Calibration Record 6-Feb-20  
 Model No.: LD-5R  
 Serial No.: 972781  
 Equipment No.: SA-01-10 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 734 CPM  
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 734 CPM

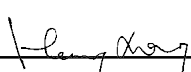
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ( $\mu\text{g}/\text{m}^3$ ) X-axis	Mass concentration ( $\mu\text{g}/\text{m}^3$ ) Y-axis
1	84.0	160.5
2	57.0	153.8
3	31.0	146.4
<b>Average</b>	<b>57.3</b>	<b>153.6</b>
<b>By Linear Regression of Y on X</b> Slope , mw = <u>0.2659</u> Intercept, bw = <u>138.3204</u> Correlation coefficient* = <u>0.9992</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )	153.6	
Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )	57.3	
Measuring time, (min)	60.0	
Set Correlation Factor , SCF		
SCF = [ K=High Volume Sampler / Dust Meter, ( $\mu\text{g}/\text{m}^3$ ) ]	<u>2.7</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.: 972781  
 Equipment No.: SA-01-10 Sensitivity 0.001 mg/m3  
 High Volume Sampler No.: A-01-01A Before Sensitivity Adjustment 734 CPM  
 Tisch Calibration Orifice No.: 3607 After Sensitivity Adjustment 734 CPM

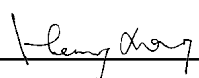
Calibration of 1 hr TSP		
Calibration Point	Laser Dust Monitor	HVS
	Mass Concentration ( $\mu\text{g}/\text{m}^3$ ) X-axis	Mass concentration ( $\mu\text{g}/\text{m}^3$ ) Y-axis
1	50.0	112.5
2	43.0	108.0
3	32.0	102.5
<b>Average</b>	<b>41.7</b>	<b>107.7</b>
<b>By Linear Regression of Y on X</b> Slope , mw = <u>0.5506</u> Intercept, bw = <u>84.7247</u> Correlation coefficient* = <u>0.9976</u>		
Set Correlation Factor		
Particulate Concentration by High Volume Sampler ( $\mu\text{g}/\text{m}^3$ )	107.7	
Particulate Concentration by Dust Meter ( $\mu\text{g}/\text{m}^3$ )	41.7	
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
<b>QSTD</b>	m=	<b>2.09221</b>	<b>QA</b>	m=	<b>1.31010</b>
	b=	<b>-0.02779</b>		b=	<b>-0.01759</b>
	r=	<b>0.99994</b>		r=	<b>0.99994</b>

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= $Va / \Delta Time$
<b>For subsequent flow rate calculations:</b>	
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. MA19019/17/0002

Project No. AM1a - Site boundary of the Shek Wu Hui STW (East)  
 Date: 6-Jan-20 Next Due Date: 5-Mar-20 Operator: SK  
 Equipment No.: A-01-17 Model No.: GS2310 Serial No. 3460

Ambient Condition			
Temperature, Ta (K)	<u>294</u>	Pressure, Pa (mmHg)	<u>764.3</u>

Orifice Transfer Standard Information					
Serial No.	<u>3607</u>	Slope, mc	<u>0.0588</u>	Intercept, bc	<u>-0.02422</u>
Last Calibration Date:	<u>8-Jan-19</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>8-Jan-20</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>16.3</u>	4.08	69.73	<u>10.3</u>	3.24
2	<u>12.5</u>	3.57	61.12	<u>7.8</u>	2.82
3	<u>9.2</u>	3.06	52.49	<u>6.2</u>	2.51
4	<u>5.6</u>	2.39	41.04	<u>4.0</u>	2.02
5	<u>3.3</u>	1.83	31.60	<u>2.5</u>	1.60

### By Linear Regression of Y on X

Slope, mw = 0.0424 Intercept, bw = 0.2651  
 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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  4.29

Remarks: \_\_\_\_\_  
 \_\_\_\_\_

Conducted by: SK Wong Signature:  Date: 6 January 2020

Checked by: Henry Leung Signature:  Date: 6 January 2020

# High-Volume TSP Sampler

## 5-POINT CALIBRATION DATA SHEET



File No. MA19019/24/0002

Project No. AM2a - Site Boundary of the Shek Wu Hui STW (North)  
 Date: 6-Jan-20 Next Due Date: 5-Mar-20 Operator: BF  
 Equipment No.: A-01-24 Model No.: TE 5170 Serial No. 1659

Ambient Condition			
Temperature, Ta (K)	<u>294</u>	Pressure, Pa (mmHg)	<u>764.3</u>

Orifice Transfer Standard Information					
Serial No.	<u>3607</u>	Slope, mc	<u>0.0588</u>	Intercept, bc	<u>-0.02422</u>
Last Calibration Date:	<u>8-Jan-19</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>8-Jan-20</u>				

Calibration of TSP Sampler					
Calibration Point	Orifice			HVS	
	$\Delta H$ (orifice), in. of water	$[\Delta H \times (Pa/760) \times (298/Ta)]^{1/2}$	Qstd (CFM) X - axis	$\Delta W$ (HVS), in. of water	$[\Delta W \times (Pa/760) \times (298/Ta)]^{1/2}$ Y-axis
1	<u>13.7</u>	3.74	63.97	<u>9.6</u>	3.13
2	<u>10.7</u>	3.30	56.58	<u>7.6</u>	2.78
3	<u>7.9</u>	2.84	48.67	<u>6.0</u>	2.47
4	<u>4.9</u>	2.23	38.42	<u>4.3</u>	2.09
5	<u>3.0</u>	1.75	30.15	<u>3.0</u>	1.76

### By Linear Regression of Y on X

Slope, mw = 0.0399 Intercept, bw = 0.5480  
 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 =  $(mw \times Qstd + bw)^2 \times (760 / Pa) \times (Ta / 298) =$  5.03

Remarks: \_\_\_\_\_

Conducted by: SK Wong Signature: [Signature] Date: 6 January 2020

Checked by: Henry Leung Signature: [Signature] Date: 6 January 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

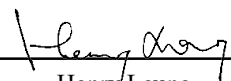
Wind Direction (°)		Difference D (°)
Wind Direction Reading (V1)	Marine Compass Value (V1)	$D = W1 - W2$
0	0	0.0
90	90	0.0
180	180	0.0
270	270	0.0

### 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

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**APPENDIX D**  
**WEATHER INFORMATION**

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

**I. General Information from Hong Kong Observatory**

<b>Date</b>	<b>Mean Air Temperature (°C)</b>	<b>Mean Relative Humidity (%)</b>	<b>Precipitation (mm)</b>
1-Feb-20	16	72	0
2-Feb-20	17.1	77	0
3-Feb-20	18.1	78	Trace
4-Feb-20	17.3	84	0.8
5-Feb-20	17.5	83	1
6-Feb-20	17.1	77	Trace
7-Feb-20	18.7	82	0
8-Feb-20	17.8	76	0
9-Feb-20	16.5	77	Trace
10-Feb-20	16.9	76	0
11-Feb-20	17.6	86	0.8
12-Feb-20	20.6	89	0
13-Feb-20	19.6	94	41.6
14-Feb-20	20.4	94	9.7
15-Feb-20	21	95	Trace
16-Feb-20	14.2	82	25.5
17-Feb-20	13.6	53	0
18-Feb-20	14.7	57	0
19-Feb-20	16.3	69	0
20-Feb-20	17.7	70	0
21-Feb-20	18.9	73	0
22-Feb-20	20.1	73	0
23-Feb-20	19.4	71	0
24-Feb-20	19.6	76	0
25-Feb-20	21.8	84	Trace
26-Feb-20	23.3	82	0
27-Feb-20	20.5	84	0.4
28-Feb-20	20.8	78	0
29-Feb-20	22.5	80	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**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
1-Feb-20	1:00	71.7	0.1
1-Feb-20	2:00	42.4	0.1
1-Feb-20	3:00	44.9	0.1
1-Feb-20	4:00	73.7	0.1
1-Feb-20	5:00	93.2	0.1
1-Feb-20	6:00	71.1	0.1
1-Feb-20	7:00	84.9	0.1
1-Feb-20	8:00	90.2	0.2
1-Feb-20	9:00	97.2	0.1
1-Feb-20	10:00	95.1	0.2
1-Feb-20	11:00	121.6	0.1
1-Feb-20	12:00	130.0	0.2
1-Feb-20	13:00	104.0	0.2
1-Feb-20	14:00	130.2	0.1
1-Feb-20	15:00	165.2	0.5
1-Feb-20	16:00	127.6	1.0
1-Feb-20	17:00	115.2	0.1
1-Feb-20	18:00	101.7	0.2
1-Feb-20	19:00	88.4	0.4
1-Feb-20	20:00	110.4	0.4
1-Feb-20	21:00	114.0	0.2
1-Feb-20	22:00	107.2	0.1
1-Feb-20	23:00	82.3	0.2
2-Feb-20	0:00	114.5	0.1
2-Feb-20	1:00	101.3	0.1
2-Feb-20	2:00	99.4	0.1
2-Feb-20	3:00	90.8	0.1
2-Feb-20	4:00	127.2	0.1
2-Feb-20	7:00	100.7	0.3
2-Feb-20	8:00	76.6	0.1
2-Feb-20	9:00	79.9	0.4
2-Feb-20	10:00	101.7	0.3
2-Feb-20	11:00	70.8	0.2
2-Feb-20	12:00	94.7	0.2
2-Feb-20	13:00	109.0	1.1
2-Feb-20	14:00	85.7	0.6

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
2-Feb-20	15:00	75.3	0.2
2-Feb-20	16:00	110.8	0.3
2-Feb-20	17:00	115.2	0.1
2-Feb-20	18:00	89.0	0.1
2-Feb-20	19:00	155.3	0.3
2-Feb-20	20:00	73.4	0.7
2-Feb-20	21:00	108.2	0.4
2-Feb-20	22:00	119.0	0.2
2-Feb-20	23:00	92.6	0.1
3-Feb-20	0:00	75.0	0.1
3-Feb-20	1:00	81.6	0.1
3-Feb-20	2:00	102.7	0.1
3-Feb-20	3:00	82.5	0.1
3-Feb-20	4:00	89.0	0.1
3-Feb-20	5:00	85.7	0.1
3-Feb-20	6:00	70.1	0.2
3-Feb-20	7:00	91.4	0.1
3-Feb-20	8:00	90.2	0.1
3-Feb-20	9:00	74.0	0.1
3-Feb-20	10:00	96.9	0.1
3-Feb-20	11:00	92.1	0.2
3-Feb-20	12:00	107.8	0.2
3-Feb-20	13:00	72.2	1.0
3-Feb-20	14:00	104.3	0.5
3-Feb-20	15:00	107.2	0.2
3-Feb-20	16:00	168.0	0.1
3-Feb-20	17:00	86.7	0.2
3-Feb-20	18:00	143.0	0.3
3-Feb-20	19:00	105.0	0.1
3-Feb-20	20:00	85.0	0.1
3-Feb-20	21:00	96.0	0.1
3-Feb-20	22:00	91.1	0.1
3-Feb-20	23:00	106.7	0.1
4-Feb-20	0:00	141.9	0.2
4-Feb-20	1:00	92.7	0.2
4-Feb-20	2:00	116.5	0.2

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
4-Feb-20	3:00	94.9	0.1
4-Feb-20	4:00	79.8	0.1
4-Feb-20	5:00	24.5	0.1
4-Feb-20	6:00	74.1	0.1
4-Feb-20	7:00	49.2	0.2
4-Feb-20	8:00	43.7	0.2
4-Feb-20	9:00	80.7	0.2
4-Feb-20	10:00	62.3	0.1
4-Feb-20	11:00	37.8	0.3
4-Feb-20	12:00	69.9	0.3
4-Feb-20	13:00	64.5	0.3
4-Feb-20	14:00	79.8	0.4
4-Feb-20	15:00	95.8	0.2
4-Feb-20	16:00	91.5	0.3
4-Feb-20	17:00	74.1	0.1
4-Feb-20	18:00	59.1	0.1
4-Feb-20	19:00	63.0	0.2
4-Feb-20	20:00	38.9	0.1
4-Feb-20	21:00	49.5	0.1
4-Feb-20	22:00	67.7	0.1
4-Feb-20	23:00	60.4	0.1
5-Feb-20	0:00	19.7	0.1
5-Feb-20	1:00	57.7	0.1
5-Feb-20	2:00	48.3	0.1
5-Feb-20	3:00	96.5	0.1
5-Feb-20	4:00	59.0	0.2
5-Feb-20	5:00	62.0	0.1
5-Feb-20	6:00	83.0	0.1
5-Feb-20	7:00	44.0	0.1
5-Feb-20	8:00	79.9	0.1
5-Feb-20	9:00	61.2	0.1
5-Feb-20	10:00	65.9	0.1
5-Feb-20	11:00	103.4	0.1
5-Feb-20	12:00	114.4	0.2
5-Feb-20	13:00	94.3	0.3
5-Feb-20	14:00	102.4	0.2

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
5-Feb-20	15:00	110.5	0.1
5-Feb-20	16:00	89.5	0.1
5-Feb-20	17:00	93.0	0.1
5-Feb-20	18:00	103.2	0.1
5-Feb-20	19:00	90.5	0.1
5-Feb-20	20:00	98.2	0.2
5-Feb-20	21:00	84.7	0.1
5-Feb-20	22:00	88.4	0.2
5-Feb-20	23:00	119.0	0.2
6-Feb-20	0:00	120.8	0.1
6-Feb-20	1:00	119.4	0.1
6-Feb-20	2:00	87.8	0.1
6-Feb-20	3:00	125.2	0.8
6-Feb-20	4:00	110.3	0.1
6-Feb-20	5:00	84.9	0.2
6-Feb-20	6:00	131.8	0.1
6-Feb-20	7:00	81.8	0.1
6-Feb-20	8:00	96.2	0.4
6-Feb-20	9:00	113.2	0.7
6-Feb-20	10:00	110.0	0.5
6-Feb-20	11:00	90.9	1.1
6-Feb-20	12:00	106.8	3.1
6-Feb-20	13:00	75.3	0.4
6-Feb-20	14:00	133.5	0.1
6-Feb-20	15:00	70.6	0.2
6-Feb-20	16:00	95.5	0.2
6-Feb-20	17:00	99.6	0.3
6-Feb-20	18:00	144.8	0.2
6-Feb-20	19:00	79.4	0.2
6-Feb-20	20:00	79.8	0.1
6-Feb-20	21:00	100.5	0.1
6-Feb-20	22:00	80.3	0.1
6-Feb-20	23:00	105.8	0.1
7-Feb-20	0:00	90.9	0.2
7-Feb-20	1:00	90.4	0.1
7-Feb-20	2:00	88.3	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
7-Feb-20	3:00	85.9	0.1
7-Feb-20	4:00	93.3	0.1
7-Feb-20	5:00	95.4	0.1
7-Feb-20	6:00	73.7	0.1
7-Feb-20	7:00	29.1	0.1
7-Feb-20	8:00	55.4	0.1
7-Feb-20	9:00	75.7	0.1
7-Feb-20	10:00	97.3	0.1
7-Feb-20	11:00	92.5	0.1
7-Feb-20	12:00	101.4	0.1
7-Feb-20	13:00	105.7	0.1
7-Feb-20	14:00	100.6	0.1
7-Feb-20	15:00	90.3	0.2
7-Feb-20	16:00	54.5	0.1
7-Feb-20	17:00	34.5	0.4
7-Feb-20	18:00	46.1	0.2
7-Feb-20	19:00	63.1	0.2
7-Feb-20	20:00	52.2	0.1
7-Feb-20	21:00	72.2	0.1
7-Feb-20	22:00	175.9	0.1
7-Feb-20	23:00	44.3	0.1
8-Feb-20	0:00	85.3	0.1
8-Feb-20	1:00	71.1	0.1
8-Feb-20	2:00	43.9	0.1
8-Feb-20	3:00	83.0	0.5
8-Feb-20	4:00	50.0	1.4
8-Feb-20	5:00	50.0	2.2
8-Feb-20	6:00	59.0	0.4
8-Feb-20	7:00	27.3	0.2
8-Feb-20	8:00	33.1	0.2
8-Feb-20	9:00	73.2	0.1
8-Feb-20	10:00	38.8	0.1
8-Feb-20	11:00	73.7	0.2
8-Feb-20	12:00	75.9	0.2
8-Feb-20	13:00	27.9	0.2
8-Feb-20	14:00	53.5	0.4



