

香港電燈有限公司  
The Hongkong Electric Co., Ltd.



**Lamma Power Station Extension  
Construction Phase  
Monthly Environmental Monitoring & Audit Report**

**July 2022**



香港電燈有限公司  
The Hongkong Electric Co., Ltd.



**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ORDINANCE, CAP. 499**

**ENVIRONMENTAL PERMIT NO. EP-071/2000/D**

**LAMMA POWER STATION EXTENSION  
ENVIRONMENTAL MONITORING & AUDIT PROGRAMME  
AT CONSTRUCTION PHASE**

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Date	12 August 2022
Certified by	 (Mr. CHAN Hon Yeung, Environmental Team Leader)
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## EXECUTIVE SUMMARY

This is the 147<sup>th</sup> monthly Environmental Monitoring and Audit (EM&A) report for the Project “Construction of Lamma Power Station Extension” prepared by the Environmental Team (ET). This report presents the results of impact monitoring on air quality and noise for the said project in July 2022.

The reclamation and submarine pipeline works were completed with the first gas-fired combined cycle unit (viz. Unit L9) commissioned in October 2006, working currently on base load operation. To cope with the scheduled retirement of the existing units at Lamma Power Station, the second gas-fired combined cycle unit (viz. Unit L10) L10 was commissioned for reliable operation in February 2020.

In September 2016, the Government approved HK Electric to construct the third combined cycle gas-fired generating unit (Unit L11) to implement the 2020 Fuel Mix Target. L11 was commissioned for reliable operation effective in May 2022. The operational EM&A work for L9, L10 and L11 is recorded in the separate monthly EM&A report for the Project “Operation of Lamma Power Station Extension”.

With the Government’s approval to build the fourth combined cycle gas-fired generating unit (L12) in July 2018, the associated construction work commenced in April 2019. When L12 is commissioned in 2023, the total gas-fired electricity generation will further rise to reach about 70% of our total output.

Air and noise monitoring were performed. The results were checked against the established Action/Limit (AL) levels. An on-site audit was conducted once per week. The implementation status of the environmental mitigation measures, Event/Action Plan and environmental complaint handling procedures were also checked.

### Construction Activities Undertaken

Construction activities for Lamma Extension during the reporting month are tabulated as follows:

Item	Construction Activities
Unit L12 Civil and Building Works	Construction of Main Station Building, construction of No. 5 Chimney, construction of L12 GRS, construction of superstructure and cable trench works for ACB, construction of retaining wall and installation of precast parapet for Cable Bridge (North & South), construction of superstructure for shunt reactor compound extension and culvert removal and installation of precast chamber for No. 5 C.W. Intake.
Unit L12 Mechanical Erection	Condenser installation, HRSG installation and turbine block installation
Unit L12 Electrical, Instrumentation & Control Erection	Cable installation

### Environmental Monitoring Works

All monitoring work at designated stations was performed as scheduled satisfactorily.

#### *Air Quality*

No exceedance of Action/Limit levels on 1-hour TSP and 24-hour TSP for air quality was recorded in the month.

#### Noise

No exceedance of Action and Limit levels for noise arising from the construction of Lamma Extension was recorded in the month.

#### Site Environmental Audit

Site audits were carried out on a weekly basis to monitor environmental issues on the construction site. The site conditions were generally satisfactory.

#### Environmental Licensing and Permitting

Description	Permit No.	Valid Period		Issued To	Date of Issuance
		From	To		
Varied Environmental Permit	EP-071/2000/D	28/09/20	-	HK Electric	28/09/20
Construction Noise Permit	GW-RS0077-22	02/02/22	28/07/22	Contractor	31/01/22
Construction Noise Permit	GW-RS0121-22	01/03/22	31/08/22	Contractor	25/02/22
Construction Noise Permit	GW-RS0222-22	13/04/22	12/10/22	Contractor	11/04/22
Construction Noise Permit	GW-RS0551-22	10/07/22	07/01/23	Contractor	08/07/22
Construction Noise Permit	GW-RS0613-22	29/07/22	27/01/23	Contractor	27/07/22
WPCO Discharge Licence	WT00037613-2021	15/04/21	30/04/26	Contractor	15/04/21
WPCO Discharge Licence	WT00037665-2021	06/05/21	31/05/26	Contractor	06/05/21
Registration of Chemical Waste Producer	WPN5213-912-P2781-22	22/02/16	-	Contractor	22/02/16
Registration of Chemical Waste Producer	WPN5517-912-T2007-02	17/03/05	-	Contractor	17/03/05
Waste Disposal Billing Account	Account No.: 7038672	27/10/20	-	Contractor	27/10/20
Waste Disposal Billing Account	Account No.: 7039272	08/01/21	-	Contractor	08/01/21
Waste Disposal Billing Account	Account No.: 7041942	21/10/21	-	Contractor	21/10/21

#### Implementation Status of Environmental Mitigation Measures

Environmental mitigation measures for the construction activities as recommended in the EM&A manual were implemented in the reporting month.

#### Environmental Complaints

No complaint in relation to the environmental impact of the construction activities was received in the reporting month.

## **Future Key Issues**

The future key issues to be considered in the coming month are as follows:

### Unit L12 Civil and Building Works

- to continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary;
- to treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance with the WPCO discharge licence already obtained;

### Unit L12 Mechanical Erection

- to continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained;
- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

### Unit L12 Electrical, Instrumentation & Control Erection

- to continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained;
- to continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the performance;
- to monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

## **Concluding Remarks**

The environmental performance of the project was generally satisfactory.

## **1. INTRODUCTION**

### **1.1 Background**

The Environmental Team (hereinafter called the “ET”) was formed within the Hongkong Electric Co. Ltd (HEC) to undertake Environmental Monitoring and Audit for “Construction of Lamma Power Station Extension” (hereinafter called the “Project”). Under the requirements of Section 6 of Environmental Permit EP-071/2000/D, an EM&A programme for impact environmental monitoring set out in the EM&A Manual (Construction Phase) is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality, noise and water quality and regular environmental audits are required for the Project. With the completion of reclamation and submarine pipeline works, no further marine water quality monitoring would be required.

The Project involves the construction of a gas-fired power station employing combined cycled gas turbine technology, forming an extension to the existing Lamma Power Station. The key elements of the Project including the construction activities associated with the transmission system and submarine gas pipeline are outlined as follows.

- dredging and reclamation to form approximately 22 hectares of usable area;
- construction of six 300MW class gas-fired combined cycle units;
- construction of a gas receiving station;
- construction of a transmission system linking the Lamma Extension to load centres on Hong Kong Island;
- laying of a gas pipeline for the supply of natural gas to the new power station

This report summarizes the environmental monitoring and audit work for the Project for the month of July 2022.

### **1.2 Project Organisation**

An Environmental Management Committee (EMC) has been set up in HEC to oversee the Project. The management structure includes the following:

- Environmental Protection Department (The Authority);
- Environmental Manager (The Chairman of the Environmental Management Committee);
- Engineer;
- Independent Environmental Checker (IEC);
- Environmental Team (ET);
- Contractor.

The project organisation chart for the construction EM&A programme is shown in [Appendix A](#).

### **1.3 Construction Works undertaken during the Reporting Month**

Construction activities for Unit L12 civil and building works were, construction of Main Station Building, construction of No.5 Chimney, construction of L12 GRS, construction of superstructure and cable trench works for ACB, and construction of retaining wall and installation of precast parapet for Cable Bridge (North & South), construction of superstructure for shunt reactor compound extension, culvert removal and installation of precast chamber for No. 5 C.W. Intake. Construction activities for Unit L12 mechanical erection were condenser



installation, HRSG installation and turbine block installation. Construction activity for Unit L12 electrical, instrumentation & control erection was cable installation. Layout plan for construction site is shown in [Figure 1.1](#).

The main construction activities carried out during the reporting month and the corresponding environmental mitigation measures are summarized in [Table 1.1](#). The implementation of major mitigation measures in the month is provided in [Appendix I](#).

Table 1.1 Construction Activities and Their Corresponding Environmental Mitigation Measures

Item	Construction Activities	Environmental Mitigation Measures
Unit L12 Civil and Building Works		
1.	<p><u>Construction of Main Station Building</u></p> <p>Construction of No.5 Chimney</p> <p>Construction of L12 GRS</p> <p><u>ACB</u></p> <p>Construction of superstructure</p> <p>Cable trench works</p>	<p><b>Air</b></p> <ul style="list-style-type: none"> <li>- All regulated machine attached with valid exception/approval NRMM labels.</li> <li>- Water truck and water sprinkler system would be used.</li> <li>- Water spraying for concrete breaking works.</li> <li>- Soil stock would be covered with cement or tarpaulin or keep the entire surface wet. Wheel washing facility was provided.</li> </ul> <p><b>Noise</b></p> <ul style="list-style-type: none"> <li>- Works conducted during restricted hours should comply with the valid CNP.</li> <li>- Noise emission label was provided for air compressor.</li> </ul> <p><b>Wastewater</b></p> <ul style="list-style-type: none"> <li>- Wastewater should be treated in desilting pit and tanks before discharge. Solution should be added to speed up the sedimentation process. Sediment in pit and tanks must be removed regularly. The frequency would be in weekly basis depends on the volume of sediment accumulated in order to maintain sufficient volume for wastewater treatment.</li> <li>-</li> </ul> <p><b>Waste Management</b></p> <ul style="list-style-type: none"> <li>- Excavated soil was temporary stored for backfilling and reuse in other projects.</li> <li>- Scrape metal would be recycled.</li> <li>- Chemical waste should be collected by licensed collector.</li> </ul>
2.	<p><u>Cable Bridge (North &amp; South):</u></p>	<p><b>Air</b></p> <ul style="list-style-type: none"> <li>- All regulated machine attached with valid</li> </ul>

Item	Construction Activities	Environmental Mitigation Measures
	Construction of retaining wall and installation of precast parapet  <u>Shunt Reactor Compound Extension</u> Construction of superstructure  <u>No. 5 C.W. Intake Culvert Removal and installation of precast chamber</u>	exception/approval NRMM labels. – Water truck, water sprinkler system and mist cannon were used. – Excavated soil slop covered with tarpaulin. – Wheel washing facilities was provided. – Water spraying on haul road and during concrete breaking.  <b>Noise</b> – Noise emission label was provided for air compressor. – Works conducted during restricted hours should comply with the valid CNP.  <b>Waste Management</b> – Excavated soil would be transferred to other project for reuse.  <b>Wastewater</b> - Wastewater would be treated in desilting tanks or wastewater treatment facility before discharge. - Silt curtain was provided as preventive measures at Intake 5.
Unit L12 Mechanical Erection		
3.	Condenser installation  HRSG installation  Turbine block installation	<b>Air</b> – Dust suppression measures implemented according to the EMP.  <b>Noise</b> – General noise mitigation measures employed at all work sites throughout the construction phase.  <b>Waste Management</b> – Waste Management Plan submitted and implemented
Unit L12 Electrical, Instrumentation & Control Erection		
4.	Cable installation	<b>Air</b> – Dust suppression measures implemented according to the EMP.  <b>Noise</b> – General noise mitigation measures employed at all work sites throughout the construction phase.

<b>Item</b>	<b>Construction Activities</b>	<b>Environmental Mitigation Measures</b>
		<b>Waste Management</b> – Waste Management Plan submitted and implemented.

#### **1.4 Summary of EM&A Requirements**

The detailed EM&A monitoring work for air quality and noise are described in Sections 2 and 3 respectively. Regular environmental site audits for air quality, noise, water quality and waste management were carried out.

The following environmental audits are summarized in Section 4 of this report:

- Environmental monitoring results;
- Waste Management Records;
- Weekly site audit results;
- The status of environmental licensing and permits for the Project;
- The implementation status of environmental protection and pollution control/ mitigation measures.

Future key issues will be reported in Section 5 of this report.

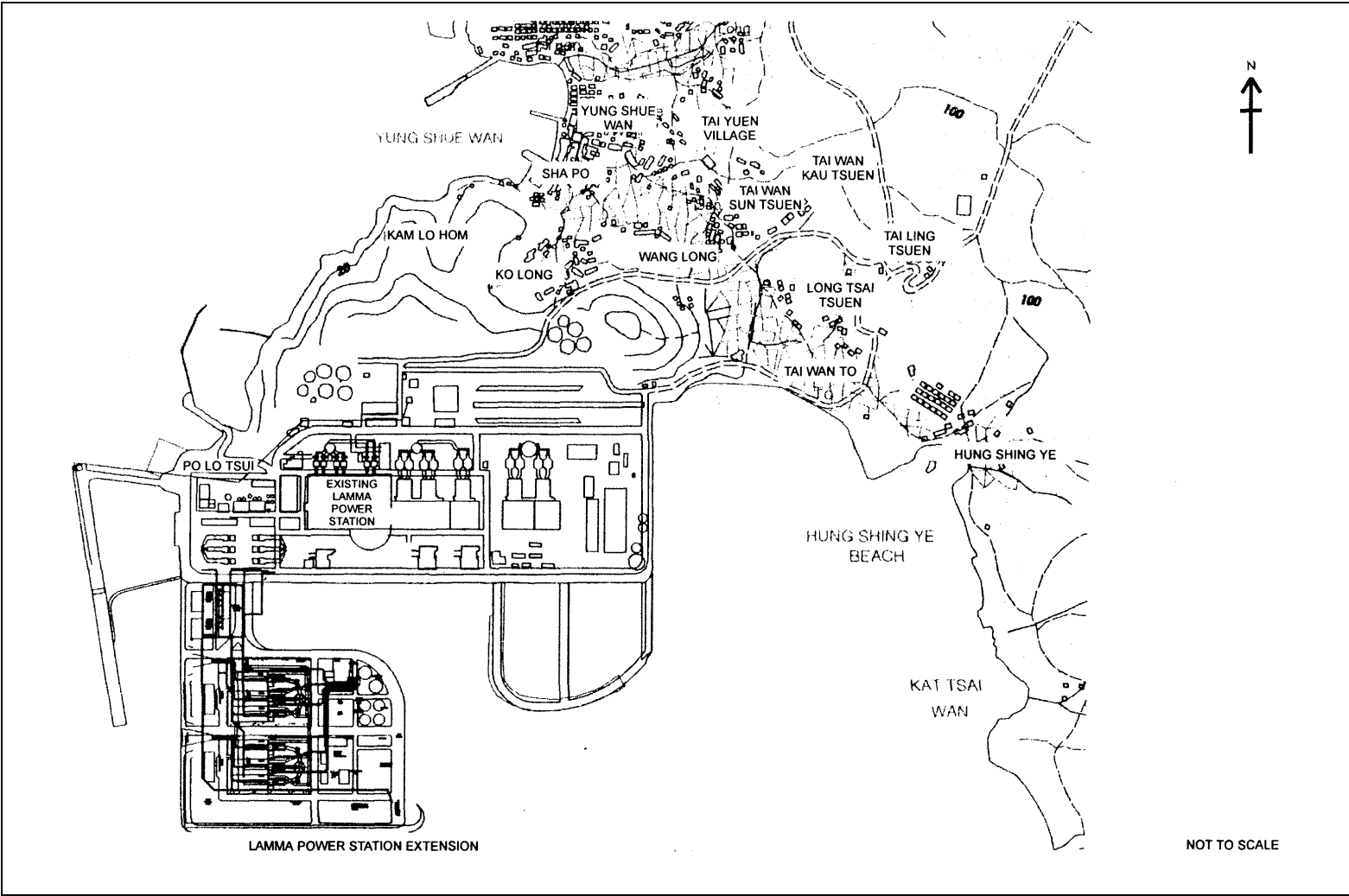


Figure 1.1 Layout of Work Site

## 2. AIR QUALITY

### 2.1 Monitoring Requirements

1-hour and 24-hour TSP monitoring at agreed frequencies were conducted to monitor air quality. The impact monitoring data were checked against the Action/Limit Levels as determined in the Baseline Monitoring Report (Construction Phase). [Appendix B](#) shows the established Action/Limit Levels for Air Quality.