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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
8-Feb-20	15:00	69.8	0.1
8-Feb-20	16:00	72.4	0.2
8-Feb-20	17:00	23.2	0.6
8-Feb-20	18:00	28.1	0.2
8-Feb-20	19:00	65.1	0.1
8-Feb-20	20:00	65.3	0.2
8-Feb-20	21:00	61.7	0.1
8-Feb-20	22:00	180.3	0.1
8-Feb-20	23:00	71.1	0.1
9-Feb-20	0:00	57.6	0.1
9-Feb-20	1:00	67.0	0.1
9-Feb-20	2:00	32.3	0.1
9-Feb-20	3:00	59.4	0.1
9-Feb-20	4:00	59.8	0.3
9-Feb-20	5:00	41.7	0.1
9-Feb-20	6:00	41.8	0.1
9-Feb-20	7:00	37.5	0.1
9-Feb-20	8:00	53.2	0.1
9-Feb-20	9:00	52.9	0.1
9-Feb-20	10:00	180.4	0.1
9-Feb-20	11:00	63.5	0.1
9-Feb-20	12:00	53.7	0.2
9-Feb-20	13:00	57.3	0.2
9-Feb-20	14:00	80.9	0.1
9-Feb-20	15:00	45.6	0.2
9-Feb-20	16:00	157.8	0.1
9-Feb-20	17:00	108.9	0.1
9-Feb-20	18:00	268.8	0.2
9-Feb-20	19:00	57.7	0.1
9-Feb-20	20:00	57.1	0.1
9-Feb-20	21:00	175.1	0.1
9-Feb-20	22:00	80.5	0.1
9-Feb-20	23:00	72.8	0.1
10-Feb-20	0:00	87.3	0.2
10-Feb-20	1:00	67.1	0.1
10-Feb-20	2:00	48.0	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
10-Feb-20	3:00	59.1	0.1
10-Feb-20	4:00	190.7	0.2
10-Feb-20	5:00	48.1	0.1
10-Feb-20	6:00	52.4	0.1
10-Feb-20	7:00	36.7	0.1
10-Feb-20	8:00	71.4	0.1
10-Feb-20	9:00	80.5	0.1
10-Feb-20	10:00	41.6	0.1
10-Feb-20	11:00	163.5	0.1
10-Feb-20	12:00	31.9	0.1
10-Feb-20	13:00	105.3	0.2
10-Feb-20	14:00	94.3	0.2
10-Feb-20	15:00	92.2	0.2
10-Feb-20	16:00	128.5	0.1
10-Feb-20	17:00	211.4	0.5
10-Feb-20	18:00	137.6	0.1
10-Feb-20	19:00	238.4	0.2
10-Feb-20	20:00	244.1	0.2
10-Feb-20	21:00	242.8	0.1
10-Feb-20	22:00	219.8	0.1
10-Feb-20	23:00	208.2	0.1
11-Feb-20	0:00	156.4	0.1
11-Feb-20	1:00	39.7	0.2
11-Feb-20	2:00	72.0	0.1
11-Feb-20	3:00	88.1	0.1
11-Feb-20	4:00	91.1	0.1
11-Feb-20	5:00	83.0	0.1
11-Feb-20	6:00	85.8	0.1
11-Feb-20	7:00	114.9	0.1
11-Feb-20	8:00	89.4	0.1
11-Feb-20	9:00	82.8	0.1
11-Feb-20	10:00	91.5	0.1
11-Feb-20	11:00	70.8	0.1
11-Feb-20	12:00	62.7	0.1
11-Feb-20	13:00	100.6	0.2
11-Feb-20	14:00	105.4	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
11-Feb-20	15:00	134.5	0.1
11-Feb-20	16:00	62.8	0.2
11-Feb-20	17:00	130.8	0.2
11-Feb-20	18:00	94.9	0.1
11-Feb-20	19:00	104.1	0.4
11-Feb-20	20:00	87.5	0.1
11-Feb-20	21:00	89.8	0.1
11-Feb-20	22:00	78.7	0.1
11-Feb-20	23:00	82.8	0.1
12-Feb-20	0:00	87.9	0.1
12-Feb-20	1:00	77.1	0.1
12-Feb-20	2:00	117.3	0.1
12-Feb-20	3:00	115.5	0.1
12-Feb-20	4:00	66.4	0.1
12-Feb-20	5:00	81.2	0.1
12-Feb-20	6:00	87.9	0.1
12-Feb-20	7:00	58.6	0.1
12-Feb-20	8:00	97.0	0.1
12-Feb-20	9:00	79.2	0.1
12-Feb-20	10:00	24.1	0.1
12-Feb-20	11:00	151.2	0.2
12-Feb-20	12:00	326.4	0.1
12-Feb-20	13:00	245.6	0.1
12-Feb-20	14:00	275.8	0.3
12-Feb-20	15:00	109.3	0.1
12-Feb-20	16:00	129.0	0.2
12-Feb-20	17:00	121.4	0.1
12-Feb-20	18:00	298.4	1.0
12-Feb-20	19:00	270.0	0.3
12-Feb-20	20:00	278.8	0.5
12-Feb-20	21:00	223.3	0.1
12-Feb-20	22:00	222.9	0.2
12-Feb-20	23:00	159.9	0.3
13-Feb-20	0:00	101.5	0.1
13-Feb-20	1:00	85.9	0.1
13-Feb-20	2:00	154.4	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
13-Feb-20	3:00	23.5	0.1
13-Feb-20	4:00	46.2	0.1
13-Feb-20	5:00	153.3	0.1
13-Feb-20	6:00	59.8	0.1
13-Feb-20	7:00	70.7	0.1
13-Feb-20	8:00	81.0	0.1
13-Feb-20	9:00	37.1	0.1
13-Feb-20	10:00	215.5	0.3
13-Feb-20	11:00	261.0	0.7
13-Feb-20	12:00	17.9	0.1
13-Feb-20	13:00	200.2	0.1
13-Feb-20	14:00	109.2	0.1
13-Feb-20	15:00	117.6	0.2
13-Feb-20	16:00	122.4	0.4
13-Feb-20	17:00	83.8	0.2
13-Feb-20	18:00	101.1	0.2
13-Feb-20	19:00	82.4	0.4
13-Feb-20	20:00	82.4	0.4
13-Feb-20	21:00	101.6	0.4
13-Feb-20	22:00	81.0	0.7
13-Feb-20	23:00	53.0	0.2
14-Feb-20	0:00	81.2	0.1
14-Feb-20	1:00	86.1	0.1
14-Feb-20	2:00	80.1	0.1
14-Feb-20	3:00	83.7	0.1
14-Feb-20	4:00	78.0	0.1
14-Feb-20	5:00	86.2	0.1
14-Feb-20	6:00	96.1	0.1
14-Feb-20	7:00	117.0	0.2
14-Feb-20	8:00	71.9	0.2
14-Feb-20	9:00	108.4	0.2
14-Feb-20	10:00	85.3	0.3
14-Feb-20	11:00	174.5	0.3
14-Feb-20	12:00	85.8	0.4
14-Feb-20	13:00	218.0	0.4
14-Feb-20	14:00	89.7	0.7

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
14-Feb-20	15:00	181.7	0.8
14-Feb-20	16:00	125.4	0.7
14-Feb-20	17:00	147.6	0.8
14-Feb-20	18:00	88.3	0.4
14-Feb-20	19:00	184.7	0.3
14-Feb-20	20:00	90.5	0.2
14-Feb-20	21:00	56.8	0.2
14-Feb-20	22:00	84.2	0.2
14-Feb-20	23:00	94.7	0.2
15-Feb-20	0:00	113.8	0.2
15-Feb-20	1:00	51.5	0.2
15-Feb-20	2:00	82.0	0.3
15-Feb-20	3:00	67.8	0.4
15-Feb-20	4:00	104.5	0.4
15-Feb-20	5:00	89.5	0.5
15-Feb-20	6:00	69.9	0.5
15-Feb-20	7:00	62.5	0.9
15-Feb-20	8:00	77.3	0.5
15-Feb-20	9:00	60.1	0.5
15-Feb-20	10:00	141.1	0.4
15-Feb-20	11:00	172.0	0.5
15-Feb-20	12:00	140.6	0.5
15-Feb-20	13:00	92.0	0.6
15-Feb-20	14:00	187.6	0.5
15-Feb-20	15:00	212.8	0.5
15-Feb-20	16:00	128.7	0.4
15-Feb-20	17:00	109.3	0.4
15-Feb-20	18:00	61.6	0.3
15-Feb-20	19:00	135.7	0.3
15-Feb-20	20:00	75.7	0.3
15-Feb-20	21:00	95.5	0.5
15-Feb-20	22:00	101.6	0.5
15-Feb-20	23:00	82.1	0.5
16-Feb-20	0:00	74.1	0.6
16-Feb-20	1:00	69.2	0.6
16-Feb-20	2:00	168.4	0.5

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
16-Feb-20	3:00	191.6	0.6
16-Feb-20	4:00	9.6	0.5
16-Feb-20	5:00	176.4	0.5
16-Feb-20	6:00	46.5	0.6
16-Feb-20	7:00	75.4	0.6
16-Feb-20	8:00	17.7	2.1
16-Feb-20	9:00	40.1	0.9
16-Feb-20	10:00	90.1	1.0
16-Feb-20	11:00	92.0	1.4
16-Feb-20	12:00	59.3	2.2
16-Feb-20	13:00	79.5	1.1
16-Feb-20	14:00	29.5	0.8
16-Feb-20	15:00	294.1	0.6
16-Feb-20	16:00	130.6	0.6
16-Feb-20	17:00	34.3	0.9
16-Feb-20	18:00	93.3	1.0
16-Feb-20	19:00	58.9	0.5
16-Feb-20	20:00	21.9	0.3
16-Feb-20	21:00	72.1	1.2
16-Feb-20	22:00	54.7	0.7
16-Feb-20	23:00	27.4	0.8
17-Feb-20	0:00	65.4	0.9
17-Feb-20	1:00	40.1	1.3
17-Feb-20	2:00	92.0	0.9
17-Feb-20	3:00	41.7	0.8
17-Feb-20	4:00	45.6	0.9
17-Feb-20	5:00	52.0	0.7
17-Feb-20	6:00	50.3	1.4
17-Feb-20	7:00	55.0	1.0
17-Feb-20	8:00	71.0	0.5
17-Feb-20	9:00	48.3	1.2
17-Feb-20	10:00	129.9	0.5
17-Feb-20	11:00	173.6	0.6
17-Feb-20	12:00	205.4	2.1
17-Feb-20	13:00	107.1	0.2
17-Feb-20	14:00	62.5	1.7

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
17-Feb-20	15:00	190.4	0.5
17-Feb-20	16:00	114.0	0.7
17-Feb-20	17:00	23.7	0.7
17-Feb-20	18:00	59.1	0.3
17-Feb-20	19:00	67.1	0.2
17-Feb-20	20:00	54.9	0.4
17-Feb-20	21:00	78.3	0.4
17-Feb-20	22:00	68.4	0.1
17-Feb-20	23:00	62.2	0.1
18-Feb-20	0:00	84.0	0.2
18-Feb-20	1:00	82.3	0.2
18-Feb-20	2:00	36.3	0.3
18-Feb-20	3:00	72.9	0.2
18-Feb-20	4:00	40.4	0.1
18-Feb-20	5:00	72.8	0.1
18-Feb-20	6:00	52.5	0.4
18-Feb-20	7:00	78.3	0.1
18-Feb-20	8:00	34.6	0.2
18-Feb-20	9:00	43.2	0.1
18-Feb-20	10:00	53.2	0.1
18-Feb-20	11:00	53.3	0.1
18-Feb-20	12:00	42.1	0.5
18-Feb-20	13:00	58.6	0.7
18-Feb-20	14:00	74.3	0.3
18-Feb-20	15:00	68.3	0.3
18-Feb-20	16:00	92.3	0.3
18-Feb-20	17:00	170.9	0.2
18-Feb-20	18:00	118.7	0.2
18-Feb-20	19:00	165.1	0.2
18-Feb-20	20:00	108.6	0.2
18-Feb-20	21:00	86.2	0.1
18-Feb-20	22:00	104.3	0.1
18-Feb-20	23:00	79.1	0.1
19-Feb-20	0:00	76.7	0.1
19-Feb-20	1:00	86.9	0.1
19-Feb-20	2:00	77.6	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
19-Feb-20	3:00	61.7	0.1
19-Feb-20	4:00	89.2	0.1
19-Feb-20	5:00	117.2	0.1
19-Feb-20	6:00	85.7	0.1
19-Feb-20	7:00	114.5	0.1
19-Feb-20	8:00	95.2	0.1
19-Feb-20	9:00	76.9	0.1
19-Feb-20	10:00	73.5	0.2
19-Feb-20	11:00	92.8	0.2
19-Feb-20	12:00	82.8	0.1
19-Feb-20	13:00	118.1	0.2
19-Feb-20	14:00	70.8	0.1
19-Feb-20	15:00	195.6	0.2
19-Feb-20	16:00	162.6	0.2
19-Feb-20	17:00	136.1	2.4
19-Feb-20	18:00	130.1	0.3
19-Feb-20	19:00	74.7	0.3
19-Feb-20	20:00	98.8	0.2
19-Feb-20	21:00	90.8	0.1
19-Feb-20	22:00	74.4	0.2
19-Feb-20	23:00	100.9	0.1
20-Feb-20	0:00	86.9	0.1
20-Feb-20	1:00	77.1	0.1
20-Feb-20	2:00	96.1	0.1
20-Feb-20	3:00	67.8	0.1
20-Feb-20	4:00	49.6	0.1
20-Feb-20	5:00	79.2	0.1
20-Feb-20	6:00	71.6	0.1
20-Feb-20	7:00	60.5	0.1
20-Feb-20	8:00	64.0	0.1
20-Feb-20	9:00	80.4	0.1
20-Feb-20	10:00	64.8	0.1
20-Feb-20	11:00	93.1	0.1
20-Feb-20	12:00	91.5	0.1
20-Feb-20	13:00	141.1	0.1
20-Feb-20	14:00	71.1	0.2



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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
20-Feb-20	15:00	115.0	0.2
20-Feb-20	16:00	91.9	0.3
20-Feb-20	17:00	78.3	1.2
20-Feb-20	18:00	82.9	0.9
20-Feb-20	19:00	92.2	0.1
20-Feb-20	20:00	88.8	0.2
20-Feb-20	21:00	117.4	0.1
20-Feb-20	22:00	84.7	0.1
20-Feb-20	23:00	89.4	0.2
21-Feb-20	0:00	87.0	0.1
21-Feb-20	1:00	77.6	0.1
21-Feb-20	2:00	94.9	0.2
21-Feb-20	3:00	96.8	0.1
21-Feb-20	4:00	89.7	0.1
21-Feb-20	5:00	92.6	0.3
21-Feb-20	6:00	72.2	0.1
21-Feb-20	7:00	106.4	0.1
21-Feb-20	8:00	91.1	0.1
21-Feb-20	9:00	63.4	0.1
21-Feb-20	10:00	62.4	0.1
21-Feb-20	11:00	88.5	0.1
21-Feb-20	12:00	76.8	0.1
21-Feb-20	13:00	75.3	0.2
21-Feb-20	14:00	63.7	0.1
21-Feb-20	15:00	125.4	0.6
21-Feb-20	16:00	126.5	0.2
21-Feb-20	17:00	158.8	0.2
21-Feb-20	18:00	137.4	0.4
21-Feb-20	19:00	151.2	0.3
21-Feb-20	20:00	134.5	0.5
21-Feb-20	21:00	86.0	0.1
21-Feb-20	22:00	68.2	0.1
21-Feb-20	23:00	76.2	0.1
22-Feb-20	0:00	53.3	0.2
22-Feb-20	1:00	50.1	0.1
22-Feb-20	2:00	78.8	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
22-Feb-20	3:00	103.2	0.1
22-Feb-20	4:00	149.4	0.1
22-Feb-20	5:00	77.7	0.1
22-Feb-20	6:00	149.1	0.1
22-Feb-20	7:00	184.1	0.1
22-Feb-20	8:00	184.1	0.1
22-Feb-20	9:00	184.1	0.2
22-Feb-20	10:00	184.9	0.2
22-Feb-20	11:00	243.7	0.1
22-Feb-20	12:00	255.4	0.1
22-Feb-20	13:00	74.0	0.1
22-Feb-20	14:00	330.3	0.2
22-Feb-20	15:00	191.9	1.2
22-Feb-20	16:00	95.5	0.1
22-Feb-20	17:00	93.2	0.1
22-Feb-20	18:00	106.5	0.3
22-Feb-20	19:00	123.0	0.2
22-Feb-20	20:00	212.1	0.2
22-Feb-20	21:00	96.3	0.8
22-Feb-20	22:00	109.9	0.1
22-Feb-20	23:00	85.4	0.5
23-Feb-20	0:00	100.9	0.2
23-Feb-20	1:00	76.3	0.2
23-Feb-20	2:00	143.4	0.1
23-Feb-20	3:00	80.3	0.5
23-Feb-20	4:00	94.6	0.3
23-Feb-20	5:00	110.8	0.2
23-Feb-20	6:00	103.7	0.1
23-Feb-20	7:00	106.3	0.1
23-Feb-20	8:00	70.4	0.1
23-Feb-20	9:00	93.3	0.1
23-Feb-20	10:00	94.8	0.1
23-Feb-20	11:00	96.2	0.9
23-Feb-20	12:00	89.4	0.2
23-Feb-20	13:00	61.7	0.5
23-Feb-20	14:00	95.8	0.4

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
23-Feb-20	15:00	78.8	0.8
23-Feb-20	16:00	98.5	0.4
23-Feb-20	17:00	207.9	0.2
23-Feb-20	18:00	168.5	0.2
23-Feb-20	19:00	84.8	0.4
23-Feb-20	20:00	107.9	0.1
23-Feb-20	21:00	89.1	0.1
23-Feb-20	22:00	88.9	0.2
23-Feb-20	23:00	90.8	0.1
24-Feb-20	0:00	75.9	0.2
24-Feb-20	1:00	60.0	0.2
24-Feb-20	2:00	91.1	0.6
24-Feb-20	3:00	92.0	0.1
24-Feb-20	4:00	125.1	0.2
24-Feb-20	5:00	121.9	0.3
24-Feb-20	6:00	125.9	0.1
24-Feb-20	7:00	97.3	0.2
24-Feb-20	8:00	147.1	0.1
24-Feb-20	9:00	89.5	0.1
24-Feb-20	10:00	106.0	0.2
24-Feb-20	11:00	80.9	0.1
24-Feb-20	12:00	114.6	0.1
24-Feb-20	13:00	177.7	0.5
24-Feb-20	14:00	49.8	0.3
24-Feb-20	15:00	64.4	0.1
24-Feb-20	16:00	117.4	0.3
24-Feb-20	17:00	72.8	0.3
24-Feb-20	18:00	94.5	0.4
24-Feb-20	19:00	125.8	0.2
24-Feb-20	20:00	116.6	0.3
24-Feb-20	21:00	116.8	0.2
24-Feb-20	22:00	74.5	0.1
24-Feb-20	23:00	75.9	0.1
25-Feb-20	0:00	80.9	0.1
25-Feb-20	1:00	114.6	0.1
25-Feb-20	2:00	120.5	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
25-Feb-20	3:00	75.9	0.1
25-Feb-20	4:00	89.3	0.1
25-Feb-20	5:00	27.8	0.1
25-Feb-20	6:00	86.7	0.1
25-Feb-20	7:00	76.2	0.2
25-Feb-20	8:00	70.5	0.1
25-Feb-20	9:00	36.8	0.2
25-Feb-20	10:00	48.0	0.1
25-Feb-20	11:00	76.8	0.1
25-Feb-20	12:00	79.5	0.1
25-Feb-20	13:00	75.1	0.1
25-Feb-20	14:00	92.2	0.1
25-Feb-20	15:00	100.5	0.1
25-Feb-20	16:00	133.4	0.1
25-Feb-20	17:00	95.4	0.3
25-Feb-20	18:00	141.3	0.2
25-Feb-20	19:00	83.4	0.2
25-Feb-20	20:00	93.5	0.3
25-Feb-20	21:00	76.0	0.1
25-Feb-20	22:00	81.2	0.1
25-Feb-20	23:00	80.5	0.1
26-Feb-20	0:00	80.8	0.1
26-Feb-20	1:00	75.7	0.1
26-Feb-20	2:00	88.9	0.1
26-Feb-20	3:00	72.5	0.2
26-Feb-20	4:00	79.0	0.1
26-Feb-20	5:00	91.0	0.1
26-Feb-20	6:00	57.3	0.1
26-Feb-20	7:00	67.5	0.1
26-Feb-20	8:00	60.4	0.1
26-Feb-20	9:00	80.0	0.1
26-Feb-20	10:00	185.1	0.1
26-Feb-20	11:00	71.3	0.1
26-Feb-20	12:00	38.9	0.1
26-Feb-20	13:00	72.9	0.2
26-Feb-20	14:00	307.7	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
26-Feb-20	15:00	253.6	0.1
26-Feb-20	16:00	83.2	0.2
26-Feb-20	17:00	242.9	1.4
26-Feb-20	18:00	299.9	1.9
26-Feb-20	19:00	248.2	1.0
26-Feb-20	20:00	286.5	0.4
26-Feb-20	21:00	273.7	0.1
26-Feb-20	22:00	115.0	0.2
26-Feb-20	23:00	73.7	0.1
27-Feb-20	0:00	71.4	0.1
27-Feb-20	1:00	94.2	0.1
27-Feb-20	2:00	71.9	0.1
27-Feb-20	3:00	68.5	0.2
27-Feb-20	4:00	74.6	0.1
27-Feb-20	5:00	96.3	0.1
27-Feb-20	6:00	94.1	0.1
27-Feb-20	7:00	101.3	0.1
27-Feb-20	8:00	95.3	0.1
27-Feb-20	9:00	109.2	0.3
27-Feb-20	10:00	92.2	0.2
27-Feb-20	11:00	88.3	0.3
27-Feb-20	12:00	102.1	0.2
27-Feb-20	13:00	87.0	0.2
27-Feb-20	14:00	99.1	0.1
27-Feb-20	15:00	213.8	0.1
27-Feb-20	16:00	113.2	0.4
27-Feb-20	17:00	200.2	0.7
27-Feb-20	18:00	108.7	0.2
27-Feb-20	19:00	166.9	0.2
27-Feb-20	20:00	111.4	0.2
27-Feb-20	21:00	52.8	0.1
27-Feb-20	22:00	78.3	0.1
27-Feb-20	23:00	159.2	0.1
28-Feb-20	0:00	125.0	0.2
28-Feb-20	1:00	70.3	0.2
28-Feb-20	2:00	127.1	0.1