### 2.2 Monitoring Locations

Three dust monitoring locations were selected for 1-hour TSP sampling (AM1, AM2 & AM3) while four monitoring locations were selected for 24-hour TSP sampling (AM1, AM2, AM3 and AM4). [Table 2.1](#) tabulates the monitoring stations. The locations of the monitoring stations are shown in [Figure 2.1](#).

Table 2.1 Air Quality Monitoring Locations

Location I.D.	Description
AM1	Reservoir
AM2	East Gate
AM3	Ash Lagoon
AM4	Tai Yuen Village

### 2.3 Monitoring Equipment

It is agreed with EPD that continuous 24-hour TSP air quality monitoring would be performed using TEOM continuous dust monitor and the MINIVOL Portable Sampler at AM1,2&3 and AM4 respectively. TEOM continuous dust monitors were used to carry out 1-hour TSP monitoring at AM1, AM2 and AM3. [Table 2.2](#) summarises the equipment used in dust monitoring.

Table 2.2 Air Quality Monitoring Equipment

Equipment	Model and Make
<i>24-hour sampling:</i>	
Continuous TSP Dust Meter	TEOM continuous dust monitor Thermo Scientific
MINIVOL Portable Sampler	AIRMETRICS
<i>1-hour sampling:</i>	
Continuous TSP Dust Meter	TEOM continuous dust monitor Thermo Scientific

### 2.4 Monitoring Parameters, Frequency and Duration

[Table 2.3](#) summarises the monitoring parameters, duration and frequency of air quality monitoring. The monitoring schedule for the reporting month is shown in [Appendix C](#).

Table 2.3 Air Quality Monitoring Parameter, Duration and Frequency

Monitoring Stations	Parameter	Duration	Frequency
AM1	1-hour TSP	1	3 hourly samples every 6 days
	24-hour TSP	24	Once every 6 days
AM2	1-hour TSP	1	3 hourly samples every 6 days
	24-hour TSP	24	Once every 6 days
AM3	1-hour TSP	1	3 hourly samples every 6 days
	24-hour TSP	24	Once every 6 days
AM4	24-hour TSP	24	Once every 6 days

## 2.5 Monitoring Procedures and Calibration Details

MINIVOL (24- hour TSP Monitoring):

### *Preparation of Filter Papers*

- Visual inspection of filter papers was carried out to ensure that there were no pinholes, tears and creases;
- The filter papers were then labeled before sampling.
- The filter papers were equilibrated at room temperature and relative humidity < 50% for at least 24 hours before weighing.

### *Field Monitoring*

- During collection of the sampled filter paper, the information on the elapse timer was logged. Site observations around the monitoring stations, which might have affected the monitoring results, were also recorded. Major pollution sources, if any, would be identified and reported.
- The post-sampling filter papers were removed carefully from the filter holder and folded to avoid loss of fibres or dust particles from the filter papers;
- The filter holder and its surrounding were cleaned;
- A pre-weighed blank filter paper for the next sampling was put in place and aligned carefully. The filter holder was then tightened firmly to avoid leakage;
- The programmable timer was set for the next 24 hrs sampling period;
- The post-sampling filter papers were equilibrated at room temperature and relative humidity < 50% for at least 24 hours before weighing.

TEOM continuous dust monitor (24- hour TSP and 1- hour TSP Monitoring):

- The following parameters of the TEOM model dust meters are regularly checked to ensure proper functionality:
  - Operation Mode;
  - Frequency of the tapered element;
  - Main flow;
  - Bypass flow.

### *Maintenance & Calibration*

- The monitoring equipment and their accessories are maintained in good working conditions.

- Monitoring equipment is calibrated at monthly intervals. Calibration details are shown in [Appendix F](#).

## 2.6 Results and Observations

All dust monitoring works were conducted on schedule. All monitoring data and graphical presentation of the monitoring results are provided in [Appendix D](#). Key findings and observations are provided below:

### *1-hour TSP*

No exceedance of 1-hour TSP Action/Limit Level was recorded in the month.

### *24-hour TSP*

No exceedance of 24-hour TSP Action/Limit Level was recorded in the month.

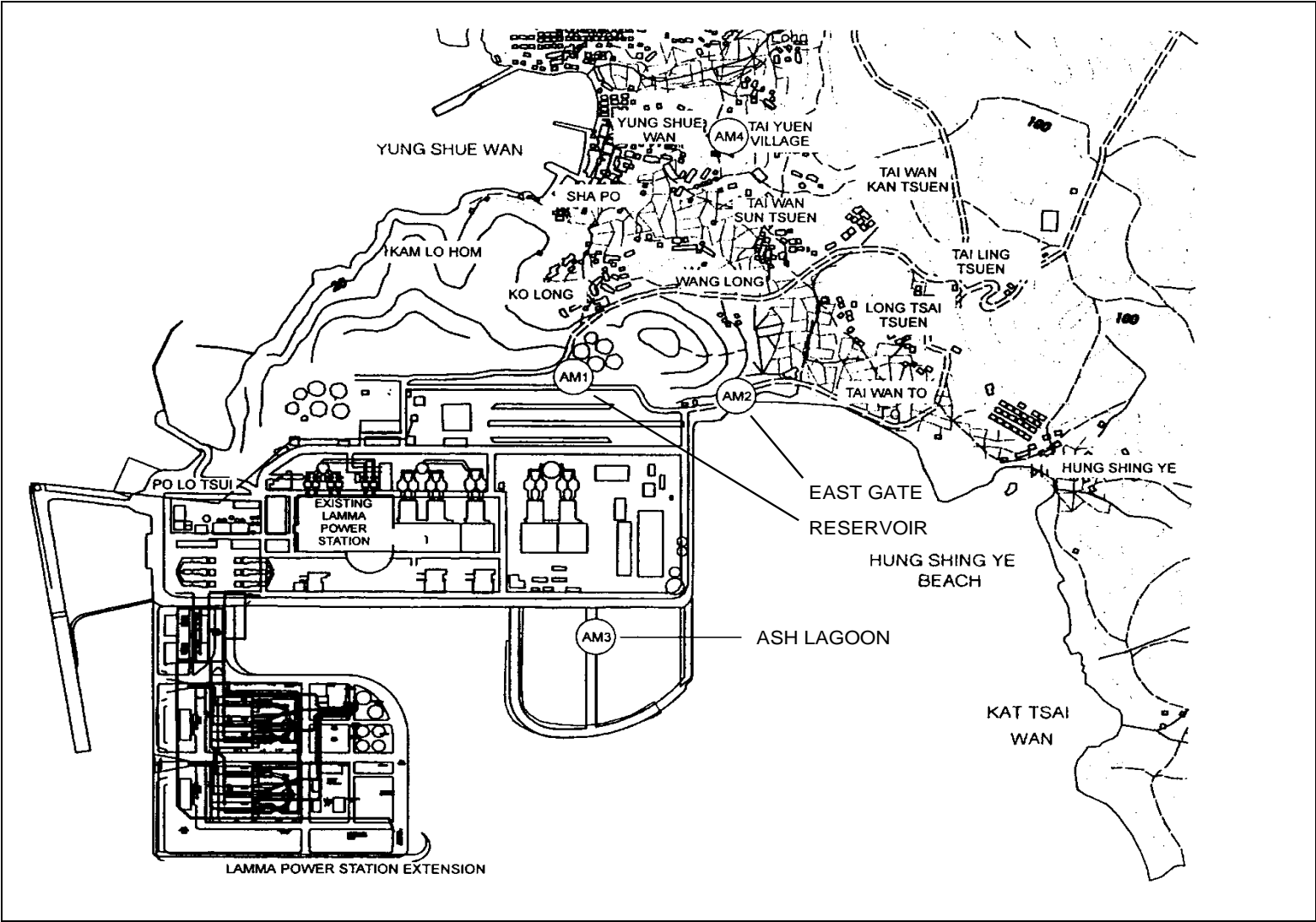


Figure 2.1 Location of Air Quality Monitoring Stations



### 3. NOISE

#### 3.1 Monitoring Requirements

Continuous noise alarm monitoring at Ash Lagoon/Ching Lam were carried out to calculate the noise contributed by the construction activities at the two critical NSR's, viz. Long Tsai Tsuen/Hung Shing Ye and the school within the village of Tai Wan San Tsuen. The impact monitoring data for construction noise were checked against the limit levels specified in the EM&A Manual. With the availability of the construction noise permits, impact monitoring for the construction work during the restricted hours was also carried out. Section 3 presents the details of the construction noise permits.

The impact noise monitoring data were checked against the limit levels specified in the EM&A Manual. [Appendix B](#) shows the established Action/Limit Levels for noise.

#### 3.2 Monitoring Locations

In accordance with the EM&A manual, the identified noise monitoring locations of Ash Lagoon and Ching Lam are shown in [Figure 3.1](#).

#### 3.3 Monitoring Equipment

The sound level meters used for noise monitoring complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1). The noise monitoring equipment used is shown in [Table 3.1](#).

Table 3.1 Noise Monitoring Equipment

Equipment	Model
Sound level meters	B&K 2250
Sound level calibrator	B&K 4231

#### 3.4 Monitoring Parameters, Frequency and Duration

Continuous alarm monitoring was carried out at Ash Lagoon and Ching Lam. The measurement duration and parameter of noise monitoring were presented in [Table 3.2](#) as follows:

Table 3.2 Noise Monitoring Duration and Parameter

Location	Time Period	Frequency	Parameter
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Ash Lagoon  Ching Lam	Day-time: 0700-1900 hrs on normal weekdays	Day-time: 30 minutes	30-min $L_{Aeq}$
	Evening-time & holidays: 0700-2300 hrs on holidays; and 1900-2300 hrs on all other days	Evening-time & holidays: 5 minutes	5-min $L_{Aeq}$
	Night-time: 2300-0700 hrs of next day	Night-time: 5 minutes	5-min $L_{Aeq}$

### 3.5 Monitoring Procedures and Calibration Details

#### *Monitoring Procedures*

##### *Continuous Noise Monitoring for Lamma Extension Construction*

The measured noise levels (MNL's) were collected at the noise alarm monitoring stations at Ash Lagoon and Ching Lam. The notional background noise levels (viz. baseline noise data at Ash Lagoon and Ching Lam) were applied to correct the corresponding MNL's in 30-min/5-min  $L_{Aeq}$ .

A wind speed sensor was installed at Station Building Rooftop. The wind speed signal was used to determine whether the data from Ash Lagoon and Ching Lam noise alarm monitoring stations were affected. The instantaneous data was discarded in case the instantaneous wind speed exceeded 10 m/s. The 30-min/5-min  $L_{Aeq}$  was considered valid only if the amount of valid data was equal to or above 70%.

#### *Equipment Calibration*

The sound level meters and calibrators were verified by the manufacturer or accredited laboratory. With the endorsement of the Independent Environmental Checker, the enhancement of calibration of sound level meter at the noise monitoring stations was implemented. The monthly manual on-site calibration using sound level calibrator was replaced by the daily auto charge injection calibration function of the sound level meter. For additional quality assurance, manual on-site calibration would still be conducted for the noise monitoring stations once every 6 months. The manual on-site calibrations for Ash Lagoon and Ching Lam noise monitoring stations were carried out in March 2022. The next calibrations for the two noise monitoring stations were scheduled in September 2022.

### 3.6 Results and Observations

Continuous noise monitoring was conducted at the two monitoring stations at Ash Lagoon and Ching Lam.

All monitoring results and their graphical presentations are provided in [Appendix E](#). No exceedance of noise Action/Limit Level was recorded in the month.