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
28-Feb-20	3:00	74.6	0.3
28-Feb-20	4:00	92.6	0.3
28-Feb-20	5:00	78.3	0.5
28-Feb-20	6:00	97.0	0.9
28-Feb-20	7:00	59.4	0.3
28-Feb-20	8:00	76.6	0.3
28-Feb-20	9:00	97.1	0.1
28-Feb-20	10:00	57.1	0.1
28-Feb-20	11:00	92.2	0.3
28-Feb-20	12:00	60.9	0.4
28-Feb-20	13:00	75.5	0.3
28-Feb-20	14:00	92.0	0.5
28-Feb-20	15:00	180.3	0.6
28-Feb-20	16:00	130.5	1.1
28-Feb-20	17:00	217.7	0.1
28-Feb-20	18:00	126.5	0.1
28-Feb-20	19:00	63.5	0.1
28-Feb-20	20:00	99.8	0.2
28-Feb-20	21:00	64.9	0.4
28-Feb-20	22:00	82.2	0.1
28-Feb-20	23:00	91.9	0.1
29-Feb-20	0:00	84.1	0.1
29-Feb-20	1:00	73.4	0.1
29-Feb-20	2:00	81.0	0.1
29-Feb-20	3:00	87.3	0.1
29-Feb-20	4:00	95.9	0.1
29-Feb-20	5:00	66.5	0.1
29-Feb-20	6:00	59.6	0.1
29-Feb-20	7:00	196.6	0.1
29-Feb-20	8:00	69.8	0.1
29-Feb-20	9:00	96.4	0.1
29-Feb-20	10:00	71.4	0.1
29-Feb-20	11:00	105.5	0.1
29-Feb-20	12:00	64.1	0.1
29-Feb-20	13:00	168.9	0.3
29-Feb-20	14:00	113.9	0.3

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

**II. Mean Wind Speed and Wind Direction**

<b>Date</b>	<b>Time</b>	<b>Wind Direction (°)</b>	<b>Wind Speed (m/s)</b>
29-Feb-20	15:00	181.5	0.2
29-Feb-20	16:00	203.3	0.2
29-Feb-20	17:00	219.3	0.3
29-Feb-20	18:00	161.8	0.2
29-Feb-20	19:00	258.1	0.1
29-Feb-20	20:00	115.4	0.1
29-Feb-20	21:00	63.6	0.1
29-Feb-20	22:00	94.3	0.1
29-Feb-20	23:00	89.6	0.1

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

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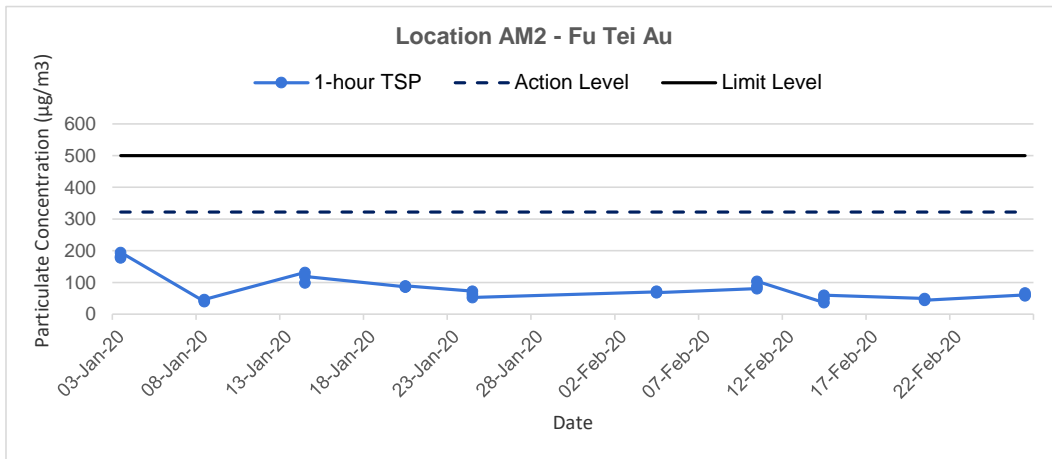
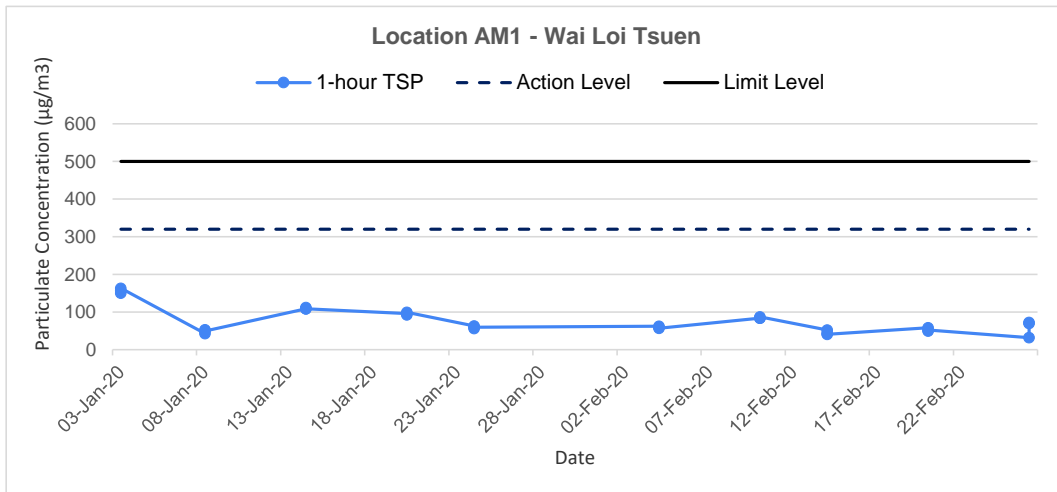


## Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Wai Loi Tsuen			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-Feb-20	9:00	Fine	62.1
4-Feb-20	10:00	Fine	59.4
4-Feb-20	11:00	Fine	56.7
10-Feb-20	16:00	Cloudy	84.1
10-Feb-20	17:00	Cloudy	84.1
10-Feb-20	18:00	Cloudy	87.0
14-Feb-20	14:00	Cloudy	52.2
14-Feb-20	15:00	Cloudy	43.5
14-Feb-20	16:00	Cloudy	40.6
20-Feb-20	9:00	Sunny	58.0
20-Feb-20	10:00	Sunny	49.3
20-Feb-20	11:00	Sunny	52.2
26-Feb-20	13:30	Sunny	31.9
26-Feb-20	14:30	Sunny	69.6
26-Feb-20	15:30	Sunny	72.5
Average			60.2
Maximum			87.0
Minimum			31.9

Location AM2 - Fu Tei Au			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
4-Feb-20	13:00	Fine	70.2
4-Feb-20	14:00	Fine	72.9
4-Feb-20	15:00	Fine	67.5
10-Feb-20	13:00	Cloudy	80.6
10-Feb-20	14:00	Cloudy	88.4
10-Feb-20	15:00	Cloudy	104.0
14-Feb-20	13:30	Cloudy	36.4
14-Feb-20	14:30	Cloudy	49.4
14-Feb-20	15:30	Cloudy	59.8
20-Feb-20	13:00	Sunny	49.3
20-Feb-20	14:00	Sunny	46.4
20-Feb-20	15:00	Sunny	43.5
26-Feb-20	9:00	Sunny	60.9
26-Feb-20	10:00	Sunny	58.0
26-Feb-20	11:00	Sunny	66.7
Average			63.6
Maximum			104.0
Minimum			36.4

### 1-hr TSP Concentration Levels



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

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

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## Appendix F - 24-hour TSP Monitoring Results

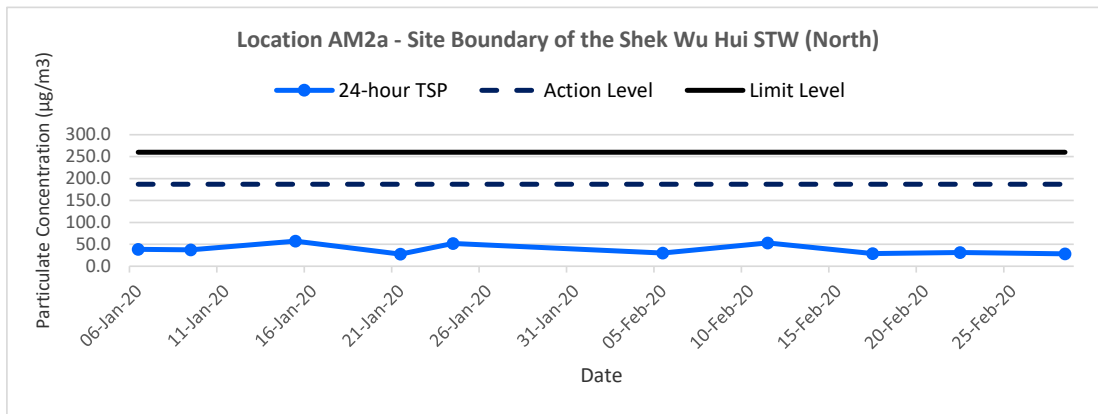
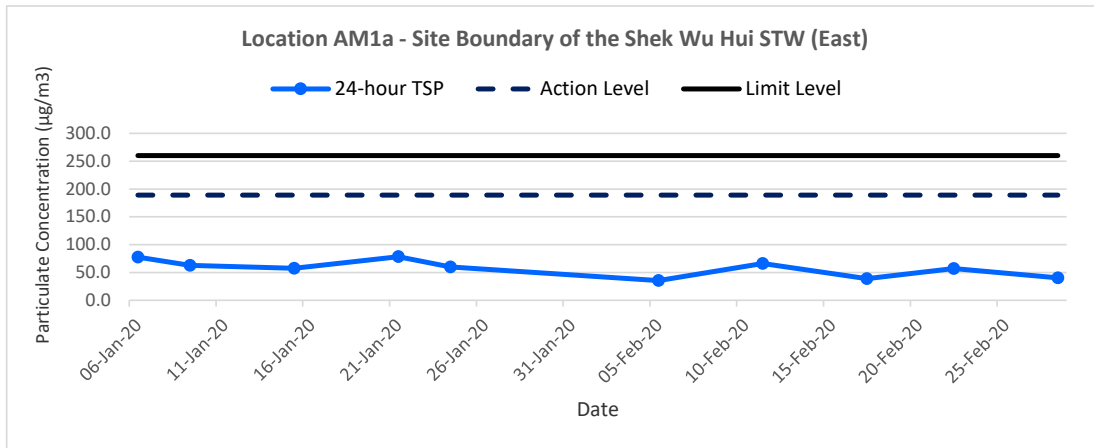
### Location AM1a - Site Boundary of the Shek Wu Hui STW (East)

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 <sup>3</sup> /min.)		Av. Flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
5-Feb-20	Cloudy	290.3	766.2	3.5759	3.6386	0.0627	8179.8	8203.8	24.0	1.23	1.23	1.23	1770.3	35.4
11-Feb-20	Rainy	292.1	765.4	3.4729	3.5896	0.1167	8203.8	8227.8	24.0	1.23	1.22	1.22	1763.1	66.2
17-Feb-20	Sunny	287.2	770.7	3.5511	3.6207	0.0696	8227.8	8251.8	24.0	1.24	1.24	1.24	1787.5	38.9
22-Feb-20	Sunny	292.8	769.9	3.5727	3.6735	0.1008	8251.8	8275.8	24.0	1.23	1.23	1.23	1766.7	57.1
28-Feb-20	Fine	294.7	763.3	3.5171	3.5877	0.0706	8275.8	8299.8	24.0	1.22	1.21	1.22	1751.5	40.3
													Min	35.4
													Max	66.2
													Average	47.6

### 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 <sup>3</sup> /min.)		Av. Flow (m <sup>3</sup> /min)	Total vol. (m <sup>3</sup> )	Conc. (µg/m <sup>3</sup> )
				Initial	Final		Initial	Final		Initial	Final			
5-Feb-20	Cloudy	290.3	766.2	3.5098	3.5631	0.0533	18396.9	18420.9	24.0	1.23	1.23	1.23	1770.5	30.1
11-Feb-20	Rainy	292.1	765.4	3.5110	3.6051	0.0941	18420.9	18444.9	24.0	1.23	1.22	1.22	1762.2	53.4
17-Feb-20	Sunny	287.2	770.7	3.5408	3.5927	0.0519	18444.9	18468.9	24.0	1.24	1.24	1.24	1790.3	29.0
22-Feb-20	Sunny	292.8	769.9	3.4944	3.5500	0.0556	18468.9	18492.9	24.0	1.23	1.23	1.23	1766.4	31.5
28-Feb-20	Fine	294.7	763.3	3.4845	3.5335	0.0490	18492.9	18516.9	24.0	1.22	1.21	1.21	1748.9	28.0
													Min	28.0
													Max	53.4
													Average	34.4

### 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 Feb 2020	Project No. MA19019  Appendix F	
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**APPENDIX G  
COPIES OF CALIBRATION  
CERTIFICATES FOR NOISE  
MONITORING**

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**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



Equipment no.: N-12-03

## Calibration Certificate

0022523

Customer : Cinotech Consultants Limited RM 1710, Technology Park, 18 On Lai Street, Shatin, N.T. Hong Kong	Object 1 : BSWA 308 SLM Serial No. /Ref. No. : 570188 / 550850 Object 2 : Serial No. /Ref. No. :
Customer Code : SVEC09005	Manufacturer : BSWAtech
Date of calibration: 23/09/2019 Date of the recommended re-calibration: 23/09/2020	Certificate No.: 0022523 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

0023000

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. : 23852 / N-08-11 Object 2 : Microphone Serial No. /Ref. No. : 35989
Customer Code : SVEC09005	Manufacturer : Svantek
Date of calibration: 19/12/2019 Date of the recommended re-calibration: 19/12/2020	Certificate No.: 0023000 Handle by: E0002

## Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	93.4dB	-0.6dB	+/- 1.5dB	1
114.0dB	113.4dB	-0.6dB	+/- 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

0022675

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. : 181001637 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.: 0022675 Handle by: E0002

## Measuring results

Reference value	Indication value	Deviation	Allowed deviation	Object
94.0dB	94.0dB	0.0dB	+/- 0.3dB	1
114.0dB	114.0dB	0.0dB	+/- 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

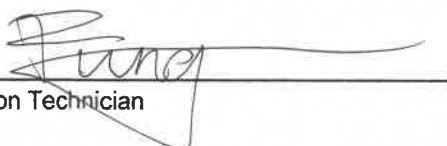
+/- 0.2dB for probability not less than 95%.

## Conformity

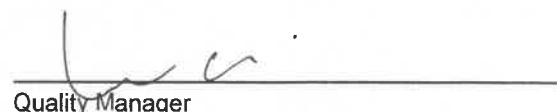
- 1.The resulted values were those obtained at the time of test and applies only to the item calibrated.
- 2.The measurement uncertainty was calculated according to the regulations of GUM with the coverage factor k=2 and contains the uncertainty of the measuring procedure and the uncertainty of the measuring 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

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

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## Appendix H - Noise Monitoring Results

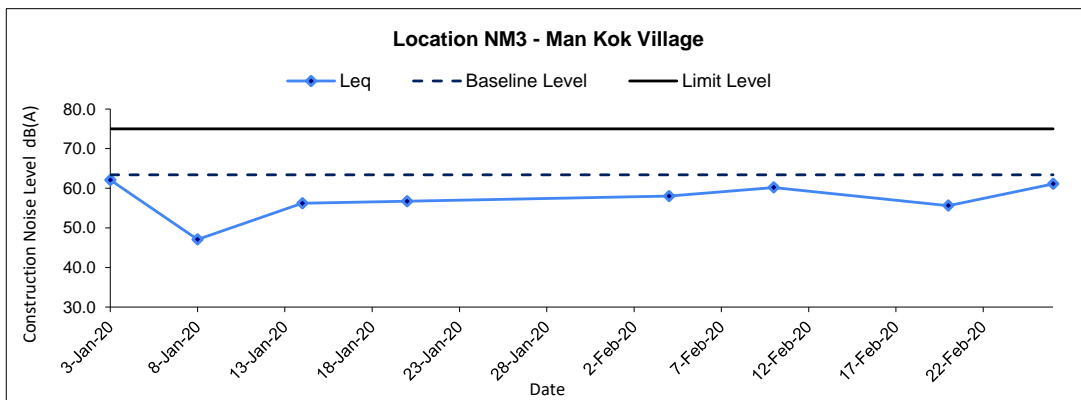
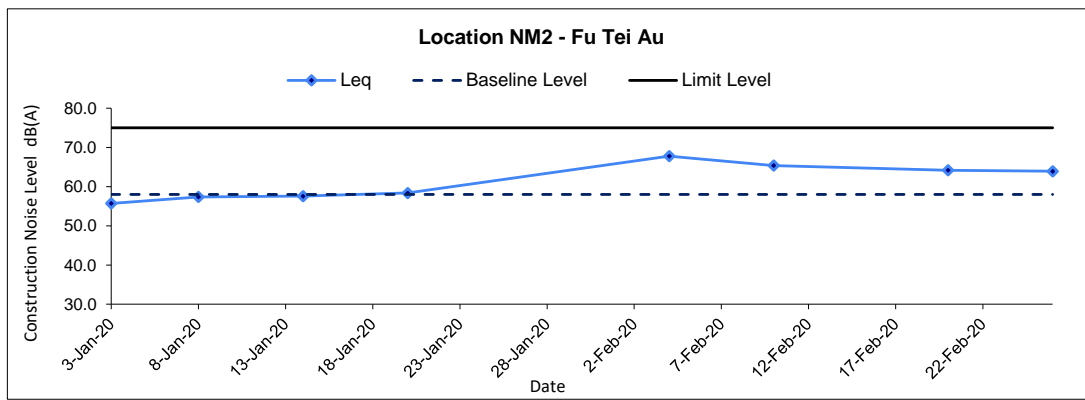
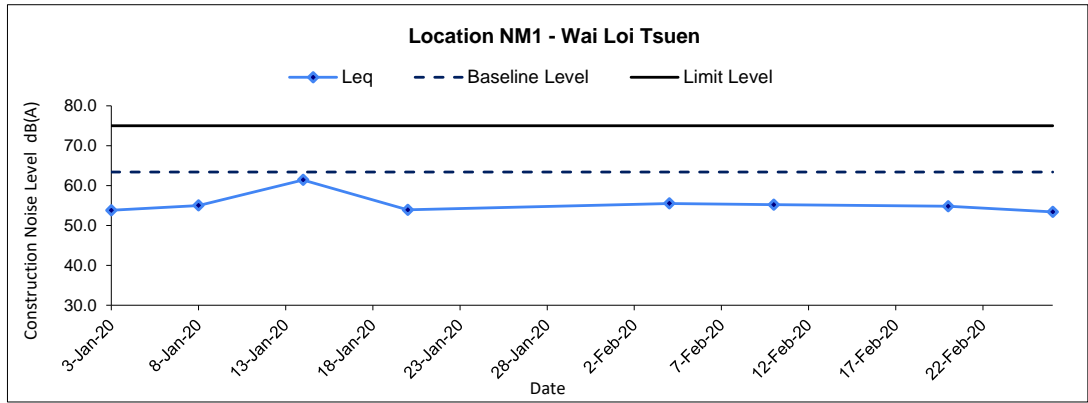
(0700-1900 hrs on Normal Weekdays)

Location NM1 - Wai Loi Tsuen							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
4-Feb-20	9:00	Fine	55.5	56.8	50.1	63.4	55.5 Measured ≤ Baseline
10-Feb-20	16:00	Cloudy	55.2	58.0	49.0		55.2 Measured ≤ Baseline
20-Feb-20	10:00	Sunny	54.8	57.0	51.4		54.8 Measured ≤ Baseline
26-Feb-20	13:40	Sunny	53.4	54.7	50.1		53.4 Measured ≤ Baseline

Location NM2 - Fu Tei Au							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
4-Feb-20	13:00	Fine	68.2	70.3	65.4	58.0	67.8
10-Feb-20	13:20	Cloudy	66.1	69.5	59.2		65.4
20-Feb-20	15:15	Sunny	65.1	67.0	62.3		64.2
26-Feb-20	15:20	Sunny	64.9	66.2	63.2		63.9

Location NM3 - Man Kok Village							
Date	Time	Weather	Unit: dB (A) (30-min)				
			Measured Noise Level			Baseline Level	Construction Noise Level
			L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>
4-Feb-20	10:00	Fine	58.0	59.1	50.2	63.4	58.0 Measured ≤ Baseline
10-Feb-20	14:30	Cloudy	60.2	62.2	53.3		60.2 Measured ≤ Baseline
20-Feb-20	13:15	Sunny	55.6	58.1	49.5		55.6 Measured ≤ Baseline
26-Feb-20	14:30	Sunny	61.1	63.1	54.6		61.1 Measured ≤ Baseline

### Noise Levels



Title Shek Wu Hui Effluent Polishing Plant - Main Works Stage 1	Date Feb 2020	Project No. MA19019	
Graphical Presentation of Construction Noise Monitoring Results		Appendix H	

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**APPENDIX I  
ECOLOGICAL MONITORING RESULTS  
AND ANALYSIS**

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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		98	+++++
<i>Actitis hypoleucos</i>	Common Sandpiper	磯鶯	*	10	+
<i>Alcedo atthis</i>	Common Kingfisher	普通翠鳥	*	6	+
<i>Amaurornis phoenicurus</i>	White-breasted Waterhen	白胸苦惡鳥	*	0	+
<i>Anthus hodgsoni</i>	Olive Backed Pipit	樹鶯		17	+++
<i>Anthus richardi</i>	Richard's Pipit	理氏鶯		0	+
<i>Apus nipalensis</i>	House Swift	小白腰雨燕		48	+
<i>Ardea alba</i>	Great Egret	大白鷺	*	30	+++
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	*	81	+++++
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	*	18	++++
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	*	30	+
<i>Buteo japonicus</i>	Eastern Buzzard	普通鵟	*	2	+
<i>Centropus sinensis</i>	Greater Coucal	褐翅鴉鵂		5	+
<i>Ceryle rudis</i>	Pied Kingfisher	斑魚狗	*	3	
<i>Charadrius dubius</i>	Little Ringed Plover	金眶鴝	*	3	+
<i>Copsychus saularis</i>	Magpie Robin	鶻鴝		2	+
<i>Corvus macrorhynchos</i>	Jungle Crow	大嘴烏鴉		3	+
<i>Corvus torquatus</i>	Collared Crow	白頸鴉	*	8	+
<i>Dicrurus hottentottus</i>	Hair-crested Drogon	髮冠卷尾		2	
<i>Dicrurus macrocercus</i>	Black Drongo	黑卷尾		0	+
<i>Egretta garzetta</i>	Little Egret	小白鷺	*	59	+++
<i>Eudynamis scolopacea</i>	Common Koel	噪鶇		10	+
<i>Ficedula albicilla</i>	Red-throated Flycatcher	紅喉姬鶯		0	+
<i>Garrulax perspicillatus</i>	Masked Laughing Thrush	黑臉噪鶇		13	+++++
<i>Halcyon smymensis</i>	White-throated Kingfisher	白胸翡翠	*	1	+
<i>Himantopus himantopus</i>	Black-winged Stilt	黑翅長腳鶻	*	3	
<i>Hirundo rustica</i>	Barn Swallow	家燕		0	+
<i>Lanius cristatus</i>	Brown Shrike	紅尾伯勞		1	
<i>Lanius schach</i>	Rufous-backed Shrike	棕背伯勞		1	+
<i>Lonchura striata</i>	White-rumped Munia	白腰文鳥		12	
<i>Milvus migrans</i>	Black Kite	黑鳶	*	5	+
<i>Motacilla alba</i>	White Wagtail	白鶺鴒		45	++++
<i>Motacilla cinerea</i>	Grey Wagtail	灰鶺鴒		4	+
<i>Orthotomus sutorius</i>	Common Tailorbird	長尾縫葉鶯		6	++
<i>Parus cinereus</i>	Cinereous Tit	蒼背山雀		2	++
<i>Passer montanus</i>	Eurasian Tree Sparrow	樹麻雀		2	+
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿	*	49	+++++
<i>Phoenicurus auroreus</i>	Daurian Redstart	北紅尾鴝		9	+
<i>Phylloscopus fuscatus</i>	Dusky Warbler	褐柳鶯		4	++
<i>Phylloscopus inornatus</i>	Yellow-browed Warbler	黃眉柳鶯		12	+++
<i>Phylloscopus proregulus</i>	Pallas's Leaf Warbler	黃腰柳鶯		2	+
<i>Pica pica</i>	Magpie	喜鵲		3	+
<i>Platalea minor</i>	Black-faced Spoonbill	黑臉琵鷺	*	4	+
<i>Prinia flaviventris</i>	Yellow-bellied Prinia	黃腹鷓鴣		1	+
<i>Prinia inornata</i>	Plain Prinia	純色鷓鴣		2	+
<i>Pycnonotus jocosus</i>	Crested bulbul	紅耳鶇		17	++++
<i>Pycnonotus sinensis</i>	Chinese Bulbul	白頭鶇		13	++
<i>Saxicola stejnegeri</i>	Stejneger's Stonechat	黑喉石鶻		7	+
<i>Spilornis cheela</i>	Crested Serpent Eagle	蛇鶻	*	5	+
<i>Streptopelia chinensis</i>	Spotted Dove	珠頸斑鳩		21	++
<i>Sturnus nigricollis</i>	Black-necked Starling	黑領椋鳥		6	++
<i>Tachybaptus ruficollis</i>	Little Grebe	小鱧鶻	*	1	+
<i>Tringa glareola</i>	Wood Sandpiper	林鶻	*	2	+
<i>Tringa nebularia</i>	Common Greenshank	青腳鶻	*	8	+
<i>Tringa ochropus</i>	Green Sandpiper	白腰草鶻	*	1	+
<i>Urocissa erythrorhyncha</i>	Red-billed Blue Magpie	紅咀藍鶻		1	+
<i>Zitting cisticola</i>	Streaked Fantail Warbler	棕扇尾鶻		1	
<i>Zosterops japonicus</i>	Japanese White-eye	暗綠繡眼鳥		21	++++
Total Point Count Abundance				720	
Total Waterbirds				329	

\*For waterbird

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

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 February 2020	Appendix I	

**MA19019 - Waterbird Ecological Monitoring Result**

Monitoring Month      Feb  
 Season                  Winter

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	4 Feb 2020	14:30	High	83	180	21
		10:00	Low	97		25
#2	12 Feb 2020	12:30	High	65	174	17
		9:30	Low	109		24
#3	20 Feb 2020	13:00	High	41	156	23
		9:00	Low	115		25
#4	25 Feb 2020	11:00	High	59	210	21
		7:30	Low	151		24
<b>Overall Total</b>					<b>720</b>	

Table III: Total Waterbird Abundance from Point Count						
Survey Information				Numbers of Waterbirds		
No.	Date	Time	Tide Level	Individuals Recorded	Total	
#1	4 Feb 2020	14:30	High	19	57	
		10:00	Low	38		
#2	12 Feb 2020	12:30	High	41	101	
		9:30	Low	60		
#3	20 Feb 2020	13:00	High	17	84	
		9:00	Low	67		
#4	25 Feb 2020	11:00	High	25	87	
		7:30	Low	62		
<b>Overall Total</b>					<b>329</b>	
<b>Average</b>					<b>82</b>	

**Table IV: T-Test Analysis for All Waterbirds**

Baseline Data

Monthly Average Abundance (Feb)      50.44  
 Seasonal Average Abundance (Winter)   62.15

T-test

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

H<sub>0</sub> The data collected in the reporting month falls within the normal distribution when compared to the baseline monitoring data.

H<sub>1</sub> 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 H<sub>0</sub>.

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	3.459	✓
	Season	2.185	✓

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 Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		Project No. MA19019	<b>CINOTECH</b>
Monthly Data Analysis for Ecological Monitoring	Date February 2020	Appendix I	



## MA19019 - Waterbird Ecological Monitoring Result

Monitoring Month      Feb  
 Season                  Winter

Representative Species			Recorded Abundance				Baseline Data			
Species Name	Common Name	Chinese Name	4 Feb 2020	12 Feb 2020	20 Feb 2020	25 Feb 2020	Total	Average	Avg (Feb)	Avg (Winter)
<i>Egretta garzetta</i>	Little Egret	小白鷺	11	9	18	21	59	15	12	15
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	10	36	13	22	81	20	16	13
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	2	9	2	5	18	5	8	9
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿	10	26	5	8	49	12	9	7
<i>Ardea alba</i>	Great Egret	大白鷺	6	3	3	18	30	8	5	5
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	5	2	20	3	30	8	2	4

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:

H<sub>0</sub> The data collected in the reporting month falls within the normal distribution when compared to the baseline monitoring data.

H<sub>1</sub> The data collected does not fall within the normal distribution when compared to the baseline monitoring data.

If t-test value for a specific representative is smaller than the critical value, then rejects H<sub>0</sub>.

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	1.101	✓	✓	0.038	✓	✓	✓
<i>Ardea cinerea</i>	Grey Heron	蒼鷺	0.771	✓	✓	1.225	✓	✓	✓
<i>Ardeola bacchus</i>	Chinese Pond Heron	池鷺	-2.261	✓	✓	-2.853	✗	✓	✓
<i>Phalacrocorax carbo</i>	Great Cormorant	普通鸕鶿	0.772	✓	✓	1.090	✓	✓	✓
<i>Ardea alba</i>	Great Egret	大白鷺	0.840	✓	✓	0.614	✓	✓	✓
<i>Bubulcus coromandus</i>	Eastern Cattle Egret	牛背鷺	1.216	✓	✓	0.800	✓	✓	✓

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 Shek Wu Hui Effluent Polishing Plant - Main Work Stage 1		Project No. MA19019	
Monthly Data Analysis for Ecological Monitoring		Date February 2020	

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**APPENDIX J  
PHOTO RECORDS OF ECOLOGICAL  
MONITORING**

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## **Appendix J - Photo Records of Ecological Monitoring**

### **Part A - Conditions of Rivers**



Sheung Yue River (Taken on 4 Feb 20)



Ng Tung River (Taken on 13 Feb 20)



Shek Sheung River (Taken on 17 Feb 20)

**Part B – Waterbird Species**



*Actitis hypoleucos* (Taken on 25 Feb 20)



*Alcedo atthis* (Taken on 17 Feb 20)

(Calling was heard)

*Amaurornis phoenicurus* (Heard on 13 Feb 20)



*Ardea alba* (Taken on 4 Feb 20)



*Ardea cinerea* (Taken on 4 Feb 20)



*Ardeola bacchus* (Taken on 13 Feb 20)





*Bubulcus coromandus* (Taken on 4 Feb 20)



*Buteo japonicas* (Taken on 17 Feb 20)



*Ceryle rudis* (Taken on 25 Feb 20)



*Charadrius dubius* (Taken on 17 Feb 20)



*Corvus torquatus* (Taken on 4 Feb 20)



*Egretta garzetta* (Taken on 17 Feb 20)



*Himantopus himantopus* (Taken on 13 Feb 20)



*Milvus migrans* (Taken on 17 Feb 20)



*Phalacrocorax carbo* (Taken on 4 Feb 20)



*Platalea minor* (Taken on 13 Feb 20)



*Spilornis cheela* (Taken on 25 Feb 20)



*Tachybaptus ruficollis* (Taken on 17 Feb 20)



*Tringa glareola* (Taken on 17 Feb 20)



*Tringa nebularia* (Taken on 4 Feb 20)



**Part C – Human Activities & Site Conditions**



Fishing (Taken on 13 Feb 20)



Breaking (Taken on 13 Feb 20)



Filming (Taken on 17 Feb 20)



Dogs (Taken on 17 Feb 20)



Jaywalking (Taken on 25 Feb 20)



Vibration Hammer (Taken on 17 Feb 20)





Oil stains (Taken on 25 Feb 20)

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**APPENDIX K**  
**SITE AUDIT SUMMARY**

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**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	200206
Date	6 February 2020
Time	14:05 – 15:00

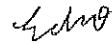

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
200114-R3	<ul style="list-style-type: none"> <li>Ponding water at several locations within Portion C should be removed or pumped through the sedimentation tank before discharge.</li> </ul>	B8
	<b><i>C. Air Quality</i></b>	
200206-R1	<ul style="list-style-type: none"> <li>The haul road appeared to be dry and dirty at Portion A. It should be sprayed with water to avoid dust generation.</li> </ul>	C5
200121-R1	<ul style="list-style-type: none"> <li>Soil was observed on the public road outside Portion C. The Contractor should clean it up as soon as possible.</li> </ul>	C9
	<b><i>D. Noise</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>E. Waste / Chemical Management</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>F. Ecology and Fisheries</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>G. Landscape and Visual</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>H. Permits /Licences</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>I. Others</i></b>	
	Following up on the previous site inspection (ref no.: 200121): Follow-up actions are needed to be reviewed for items 200121-R1 & 200114-R3. Item 200114-R1 was rectified/improved by the Contractor.	

	Name	Signature	Date
Recorded by	Miss Echo Hung		6 February 2020
Checked by	Miss Jennifer Mok		7 February 2020

Weekly Site Inspection Record Summary  
Inspection Information

Checklist Reference Number	200213
Date	13 February 2020
Time	14:00 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b>B. Water Quality</b>	
200114-R3	<ul style="list-style-type: none"> <li>Ponding water was found at several points within Portion C. It should be removed or pumped through the sedimentation tank before discharge.</li> </ul>	B8
	<b>C. Air Quality</b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b>D. Noise</b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b>E. Waste / Chemical Management</b>	
200213-R1	<ul style="list-style-type: none"> <li>Unused nylon bags and fences were deposited at Portion A. The Contractor should remove them to avoid waste accumulation.</li> </ul>	E2iii
	<b>F. Ecology and Fisheries</b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b>G. Landscape and Visual</b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b>H. Permits /Licences</b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b>I. Others</b>	
	Following up on the previous site inspection (ref no.: 200206): Follow-up actions are needed to be reviewed for item 200114-R3. Item 200206-R1 & 200121-R1 were rectified/improved by the Contractor.	

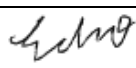

	Name	Signature	Date
Recorded by	Miss Echo Hung		13 February 2020
Checked by	Miss Jennifer Mok		14 February 2020

**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	200219
Date	19 February 2020
Time	14:00 – 15:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
200219-R1	• Stockpiles should be covered by impervious materials to avoid dust generation at Portion A and C.	C1
200219-R2	• The haul road appeared to be dry at Portion C. Water spraying should be provided to prevent excessive dust generation.	C5
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Ecology and Fisheries</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>G. Landscape and Visual</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>I. Others</i></b>	
	Following up on the previous site inspection (ref no.: 200213): Items 200213-R1 & 200114-R3 were rectified/improved by the Contractor.	



	Name	Signature	Date
Recorded by	Miss Echo Hung		19 February 2020
Checked by	Miss Jennifer Mok		20 February 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	200225
Date	25 February 2020
Time	14:20 – 15:40

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
200225-R2	<ul style="list-style-type: none"> <li>Muddy water was accumulated at the eastern side of Portion C. It should be removed to prevent leaking into the river nearby.</li> </ul>	B8
	<b><i>C. Air Quality</i></b>	
200225-R1	<ul style="list-style-type: none"> <li>The haul road appeared to be dry and dirty at Portion A. The Contractor should clean the haul road to prevent excessive dust generation.</li> </ul>	C5
	<b><i>D. Noise</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>E. Waste / Chemical Management</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>F. Ecology and Fisheries</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>G. Landscape and Visual</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>H. Permits /Licences</i></b>	
	<ul style="list-style-type: none"> <li>No environmental deficiency was identified during site inspection.</li> </ul>	
	<b><i>I. Others</i></b>	
	Following up on the previous site inspection (ref no.: 200219): Items 200219-R1 & 200219-R2 were rectified/improved by the Contractor.	



	Name	Signature	Date
Recorded by	Miss Echo Hung		25 February 2020
Checked by	Miss Jennifer Mok		26 February 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	200206
Date	6 February 2020
Time	14:05 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Ecology and Fisheries</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>G. Landscape and Visual</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>I. Others</i></b>	
	Following up on the previous site inspection (ref no.: 200121): Item 200114-R2 was rectified/improved by the Contractor.	



	Name	Signature	Date
Recorded by	Miss Echo Hung		6 February 2020
Checked by	Miss Jennifer Mok		7 February 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	200213
Date	13 February 2020
Time	14:00 – 15:00

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Ecology and Fisheries</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>G. Landscape and Visual</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>I. Others</i></b>	
	Following up on the previous site inspection (ref no.: 200206): No major environmental deficiency was identified during the previous site inspection.	

	Name	Signature	Date
Recorded by	Miss Echo Hung		13 February 2020
Checked by	Miss Jennifer Mok		14 February 2020

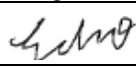



**Agreement No. SPW 07/2019**  
**Shek Wu Hui Effluent Polishing Plant – Main Works Stage 1**  
**Contract DC/2018/07**

**Weekly Site Inspection Record Summary**  
**Inspection Information**

Checklist Reference Number	200219
Date	19 February 2020
Time	14:00 – 15:15

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>F. Ecology and Fisheries</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>G. Landscape and Visual</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>I. Others</i></b>	
	No follow-up items from the previous site inspection (ref no.: 200213).	