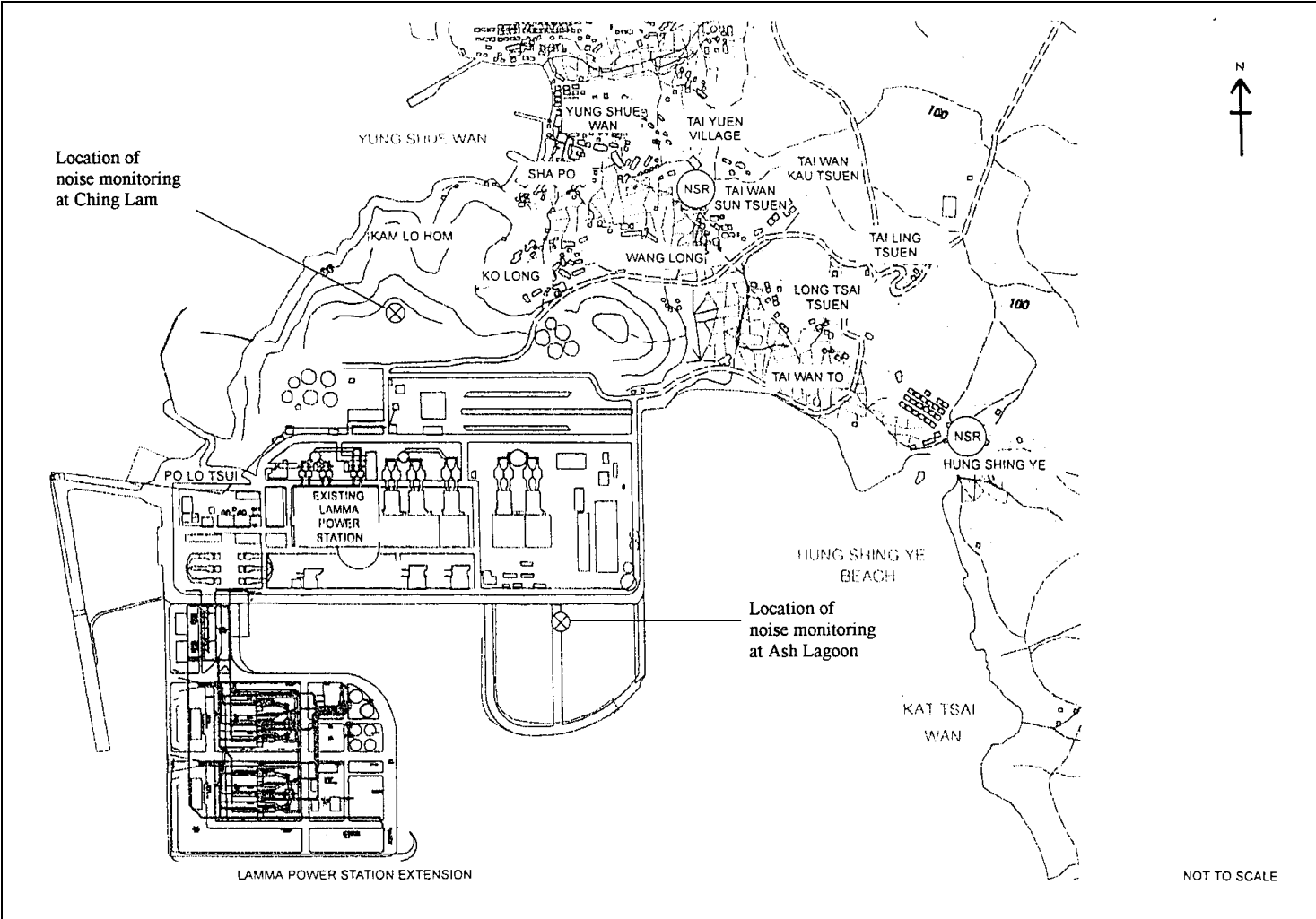


Figure 3.1 Location of Noise Monitoring Stations

## 4. ENVIRONMENTAL AUDIT

### 4.1 Review of Environmental Monitoring Procedures

The environmental monitoring procedures were regularly reviewed by the Environmental Team. No modification to the existing monitoring procedures was recommended.

### 4.2 Assessment of Environmental Monitoring Results

#### *Monitoring results for Air Quality and Noise*

The environmental monitoring results for Air Quality and Noise in the reporting month presented in Sections 2 and 3 respectively are summarized in [Table 4.1](#).

Table 4.1 Summary of AL Level Exceedances on Monitoring Parameters

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
Air					
1	Ambient TSP (24-hour)	01/07/2022-31/07/2022	0	0	
2	Ambient TSP (1-hour)	01/07/2022-31/07/2022	0	0	
Noise					
1	Noise level at the critical NSR's predicted by the noise alarm monitoring system	01/07/2022-31/07/2022	0	0	

### 4.3 Waste Management

Wastes generated from this Project include inert construction and demolition (C&D) materials and non-inert C&D materials. Inert C&D materials comprise excavated materials and broken concrete. Non-inert C&D materials comprise general refuse, metals and paper/ cardboard packaging, plastics, chemical waste, etc.

Inert C&D material and non-inert C&D material disposed of in July 2022 are shown in [Table 4.2](#).

Table 4.2 Estimated Amounts of Waste in July 2022

Total Inert C&D Waste Materials	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste

30.62 Tonnes	11.55 Tonnes	76.69 Tonnes	0 Litres
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The monthly waste flow tables prepared by the contractors are attached in [Appendix K](#)

#### 4.4 Site Environmental Audit

Site audits were carried out by ET on a weekly basis to monitor environmental issues at the construction sites to ensure that all mitigation measures were implemented timely and properly. The site audit findings for the reporting month are summarized in [Appendix H](#). The site conditions were generally satisfactory. All required mitigation measures were implemented.

#### 4.5 Status of Environmental Licensing and Permitting

All permits/licenses obtained for the project are summarised in [Table 4.3](#).

Table 4.3 Summary of Environmental Licensing and Permit Status

Description	Permit No.	Valid Period		Highlights	Status
		From	To		
Varied Environmental Permit	EP-071/2000/D	28/09/20	-	The whole construction work site	Valid
Construction Noise Permit	GW-RS0077-22	02/02/22	28/07/22	Civil and Building Works for Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0121-22	01/03/22	31/08/22	Power Block Facilities works for Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0222-22	13/04/22	12/10/22	Construction site of Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0551-22	10/07/22	07/01/23	Construction site of Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0613-22	29/07/22	27/01/23	Civil and Building Works for Unit L12. Operation of PME during restricted hours	Valid
WPCO Discharge Licence#	WT00037613-2021	15/04/21	30/04/26	Civil and Building Works for No.5 C.W. Intake and Cable Bridge	Valid

Description	Permit No.	Valid Period		Highlights	Status
		From	To		
WPCO Discharge Licence##	WT00037665-2021	06/05/21	31/05/26	Civil and Building Works for Unit L12	Valid
Registration of Chemical Waste Producer	WPN5213-912-P2781-22	22/02/16	-	Civil and Building Works	Valid
Registration of Chemical Waste Producer	WPN5517-912-T2007-02	17/03/05	-	E&M Equipment Installation and Maintenance	Valid
Waste Disposal Billing Account	Account No.: 7038672	27/10/20	-	Civil works for Unit L12 No.5 C.W. intake and cable bridge	Valid
Waste Disposal Billing Account	Account No.: 7039272	08/01/21	-	Civil and building works for Unit L12	Valid
Waste Disposal Billing Account	Account No.: 7041942	21/10/21	-	E&M Erection of Power Block Facilities – L12	Valid

Notes: # and ## - Water quality monitoring was carried out in May 2022 and the results of which would be reported separately by the contractor.

#### 4.6 Implementation Status of Environmental Mitigation Measures

Mitigation measures detailed in the permits and the EM&A Manual (Construction Phase) are required to be implemented. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in [Appendix I](#).

#### 4.7 Implementation Status of Event/Action Plans

The Event/Action Plans extracted from the EM&A Manual (Construction Phase) are presented in [Appendix G](#).

#### 4.8 Implementation Status of Environmental Complaint Handling Procedures

In July 2022, no complaint in relation to the environmental impact of the construction activities was received.

Table 4.4 Environmental Complaints Received in July 2022

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

Table 4.5 Outstanding Environmental Complaints Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

## **5. FUTURE KEY ISSUES**

### **5.1 Key Issues for the Coming Month**

Key issues to be considered in the coming month include:

#### Unit L12 Civil and Building Works

##### *Noise Impact*

- To continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained.

##### *Air Impact*

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

##### *Water Impact*

- To treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance in accordance with the WPCO discharge licence already obtained.

#### Unit L12 Mechanical Erection

##### *Noise Impact*

- To continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained.
- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

##### *Air Impact*

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

#### Unit L12 Electrical, Instrumentation & Control Erection

##### *Noise Impact*

- To continue monitoring the noise level during construction and to ensure compliance with the CNP's already obtained.
- To continue executing the preventive measures for avoiding noise exceedance and keep monitoring/ reviewing the noise performance.

##### *Air Impact*

- To monitor and review the sufficiency of the dust suppression measures provided and increase the resources accordingly if necessary.

### **5.2 Monitoring Schedules for the Next 3 Months**

The tentative environmental monitoring schedules for the next 3 months are shown in [Appendix C](#).



### **5.3 Construction Program for the Next 3 Months**

The tentative construction programs for the next 3 months are shown in [Appendix J](#).

## **6. CONCLUSION**

All monitoring work at designated stations was performed as scheduled satisfactorily. The environmental monitoring works and site inspection were performed as scheduled in the reporting month. All monitoring results were checked and reviewed.

No Action/Limit level exceedance on 1-hour and 24-hour TSP level was recorded in the reporting month.

No Action/Limit level exceedance on noise was recorded in the reporting month.

Environmental mitigation measures recommended in the EM&A manual for the construction activities were implemented in the reporting month. No complaint in relation to the environmental impact of the construction activities was received in the reporting month. No prosecution was received for this Project in the reporting period.

The environmental performance of the Project was generally satisfactory.

Appendix A Organization Chart

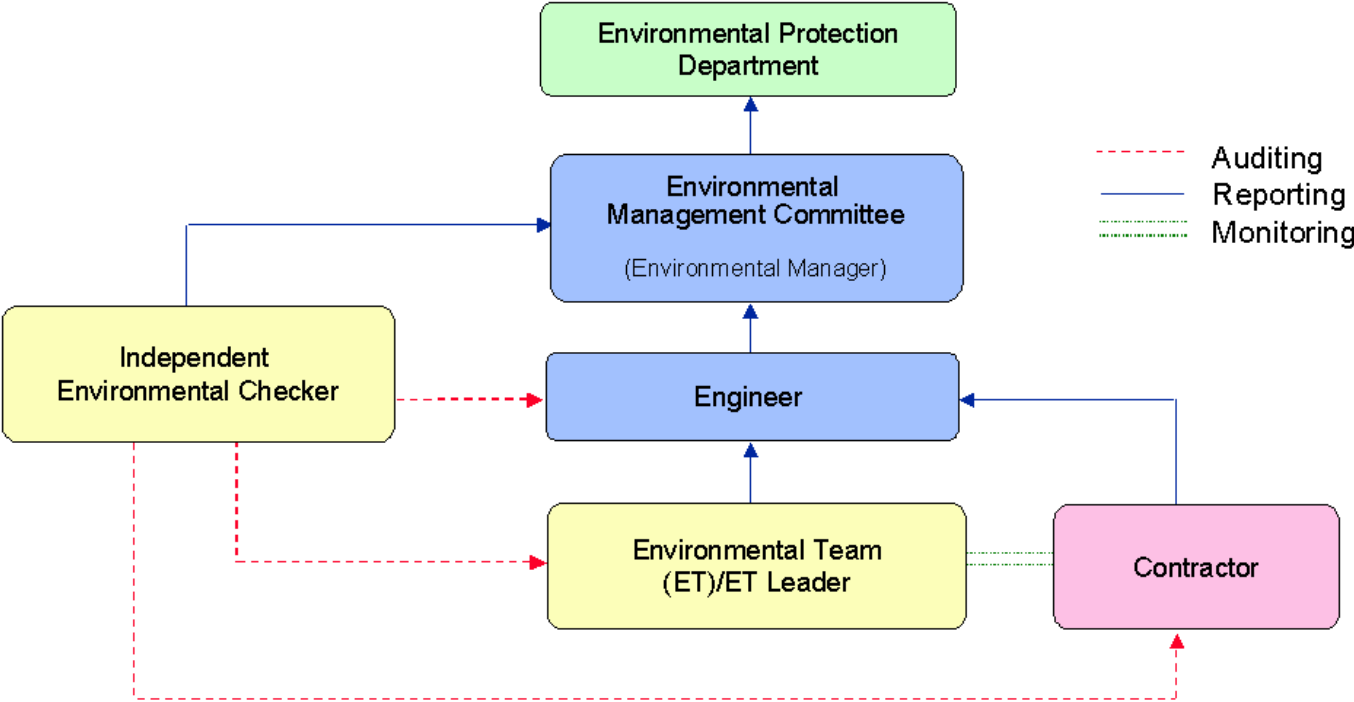


Figure A.1 Organisation of EM&A Programme at Construction Phase

## Appendix B Action and Limit Levels for Air Quality and Noise Monitoring

### B.1. Air

Table B.1 Action and Limit Levels for 1-hour and 24-hour TSP

	Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
1-hour TSP*	340	500
24-hour TSP	190	260

\* No Action/Limit Level for 1-hour TSP is applied to AM4 where no real time dust monitor is installed.

### B.2. Noise

Table B.2 AL Levels for Construction Noise (Other than Percussive Piling)

Parameters	Action	Limit
Noise Levels at the NSR's at Long Tsai Tsuen/Hung Shing Ye and school within the village of Tai Wan San Tsuen predicted by the noise alarm monitoring system	When one or more documented complaints are received	a. 75 dB(A) in $L_{Aeq,30 \text{ min}}$ (07:00-19:00 hrs on normal weekdays) (Note 1)
Manual noise monitoring at the nearest Pak Kok Tsui residences to cable landing points N4 and N5		b. subject to statutory control under the Noise Control Ordinance (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days). Set to 60 dB(A) in $L_{Aeq,5 \text{ min}}$ c. subject to statutory control under the Noise Control Ordinance (23:00-07:00 hrs of next day). Set to 45 dB(A) in $L_{Aeq,5 \text{ min}}$
Note:		
1. For educational institution, the limit level shall be 70 dB(A), reduced to 65 dB(A) during examination periods.		