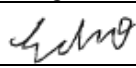

	Name	Signature	Date
Recorded by	Miss Echo Hung		19 February 2020
Checked by	Miss Jennifer Mok		20 February 2020

**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	200225
Date	25 February 2020
Time	14:20 – 15:40

Ref. No.	Non-Compliance	Related Item No.
-	None identified	-
Ref. No.	Remarks/Observations	Related Item No.
	<b><i>B. Water Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>C. Air Quality</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>D. Noise</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>E. Waste / Chemical Management</i></b>	
200225-R1	• Waste stockpile accumulated should be removed at Portion B.	E2iv
	<b><i>F. Ecology and Fisheries</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>G. Landscape and Visual</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>H. Permits /Licences</i></b>	
	• No environmental deficiency was identified during site inspection.	
	<b><i>I. Others</i></b>	
	No follow-up items from the previous site inspection (ref no.: 200219).	

	Name	Signature	Date
Recorded by	Miss Echo Hung		25 February 2020
Checked by	Miss Jennifer Mok		26 February 2020

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**APPENDIX L  
WASTE FLOW TABLE**

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### 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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )
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											
Apr											
May											
Jun											
<b>Sub-total</b>	1.498	0.000	0.000	0.250	1.248	0.000	0.000	0.000	0.000	0.000	0.122
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
<b>Total</b>	1.498	0.000	0.000	0.250	1.248	0.000	0.000	0.000	0.000	0.000	0.122

- Notes:
1. Assume the density of soil fill is 2 ton/m<sup>3</sup>.
  2. Assume the density of rock and broken concrete is 2.5 ton/m<sup>3</sup>.
  3. Assume the density of mixed rock and soil is 1.9 ton/m<sup>3</sup>.
  4. Assume the density of slurry and bentonite is 2.8 ton/m<sup>3</sup>.
  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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )
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 m<sup>3</sup>.
- (4) The density of soil fill is 2.24 ton/m<sup>3</sup>.

**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

<b>Item No.</b>	<b>Month.</b>	<b>Description of Works Process or Activity [see note (a) below]</b>	<b>Justifications for Using Timber in Temporary Construction Works</b>	<b>Est. Quantities of Timber Used (m<sup>3</sup>)</b>	<b>Est. Quantities of Timber reused (m<sup>3</sup>)</b>	<b>Actual Quantities Used (m<sup>3</sup>)</b>	<b>Remarks</b>
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
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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(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											
Apr											
May											
Jun											
<b>Sub-total</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.250
Jul											
Aug											
Sep											
Oct											
Nov											
Dec											
<b>Total</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.250

- Notes:
1. Assume the density of soil fill is 2 ton/m<sup>3</sup>.
  2. Assume the density of rock and broken concrete is 2.5 ton/m<sup>3</sup>.
  3. Assume the density of mixed rock and soil is 1.9 ton/m<sup>3</sup>.
  4. Assume the density of slurry and bentonite is 2.8 ton/m<sup>3</sup>.
  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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
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 m<sup>3</sup>. (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 <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000m <sup>3</sup> )
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											
Apr											
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

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**APPENDIX M**  
**EVENT AND ACTION PLANS**

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

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

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

## Appendix M - Event Action Plans

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



# Appendix M - Event Action Plans

**Table M-3 Event/Action Plan for Ecology**

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

## Appendix M - Event Action Plans

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

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

## Appendix M - Event Action Plans

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

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

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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
<b>Air Quality Impact</b>							
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;						N/A
	Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed;						N/A
	Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system; and						N/A
	Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shortcrete or other suitable surface stabiliser within six months after the last construction activity on the construction site or part of the construction site where the exposed earth lies						^

EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measures & Main Concern to Address	Who to implement the measures?	Location of the measure	When to implement the measures?	What requirements or standards for the measure to achieve	Status
<b>Noise Impact</b>							
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 <sup>2</sup> 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
<b>Ecological Impact</b>							
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;						N/A
	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
<b>Water Quality Impact</b>							
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
<b>Waste Management</b>							
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.						N/A
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
<b>Landscape and Visual</b>							
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 &amp; 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	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	<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>Rhodymyrtus tomentosa</i> , <i>Rhaphiolepis indica</i> , and <i>Rhododendron simsii</i> are suggested.						N/A
S7.3.2.1	MM9 - Vertical Greening Planting of climbers to grow up vertical surfaces were appropriate.	Soften hard surfaces and facilities	Designer / Contractor	On appropriate structures	Prior to construction, construction phase and operation phase	ETWB TCW No.11/2004 – Cyber Manual for Greening	N/A
S7.3.2.1	MM10 - Green Roof Roof greening where appropriate should be established on proposed buildings as per the guidelines stated. These guidelines provide further details including information regarding structural loading, design, maintenance, etc. considerations as well as providing information on what types of plants might be suitable.	Reduce exposure to untreated concrete surfaces and particularly mitigate visual impact to visually sensitive receivers (VSRs) at high levels. Provide greening.	Designer / Contractor	On appropriate buildings	Prior to construction, construction phase and operation phase	CIBSE HK Branch, Technical Guidelines for Green Roof Systems in Hong Kong (2011); ArchSD/Urbis Study on Green Roof Application in HK (2007)	N/A



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

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

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

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**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:** February 2020

<b>Log Ref.</b>	<b>Location</b>	<b>Received Date</b>	<b>Details of Complaint/warning/summon and prosecution</b>	<b>Investigation/Mitigation Action</b>	<b>Status</b>
N/A	N/A	N/A	N/A	N/A	N/A

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

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**APPENDIX P**  
**SUMMARY OF EXCEEDANCE**

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

**Appendix P – Summary of Exceedance**

**Reporting Month:** February 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)**

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**APPENDIX Q  
TENTATIVE CONSTRUCTION  
PROGRAMME**

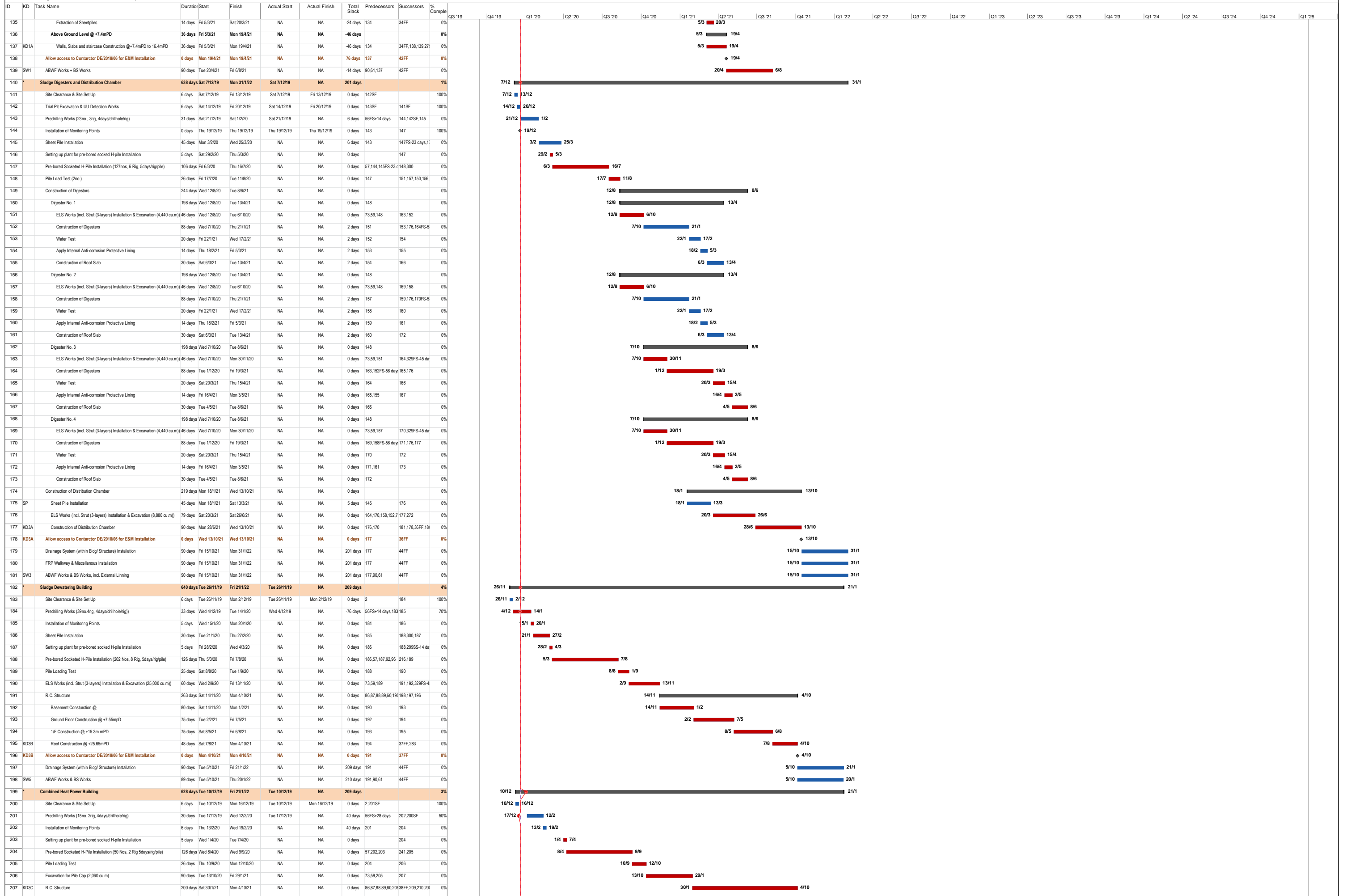
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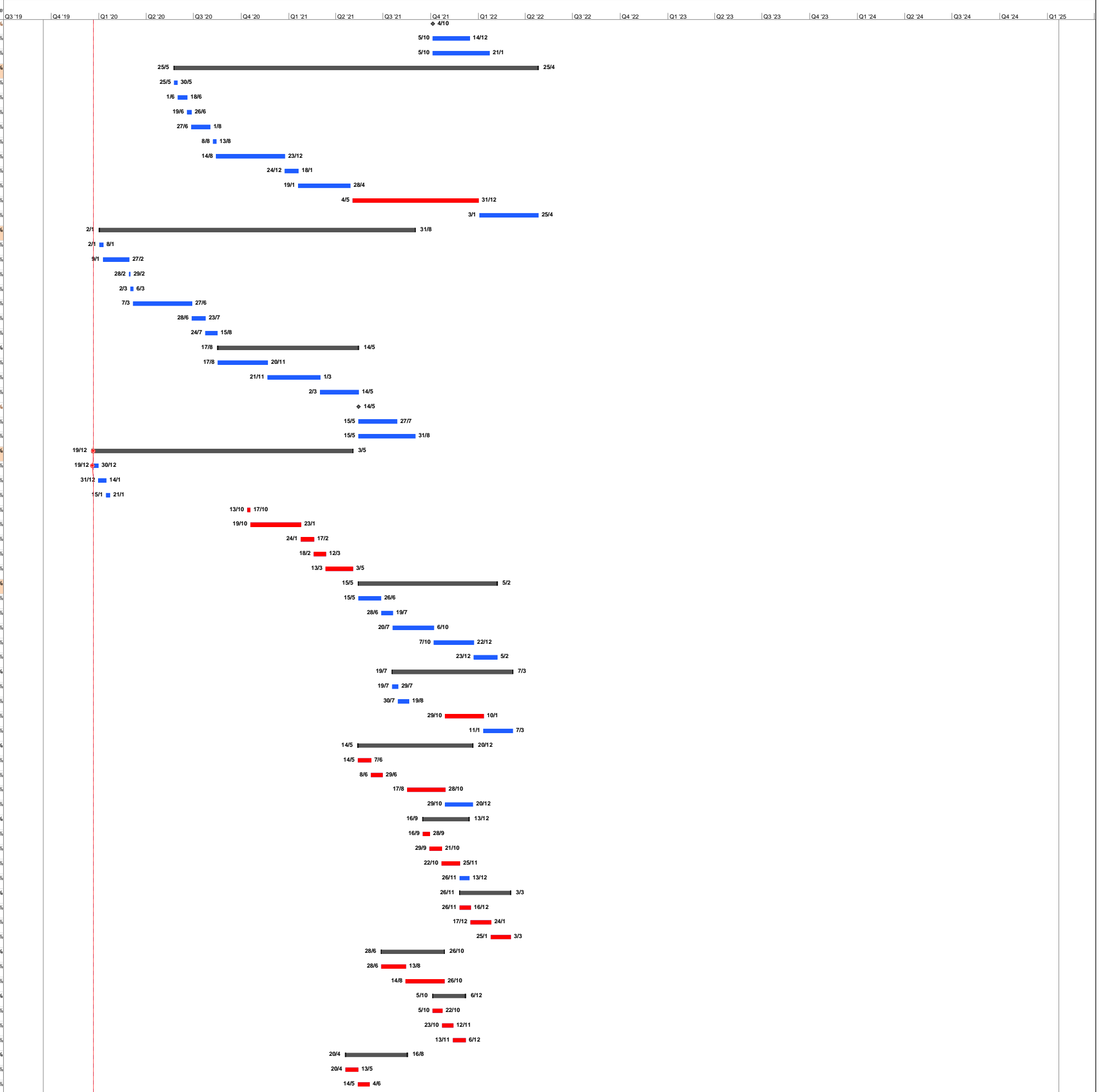
ID	KD	Task Name	Duration/Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Q3 '19	Q4 '19	Q1 '20	Q2 '20	Q3 '20	Q4 '20	Q1 '21	Q2 '21	Q3 '21	Q4 '21	Q1 '22	Q2 '22	Q3 '22	Q4 '22	Q1 '23	Q2 '23	Q3 '23	Q4 '23	Q1 '24	Q2 '24	Q3 '24	Q4 '24	Q1 '25				
1		<b>Contract Dates</b>	1956 day	Mon 16/9/19	Wed 22/1/25	Mon 16/9/19	Wed 22/1/25	0 days			100%																										
2		Starting Date	0 days	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	4,SFS+180 days		100%																										
3		<b>Access Date (cal. day)</b>	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days			100%																										
4		Portion A-1	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
5		Portion A-2	1 day	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	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
7		Portion C-1B	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
8		Portion C-2A	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
9		Portion C-2B	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
10		Portion C-2C	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
11		Portion C-2D	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
12		Portion C-3	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
13		Portion C-4	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
14		Portion C-5	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2		100%																										
15		Portion C-6	1 day	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	Mon 16/9/19	0 days	2FS+180 days	308,300	100%																										
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		<b>Key Date (cal. day)</b>	840 days	Tue 17/9/19	Mon 3/1/22	Tue 17/9/19	Mon 3/1/22	0 days			100%																										
19		KD1A (525 days after starting date)	525 days	Tue 17/9/19	Mon 22/2/21	Tue 17/9/19	Mon 22/2/21	0 days	34FF		100%																										
20		KD2A (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	Tue 17/9/19	Wed 7/7/21	0 days	2,35FF		100%																										
21		KD3A (760 days after starting date)	760 days	Tue 17/9/19	Fri 15/10/21	Tue 17/9/19	Fri 15/10/21	0 days	2,36FF		100%																										
22		KD3B (750 days after starting date)	750 days	Tue 17/9/19	Tue 5/10/21	Tue 17/9/19	Tue 5/10/21	0 days	2,37FF		100%																										
23		KD3C (750 days after starting date)	750 days	Tue 17/9/19	Tue 5/10/21	Tue 17/9/19	Tue 5/10/21	0 days	2,38FF		100%																										
24		KD3D (660 days after starting date)	660 days	Tue 17/9/19	Wed 7/7/21	Tue 17/9/19	Wed 7/7/21	0 days	2,39FF		100%																										
25		KD3E (840 days after starting date)	840 days	Tue 17/9/19	Mon 3/1/22	Tue 17/9/19	Mon 3/1/22	0 days	2,40FF		100%																										
26		<b>Completion Date (cal. day)</b>	1955 day	Tue 17/9/19	Wed 22/1/25	Tue 17/9/19	Wed 22/1/25	0 days			100%																										
27		Section 1 of Works (675 days after starting date)	675 days	Tue 17/9/19	Thu 22/7/21	Tue 17/9/19	Thu 22/7/21	0 days	2,42FF		100%																										
28		Section 2 of Works (1,295 days after starting date)	1295 days	Tue 17/9/19	Mon 3/4/23	Tue 17/9/19	Mon 3/4/23	0 days	2,43FF		100%																										
29		Section 3 of Works (1,120 days after starting date)	1120 days	Tue 17/9/19	Mon 10/10/22	Tue 17/9/19	Mon 10/10/22	0 days	2,44FF		100%																										
30		Section 4 of Works (900 days after starting date)	900 days	Tue 17/9/19	Fri 4/3/22	Tue 17/9/19	Fri 4/3/22	0 days	2,45FF		100%																										
31		Section 5 of Works (1,590 days after starting date)	1590 days	Tue 17/9/19	Tue 23/1/24	Tue 17/9/19	Tue 23/1/24	0 days	2,46FF	32	100%																										
32		Defect Liability Period, & Soft Landscape Establishment Works	366 days	Tue 23/1/24	Wed 22/1/25	Tue 23/1/24	Wed 22/1/25	0 days	31,47FF		100%																										
33		<b>Planned Completion - Key Date (cal. day)</b>	315 days	Mon 19/4/21	Mon 28/2/22	NA	NA	-57 days			0%																										
34	KD1A	KD1A (525 days after starting date)	0 days	Mon 19/4/21	Mon 19/4/21	NA	NA	-57 days	137FF,135FF	19FF	0%																										
35	KD2A	KD2A (660 days after starting date)	0 days	Sat 11/9/21	Sat 11/9/21	NA	NA	-67 days	363FF	20FF	0%																										
36	KD3A	KD3A (760 days after starting date)	0 days	Wed 13/10/21	Wed 13/10/21	NA	NA	0 days	177FF,178FF	21FF	0%																										
37	KD3B	KD3B (750 days after starting date)	0 days	Mon 4/10/21	Mon 4/10/21	NA	NA	0 days	195FF,196FF	22FF	0%																										
38	KD3C	KD3C (750 days after starting date)	0 days	Mon 4/10/21	Mon 4/10/21	NA	NA	0 days	207FF,208FF	23FF	0%																										
39	KD3D	KD3D (660 days after starting date)	0 days	Fri 14/5/21	Fri 14/5/21	NA	NA	53 days	233FF,234FF	24FF	0%																										
40	KD3E	KD3E (840 days after starting date)	0 days	Mon 28/2/22	Mon 28/2/22	NA	NA	-57 days	250FF,245FF,281F,255F		0%																										
41		<b>Planned Completion - Section of the Works (cal. day)</b>	1263 day	Fri 6/8/21	Mon 28/1/25	NA	NA	-16 days			0%																										
42	SW1	Section 1 of Works (675 days after starting date)	0 days	Fri 6/8/21	Fri 6/8/21	NA	NA	-16 days	139FF,306FF,138F,277F		0%																										
43	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	368FF,365FF,367F,285F		0%																										
44	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	209FF,210FF,235F,295F		0%																										
45	SW4	Section 4 of Works (900 days after starting date)	0 days	Thu 3/3/22	Thu 3/3/22	NA	NA	0 days	266FF,270FF,301F,305F		0%																										
46	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	338FF,336FF,337F,311																												