## Appendix C Environmental Monitoring Schedule

Table C.1 Monitoring schedule for 24hr and 1hr TSP monitoring for Lamma Extension Construction (July 2022 to October 2022)

24hr TSP Monitoring	1hr TSP Monitoring
6/July/2022	6/July/2022 1500hr to 1800hr
12/July/2022	12/July/2022 1500hr to 1800hr
18/July/2022	18/July/2022 1500hr to 1800hr
24/July/2022	24/July/2022 1500hr to 1800hr
30/July/2022	30/July/2022 1500hr to 1800hr
5/August/2022	5/August/2022 1500hr to 1800hr
11/August/2022	11/August/2022 1500hr to 1800hr
17/August/2022	17/August/2022 1500hr to 1800hr
23/August/2022	23/August/2022 1500hr to 1800hr
29/August/2022	29/August/2022 1500hr to 1800hr
4/September/2022	4/September/2022 1500hr to 1800hr
10/September/2022	10/September/2022 1500hr to 1800hr
16/September/2022	16/September/2022 1500hr to 1800hr
22/September/2022	22/September/2022 1500hr to 1800hr
28/September/2022	28/September/2022 1500hr to 1800hr
4/October/2022	4/October/2022 1500hr to 1800hr
10/October/2022	10/October/2022 1500hr to 1800hr
16/October/2022	16/October/2022 1500hr to 1800hr
22/October/2022	22/October/2022 1500hr to 1800hr
28/October/2022	28/October/2022 1500hr to 1800hr

## APPENDIX D AIR QUALITY MONITORING RESULTS

Site: Lamma Power Station Extension

Month: July 2022

### 24 hour TSP Measurement:-

Date	TSP concentration ( $\mu\text{g}/\text{m}^3$ )				Weather Information (From Hong Kong Observatory)		
	Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)	Tai Yuen Village (AM4)	Mean Wind Speed (km/hr)	Prevailing Wind Dir. ( $^{\circ}$ )	Mean R.H. (%)
6/7/2022	23	26	17	13	22.5	220	81
12/7/2022	13	11	8	15	10.2	110	72
18/7/2022	36	16	21	10	25.5	220	78
24/7/2022	49	19	17	13	18.3	240	72
30/7/2022	38	26	24	21	8.8	220	81

### 1 hour TSP Measurement:-

Date	Time	TSP concentration ( $\mu\text{g}/\text{m}^3$ )		
		Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)
6/7/2022	15:00 - 15:59	22	34	15
	16:00 - 16:59	20	27	11
	17:00 - 17:59	19	25	11
12/7/2022	15:00 - 15:59	4	8	7
	16:00 - 16:59	18	12	10
	17:00 - 17:59	17	14	11
18/7/2022	15:00 - 15:59	41	13	19
	16:00 - 16:59	38	14	20
	17:00 - 17:59	33	15	22
24/7/2022	15:00 - 15:59	156	19	19
	16:00 - 16:59	76	27	19
	17:00 - 17:59	45	34	20
30/7/2022	15:00 - 15:59	32	27	38
	16:00 - 16:59	46	26	36
	17:00 - 17:59	51	23	38

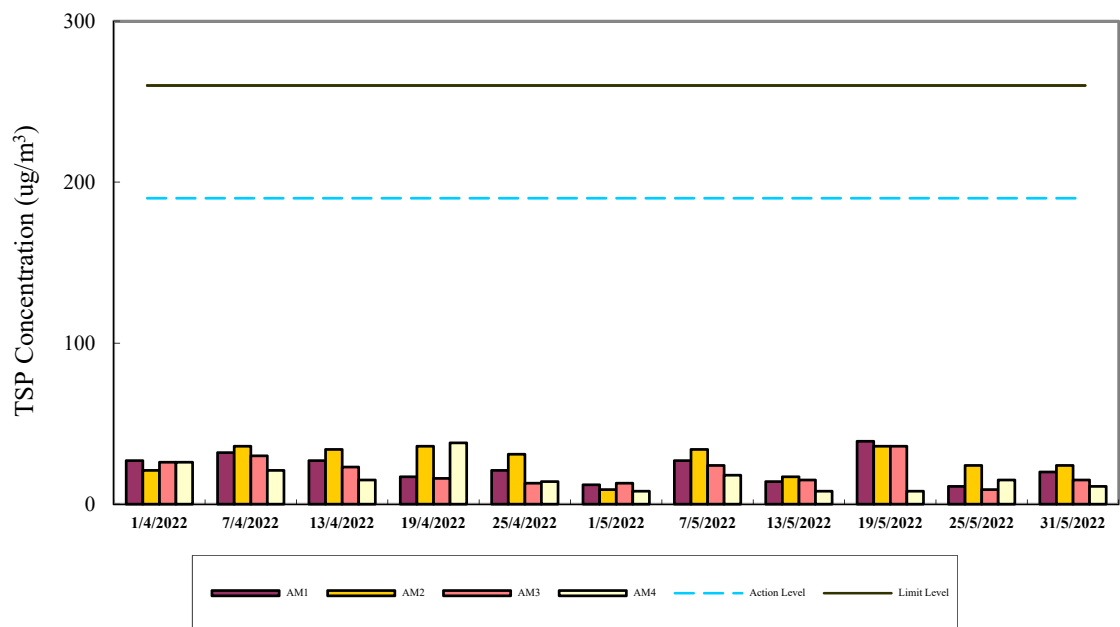
	1-hr TSP ( $\mu\text{g}/\text{m}^3$ )	24-hr TSP ( $\mu\text{g}/\text{m}^3$ )
Action Level	340	190
Limit Level	500	260

Calibration: Calibration details are shown in appendix F.

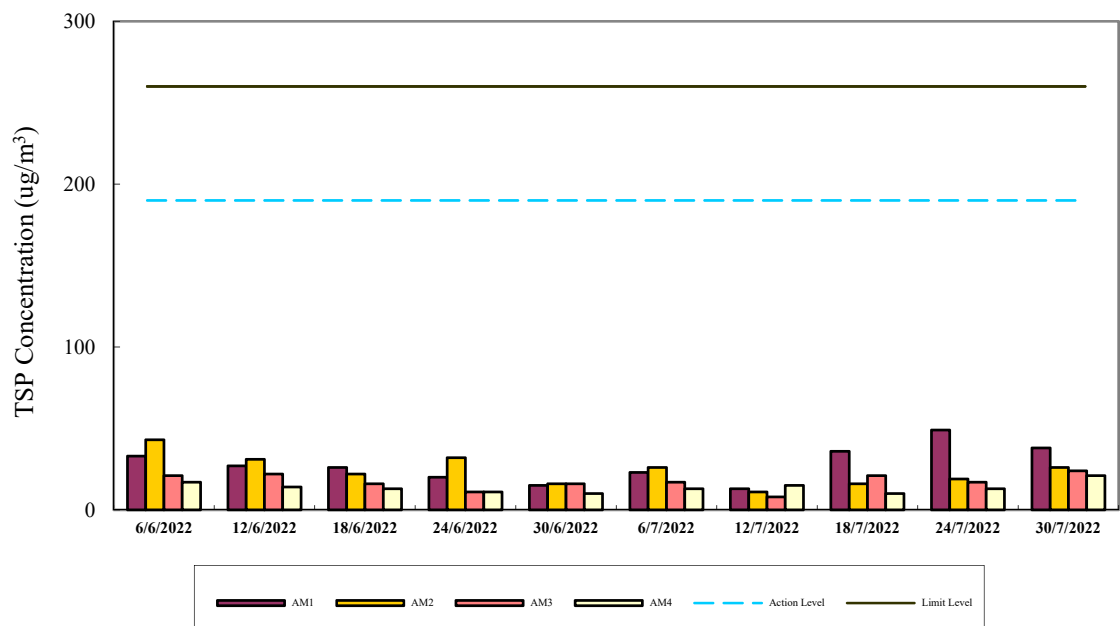
Equipment used:

Location	1-hr TSP	24-hr TSP
Reservoir, East Gate and Ash Lagoon	TEOM	TEOM
Tai Yuen Village	-	MINIVOL Portable Sampler

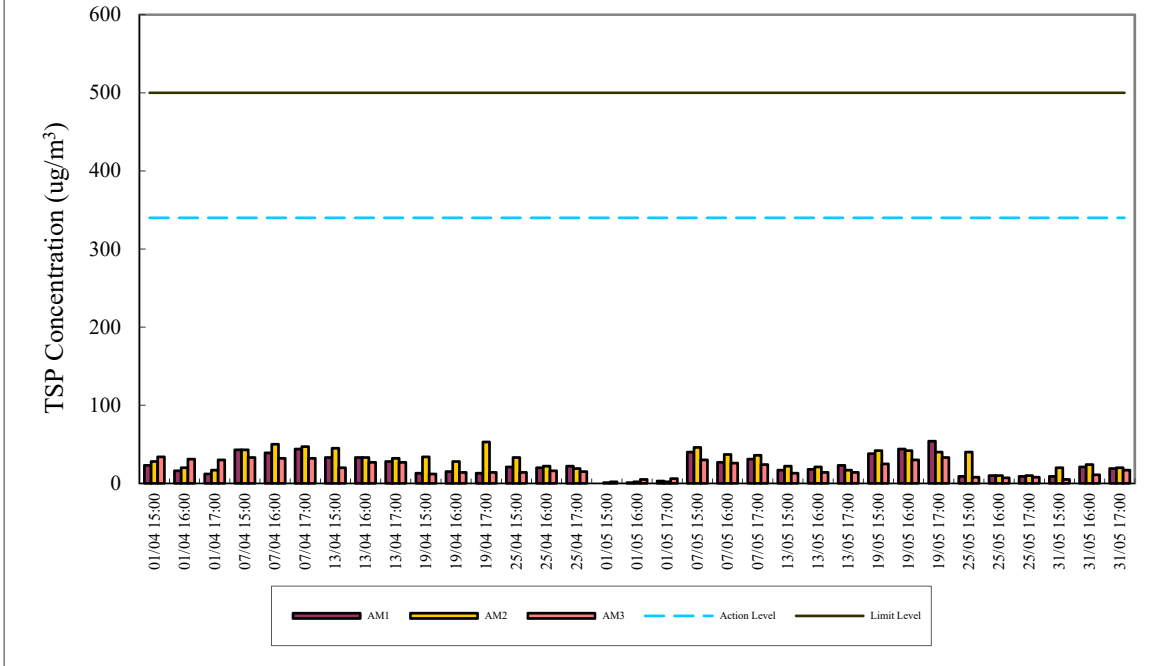
24-hr TSP Air Monitoring Data (April 2022 - May 2022)



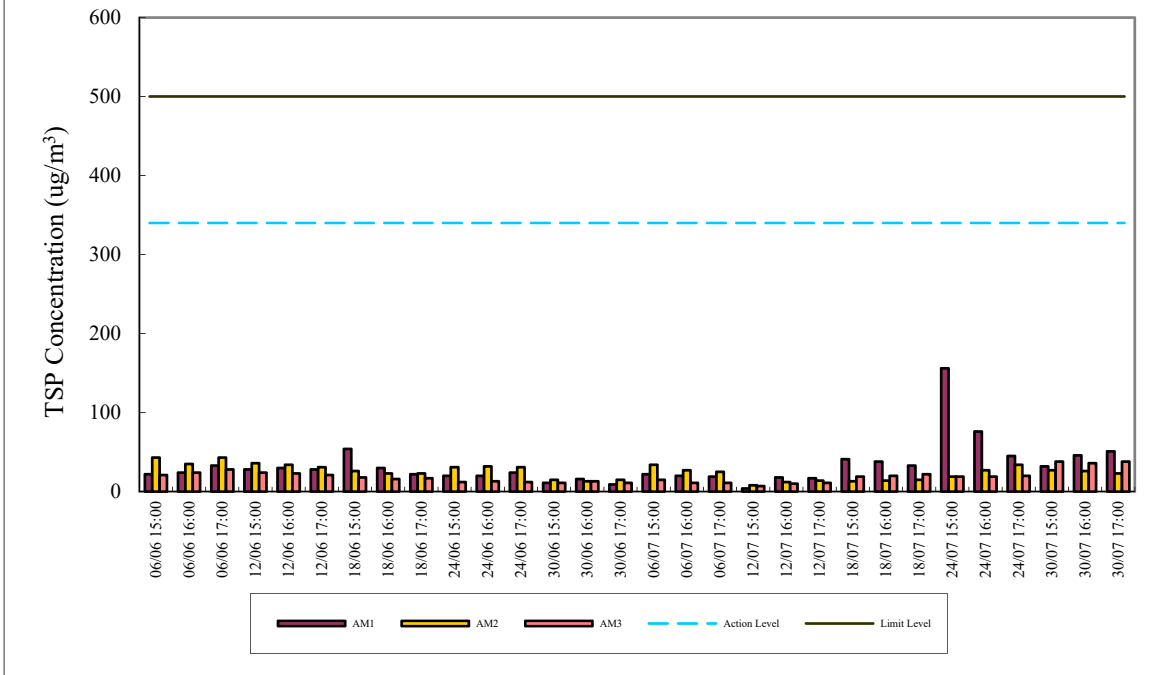
24-hr TSP Air Monitoring Data (June 2022 - July 2022)



1-hr TSP Air Monitoring Data (April 2022 - May 2022)



1-hr TSP Air Monitoring Data (June 2022 - July 2022)