ID	KD	Task Name	Duration/Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Q3 '19	Q4 '19	Q1 '20	Q2 '20	Q3 '20	Q4 '20	Q1 '21	Q2 '21	Q3 '21	Q4 '21	Q1 '22	Q2 '22	Q3 '22	Q4 '22	Q1 '23	Q2 '23	Q3 '23	Q4 '23	Q1 '24	Q2 '24	Q3 '24	Q4 '24	Q1 '25		
70		Approval for Lighting Removal at Portion C-1A of the Site from Hyd	68 days	Mon 16/9/19	Fri 22/11/19	Mon 16/9/19	Fri 22/11/19	0 days	2	117	100%	16/9	22/11																						
71		Prepare, submit & approve for commencement of Works near MTRCL protection zone at Sun Wan Road from MTRCL	43 days	Mon 16/9/19	Mon 28/10/19	Mon 16/9/19	Mon 28/10/19	0 days	2	350,347	100%	16/9	28/10																						
72		Prepare, submit & approve the layout plan of the Temporary Site accommodation (PPM no.001) (On hold)	60 days	Fri 25/10/19	Mon 23/12/19	Fri 25/10/19	NA	0 days	2	108	50%	25/10	23/12																						
73		Prepare, submit & approve the ELS design for deep excavation	47 days	Thu 7/11/19	Mon 23/12/19	Thu 7/11/19	Mon 23/12/19	0 days	58	124,151,157,163	100%	7/11	23/12																						
74		Prepare, submit & approve the Method Statement for Drainage Diversion Works	27 days	Mon 16/9/19	Sat 12/10/19	Mon 16/9/19	Sat 12/10/19	0 days	2	305,75	100%	16/9	12/10																						
75		PM approve the Method Statement for Drainage Diversion Works	14 days	Sun 20/10/19	Sat 2/11/19	Sun 20/10/19	NA	0 days	74		80%	20/10	2/11																						
76		Prepare, submit & approve for the FSD submissions for CLP 132kV Substation	60 days	Mon 6/6/22	Thu 4/8/22	NA	NA	20 days		368	0%																								
77		Environmental Aspect Submissions	113 days	Mon 16/9/19	Mon 6/1/20	Mon 16/9/19	Mon 6/1/20	0 days	2		100%	16/9	6/1																						
78		Prepare, submit & approve Site Management Plan for Trip Tricket System	58 days	Mon 16/9/19	Tue 12/11/19	Mon 16/9/19	Tue 12/11/19	0 days	2		100%	16/9	12/11																						
79		Prepare, submit & approve Waste Management Plan	57 days	Mon 16/9/19	Mon 11/11/19	Mon 16/9/19	Mon 11/11/19	0 days	2		100%	16/9	11/11																						
80		Prepare, submit & approve Environmental Management Plan	50 days	Mon 16/9/19	Mon 4/11/19	Mon 16/9/19	Mon 4/11/19	0 days	2		100%	16/9	4/11																						
81		Notification to EPD for Works Commencement	55.44 day	Wed 9/10/19	Mon 6/1/20	Wed 9/10/19	Mon 6/1/20	0 days		30FS-1 day,326	100%	9/10	6/1																						
82		<b>Procurement</b>	<b>548 days</b>	<b>Mon 16/9/19</b>	<b>Tue 16/3/21</b>	<b>Mon 16/9/19</b>	<b>NA</b>	<b>14 days</b>			<b>27%</b>	16/9																							
83		Prepare and submit the Procurement Procedure	34 days	Mon 16/9/19	Sat 19/10/19	Mon 16/9/19	Sat 19/10/19	0 days		94	100%	16/9	19/10																						
84		PM Review & Accept Procurement Procedure	0 days	Sat 19/10/19	Sat 19/10/19	Sat 19/10/19	Sat 19/10/19	0 days		83, 85, 86, 87	100%		19/10																						
85		Prepare, submit and approve the pipe works material	45 days	Sun 20/10/19	Tue 3/12/19	Sun 20/10/19	NA	-5 days		302	80%	20/10	3/12																						
86		Prepare, submit and approve the water proofing material	30 days	Mon 15/6/20	Tue 14/7/20	NA	NA	24 days		125, 191, 207, 220	0%																								
87		Prepare, submit and approve the concrete mix	60 days	Sat 1/2/20	Tue 31/3/20	NA	NA	69 days		125, 191, 207, 220	0%																								
88		Prepare, submit and approve the rebar material	30 days	Mon 11/5/20	Tue 9/6/20	NA	NA	29 days		89, 125, 191, 207, 2	0%																								
89		Prepare, submit and approve the metal works material	30 days	Wed 10/6/20	Thu 9/7/20	NA	NA	29 days		90, 125, 191, 207, 2	0%																								
90		Prepare, submit and approve the ABWF works material	30 days	Mon 15/2/21	Tue 16/3/21	NA	NA	14 days		138, 181, 198, 210	0%																								
91		<b>Preparation of Cost Saving Design</b>	<b>166.8 day</b>	<b>Wed 18/9/19</b>	<b>Mon 2/3/20</b>	<b>Wed 18/9/19</b>	<b>NA</b>	<b>2.2 days</b>			<b>66%</b>	18/9																							
92		Prepare, submit and approve CSD package no.1	86 days	Wed 18/9/19	Thu 12/12/19	Wed 18/9/19	NA	83 days		147, 188	84%	18/9	12/12																						
93		Prepare and submit CSD proposal	66 days	Wed 18/9/19	Fri 22/11/19	Wed 18/9/19	Fri 22/11/19	0 days		94	100%	18/9	22/11																						
94		PM review and approval of CSD	7 days	Sat 23/11/19	Fri 29/11/19	Sat 23/11/19	Fri 29/11/19	0 days		93	100%	23/11	29/11																						
95		Obtain AP	0 days	Fri 29/11/19	Fri 29/11/19	Fri 29/11/19	0 days		94	96	100%		29/11																						
96		Obtain DDA	14 days	Fri 29/11/19	Thu 12/12/19	Fri 29/11/19	NA	83 days		147, 188	0%	29/11	12/12																						
97		<b>Prepare, submit and approve CSD package no.2</b>	<b>166.8 day</b>	<b>Wed 18/9/19</b>	<b>Mon 2/3/20</b>	<b>Wed 18/9/19</b>	<b>NA</b>	<b>-5.8 days</b>		<b>122,217</b>	<b>56%</b>	18/9																							
98		Prepare and submit CSD proposal	95 days	Wed 18/9/19	Mon 23/12/19	Wed 18/9/19	NA	-5.8 days		99	98%	18/9	23/12																						
99		PM review and approval of CSD	35 days	Mon 23/12/19	Mon 27/1/20	NA	NA	-5.8 days		100	0%	23/12	27/1																						
100		Obtain AP	21 days	Mon 27/1/20	Mon 17/2/20	NA	NA	-5.8 days		101	0%	27/1	17/2																						
101		Obtain DDA	14 days	Mon 17/2/20	Mon 2/3/20	NA	NA	-5.8 days		122,217	0%	17/2	2/3																						
102		<b>Site Preliminary Works</b>	<b>166 days</b>	<b>Mon 16/9/19</b>	<b>Fri 28/2/20</b>	<b>Mon 16/9/19</b>	<b>NA</b>	<b>0 days</b>			<b>68%</b>	16/9																							
103		Initial Tree survey and report submission	14 days	Thu 26/9/19	Wed 9/10/19	Thu 26/9/19	Wed 9/10/19	0 days		105	100%	26/9	9/10																						
104		Prepare and submit and approve the Method Statement of Tree felling & Pruning works	72 days	Mon 7/10/19	Tue 17/12/19	Mon 7/10/19	Tue 17/12/19	0 days		105	100%	7/10	17/12																						
105		Mobilization for Hoarding	0 days	Thu 21/11/19	Tue 26/11/19	Thu 21/11/19	Tue 26/11/19	0 days		2,113,103,104	100%		26/11																						
106		Hoarding Erection at Portion C	40 days	Wed 27/11/19	Wed 15/1/20	Wed 27/11/19	NA	0 days		105	70%	27/11	15/1																						
107		Utility applications and Connection	89 days	Mon 16/9/19	Thu 2/1/20	Mon 16/9/19	NA	46 days		108FF	75%	16/9	2/1																						
108		Construction of Site Accommodation in Works Area (On hold)	52 days	Tue 24/12/19	Fri 28/2/20	NA	NA	0 days		72,107FF,55	0%																								
109		<b>Construction Works of Portion C of the Site</b>	<b>1954 day</b>	<b>Mon 16/9/19</b>	<b>Mon 20/1/23</b>	<b>Mon 16/9/19</b>	<b>NA</b>	<b>0 days</b>			<b>1%</b>	16/9																							
110		<b>UV System No. 1 &amp; Effluent Pumping Station No. 1</b>	<b>561 days</b>	<b>Mon 16/9/19</b>	<b>Fri 6/8/21</b>	<b>Mon 16/9/19</b>	<b>NA</b>	<b>-14 days</b>			<b>11%</b>	16/9																							
111		<b>Preliminary Works</b>	<b>80 days</b>	<b>Mon 16/9/19</b>	<b>Thu 19/12/19</b>	<b>Mon 16/9/19</b>	<b>NA</b>	<b>0 days</b>			<b>75%</b>	16/9																							
112		Site Clearance & Site Set Up	23 days	Mon 16/9/19	Mon 14/10/19	Mon 16/9/19	Mon 14/10/19	0 days		113,114,115	100%	16/9	14/10																						
113		Tree Felling Works	5 days	Tue 15/10/19	Sun 20/10/19	Tue 15/10/19	Sun 20/10/19	0 days		105	100%	15/10	20/10																						
114		Trial Pit Excavation & UU Detection Works	6 days	Tue 15/10/19	Mon 21/10/19	Tue 15/10/19	Mon 21/10/19	0 days		112	100%	15/10	21/10																						

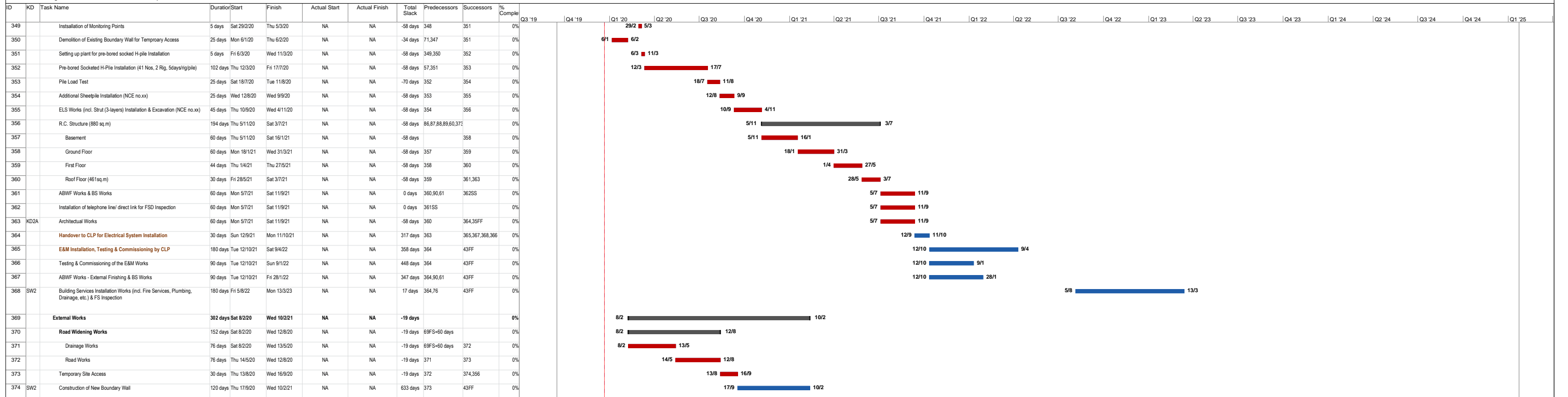




ID	KD	Task Name	Duration/Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete
208	KD3C	Allow access to Contractor DE/2018/06 for E&M Installation	0 days Mon 4/10/21	Mon 4/10/21	NA	NA	0 days	207	38FF	0%
209		Drainage System (within Bldg/ Structure) Installation	60 days Tue 5/10/21	Tue 14/12/21	NA	NA	239 days	207	44FF	0%
210	SW3	ABWF Works & BS Works	90 days Tue 5/10/21	Fri 21/1/22	NA	NA	209 days	207,90,61	44FF	0%
211		<b>Sewage Pumping Station</b>	<b>570 days Mon 25/5/20</b>	<b>Mon 25/4/22</b>	<b>NA</b>	<b>NA</b>	<b>11 days</b>			<b>0%</b>
212		Site Clearance & Site Set Up	6 days Mon 25/5/20	Sat 30/5/20	NA	NA	11 days	2	213	0%
213		Predrilling Works (4no.1rig, 4days/drillhole/ig)	16 days Mon 1/6/20	Thu 18/6/20	NA	NA	11 days	56FS+14 days,212,214		0%
214		Installation of Monitoring Points	6 days Fri 19/6/20	Fri 26/6/20	NA	NA	11 days	213	215	0%
215		Sheet Pile Installation	30 days Sat 27/6/20	Sat 1/8/20	NA	NA	11 days	214	217	0%
216		Setting up plant for pre-bored socket H-pile Installation	5 days Sat 8/8/20	Thu 13/8/20	NA	NA	1 day	188	217	0%
217		Pre-bored Socketed H-Pile Installation (22 Nos, 1 Rig, 5days/ig/pile)	110 days Fri 14/8/20	Wed 23/12/20	NA	NA	1 day	57,215,216,97,101,216		0%
218		Pile Loading Test	26 days Thu 24/12/20	Mon 18/1/21	NA	NA	3 days	217	219	0%
219		ELS Works (incl. Strut (3-layers) Installation & Excavation (1,440 cu.m))	80 days Tue 19/1/21	Wed 28/4/21	NA	NA	3 days	73,59,218	220	0%
220	KD3E	R.C. Structure	200 days Tue 4/5/21	Fri 31/12/21	NA	NA	0 days	86,87,88,89,60,244,40FF,221		0%
221	SW3	ABWF Works & BS Works	90 days Mon 3/1/22	Mon 25/4/22	NA	NA	136 days	90,61,220	44FF	0%
222		<b>Workshop No. 2</b>	<b>494 days Thu 21/20</b>	<b>Tue 31/8/21</b>	<b>NA</b>	<b>NA</b>	<b>5 days</b>			<b>0%</b>
223		Site Clearance & Site Set Up	6 days Thu 21/20	Wed 9/1/20	NA	NA	5 days	2	224	0%
224		Predrilling Works (10no.1rig, 4days/drillhole/ig)	40 days Thu 9/1/20	Thu 27/2/20	NA	NA	5 days	56,223	225	0%
225		Installation of Monitoring Points	2 days Fri 28/2/20	Sat 29/2/20	NA	NA	5 days	224	227,226	0%
226		Setting up plant for pre-bored socket H-pile Installation	5 days Mon 2/3/20	Fri 6/3/20	NA	NA	5 days	225	227	0%
227		Pre-bored Socketed H-Pile Installation (36 Nos, 2 Rig, 5days/ig/pile)	90 days Sat 7/3/20	Sat 27/6/20	NA	NA	5 days	57,225,226	228	0%
228		Pile Loading Test	26 days Sun 28/6/20	Thu 23/7/20	NA	NA	7 days	227	229	0%
229		Excavation for Pile Cap (1,800 cu.m)	20 days Fri 24/7/20	Sat 15/8/20	NA	NA	6 days	73,59,228	231,329FS-45 da	0%
230		<b>R.C. Structure</b>	<b>220 days Mon 17/8/20</b>	<b>Fri 14/5/21</b>	<b>NA</b>	<b>NA</b>	<b>6 days</b>			<b>0%</b>
231		Ground Floor Construction @ +6.30mPD	80 days Mon 17/8/20	Fri 20/11/20	NA	NA	6 days	229	232	0%
232		First Floor Construction @ +13.50mPD	80 days Sat 21/11/20	Mon 1/3/21	NA	NA	6 days	231	233	0%
233	KD3D	Roof Construction @+19.00mPD	60 days Tue 2/3/21	Fri 14/5/21	NA	NA	6 days	232	235,236,39FF,23	0%
234	KD3D	Allow access to Contractor DE/2018/06 for E&M Installation	0 days Fri 14/5/21	Fri 14/5/21	NA	NA	42 days	233	39FF	0%
235		Drainage System (within Bldg/ Structure) Installation	60 days Sat 15/5/21	Tue 27/7/21	NA	NA	356 days	233	44FF	0%
236	SW3	ABWF Works & BS Works	90 days Sat 15/5/21	Tue 31/8/21	NA	NA	326 days	90,61,233	44FF	0%
237		<b>Thermal Hydrolysis Pretreatment</b>	<b>403 days Thu 19/12/19</b>	<b>Mon 3/5/21</b>	<b>Thu 19/12/19</b>	<b>NA</b>	<b>0 days</b>			<b>0%</b>
238		Site Clearance & Site Set Up	6 days Thu 19/12/19	Mon 30/12/19	Thu 19/12/19	NA	219,12 days 2	239		2%
239		Predrilling Works (3no.1rig, 4days/drillhole/ig)	12 days Tue 31/12/19	Tue 14/1/20	NA	NA	219 days	56FS+24 days,238,240		0%
240		Installation of Monitoring Points	6 days Wed 15/1/20	Tue 21/1/20	NA	NA	219 days	239	242	0%
241		Setting up plant for pre-bored socket H-pile Installation	5 days Tue 13/10/20	Sat 17/10/20	NA	NA	0 days	204	242	0%
242		Pre-bored Socketed H-Pile Installation (15 Nos, 1 Rig, 5days/ig/pile)	80 days Mon 19/10/20	Sat 23/1/21	NA	NA	0 days	57,240,241	243	0%
243		Pile Loading Test	25 days Sun 24/1/21	Wed 17/2/21	NA	NA	0 days	242	244	0%
244		Excavation for Pile Cap (160 cu.m)	20 days Thu 18/2/21	Fri 12/3/21	NA	NA	0 days	73,59,243	245	0%
245	KD3E	R.C. Plinth	40 days Sat 13/3/21	Mon 3/5/21	NA	NA	0 days	244	40FF,220	0%
246		<b>Ferrous Chloride Dosing Facilities</b>	<b>217 days Sat 15/5/21</b>	<b>Sat 5/2/22</b>	<b>NA</b>	<b>NA</b>	<b>6 days</b>			<b>0%</b>
247		Excavation for Raft Footing (105 cu.m)	35 days Sat 15/5/21	Sat 26/6/21	NA	NA	6 days	2,233	248	0%
248		Plate Load Test	18 days Mon 28/6/21	Mon 19/7/21	NA	NA	6 days	247	249	0%
249		R.C. Structure	66 days Tue 20/7/21	Wed 9/10/21	NA	NA	6 days	248,60	250	0%
250	KD3E	Steel Roof Structure (On-site Fabrication)	65 days Thu 7/10/21	Wed 22/12/21	NA	NA	6 days	249	40FF,251	0%
251	SW3	ABWF Works & BS Works	45 days Thu 23/12/21	Sat 5/2/22	NA	NA	246 days	250,90,61	44FF	0%
252		<b>Fire Hydrant and Booster Pump Room</b>	<b>190 days Mon 19/7/21</b>	<b>Mon 7/3/22</b>	<b>NA</b>	<b>NA</b>	<b>11 days</b>			<b>0%</b>
253		Excavation for Raft Footing (160 cu.m)	10 days Mon 19/7/21	Thu 29/7/21	NA	NA	11 days	2,258	254,291	0%
254		Plate Load Test	18 days Fri 30/7/21	Thu 19/8/21	NA	NA	11 days	253	255	0%
255	KD3E	R.C. Structure	60 days Fri 29/10/21	Mon 10/1/22	NA	NA	-6 days	254,60,260	256,40FF,293FS-	0%
256	SW3	ABWF Works & BS Works	45 days Tue 11/1/22	Mon 7/3/22	NA	NA	174 days	255,90,61	44FF	0%
257		<b>Transformer and Switchroom</b>	<b>183 days Fri 14/5/21</b>	<b>Mon 20/12/21</b>	<b>NA</b>	<b>NA</b>	<b>-6 days</b>			<b>0%</b>
258		Excavation for Raft Footing (310 cu.m)	20 days Fri 14/5/21	Mon 7/6/21	NA	NA	-6 days	2,279	259,253	0%
259		Plate Load Test	18 days Tue 8/6/21	Tue 29/6/21	NA	NA	-6 days	258	260	0%
260	KD3E	R.C. Structure	60 days Tue 17/8/21	Thu 28/10/21	NA	NA	-6 days	259,60,281	261,40FF,255	0%
261	SW3	ABWF Works & BS Works	45 days Fri 29/10/21	Mon 20/12/21	NA	NA	234 days	260,90,61	44FF	0%
262		<b>Water Meter Cabinet</b>	<b>73 days Thu 16/9/21</b>	<b>Mon 13/1/22</b>	<b>NA</b>	<b>NA</b>	<b>0 days</b>			<b>0%</b>
263		Excavation for Raft Footing (6 cu.m)	10 days Thu 16/9/21	Tue 28/9/21	NA	NA	0 days	2,301	264	0%
264		Plate Load Test	18 days Wed 29/9/21	Thu 21/10/21	NA	NA	0 days	263	265	0%
265		R.C. Structure	30 days Fri 22/10/21	Thu 25/11/21	NA	NA	0 days	264,60	266,268	0%
266	SW4	ABWF Works & BS Works	15 days Fri 26/11/21	Mon 13/1/22	NA	NA	63 days	265,90,61	45FF	0%
267		<b>Guard House</b>	<b>78 days Fri 26/11/21</b>	<b>Thu 3/3/22</b>	<b>NA</b>	<b>NA</b>	<b>0 days</b>			<b>0%</b>
268		Excavation to Formation	21 days Fri 26/11/21	Thu 16/12/21	NA	NA	0 days	2,265	269	0%
269		R.C. Structure	30 days Fri 17/12/21	Mon 24/1/22	NA	NA	0 days	60,268	270	0%
270	SW4	ABWF Works & BS Works	30 days Tue 25/1/22	Thu 3/3/22	NA	NA	0 days	269,90,61	45FF	0%
271		<b>Coolers Pumping Station</b>	<b>100 days Mon 28/6/21</b>	<b>Tue 26/10/21</b>	<b>NA</b>	<b>NA</b>	<b>0 days</b>			<b>0%</b>
272		Excavation for Raft Footing (165 cu.m)	40 days Mon 28/6/21	Fri 13/8/21	NA	NA	0 days	2,176	273,287	0%
273	SW4	R.C. Structure	60 days Sat 14/8/21	Tue 26/10/21	NA	NA	0 days	272,60	40FF,289	0%
274		<b>Waste Gas Burner</b>	<b>53 days Tue 5/10/21</b>	<b>Mon 6/12/21</b>	<b>NA</b>	<b>NA</b>	<b>0 days</b>			<b>0%</b>
275		Excavation for Raft Footing (75cu.m)	15 days Tue 5/10/21	Fri 22/10/21	NA	NA	0 days	2,207	276,295	0%
276		Plate Load Test	18 days Sat 23/10/21	Fri 12/11/21	NA	NA	0 days	275	277	0%
277	KD3E	R.C. Plinth	20 days Sat 13/11/21	Mon 6/12/21	NA	NA	0 days	276,60	40FF,297	0%
278		<b>Plant Services Water System</b>	<b>98 days Tue 20/4/21</b>	<b>Mon 16/8/21</b>	<b>NA</b>	<b>NA</b>	<b>-46 days</b>			<b>0%</b>
279		Excavation for Raft Footing (800 cu.m)	20 days Tue 20/4/21	Thu 13/5/21	NA	NA	-6 days	2,137	280,258	0%
280		Plate Load Test	18 days Fri 14/5/21	Fri 4/6/21	NA	NA	-6 days	279	281	0%



ID	KD	Task Name	Duration/Start	Finish	Actual Start	Actual Finish	Total Slack	Predecessors	Successors	% Complete	Q3 '19	Q4 '19	Q1 '20	Q2 '20	Q3 '20	Q4 '20	Q1 '21	Q2 '21	Q3 '21	Q4 '21	Q1 '22	Q2 '22	Q3 '22	Q4 '22	Q1 '23	Q2 '23	Q3 '23	Q4 '23	Q1 '24	Q2 '24	Q3 '24	Q4 '24	Q1 '25
281	KD3E	Basement Construction @-1.20mPD	60 days	Sat 5/6/21	Mon 16/8/21	NA	NA	-46 days	280.60	40FF,260	0%								5/6	16/8													
282		Deodorization System No. 11	73 days	Tue 5/10/21	Fri 31/12/21	NA	NA	0 days			0%										5/10												
283		Excavation for Raft Footing (1,280 cu.m)	20 days	Tue 5/10/21	Thu 28/10/21	NA	NA	0 days	2,195	284	0%										5/10												
284		Plate Load Test	18 days	Fri 29/10/21	Thu 18/11/21	NA	NA	0 days	283	285	0%										29/10												
285	KD3E	R.C. Plinth	35 days	Fri 19/11/21	Fri 31/12/21	NA	NA	0 days	284.60	40FF	0%										19/11												
286		Biogas Holder	102 days	Mon 30/8/21	Fri 31/12/21	NA	NA	0 days			0%										30/8												
287		Excavation for Raft Footing (1,120 cu.m)	20 days	Mon 30/8/21	Tue 21/9/21	NA	NA	9 days	2,272	288	0%										30/8												
288		Plate Load Test	18 days	Thu 23/9/21	Fri 15/10/21	NA	NA	9 days	287	289	0%										23/9												
289	KD3E	R.C. Plinth	55 days	Wed 27/10/21	Fri 31/12/21	NA	NA	0 days	288.60,273	40FF	0%										27/10												
290		H2S Removal System	125 days	Mon 27/9/21	Mon 28/2/22	NA	NA	-46 days			0%										27/9												
291		Excavation for Raft Footing (396 cu.m)	10 days	Mon 27/9/21	Fri 8/10/21	NA	NA	9 days	2,253	292	0%										27/9												
292		Plate Load Test	20 days	Sat 9/10/21	Tue 21/11/21	NA	NA	9 days	291	293	0%										9/10												
293	KD3E	R.C. Plinth	40 days	Mon 10/1/22	Mon 28/2/22	NA	NA	-46 days	292.60,255FS-1	40FF	0%																						
294		Deodorization System No. 12	58 days	Sat 23/10/21	Fri 31/12/21	NA	NA	0 days			0%										23/10												
295		Excavation to Formation	20 days	Sat 23/10/21	Mon 15/11/21	NA	NA	0 days	2,275	296	0%										23/10												
296		Plate Load Test	18 days	Tue 16/11/21	Mon 6/12/21	NA	NA	0 days	295	297	0%										16/11												
297	KD3E	R.C. Plinth	20 days	Tue 7/12/21	Fri 31/12/21	NA	NA	0 days	296.60,277	40FF	0%																						
298		Underpass	473 days	Fri 14/2/20	Wed 15/8/21	NA	NA	0 days			0%										14/2												
299		Temporary Storage for H pile works and access for DSD	155 days	Fri 14/2/20	Fri 17/7/20	NA	NA	0 days	187SS-14 days	300	0%										14/2												
300		Sheet Pile Installation - ELS Works (incl. Strut (2-layers) Installation & Excavation (300 cu.m))	68 days	Sat 18/7/20	Wed 7/10/20	NA	NA	0 days	15,186,147,299	301	0%																						
301	SW4	R.C. Structure	280 days	Thu 8/10/20	Wed 15/9/21	NA	NA	0 days	300.60	45FF,263	0%																						
302		Pipe Works and Utility Installation	1842 day	Mon 6/1/20	Mon 20/1/25	NA	NA	-58 days	85		0%										6/1												
303		Pipe Works At Chuk Wan Street	495 days	Mon 6/1/20	Fri 14/5/21	NA	NA	-58 days			0%										6/1												
304		Drainage Diversion (Existing Drainage Culvert)	401 days	Mon 6/1/20	Fri 14/5/21	NA	NA	-46 days			0%										6/1												
305	KD1A	Stage 1 - Drainage Diversion of Drainage b/w Reconstructed Storm Water Manhole SMH1003177A and Reconstructed Storm Water Manhole MHD33	60 days	Mon 6/1/20	Wed 18/3/20	NA	NA	-23 days	67,54,74,117FS-5 days,81FS-1 day,116	118,326SS,120	0%										6/1												
306	KD1A	Stage 2 - Drainage Diversion of Drainage b/w MHD26 and SMH1003177A, to Abandon of Existing Drainage Culvert (1 Cell, 1000mm x 1150mm)	120 days	Tue 15/12/20	Fri 14/5/21	NA	NA	55 days	322	42FF	0%																						
307	KD1A	Trenchless Work for Pipe Installation	162 days	Wed 3/6/20	Mon 14/1/20	NA	NA	55 days			0%										3/6												
308		Construction of Temporary Jacking Pit	61 days	Wed 3/6/20	Fri 14/8/20	NA	NA	55 days	15,53		0%										3/6												
309		Trial Pit Excavation & UU Detection Works	7 days	Wed 3/6/20	Wed 10/6/20	NA	NA	55 days	2FS+210 days	310,313	0%										3/6												
310		Pit Construction (11m x 9m)	40 days	Thu 11/6/20	Wed 29/7/20	NA	NA	55 days	309	311	0%										11/6												
311		Setting up of Entrance Ring and Gantry	14 days	Thu 30/7/20	Fri 14/8/20	NA	NA	55 days	310	316	0%										30/7												
312		Construction of Temporary Receiving Pit	47 days	Thu 11/6/20	Thu 6/8/20	NA	NA	79 days			0%										11/6												
313		Trial Pit Excavation & UU Detection Works	7 days	Thu 11/6/20	Thu 18/6/20	NA	NA	79 days	309	314	0%										11/6												
314		Pit Construction (6m x 9m)	40 days	Fri 19/6/20	Thu 6/8/20	NA	NA	79 days	313	317FF	0%										19/6												
315		Pipe Jacking Operation	41 days	Sat 15/8/20	Sat 31/10/20	NA	NA	55 days			0%										15/8												
316		Setting Up of Trenchless Equipment	7 days	Sat 15/8/20	Sat 22/8/20	NA	NA	55 days	311	317	0%										15/8												
317		Pipe Jacking Operation (30m, 3m/day)	10 days	Mon 24/8/20	Thu 3/9/20	NA	NA	55 days	316,314FF	318	0%										24/8												
318		Installation of grouting pipe and rail	7 days	Fri 4/9/20	Fri 11/9/20	NA	NA	55 days	317	319	0%										4/9												
319		Pipe Laying Works	10 days	Sat 12/9/20	Wed 23/9/20	NA	NA	55 days	318	320	0%										12/9												
320		Formwork Erection and grouting works	7 days	Thu 24/9/20	Sat 3/10/20	NA	NA	55 days	319	321	0%										24/9												
321		Reinstatement of Temporary Launching Pit	30 days	Mon 5/10/20	Mon 9/11/20	NA	NA	55 days	320	322	0%										5/10												
322		Reinstatement of Temporary Receiving Pit	30 days	Tue 10/11/20	Mon 14/12/20	NA	NA	55 days	321	306	0%										10/11												
323		Process Pipeworks, All Sewerage, Utilities & Roadworks in Portion C of the Site	640 days	Mon 6/1/20	Thu 3/3/22	NA	NA	-26 days			0%										6/1												
324		Process Pipeworks	60 days	Mon 6/1/20	Wed 18/3/20	NA	NA	-26 days			0%										6/1												
325	SW1	Connection pipe at UV System no.1 & Effluent Pumping Station no.1	60 days	Mon 6/1/20	Wed 18/3/20	NA	NA	-28 days			0%										6/1												
326		Effluent Pipe (approx. 70m, dia 300 - 1600)	40 days	Mon 6/1/20	Mon 24/2/20	NA	NA	-3 days	305SS,81FS-1 day,328,327,120		0%										6/1												
327		Effluent Pipe Flowmeter Chamber (3.8mx3.95mx3.42m(D))	20 days	Tue 25/2/20	Wed 18/3/20	NA	NA	274 days	325	118	0%										25/2												
328		Plant Services Water Pipe (approx. 15m, dia 150-350)	20 days	Tue 25/2/20	Wed 18/3/20	NA	NA	0 days	326	118	0%										25/2												
329	SW4	Remaining Effluent Pipes	416 days	Thu 8/10/20	Thu 3/3/22	NA	NA	0 days	62,163FS-45 days,45FF		0%										8/10												
330	SW4	Stormdrain Pipeworks	416 days	Thu 8/10/20	Thu 3/3/22	NA																											



ID	Key Date	Task Name	Duration	Start	Finish	Predecessors	Successors	Total Slack	Task Calendar	trade	2020												2021				2022				2023				2024				2025			
											Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4					
1		<b>Contract Dates</b>	<b>1585 days</b>	<b>Mon 18/11/19</b>	<b>Thu 27/3/25</b>			<b>0 days</b>	<b>None</b>																																	
2		Starting Date	0 days	Mon 18/11/19	Mon 18/11/19		35FS+1 day,36FS+1 day,30 days		Calendar Day																																	
3		<b>Access Dates (cal. day)</b>	<b>310 days</b>	<b>Mon 18/11/19</b>	<b>Tue 22/9/20</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
4		Portion B-1 (Access Road AR3)	0 days	Mon 18/11/19	Mon 18/11/19		118	77 days	Calendar Day																																	
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																																	
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																																	
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																																	
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																																	
9		Portion B-4 (Bioreactor No. 2A & 2B)	0 days	Mon 18/11/19	Mon 18/11/19		189	0 days	Calendar Day																																	
10		Portion B-5 (Membrane Facilities Building No.2)	0 days	Mon 18/11/19	Mon 18/11/19		203	49 days	Calendar Day																																	
11		Portion B-6 (SAS Pumping Station)	0 days	Mon 18/11/19	Mon 18/11/19		224	184 days	Calendar Day																																	
12		Portion B-7 (Ancillary structures)	0 days	Mon 18/11/19	Mon 18/11/19		233	299 days	Calendar Day																																	
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																																	
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																																	
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																																	
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																																	
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		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																																	
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																																	
20		<b>Key Dates (cal. day)</b>	<b>1440 days</b>	<b>Tue 19/11/19</b>	<b>Sat 28/10/23</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
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																																	
34		<b>Completion Date (cal. Day)</b>	<b>1956 days</b>	<b>Tue 19/11/19</b>	<b>Thu 27/3/25</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
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																																	
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																																	
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																																	
38	DLP	Defects Liability Period and Landscape Establishment Works	365 days	Thu 28/3/24	Thu 27/3/25		37FS+1 day,59F	0 days	Calendar Day																																	
39		<b>Planned Completion</b>	<b>1686 days</b>	<b>Fri 14/8/20</b>	<b>Thu 27/3/25</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
40		<b>Planned Completion - Key Dates (cal. day)</b>	<b>1170 days</b>	<b>Fri 14/8/20</b>	<b>Sat 28/10/23</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
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	Calendar Day																																	
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	Calendar Day																																	
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	Calendar Day																																	
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	Calendar Day																																	
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	Calendar Day																																	
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		199FF,220FF	26FF	Calendar Day																																	
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	Calendar Day																																	
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	Calendar Day																																	
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	Calendar Day																																	
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																																	
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	Calendar Day																																	
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	Calendar Day																																	
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	Calendar Day																																	
54		<b>Planned Completion Date (cal. Day)</b>	<b>1056 days</b>	<b>Fri 6/5/22</b>	<b>Thu 27/3/25</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
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																																	
56	SW2	Section 2 of the Works (900 after starting date)	0 days	Fri 6/5/22	Fri 6/5/22		284FF,287FF,2E36FF	0 days	Calendar Day																																	
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	0 days	Calendar Day																																	
58		Planned Time Risk Allowance (14days per 365day)	60 days	Sat 13/1/24	Tue 26/3/24		57FF	294 days	None																																	
59	DLP	Defects Liability Period and Landscape Establishment Works	0 days	Thu 27/3/25	Thu 27/3/25		294FF	38FF	Calendar Day																																	
60		<b>Submissions (cal.day)</b>	<b>880 days</b>	<b>Mon 18/11/19</b>	<b>Fri 15/4/22</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
61		<b>Subletting Package</b>	<b>96 days</b>	<b>Mon 18/11/19</b>	<b>Fri 21/2/20</b>			<b>0 days</b>	<b>Calendar Day</b>																																	
62		Prepare & submit subletting procedure	12 days	Mon 18/11/19	Fri 29/11/19		63	0 days	Calendar Day																																	
63		PM review and accept subletting procedure	12 days	Sat 30/11/19	Wed 11/12/19		62	0 days	Calendar Day																																	
64		Subletting for Preliminary Works (surveying, condition survey, site clearacne etc)	14 days	Thu 12/12/19	Wed 25/12/19		63,82	1 day	Calendar Day																																	
65		Subletting for Contractor desinger for temporary works and ICE	24 days	Thu 12/12/19	Sat 4/1/20		63,82	212 days	Calendar Day																																	
66		Subletting for independent BIM consultant	24 days	Mon 6/1/20	Wed 5/2/20		65	1474 days	None																																	
67		Subletting for demolition works	24 days	Thu 12/12/19	Sat 4/1/20		63,82	1 day	Calendar Day	dem																																
68		Subletting for AR3 access road and UU diversion for Inlet Works No.1	24 days	Thu 12/12/19	Sat 4																																					