## Appendix E Continuous Noise Monitoring Results for July 2022

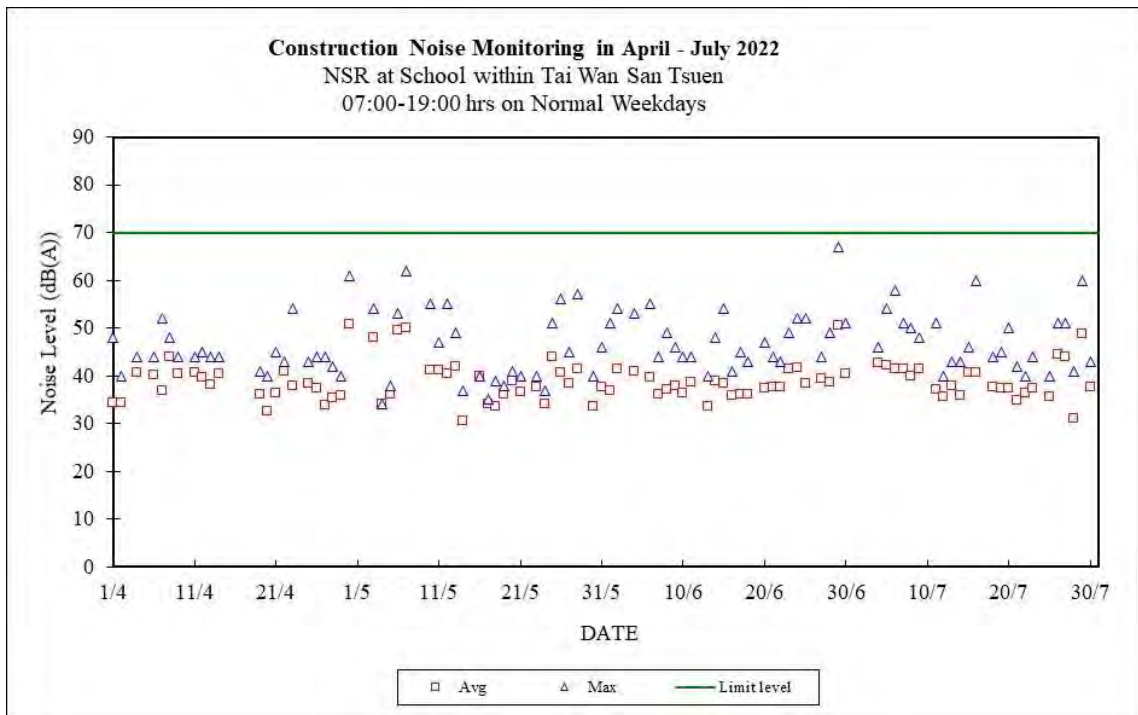
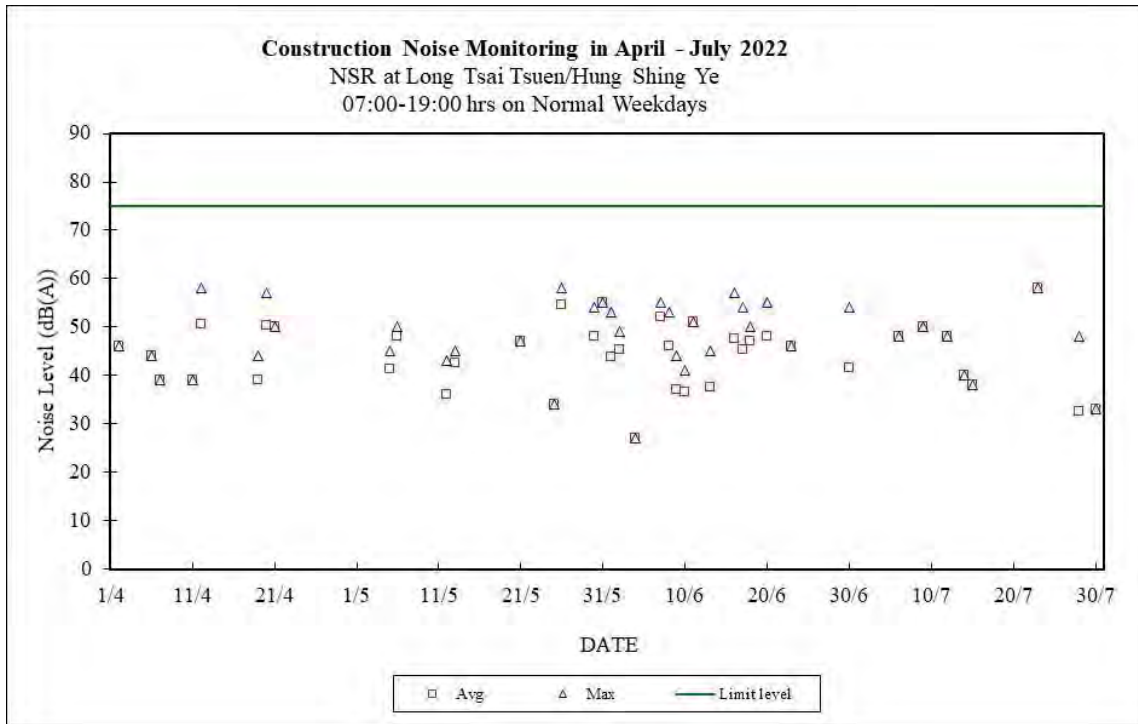
Site: Lamma Power Station Extension Construction  
 Measurement Location: Ash Lagoon and Ching Lam  
 Measurement Parameter: 30-min Leq (07:00-19:00 hrs on normal weekdays)  
 5-min Leq (07:00-23:00 hrs on holidays and  
 19:00-23:00 hrs on all other days, and 23:00-  
 07:00 hrs of next day)  
 Noise Equipment: B&K 2250 sound level meters and B&K 4231 sound  
 Level calibrator  
 Lab. Calibration Date: B&K 2250 sound level meters - 21/10/2021 (Ash Lagoon)  
 03/09/2021 (Ching Lam)  
 B&K 4231 calibrator (21/10/2021)

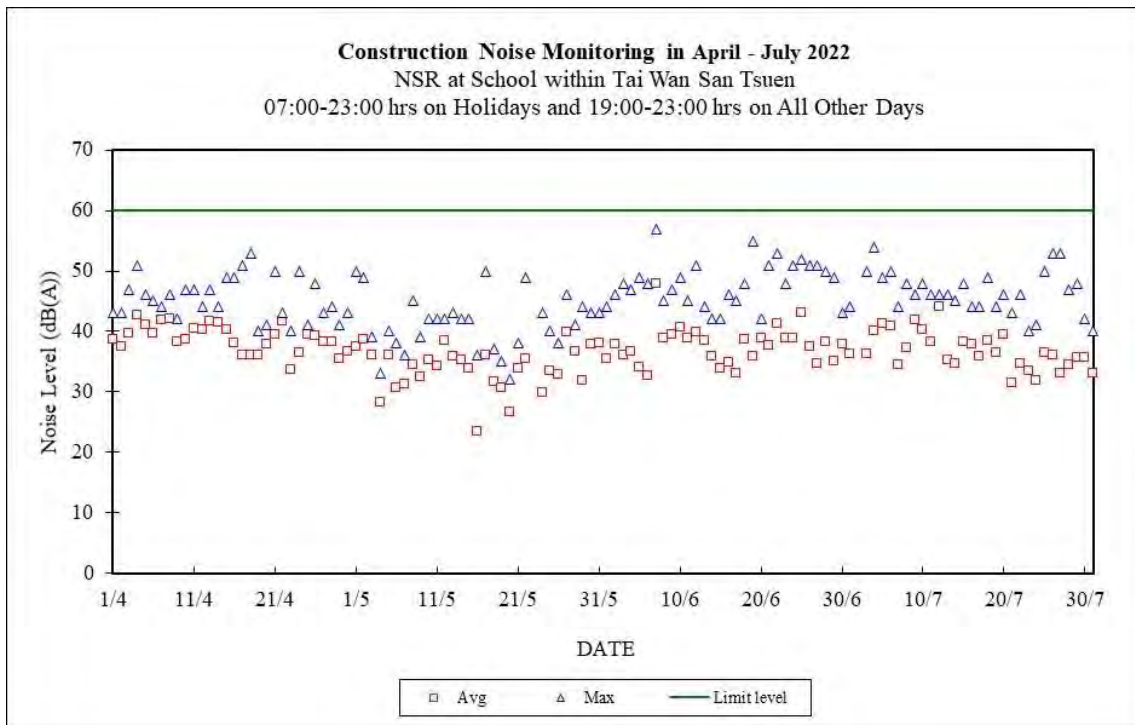
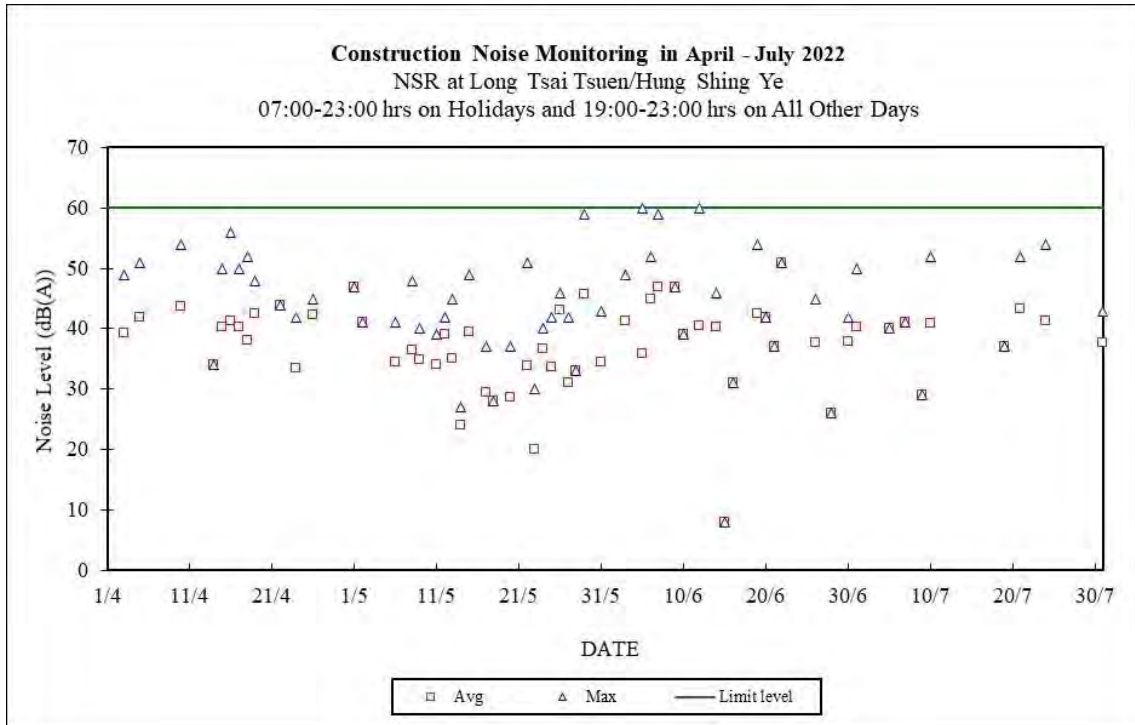
Date	Time	Calculated Noise Level at NSR at Long Tsai Tsuen/Hung Shing Ye (dB(A))		Limit Noise Level (dB(A))	Calculated Noise Level at NSR at the school within Tai Wan San Tsuen (dB(A))		Limit Noise Level (dB(A))
		Max	Avg		Max	Avg	
01/07/2022	07:00-23:00	50	40	60	44	36	60
01/07/2022	23:00-07:00	---	---	45	---	---	45
02/07/2022	07:00-19:00	---	---	75	---	---	70
02/07/2022	19:00-23:00	---	---	60	---	---	60
02/07/2022	23:00-07:00	---	---	45	---	---	45
03/07/2022	07:00-23:00	---	---	60	50	36	60
03/07/2022	23:00-07:00	44	38	45	44	38	45
04/07/2022	07:00-19:00	---	---	75	46	43	70
04/07/2022	19:00-23:00	---	---	60	54	40	60
04/07/2022	23:00-07:00	---	---	45	43	37	45
05/07/2022	07:00-19:00	---	---	75	54	42	70
05/07/2022	19:00-23:00	40	40	60	49	41	60
05/07/2022	23:00-07:00	45	42	45	45	39	45
06/07/2022	07:00-19:00	48	48	75	58	41	70
06/07/2022	19:00-23:00	---	---	60	50	41	60
06/07/2022	23:00-07:00	42	40	45	43	35	45
07/07/2022	07:00-19:00	---	---	75	51	41	70
07/07/2022	19:00-23:00	41	41	60	44	34	60
07/07/2022	23:00-07:00	22	22	45	45	38	45
08/07/2022	07:00-19:00	---	---	75	50	40	70
08/07/2022	19:00-23:00	---	---	60	48	37	60
08/07/2022	23:00-07:00	41	35	45	45	39	45
09/07/2022	07:00-19:00	50	50	75	48	41	70
09/07/2022	19:00-23:00	29	29	60	46	42	60
09/07/2022	23:00-07:00	28	28	45	45	37	45
10/07/2022	07:00-23:00	52	41	60	48	40	60
10/07/2022	23:00-07:00	37	34	45	42	35	45
11/07/2022	07:00-19:00	---	---	75	51	37	70
11/07/2022	19:00-23:00	---	---	60	46	38	60
11/07/2022	23:00-07:00	40	38	45	45	35	45
12/07/2022	07:00-19:00	48	48	75	40	36	70
12/07/2022	19:00-23:00	---	---	60	46	44	60
12/07/2022	23:00-07:00	35	35	45	43	35	45
13/07/2022	07:00-19:00	---	---	75	43	38	70
13/07/2022	19:00-23:00	---	---	60	46	35	60
13/07/2022	23:00-07:00	34	30	45	45	34	45

14/07/2022	07:00-19:00	40	40	75	43	36	70
14/07/2022	19:00-23:00	---	---	60	45	35	60
14/07/2022	23:00-07:00	37	37	45	45	35	45
15/07/2022	07:00-19:00	38	38	75	46	41	70
15/07/2022	19:00-23:00	---	---	60	48	38	60
15/07/2022	23:00-07:00	45	40	45	42	37	45
16/07/2022	07:00-19:00	---	---	75	60	41	70
16/07/2022	19:00-23:00	---	---	60	44	38	60
16/07/2022	23:00-07:00	40	40	45	45	37	45
17/07/2022	07:00-23:00	---	---	60	44	36	60
17/07/2022	23:00-07:00	43	40	45	45	36	45
18/07/2022	07:00-19:00	---	---	75	44	38	70
18/07/2022	19:00-23:00	---	---	60	49	39	60
18/07/2022	23:00-07:00	34	33	45	45	37	45
19/07/2022	07:00-19:00	---	---	75	45	37	70
19/07/2022	19:00-23:00	37	37	60	44	37	60
19/07/2022	23:00-07:00	39	32	45	44	36	45
20/07/2022	07:00-19:00	---	---	75	50	37	70
20/07/2022	19:00-23:00	---	---	60	46	39	60
20/07/2022	23:00-07:00	42	42	45	43	35	45
21/07/2022	07:00-19:00	---	---	75	42	35	70
21/07/2022	19:00-23:00	52	43	60	43	32	60
21/07/2022	23:00-07:00	38	35	45	44	39	45
22/07/2022	07:00-19:00	---	---	75	40	37	70
22/07/2022	19:00-23:00	---	---	60	46	35	60
22/07/2022	23:00-07:00	38	38	45	45	38	45
23/07/2022	07:00-19:00	58	58	75	44	37	70
23/07/2022	19:00-23:00	---	---	60	40	34	60
23/07/2022	23:00-07:00	---	---	45	43	34	45
24/07/2022	07:00-23:00	54	41	60	41	32	60
24/07/2022	23:00-07:00	45	39	45	40	33	45
25/07/2022	07:00-19:00	---	---	75	40	36	70
25/07/2022	19:00-23:00	---	---	60	50	37	60
25/07/2022	23:00-07:00	---	---	45	45	36	45
26/07/2022	07:00-19:00	---	---	75	51	45	70
26/07/2022	19:00-23:00	---	---	60	53	36	60
26/07/2022	23:00-07:00	---	---	45	42	34	45
27/07/2022	07:00-19:00	---	---	75	51	44	70
27/07/2022	19:00-23:00	---	---	60	53	33	60
27/07/2022	23:00-07:00	---	---	45	44	37	45
28/07/2022	07:00-19:00	48	33	75	41	31	70
28/07/2022	19:00-23:00	---	---	60	47	34	60
28/07/2022	23:00-07:00	43	36	45	40	34	45
29/07/2022	07:00-19:00	---	---	75	60	49	70
29/07/2022	19:00-23:00	---	---	60	48	36	60
29/07/2022	23:00-07:00	45	39	45	45	34	45
30/07/2022	07:00-19:00	33	33	75	43	38	70
30/07/2022	19:00-23:00	---	---	60	42	36	60
30/07/2022	23:00-07:00	36	36	45	38	31	45
31/07/2022	07:00-23:00	43	38	60	40	33	60
31/07/2022	23:00-07:00	42	37	45	37	34	45

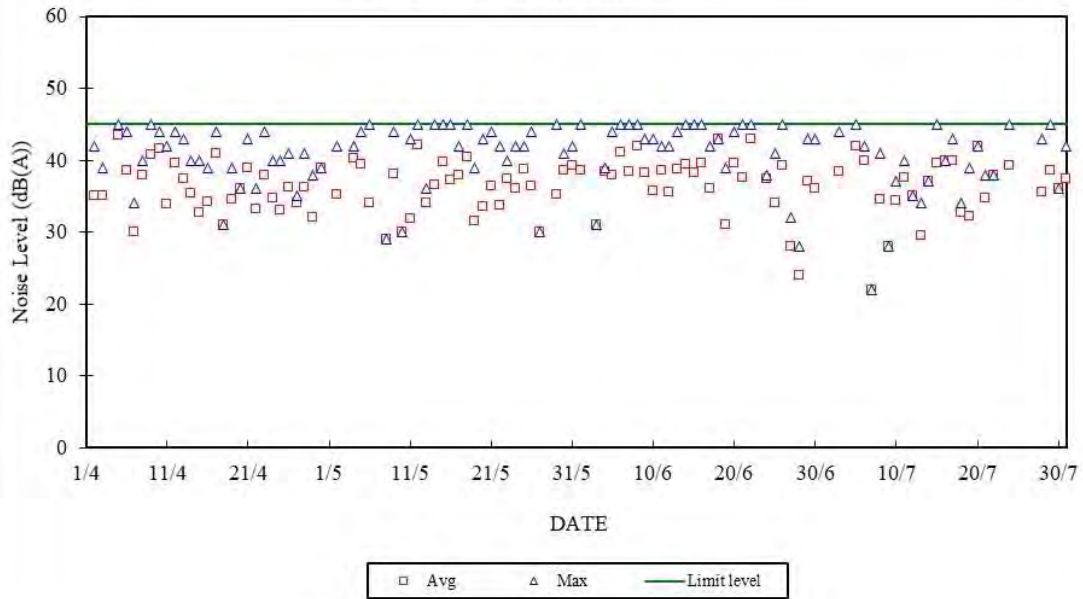
Note:

- a. "---" represents the measured noise monitoring data lower than the established notional background level/discarded under strong wind.
- b. Continuous noise monitoring was also carried out at holidays & evening-time (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days) and night-time (23:00-07:00 hrs of next day).

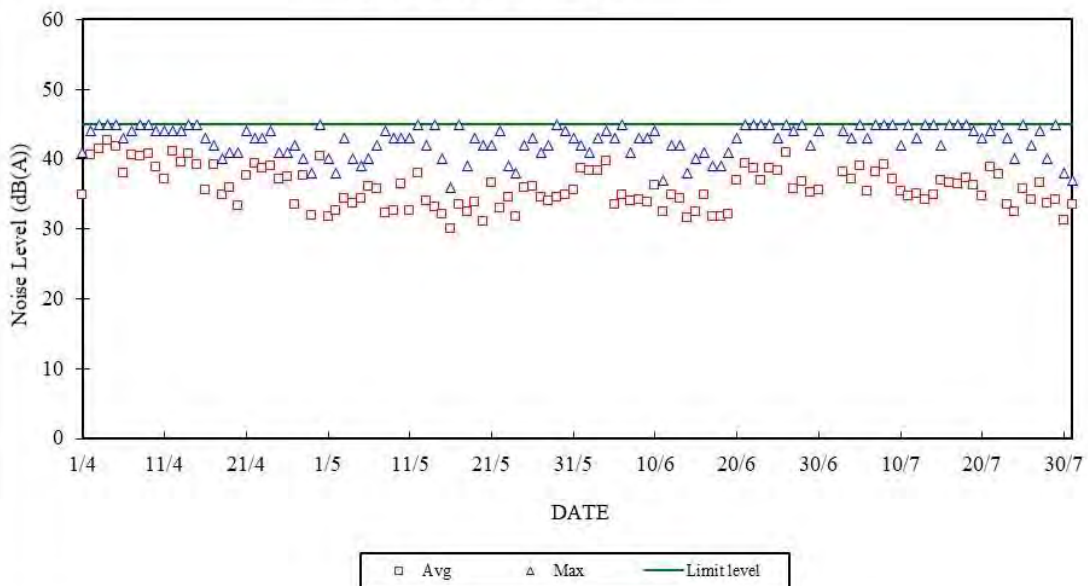




**Construction Noise Monitoring in April - July 2022**  
NSR at Long Tsai Tsuen/Hung Shing Ye  
23:00-07:00 hrs of Next Day



**Construction Noise Monitoring in April - July 2022**  
NSR at School within Tai Wan San Tsuen  
23:00-07:00 hrs of Next Day



# Appendix F

## The QA/QC Procedures and Results

**The Hongkong Electric Co., Ltd.**  
**Lamma Power Station Extension**  
**TEOM Continuous Dust Monitor**  
**Data Quality Assurance Log Sheet**

Month: July

Year: 2022

Reservoir (AM1)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
6/7/2022	271.294	4	2.88	10.31
12/7/2022	271.118	4	2.85	10.31
18/7/2022	270.759	4	2.83	10.31
24/7/2022	270.350	4	2.81	10.31
30/7/2022	269.869	4	2.88	10.31

East Gate (AM2)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
6/7/2022	251.237	4	2.66	13.56
12/7/2022	253.426	4	2.92	13.33
18/7/2022	253.227	4	2.96	13.38
24/7/2022	253.104	4	2.92	13.24
30/7/2022	252.824	4	2.99	13.44

Ash Lagoon (AM3)				
Date	Frequency (Hz) (240 - 275)	Operation Mode (Mode 4)	Main Flow (l/min) (2.70 - 3.30)	Bypass Flow (l/min) (12.30 - 15.04)
6/7/2022	258.080	4	3.00	13.68
12/7/2022	257.969	4	3.00	13.68
18/7/2022	258.288	4	3.00	13.68
24/7/2022	258.124	4	3.00	13.68
30/7/2022	257.918	4	3.00	13.68

Maintenance Record			
	Reservoir	East Gate	Ash Lagoon
TEOM Filter Exchange	✓	✓	✓
Clean TSP Inlet	✓	✓	✓
Replace flow in-line filter	✓	✓	✓
Pump Repair			
Leak Check			
Flow audit			
Flow Controller Calibration			
A/C filter cleaning			

Remarks:

Prepared by: Chris Chan

Checked by: HY Chan

The Hongkong Electric Co., Ltd.  
Mini Volume Air Sampler Site Visit Log Sheet

Attendance Log

Site Name: Tai Yuen Village (AM4)

Date/Time	Staff Name
13/07/2022 / 10:15	W.M. TAM

Equipment / Item

Equipment / Item	Serial No. / No.
MINIVOL	5580
Used filter paper no.	MS09
New filter paper no.	MS10

Type of filter: Glass-fibre

- I. Calibration is performed by using Drycal DC-2 Flow Calibrator  
5 std. L/min set point is recommended

Before:

5.022

After:

5.022 (No adjustment)

- II. General Services

- Clean Rotameter: Yes
- Clean / Replace Pump Valves: Yes
- Clean / Replace Pump Diaphragms: Yes
- Clean Impaction Inlet: Yes
- Replace Timer Battery Every 6 months: Yes
- Replace Inlet Filter: Yes

Remarks

N/A

Conducted by: W.M. TAM

Checked by: SM Hon



**The Hongkong Electric Co., Ltd.**  
**Lamma Power Station Extension**  
**Noise Monitoring Station**  
**Daily Calibration Records**

Date	Location: Ash Lagoon		Location: Ching Lam	
	Calibration Results	Deviation from Reference (dB)	Calibration Results	Deviation from Reference (dB)
01/07/2022	Passed	0.14	Passed	-0.04
02/07/2022	Passed	0.07	Passed	-0.02
03/07/2022	Passed	0.03	Passed	0.00
04/07/2022	Passed	0.05	Passed	-0.02
05/07/2022	Passed	0.05	Passed	0.01
06/07/2022	Passed	0.08	Passed	0.02
07/07/2022	Passed	0.06	Passed	0.03
08/07/2022	Passed	0.08	Passed	0.07
09/07/2022	Passed	0.07	Passed	0.05
10/07/2022	Passed	0.10	Passed	0.04
11/07/2022	Passed	0.08	Passed	0.06
12/07/2022	Passed	0.10	Passed	0.03
13/07/2022	Passed	0.09	Passed	0.04
14/07/2022	Passed	0.07	Passed	0.04
15/07/2022	Passed	0.06	Passed	0.03
16/07/2022	Passed	0.05	Passed	0.03
17/07/2022	Passed	0.09	Passed	0.06
18/07/2022	Passed	0.11	Passed	0.06
19/07/2022	Passed	0.10	Passed	0.05
20/07/2022	Passed	0.10	Passed	0.04
21/07/2022	Passed	0.10	Passed	0.05
22/07/2022	Passed	0.10	Passed	0.05
23/07/2022	Passed	0.08	Passed	0.07
24/07/2022	Passed	0.10	Passed	0.04
25/07/2022	Passed	0.11	Passed	0.05
26/07/2022	Passed	0.12	Passed	0.04
27/07/2022	Passed	0.08	Passed	0.05
28/07/2022	Passed	0.09	Passed	0.03
29/07/2022	Passed	0.08	Passed	0.02
30/07/2022	Passed	0.09	Passed	0.04
31/07/2022	Passed	0.09	Passed	0.02

Remarks:

1. The B&K sound level meter at the noise monitoring station has an advanced feature of internal calibration checking (viz. Charge Injection Calibration (CIC)). CIC is a B&K patented method for in situ verification of the integrity of the entire sound measurement chain (including microphone, preamplifier and cabling).
2. The acceptance criterion of deviation from reference is  $\pm 0.5$  dB.

## Appendix G Event/Action Plans

Table G.1 Event and Action Plans for Air Quality

Event	Monitoring		Action	
	ET Leader	IEC	Engineer	Contractor
<b>Action Level</b>				
Exceedance of one sample	Identify source Inform Engineer and IEC verbally Repeat measurement to confirm finding	Check monitoring data submitted by ET and advise Engineer.	Notify Contractor Checking monitoring data and contractor's working methods	Rectify any unacceptable practice amend any working methods if appropriate
Exceedance of two or more consecutive samples	Identify source Inform Engineer and IEC verbally Repeat measurement to confirm finding Increase monitoring frequency Discuss with Engineer and Contractor on remedial actions required If exceedance continues, arrange meeting with Engineer If exceedance stops, discontinue additional monitoring	Check monitoring data submitted by ET and advise Engineer. Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Confirm receipt of notification of failure in writing Notify contractor Checking monitoring data and contractor's working methods Discuss proposed remedial actions with the ET and Contractor Ensure remedial actions properly implemented	Submit proposals for remedial actions to Engineer within 3 working days of notifications Implement the agreed proposals Amend proposal if appropriate
<b>Limit level</b>				
Exceedance of one sample	Repeat measurement to confirm finding. Identify the source(s) of the impact. If the exceedance is found to be valid and due to the Construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance, as soon as practicable. Increase monitoring frequency to daily Assess the effectiveness of the contractor's remedial actions and keep Engineer, IEC and EPD informed of the results	Check monitoring data submitted by ET and advise Engineer Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Confirm receipt of notification of failure in writing Notify Contractor Checking monitoring data and Contractor's working method Discuss with ET and Contractor on remedial actions to be provided Ensure remedial measures properly implemented	Take immediate action to avoid further exceedance Submit proposals for remedial actions to Engineer within 3 working days of notifications Implement the agreed proposals Amend proposal if appropriate
Exceedance of two or more	Identify source	Provide feedback to the Engineer on the remedial actions proposed by the	Confirm receipt of notification of	Take immediate action to

Event	Monitoring			Action		
	ET Leader	IEC	Engineer	Contractor		
consecutive samples	<p>If the exceedance is found to be valid and due to the construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance as soon as practicable.</p> <p>Repeat measurement to confirm finding</p> <p>Increase monitoring frequency to daily</p> <p>Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented</p> <p>Arrange meeting with Engineer and Contractor to discuss the remedial actions to be taken</p> <p>If exceedance stops, discontinue additional monitoring</p>	<p>ET / Contractor</p> <p>Advise Engineer on the effectiveness of the proposed remedial measures</p> <p>Verify the implementation of the remedial measures</p>	<p>failure in writing</p> <p>Checking monitoring data and Contractor's working methods</p> <p>Notify Contractor</p> <p>Discuss proposed remedial actions with ET and Contractor</p> <p>Ensure remedial measures properly implemented</p> <p>If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop the portion of work until the exceedance is abated</p>	<p>avoid further exceedance</p> <p>Submit proposals for remedial actions to Engineer within 3 working days of notifications</p> <p>Implement the agreed proposals</p> <p>Resubmit proposals if problem still not under control</p> <p>Stop the relevant portion of works as determined by the Engineer until the exceedance is abated</p>		

Table G.2 Event and Action Plans for Construction Noise

Exceedance	ET Leader	IEC	Engineer	Contractor
<b>Action Level</b>	Undertake noise measurement/check monitoring data to establish validity of complaint.	Review the analysed results submitted by the ET.	Notify Contractor of the complaint if proven.	Submit proposals for remedial actions to Engineer.
	If the complaint is valid, inform Engineer and IEC verbally.	Review the remedial measures proposed by the Contractor and advise the Engineer and ET accordingly.	Check Contractor's working methods and advise IEC and ET accordingly.	Amend proposals if required by the Engineer.
	Identify the source(s) of the noise.	Verify the implementation of the remedial measures.	Remind the Contractor of his contractual obligations and discuss remedial actions.	Implement the remedial actions immediately upon instruction from the Engineer.
	Discuss remedial actions required with Contractor and Engineer.		Keep the Contractor informed of the efficacy of remedial actions.	Liaise with the Engineer to optimise the effectiveness of the agreed mitigation.
	Increase manual monitoring frequency to assess efficacy of remedial measures.			
	If exceedance continues, review implementation of appropriate mitigation measures.			
<b>Limit Level</b>	Repeat manual measurement/check monitoring data to confirm findings.	Agree potential remedial actions with Engineer, ET and Contractor.	Notify Contractor of exceedance.	Take immediate action to avoid further exceedance.
	Identify the source(s) of the impact. If the exceedance is found to be valid and due to the Construction works, verbally advise the Contractor, Engineer and IEC, and inform the EPD of the exceedance, as soon as practicable.	Review Contractor's remedial actions / measures to ensure their effectiveness and advise the Engineer and ET accordingly.	Check Contractor's working methods and advise IEC and ET accordingly.  Discuss with Contractor the remedial actions to be implemented.	Submit proposals for remedial actions to Engineer.  Amend proposals if required by the Engineer.
	Discuss remedial actions required with Engineer.	Verify the implementation of the remedial measures	Keep the Contractor informed of the efficacy of remedial actions. If the exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop the portion of work until the exceedance is abated	Implement remedial actions immediately upon instruction from the Engineer. If the exceedance continues, consider what portion of the work is responsible and, as instructed by the Engineer, stop the portion of work until the exceedance is abated
	Increase manual monitoring frequency to assess efficacy of remedial measures.			