ID	Key Date	Task Name	Duration	Start	Finish	Predecessors	Successors	Total Slack	Task Calendar	trade	Gantt Chart (2020-2025)																															
											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	Qtr 1	Qtr 2	Qtr 3	Qtr 4	2025	Qtr 1	Qtr 2	Qtr 3
71		Subletting for ELS works for Inlet Works No.1	48 days	Sun 5/1/20	Fri 21/2/20	63,65,82	154	560 days	Calendar Day	ex	5/1 21/2																															
72		Subletting for ELS works for Membrane Facilities Building and other buildings	48 days	Sun 5/1/20	Fri 21/2/20	63,65,82	184,196,213,229	212 days	Calendar Day	ex	5/1 21/2																															
73		Subletting for structural works for Inlet Works Building	48 days	Thu 12/12/19	Tue 28/1/20	63,82	160	635 days	Calendar Day	rc	12/12 28/1																															
74		Subletting for structural works for Primary Sedimentation Tanks	48 days	Thu 12/12/19	Tue 28/1/20	63,82	1885 days	Calendar Day	rc	12/12 28/1																																
75		Subletting for structural works for Bioreactors	48 days	Thu 12/12/19	Tue 28/1/20	63,82	197	850 days	Calendar Day	rc	12/12 28/1																															
76		Subletting for structural works for Membrane Facilities Building	48 days	Thu 12/12/19	Tue 28/1/20	63,82	219	590 days	Calendar Day	rc	12/12 28/1																															
77		Subletting for structural works for SAS pumping house and ancillary structures	48 days	Thu 12/12/19	Tue 28/1/20	63,82	230	327 days	Calendar Day	rc	12/12 28/1																															
78		Subletting for ABWF works	48 days	Thu 12/12/19	Tue 28/1/20	63,82	176,187,202,223,232,240,1132	Calendar Day	abwf	12/12 28/1																																
79		Subletting for Process Pipeworks, Utilities and Roadworks	48 days	Thu 12/12/19	Tue 28/1/20	63,82	279,283FS+22 days	0 days	Calendar Day	uu	12/12 28/1																															
80		Subletting for Landscape Hardworks and Softworks	48 days	Thu 12/12/19	Tue 28/1/20	63,82	292,293,294	978 days	Calendar Day	land	12/12 28/1																															
81		<b>Statutory Submission, Submission and Approval</b>	<b>880 days</b>	<b>Mon 18/11/19</b>	<b>Fri 15/4/22</b>			<b>0 days</b>	<b>Calendar Day</b>		18/11 15/4																															
82		Prepare and submit Subcontractor Management Plan (SMP)	24 days	Mon 18/11/19	Wed 11/12/19	2	64,65,67,68,69,70,71,72,70	0 days	Calendar Day		18/11 11/12																															
83		Prepare and submit Interface Management Plan	36 days	Mon 18/11/19	Mon 23/12/19	2		1921 days	Calendar Day		18/11 23/12																															
84		Prepare and submit the TTA plans inside Treatment Plant for UU diversion and buildings construction	24 days	Mon 18/11/19	Wed 11/12/19	2	118	53 days	Calendar Day		18/11 11/12																															
85		Prepare and submit method statement for UU diversion for Inlet Works No.1	12 days	Mon 18/11/19	Fri 29/11/19	2	86	116 days	Calendar Day		18/11 29/11																															
86		PM review and accept the method statement	12 days	Sat 30/11/19	Wed 11/12/19	85	124,125	116 days	Calendar Day		30/11 11/12																															
87		Prepare and submit combine underground services drawing for PM's review the alignment	24 days	Thu 26/12/19	Sat 18/1/20	64	118	15 days	Calendar Day		26/12 18/1																															
88		Prepare and submit method statement for demolition existing structures	24 days	Mon 18/11/19	Wed 11/12/19	2	204,179,191,234,143,207,125	25 days	Calendar Day	dem	18/11 11/12																															
89		Prepare and submit method statement for structural works for buildings	24 days	Mon 18/11/19	Wed 11/12/19	2		1933 days	Calendar Day	rc	18/11 11/12																															
90		Prepare and submit method statements to MTRC regarding the works within railing protection boundary	36 days	Mon 18/11/19	Mon 23/12/19	2	179,191,234,143,204,207,113	13 days	Calendar Day	dem	18/11 23/12																															
91		Prepare and submit & approve Safety Management Plan	24 days	Mon 18/11/19	Wed 11/12/19	2		1933 days	Calendar Day		18/11 11/12																															
92		Prepare and submit Excavation and lateral support (ELS) proposal	24 days	Mon 10/2/20	Wed 4/3/20	2	206	7 days	Calendar Day	ex	10/2 4/3																															
93		Prepare and submit Dewatering proposal for basement construction	24 days	Mon 10/2/20	Wed 4/3/20	2	206	7 days	Calendar Day	ex	10/2 4/3																															
94		Prepare and submit Pre-construction condition survey of existing structures/ services	24 days	Wed 5/2/20	Fri 28/2/20	116		1854 days	Calendar Day		5/2 28/2																															
95		Prepare and submit Settlement and movement monitoring proposal of existing structures/ services	24 days	Wed 5/2/20	Fri 28/2/20	116		1854 days	Calendar Day		5/2 28/2																															
96		Prepare and submit design of structure elements of the temporary activated carbon deodorization unit	60 days	Fri 17/1/20	Mon 16/3/20	2FS+60 days		1837 days	Calendar Day		17/1 16/3																															
97		Prepare of RSE and structural design for alternation and additional (A&A) works at Membrane Facilities Building No.1 and Main Power House	180 days	Mon 18/10/21	Fri 15/4/22		223	324 days	Calendar Day		18/10 15/4																															
98		<b>Environmental Aspect Submissions</b>	<b>136 days</b>	<b>Mon 18/11/19</b>	<b>Wed 1/4/20</b>			<b>23 days</b>	<b>Calendar Day</b>		18/11 1/4																															
99		Prepare, submit & approve Site Management Plan for Trip Tricket System	45 days	Mon 18/11/19	Wed 1/1/20	2		1912 days	Calendar Day		18/11 1/1																															
100		Prepare, submit & approve Waste Management Plan	45 days	Mon 18/11/19	Wed 1/1/20	2		1912 days	Calendar Day		18/11 1/1																															
101		Prepare, submit & approve Environmental Management Plan	45 days	Mon 18/11/19	Wed 1/1/20	2		1912 days	Calendar Day		18/11 1/1																															
102		<b>Procurement</b>	<b>72 days</b>	<b>Mon 18/11/19</b>	<b>Tue 28/1/20</b>			<b>23 days</b>	<b>Calendar Day</b>		18/11 28/1																															
103		Prepare and submit the Procurement Procedure	12 days	Mon 18/11/19	Fri 29/11/19	2	104	23 days	Calendar Day		18/11 29/11																															
104		PM Review & Accept Procurement Procedure	12 days	Sat 30/11/19	Wed 11/12/19	103	105,106,107,108,109,110	23 days	Calendar Day		30/11 11/12																															
105		Prepare, submit and approve the pipe works material	25 days	Thu 12/12/19	Sun 5/1/20	104	123,279,285,286,288,287,123	23 days	Calendar Day	uu	12/12 5/1																															
106		Prepare, submit and approve the pipe water proofing material	25 days	Thu 12/12/19	Sun 5/1/20	104	123,279,285,286,288,287,123	23 days	Calendar Day	uu	12/12 5/1																															
107		Prepare, submit and approve the concrete mix material	48 days	Thu 12/12/19	Tue 28/1/20	104	160,197,219,230	327 days	Calendar Day	rc	12/12 28/1																															
108		Prepare, submit and approve the rebar material	48 days	Thu 12/12/19	Tue 28/1/20	104	160,197,219,230	327 days	Calendar Day	rc	12/12 28/1																															
109		Prepare, submit and approve the metal works material	48 days	Thu 12/12/19	Tue 28/1/20	104		1885 days	Calendar Day		12/12 28/1																															
110		Prepare, submit and approve the ABWF works material	48 days	Thu 12/12/19	Tue 28/1/20	104	176,187,202,223,232,240,1132	1132 days	Calendar Day	abwf	12/12 28/1																															
111		<b>BIM</b>	<b>48 days</b>	<b>Thu 6/2/20</b>	<b>Wed 1/4/20</b>			<b>1474 days</b>	<b>None</b>		6/2 1/4																															
112		Prepare, submit and approve the proposal of details of Common data environment (CDE)	48 days	Thu 6/2/20	Wed 1/4/20	66		1474 days	None		6/2 1/4																															
113		<b>Construction Works</b>	<b>1957 days</b>	<b>Mon 18/11/19</b>	<b>Thu 27/3/25</b>			<b>0 days</b>	<b>Calendar Day</b>		18/11 27/3																															
114		<b>Preliminary Works</b>	<b>109 days</b>	<b>Mon 18/11/19</b>	<b>Thu 5/3/20</b>			<b>0 days</b>	<b>Calendar Day</b>		18/11 5/3																															
115		Initial Survey	24 days	Mon 18/11/19	Sat 14/12/19	2	116	8 days	Normal Working Hours		18/11 14/12																															
116		Condition Survey	30 days	Fri 27/12/19	Tue 4/2/20	64,115	117,94,95	0 days	Normal Working Hours		27/12 4/2																															
117		Installation of Monitoring Markers	26 days	Wed 5/2/20	Thu 5/3/20	116	120	0 days	Normal Working Hours		5/2 5/3																															
118		<b>Access Road (AR3), B-1</b>	<b>193 days</b>	<b>Mon 20/1/20</b>	<b>Sat 12/9/20</b>	<b>4,84,87</b>		<b>0 days</b>	<b>Normal Working Hou</b>		20/1 12/9																															
119		Site setup and clearance works	28 days	Mon 20/1/20	Mon 24/2/20	68	120	9 days	Normal Working Hours		20/1 24/2																															
120		Drainage and Utilities Works	76 days	Fri 6/3/20	Tue 9/6/20	119,117	121	0 days	Normal Working Hours		6/3 9/6																															
121	KD1A	Roadworks	80 days	Wed 10/6/20	Sat 12/9/20	120	41FF	0 days	Normal Working Hours		10/6 12/9																															
122		<b>Inlet Works No.1, B-2</b>	<b>854 days</b>	<b>Mon 6/1/20</b>	<b>Mon 21/1/22</b>	<b>6</b>		<b>45 days</b>	<b>Normal Working Hou</b>		6/1 21/1																															
123		<b>Diversion Works (1. Inlet Truck Sewer, Leachate Rising Mains, Sludge Pipes, Tank Drains and Pipelines near Primary Sludge Thickeners)</b>	<b>180 days</b>	<b>Mon 6/1/20</b>	<b>Fri 14/8/20</b>	<b>105,106</b>	<b>42FF</b>	<b>74 days</b>	<b>Normal Working Hours_20190924</b>		6/1 14/8																															
124		Utilities scanning to identify existing UU arrangement	12 days	Mon 6/1/20	Sat 18/1/20	86	125SS	74 days	Normal Working Hours		6/1 18/1																															
125		Trial pits to locate the collection points	24 days	Mon 6/1/20	Wed 5/2/20	86,124SS	127,133,137,134,135,132	74 days	Normal Working Hours		6/1 5/2																															
126		<b>Diversion of Inlet Truck Sewer (approx. 40m 1800mm dia concrete pipe, 4 deep manholes and Inlet Reception Chamber)</b>	<b>146 days</b>	<b>Thu 6/2/20</b>	<b>Mon 3/8/20</b>			<b>84 days</b>	<b>Normal Working Hours_20190924</b>		6/2 3/8																															
127		Trench Excavation for 1800mm dia pipeline and manholes	45 days	Thu 6/2/20	Sat 28/3/20	125	128	84 days	Normal Working Hours	uu	6/2 28/3																															
128		Construct M/H MHA01, MHA02, MHA03, MHA04 and Inlet Reception Chamber	65 days	Mon 30/3/20	Fri 19/6/20	127	129	84 days	Normal Working Hours_20190924	uu	30/3 19/6																															
129		Lay 1800mm dia concrete pipe	24 days	Sat 20/6/20	Mon 20/7/20	128	130	84 days	Normal Working Hours	uu	20/6 20/7																															
130		Collection to existing Inlet Chamber	12 days	Tue 21/7/20	Mon 3/8/20	129		84 days	Normal Working Hours	uu	21/7 3/8																															
131		<b>Diversion of Leachate Rising Main, Sludge Pipes and Tank Drain</b>	<b>150 days</b>	<b>Thu 6/2/20</b>	<b>Fri 7/8/20</b>			<b>80 days</b>	<b>Normal Working Hou</b>		6/2 7/8																															
132		Diversion of tank drain, approx. 70m 675mm dia concrete pipe and 2 manholes MHD8.5 & MHD9.5)	150 days	Thu 6/2/20	Fri 7/8/20	125	135SS+60 days,134SS+60	80 days	Normal Working Hours_20190924	uu	6/2 7/8																															
133		Diversion of leachate rising main, CHLC, approx. 24m DN250 DI	60 days	Tue 21/4/20	Fri 3/7/20	125,132SS+60 days		110 days	Normal Working Hours_20190924	uu	21/4 3/7																															
134		Diversion of sludge pipe, CHES1 approx. 154m DN250 CI	75 days	Tue 21/4/20	Tue 21/7/20	125,132SS+60 days		95 days	Normal Working Hours_20190924	uu	21/4 21/7																															
135		Diversion of sludge pipe, CHES2 approx. 106m DN250 CI	75 days	Tue 21/4/20	Tue 21/7/20	125,132SS+60 days		95 days	Normal Working Hours_20190924	uu	21/4 21/7																															
136		<b>Diversion of pipelines near Primary Sludge Thickeners (approx. 180m long 150mm to 375mm concrete pipes)</b>	<b>156 days</b>	<b>Thu 6/2/20</b>	<b>Fri 14/8/20</b>			<b>74 days</b>	<b>Normal Working Hours_20190924</b>	<b>uu</b>	6/2 14/8																															
137		Trench Excavation from M/H MHD1E to MHD5 (approx. 90m long with M/Hs MHD1A, 1B, 1C, 1D & 1E)	60 days	Thu 6/2/20	Mon 20/4/20	125	138SS+45 days,140	74 days	Normal Working Hours_20190924	uu	6/2 20/4																															
138		Manholes construction and Pipe laying	60 days	Mon 30/3/20	Sat 13/6/20	137SS+45 days	139	100 days	Normal Working Hours	uu	30/3 13/6																															
139		Backfilling	25 days	Mon 15/6/20	Wed 15/7/20	138		100 days	Normal Working Hours	uu	15/6 15/7																															
140		Trench Excavation from MHD5 to MHD9.5 (approx. 90m long with M/Hs MHD5A & 5B)	60 days	Tue 21/4/20	Fri 3/7/20	137	141SS+26 days	74 days	Normal Working Hours_20190924	uu	21/4 3/7																															
141		Manholes construction and Pipe laying	45 days	Sat 23/5/20	Thu 16/7/20	140SS+26 days	142	74 days	Normal Working Hours	uu	23/5 16/7																															
142	KD1B	Backfilling	25 days	Fri 17/7/20	Fri 14/8/20	141		74 days	Normal Working Hours	uu	17/7 14/8																															
143		<b>Decommission and Demolition of Existing Facilities and Structures</b>	<b>240 days</b>	<b>Mon 2/3/20</b>	<b>Fri 18/12/20</b>	<b>6,67,88,90</b>	<b>149</b>	<b>0 days</b>	<b>Normal Working Hou</b>		2/3 18/12																															
144		Primary Sludge Thickening Tank No.1 and No.2	80 days	Mon 2/3/20	Tue 9/6/20		145	0 days	Normal Working Hours	dem	2/3 9/6																															





































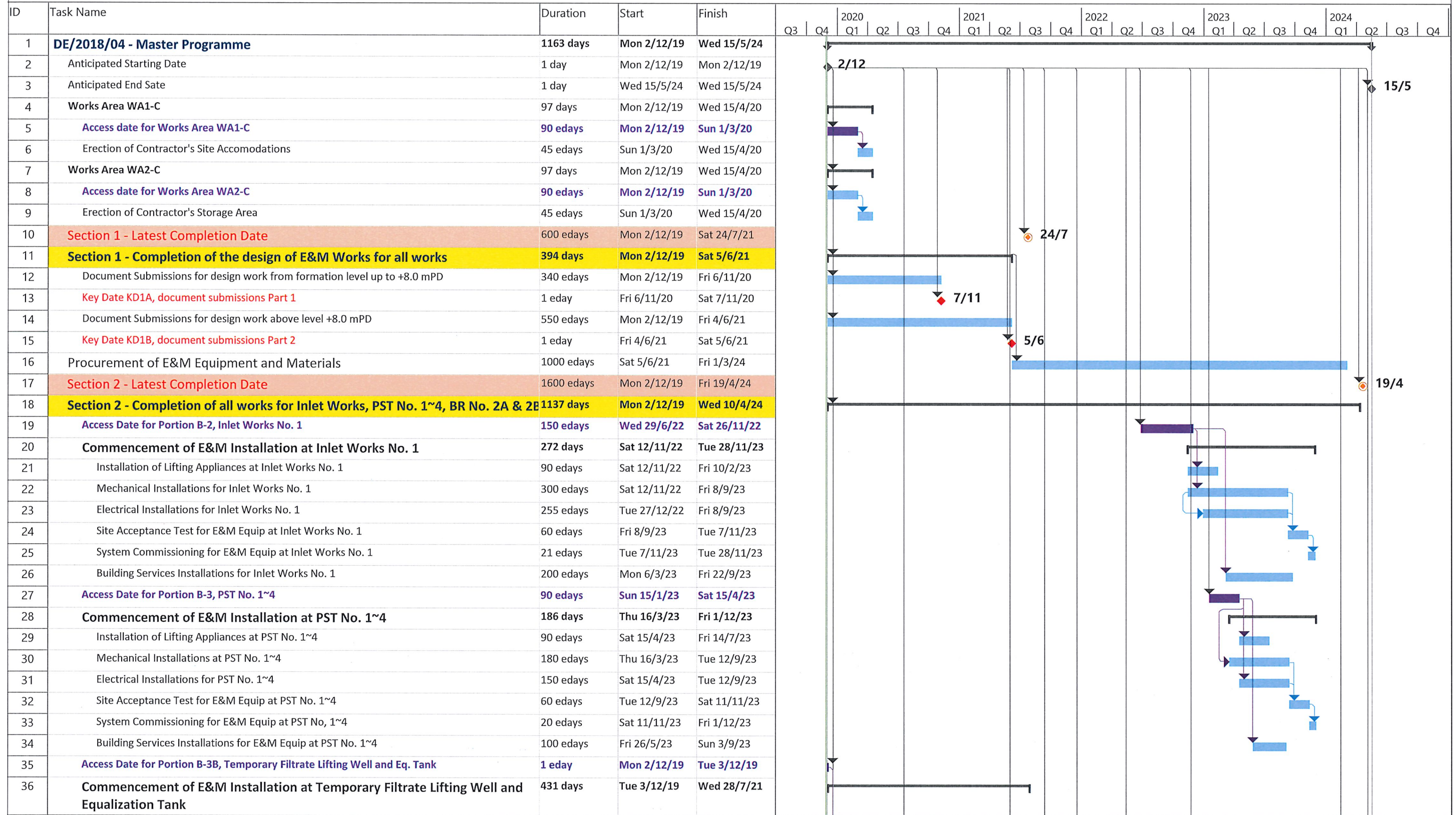












**Bestwise**  
Ref: P431-PG-001  
Date: Sat 30/11/19

Task		Project Summary		Manual Task		Start-only		Manual Progress	
Split		Inactive Task		Duration-only		Finish-only			
Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks			
Summary		Inactive Summary		Manual Summary		Progress			