Table G.3 Event and Action Plans for Water Quality

<b>Exceedance</b>	<b>ET Leader</b>	<b>IEC</b>	<b>Engineer</b>	<b>Contractor</b>
Action level exceeded on one sampling day	Verbally inform the Contractor, and IEC. Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measures with Engineer and Contractor; Repeat measurement on next day of exceedance.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose and discuss mitigation measures with Engineer; Implement the agreed mitigation measures.
Action level exceeded on more than one consecutive sampling day	Repeat in-situ measurements to confirm findings; Identify source(s) of impact; Inform Contractor and IEC; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measure with Engineer and Contractor; Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance.	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with ET and Contractor on the proposed mitigation measures; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the implemented mitigation measures.	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer within 3 working days and discuss with ET and Engineer; Implement the agreed mitigation measures.
Limit level exceeded on one sampling day	Verbally inform the Contractor, IEC and the EPD of the exceedance; Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Check monitoring data, all plant,	Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	Discuss with Contractor on the proposed mitigation measures; Request Contractor to critically review the working methods; Make agreement on the mitigation measures to be implemented; Assess the effectiveness of the	Inform the Engineer and confirm notification of the non-compliance in writing; Rectify unacceptable practice; Check all plant and equipment; Consider changes of working methods; Propose mitigation measures to Engineer

<b>Exceedance</b>	<b>ET Leader</b>	<b>IEC</b>	<b>Engineer</b>	<b>Contractor</b>
	<p>equipment and Contractor's working methods;</p> <p>Discuss mitigation measure with Engineer and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase the monitoring frequency to daily until no exceedance of Limit level.</p>		implemented mitigation measures.	<p>within 3 working days and discuss with Engineer;</p> <p>Implement the agreed mitigation measures.</p>
<p>Limit level exceeded by more than one consecutive sampling day</p>	<p>Repeat in-situ measurement to confirm findings;</p> <p>Identify source(s) of impact;</p> <p>Inform Contractor, IEC and EPD;</p> <p>Check monitoring data, all plant, equipment and Contractor's working methods;</p> <p>Discuss mitigation measure with Engineer and Contractor;</p> <p>Ensure mitigation measures are implemented;</p> <p>Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.</p>	<p>Provide feedback to the Engineer on the remedial actions proposed by the ET / Contractor</p> <p>Advise Engineer on the effectiveness of the proposed remedial measures</p> <p>Verify the implementation of the remedial measures</p>	<p>Discuss with Contractor on the proposed mitigation measures;</p> <p>Request Contractor to critically review the working methods;</p> <p>Make agreement on the mitigation measures to be implemented;</p> <p>Assess the effectiveness of the implemented mitigation measures;</p> <p>Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine works until no exceedance of the Limit Level.</p>	<p>Inform the Engineer and confirm notification of the non-compliance in writing;</p> <p>Rectify unacceptable practice;</p> <p>Check all plant and equipment; Consider changes of working methods;</p> <p>Propose mitigation measures to Engineer within 3 working days and discuss with Engineer;</p> <p>Implement the agreed mitigation measures..</p> <p>As directed by the Engineer, to slow down or to stop all or part of the marine work</p>

## **Appendix H Summary of Site Audit Findings**

### L12 Civil and Building Works

Dates of Inspection: 5/7/2022, 12/7/2022, 19/7/2022 and 29/7/2022.

#### Summary of Findings

##### *General*

- No environmental deficiency identified.

##### *Air Quality*

- No environmental deficiency identified.

##### *Noise*

- No environmental deficiency identified.

##### *Water Quality*

- No environmental deficiency identified.

##### *Waste Management*

- No environmental deficiency identified.

L12 Mechanical, Electrical, Instrumentation & Control Erection Works

Dates of Inspection: 7/7/2022, 14/7/2022, 21/7/2022 and 28/7/2022.

Summary of Findings

*General*

- No environmental deficiency identified.

*Air Quality*

- No environmental deficiency identified.

*Noise*

- No environmental deficiency identified.

*Water Quality*

- No environmental deficiency identified.

*Waste Management*

- No environmental deficiency identified.



## Summary of EMIS

### Power Station – (Part B of EIA Report)

#### Construction Phase Mitigation Measures and their Implementation

EM&A Log Ref.	Mitigation Measures	Implementation Status
	<b>AIR QUALITY</b>	
A1	For general construction works, the dust control measures stipulated under the Air Pollution Control (Construction Dust) Regulation shall be complied with, such as: <ul style="list-style-type: none"> <li>the haul roads shall be sprayed with water to keep the entire road surface wet.</li> <li>the load carried by vehicle shall be covered by impervious sheeting to ensure no leakage of dusty materials from the vehicle.</li> <li>the heights from which fill materials are dropped shall be controlled to a practical level to minimise the fugitive dust arising from unloading.</li> </ul>	C C C
A2	For the concrete batching plant, the following control measures are recommended: <ul style="list-style-type: none"> <li>loading, unloading, handling, transfer or storage of any dusty materials shall be carried out in a totally enclosed system.</li> <li>The materials which may generate airborne dust emissions shall be wetted by water spray system.</li> <li>All receiving hoppers shall be enclosed on three sides up to 3m above unloading point.</li> <li>All conveyor transfer points shall be totally enclosed.</li> </ul>	N/A N/A N/A N/A
	<b>WATER QUALITY</b>	
B1	Silt curtains shall be installed on the eastern, southern and north western sides of the reclamation site during dredging for the reclamation construction. This is a required mitigation measure for the construction works and shall be implemented prior to the commencement of bulk dredging. **	N/A
B3	As a necessary operational constraint combined bulk dredging and sand filling for site formation shall not be permitted at any time. In addition, sand filling for site platform shall take place behind constructed sea walls which pierce the water surface. **	N/A
B4	HEC shall ensure design to divert all storm drains away from Hung Shing Ye Bay. **	N/A
B5	Sand fill for the rubble mound seawalls shall be placed by controlled pumping down the trailer arm. **	N/A
B6	EM&A shall confirm the acceptability of any impacts during construction and should any unacceptable impacts be found then one or more of the following mitigation measures shall be implemented: ** <ul style="list-style-type: none"> <li>reducing the number of dredgers working at any one time;</li> <li>reducing the rate of working of the dredgers;</li> <li>temporary suspension of operations;</li> <li>phasing of the works so that dredging / filling is only undertaken at certain stages of the tidal cycle.</li> </ul>	N/A



EM&A Log Ref.	Mitigation Measures	Implementation Status
<b>WASTE MANAGEMENT</b>		
E1	HEC to submit a Waste Management Plan for the construction phase to EPD. The Plan shall be verified by the IEC and shall describe the arrangements for avoidance, reuse, recovery and recycling, storage, collection, treatment and disposal of different categories of waste to be generated from the construction activities and shall take into account the recommendations of the EIA report.	C
<i>Dredging Waste</i>		
E2	All vessels for marine transportation of dredged sediment shall be fitted with tight fitting seals to their bottom openings to prevent leakage of materials. In addition, loading of barges and hoppers shall be controlled to prevent splashing of dredged material into the surrounding water, and barges or hoppers should under no circumstances be filled to a level which shall cause the overflowing of materials or polluted water during loading or transportation**	N/A
<i>Storage, Collection and Transport of Waste</i>		
E3	<ul style="list-style-type: none"> <li>Minimise windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed containers.</li> </ul>	C
	<ul style="list-style-type: none"> <li>Obtain the necessary waste disposal permits from the appropriate authorities, if they are required, in accordance with the Waste Disposal Ordinance (Cap.354), Waste Disposal (Chemical Waste) (General) Regulation (Cap.354), the Crown Land Ordinance (Cap 28), Dumping at Sea Ordinance (Cap 466) and Work Branch Technical Circular No. 22/92, Marine Disposal of Dredged Mud.</li> </ul>	C
	<ul style="list-style-type: none"> <li>Disposal of waste at Licensed sites;</li> </ul>	C
	<ul style="list-style-type: none"> <li>Develop procedures such as a ticketing system to facilitate tracking of marine mud and chemical waste, and to ensure that illegal disposal does not occur;</li> </ul>	C
	<ul style="list-style-type: none"> <li>Segregate and sort the waste materials into 3 categories: <ul style="list-style-type: none"> <li>public fill (e.g. concrete and rubble) for re-use on-site or disposal at a public filling area;</li> <li>re-use and/or recycling waste (e.g. steel and other metals);</li> <li>waste which cannot be re-used and/or recycled (e.g. wood, glass and plastic) for landfill disposal.</li> <li>The sorting process shall be carefully monitored to avoid missing of the 3 categories. Different types of wastes shall be stockpiled and stored in different containers or skips to enhance re-use or recycling of materials and their proper disposal.</li> </ul> </li> <li>Maintain records of the quantities of wastes generated and disposed off-site for each category of waste.</li> </ul>	C
E4	Chemical waste that is produced, as defined by Schedule 1 of the Waste Disposal (Chemical Waste) (General) Regulation, shall be handled in accordance with the Code of Practice on the Packaging, Handling and Storage of Chemical Wastes	C
<b>LAND CONTAMINATION</b>		
F1	No land Contamination mitigation measures are required during the construction phase.	N/A
<b>MARINE ECOLOGY</b>		

<b>EM&amp;A Log Ref.</b>	<b>Mitigation Measures</b>	<b>Implementation Status</b>
G1	All percussive piling works shall be conducted on reclaimed land to avoid noise impact to marine mammals**	N/A
G2	All construction related vessels shall approach the extension site from the north and via the East Lamma Channel to avoid disturbance to the finless porpoise**	N/A
G3	Rubble mound seawall to the south and west edges of the reclamation to enhance recolonisation of marine organisms**	N/A
G4	Artificial Reefs of a volume not less than 400 m <sup>3</sup> shall be deployed in a location to be decided upon consultation with the Director of Agriculture and Fisheries to serve the purpose of an Additional Habitat Enhancement Measure.**	N/A
<b>FISHERIES</b>		
H1	No Fisheries-specific mitigation measures are required during the construction phase.	N/A
<b>RISK ASSESSMENT</b>		
I1	No risk mitigation measures are required during the construction phase.	N/A

## Remarks:

- \*\* - No dredging and reclamation work would be involved for L12 construction
- C - Compliance with mitigation measure
- NC - Non-compliance with mitigation measure
- N/A - Not Applicable

**Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12**

**MASTER PROGRAMME**

ID	Task Name	Duration	Start	Finish	Aug	Sep	Oct
1	<b>KEY DATES &amp; MILESTONES</b>	<b>1123 days</b>	<b>Fri 4/12/20</b>	<b>Sun 31/12/23</b>			
2	Contract Period	1123 days	Fri 4/12/20	Sun 31/12/23			
3	Deferred Work Completion Key Dates	784 days	Mon 8/11/21	Sun 31/12/23			
4	Substantial Completion of the Whole Contract Works (1123 Days)	0 days	Sun 31/12/23	Sun 31/12/23			
5	<b>SITE POSSESSION DATES</b>	<b>513 days</b>	<b>Fri 4/12/20</b>	<b>Sun 1/5/22</b>			
6	Site Possession Date as phased site possession plan and PS1.4.2	0 days	Fri 4/12/20	Fri 4/12/20			
7	Site Possession Date as phased site possession plan and PS1.4.2	0 days	Fri 1/1/21	Fri 1/1/21			
8	Site Possession Date as phased site possession plan and PS1.4.2	0 days	Sat 1/5/21	Sat 1/5/21			
9	Site Possession Date as phased site possession plan and PS1.4.2	0 days	Fri 1/10/21	Fri 1/10/21			
10	Site Possession Date as phased site possession plan and PS1.4.2	0 days	Fri 1/4/22	Fri 1/4/22			
11	Site Possession Date as phased site possession plan and PS1.4.2	0 days	Sun 1/5/22	Sun 1/5/22			
12	<b>COMPLETION DATES as per PS1.4.2 Time for Completion</b>	<b>609 days</b>	<b>Wed 30/6/21</b>	<b>Tue 28/2/23</b>			
13	Section A1 (i) - Area south of L12 MSB and L12 HRSG from GL12-F eastwards leading to Chimney Road at Area F1 & F2	0 days	Thu 30/9/21	Thu 30/9/21			
14	Section A1 (ii) - Supporting structures for overhead cranes of L12 MSB including the associated roof structure except the roof deferred works	0 days	Thu 30/9/21	Thu 30/9/21			
15	Section A2 (i) External Works including CW Inlet Culvert at Area F8A	0 days	Thu 30/9/21	Thu 30/9/21			
16	Section A2 (ii) External Works including CW Inlet Culvert at Area F8B	0 days	Thu 31/3/22	Thu 31/3/22			
17	Section A2 (iii) External Works including CW Inlet Culvert at Area F8C	0 days	Thu 31/3/22	Thu 31/3/22			
18	Section B1 - Area south of L12 MSB from GL12-F westwards leading to Station Road at Area F3	0 days	Wed 15/12/21	Wed 15/12/21			
19	Section B2 (i)- Southern Part of L12 HRSG areas and its surrounding refer to Area F6B as shown in drawing no 553/03/2040 including the foundations for Gas Exhaust Duct	0 days	Tue 31/8/21	Tue 31/8/21			
20	Section B2 (ii) - Remaining northern part of L12 HRSG area and its surrounding at Area F6A and F6C	0 days	Mon 15/11/21	Mon 15/11/21			
21	Section B2 - (iii) L12 Turbo Block foundation including the L12 MSB ground floor together with the equipment foundations between GL 12-F to 12-H and 12-1 to 12-6 for the installation of power generator, air inlet duct and lube oil reservoir	0 days	Sat 15/1/22	Sat 15/1/22			
22	Section B2 - (iv) G/F of L12 MSB including the Condenser Pit, Circulating Water Pipe Pit and equipment foundations between GL 12-B to 12-C and 12-1 to 12-6 for the installation of condenser	0 days	Wed 15/12/21	Wed 15/12/21			
23	Section C - (i) Roads and external grounds surrounding L12 MSB and L12 HRSG in addition to the southern & eastern areas mentioned above in Area F5	0 days	Sat 15/1/22	Sat 15/1/22			
24	Section C - (ii) Whole of L12 MSB including the pipe and cable rack along south façade of L12 MSB with all underground utilities at Area F4 including C.W. Inlet and Outlet Culvert except the deferred works	0 days	Sat 15/1/22	Sat 15/1/22			
25	Section C - (iii) Link Bridge between L11 and L12 MSB including their associated A&A at L11 MSB	0 days	Sat 15/1/22	Sat 15/1/22			
26	Section D - (i) Microwave Antenna Room and Chimney Windshiled for the installation of microwave equipment and antenna	0 days	Wed 30/6/21	Wed 30/6/21			
27	Section D (ii) - No. 5 Chimney with L12 Steel Flue liner	0 days	Sat 30/4/22	Sat 30/4/22			
28	Section E (i) Tx Room of Administration and Control Building	0 days	Sun 31/10/21	Sun 31/10/21			
29	Section E (ii) - G/F,1/F, 2/F & Hoisting Well of Admin. & Control Building	0 days	Mon 28/2/22	Mon 28/2/22			
30	Section E (iii) - Whole of Admin. And Control Building	0 days	Sat 30/4/22	Sat 30/4/22			
31	Section F (i) - Gas Receiving Station and L12 Gas Receiving Station Equipment Room (GRS) Area Extension at Area F14	0 days	Thu 30/6/22	Thu 30/6/22			
32	Section F (ii) - Pipe and Cable rack and external work at Area F9A and F9B	0 days	Tue 31/5/22	Tue 31/5/22			
33	Section F (iii) - No. 5 CW Equipment Room, pipe and cable rack, external works at Area F10	0 days	Thu 30/6/22	Thu 30/6/22			
34	Section G (i) - External Work surrounding Area F11	0 days	Fri 30/9/22	Fri 30/9/22			
35	Section G (ii) - External Works at Area F12 & F13	0 days	Fri 30/9/22	Fri 30/9/22			
36	Section G (iii) - FS Modification works along South Seafront Road at Area F15	0 days	Fri 30/9/22	Fri 30/9/22			
37	Section G (iv) - 275kV cable trenches and External Works at Area F16	0 days	Fri 30/9/22	Fri 30/9/22			
38	Section G (v) - Shunt Reactor Compound and External Works at Area F17	0 days	Fri 30/9/22	Fri 30/9/22			
39	Section G (vi) - 275kV cable trenches and External Works at Area F18	0 days	Wed 1/6/22	Wed 1/6/22			
40	Section G (vii) - Flood Wall at No. 4 CW Intake Area along HUA at Area F20A	0 days	Thu 30/9/21	Thu 30/9/21			
41	Section G (viii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20B	0 days	Fri 30/9/22	Fri 30/9/22			
42	Section G (ix) - Bund wall modification works at South Seafront Road at Area F21	0 days	Wed 30/6/21	Wed 30/6/21			
43	Section G (x) - DAX Cable Diversion Works (from Part I to Part IV)	0 days	Sat 31/12/22	Sat 31/12/22			
44	Section H - All remaining works shall be completed for reporting completion to BD and ready for OP inspection	0 days	Tue 28/2/23	Tue 28/2/23			
45	<b>GENERAL &amp; PRELIMINARY</b>	<b>228 days</b>	<b>Fri 4/12/20</b>	<b>Mon 19/7/21</b>			
46	First Mobilization	18 days	Fri 4/12/20	Mon 21/12/20			
47	Set up Temporary Site Office and Welfare Facilities	90 days	Tue 22/12/20	Sun 21/3/21			
48	Permit Applications & Statuary Submissions	120 days	Mon 22/3/21	Mon 19/7/21			
49	Existing Utilities scanning & Excavation Permit	45 days	Tue 22/12/20	Thu 4/2/21			
50	Tower Crane erections	60 days	Sun 27/12/20	Wed 24/2/21			
51	<b>TECHNICAL SUBMISSION AND APPROVAL</b>	<b>314 days</b>	<b>Thu 10/12/20</b>	<b>Wed 20/10/21</b>			
52	BD Approval & Consent (If required)	0 days	Thu 10/12/20	Thu 10/12/20			
53	Submission and Approval of Master Programme	14 days	Fri 11/12/20	Thu 24/12/20			
54	Work Execution Overall Plan submission & approval	14 days	Fri 11/12/20	Thu 24/12/20			
55	Material Submissions and approval	300 days	Fri 25/12/20	Wed 20/10/21			
56	Method Statement submission and approval	300 days	Fri 25/12/20	Wed 20/10/21			
57	BIM Model, CSD & CBWD Submission & approval	120 days	Fri 25/12/20	Fri 23/4/21			
58	Structure Steelwork Connection Design Submission & BD approval	45 days	Tue 29/12/20	Thu 11/2/21			
59	Structure Steelwork Shop Drawing & Approval	30 days	Fri 12/2/21	Sat 13/3/21			
60	Metal Cladding, louvre & windows submission & BD approval	45 days	Tue 29/12/20	Thu 11/2/21			
61	Metal Cladding, louvre & windows shop drawing submission	45 days	Fri 12/2/21	Sun 28/3/21			
62	Order, Off Site Fabrication and Delivery (S. Steel & Cladding & louvres)	120 days	Mon 29/3/21	Mon 26/7/21			
63	ELS Submission and BD approval	90 days	Fri 11/12/20	Wed 10/3/21			
64	No. 5 Chimney windshield temporary work submission, approval & fabrication	60 days	Fri 11/12/20	Mon 8/2/21			
65	Steel Flue Assessment Report and Design Drawings submission & approval	60 days	Tue 9/2/21	Fri 9/4/21			
66	Folding Shutters Shop Drawing Submission & Approval	30 days	Thu 11/2/21	Fri 12/3/21			
67	Fabrication & Delivery of Folding Shutters	180 days	Sat 13/3/21	Wed 8/9/21			
68	Sewage Pump System Design submission & approval	45 days	Tue 23/2/21	Thu 8/4/21			
69	Fabrication & Delivery of Sewage Pump	180 days	Fri 9/4/21	Tue 5/10/21			
70	Other material submission & approval & delivery	180 days	Sat 24/4/21	Wed 20/10/21			
71	Other material submission & approval & delivery	180 days	Sat 24/4/21	Wed 20/10/21			
72	<b>CONSTRUCTION</b>	<b>1123 days</b>	<b>Fri 4/12/20</b>	<b>Sun 31/12/23</b>			
73	<b>Coordination with the Employer's Specialist Contractors</b>	<b>421 days</b>	<b>Mon 22/3/21</b>	<b>Mon 16/5/22</b>			
74	Installation of Puddle Pipes at C.W. outlet Culvert	7 days	Mon 22/3/21	Sun 28/3/21			
75	Installation of Puddle Pipes at C.W. Inlet Culvert	7 days	Tue 11/5/21	Mon 17/5/21			
76	Template setting at L12 Turbo Block Foundation	45 days	Thu 28/10/21	Sat 11/12/21			
77	Template setting of holding down bolts at HRSG column base	45 days	Sun 6/6/21	Tue 20/7/21			
78	I-beam / channel base installation on top of transformer foundations at Transformer Area	45 days	Tue 1/6/21	Thu 15/7/21			
79	Overhead crane erection at turbine hall using access through a temporary opening at L12 MSB roof between GL12-G to 12-H and 12-2 to 12-6	38 days	Fri 1/10/21	Sun 7/11/21			
80	Condenser assembly and erection using access through a temporary façade opening at L12 MSB below 1/F along GL 12-6 from GL12-B to 12-C including a clear space below 1/F between GL 12-B to 12-C	122 days	Thu 16/12/21	Sat 16/4/22			
81	Installation of power train equipment including air inlet duct using access through a temporary façade opening at L12 MSB below 1/F along GL 12-6 from GL12-F to 12-H including a clear space below 1/F of the above area	121 days	Sun 16/1/22	Mon 16/5/22			
82	Installation of embedded materials such as holding down bolts for equipment foundations - Commencement	0 days	Thu 15/4/21	Thu 15/4/21			
83	<b>Section A1 (i) - Area south of L12 MSB and L12 HRSG from GL12-F eastwards leading to Chimney Road at Area F1 &amp; F2</b>	<b>301 days</b>	<b>Fri 4/12/20</b>	<b>Thu 30/9/21</b>			
84	Area Possession & Clearance	30 days	Fri 4/12/20	Sat 2/1/21			
85	Subletting / Fabrication / Delivery (both for Area F1 and Area F2)	60 days	Sun 17/1/21	Wed 17/3/21			
86	Excavation for CW Inlet Culvert (Type D Construction Area)	14 days	Mon 8/3/21	Sun 21/3/21			
87	Installation CW Inlet Culvert pipe + testing	30 days	Mon 22/3/21	Tue 20/4/21			
88	Construction of Thrust Box & Manholes,etc	14 days	Wed 21/4/21	Tue 4/5/21			
89	Backfill	14 days	Wed 5/5/21	Tue 18/5/21			
90	Construction UG Utilities 2m deep below further surface	30 days	Thu 19/8/21	Fri 17/9/21			
91	Temporary Paving and handover for plant erection	13 days	Sat 18/9/21	Thu 30/9/21			
92	<b>Section A1 (ii) - Supporting structures for overhead cranes of L12 MSB including the associated roof structure except the roof deferred works</b>	<b>301 days</b>	<b>Fri 4/12/20</b>	<b>Thu 30/9/21</b>			
93	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21			
94	Subletting / Fabrication / Delivery	210 days	Sun 17/1/21	Sat 14/8/21			
95	Complete structural steel erection	0 days	Mon 6/9/21	Mon 6/9/21			
96	Install Crane Girders	18 days	Tue 7/9/21	Fri 24/9/21			
97	Construction of roof slab (except defer work)	21 days	Tue 7/9/21	Mon 27/9/21			
98	Touch up and handover for install overhead cranes	3 days	Tue 28/9/21	Thu 30/9/21			
99	<b>Section A2 (i) External Works including CW Inlet Culvert at Area F8A</b>	<b>301 days</b>	<b>Fri 4/12/20</b>	<b>Thu 30/9/21</b>			
100	BD consent for Sheeple installation	30 days	Fri 4/12/20	Sat 2/1/21			

Receiving Station Equipment Room (GRS) Area Extension at Area F14

and cable rack, external works at Area F10

- ◆ Section G (i) - External Work surrounding Area F11
- ◆ Section G (ii) - External Works at Area F12 & F13
- ◆ Section G (iii) - FS Modification works along South Seafront Road at Area F15
- ◆ Section G (iv) - 275kV cable trenches and External Works at Area F16
- ◆ Section G (v) - Shunt Reactor Compound and External Works at Area F17
- ◆ Section G (viii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20B

below 1/F along GL 12-6 from GL12-F to 12-H including a clear space below 1/F of the above area

REVISED MASTER PROGRAMME  
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Task  Split  Milestone ◆ Summary

**Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12**

**MASTER PROGRAMME**

ID	Task Name	Duration	Start	Finish	Aug	Sep	Oct
101	Subletting / Fabrication / Delivery (both for Area F8A-F8B)	30 days	Fri 18/12/20	Sat 16/1/21			
102	Area Possession & Clearance	14 days	Sat 2/1/21	Fri 15/1/21			
103	Install Sheet pile	55 days	Sat 16/1/21	Thu 11/3/21			
104	BD Consent for ELS	28 days	Fri 12/3/21	Thu 8/4/21			
105	ELS and install CW Inlet Pipe (NW to N direction)	60 days	Fri 9/4/21	Mon 7/6/21			
106	Construction of Thrust Box & Manholes,etc	36 days	Tue 8/6/21	Tue 13/7/21			
107	Backfill, UG Utilities and Road Paving	79 days	Wed 14/7/21	Thu 30/9/21			
108	<b>Section A2 (ii) External Works including CW Intet Culvert at Area F8B</b>	<b>483 days</b>	<b>Fri 4/12/20</b>	<b>Thu 31/3/22</b>			
109	Area Possession & Clearance	30 days	Mon 1/2/21	Tue 2/3/21			
110	BD consent for Sheetpile installation	30 days	Fri 4/12/20	Sat 2/1/21			
111	Install Sheet pile	90 days	Fri 2/4/21	Wed 30/6/21			
112	BD Consent for ELS	28 days	Thu 1/7/21	Wed 28/7/21			
113	ELS and install CW Inlet Pipe	90 days	Thu 29/7/21	Tue 26/10/21			
114	Construction of Thrust Box & Manholes,etc	60 days	Wed 27/10/21	Sat 25/12/21			
115	Backfill, UG Utilities and Road Paving	96 days	Sun 26/12/21	Thu 31/3/22			
116	<b>Section A2 (iii) External Works including CW Inlet Culvert at Area F8C</b>	<b>182 days</b>	<b>Fri 1/10/21</b>	<b>Thu 31/3/22</b>			
117	Area Possession & Clearance	30 days	Fri 1/10/21	Sat 30/10/21			
118	Subletting / Fabrication / Delivery (for Area F8C)	60 days	Fri 1/10/21	Mon 29/11/21			
119	BD consent for Sheetpile installation	30 days	Fri 1/10/21	Sat 30/10/21			
120	Install Sheet pile	34 days	Sun 31/10/21	Fri 3/12/21			
121	BD Consent for ELS	28 days	Sat 4/12/21	Fri 31/12/21			
122	ELS and install CW Inlet Pipe	40 days	Sat 1/1/22	Wed 9/2/22			
123	Construction of Thrust Box & Manholes,etc	30 days	Thu 10/2/22	Fri 11/3/22			
124	Backfill, UG Utilities and Road Paving	20 days	Sat 12/3/22	Thu 31/3/22			
125	<b>Section B1 - Area south of L12 MSB from GL12-F westwards leading to Station Road at Area F3</b>	<b>377 days</b>	<b>Fri 4/12/20</b>	<b>Wed 15/12/21</b>			
126	Area Possession & Clearance	30 days	Fri 4/12/20	Sat 2/1/21			
127	Subletting / Fabrication / Delivery	120 days	Fri 25/12/20	Fri 23/4/21			
128	Complete CW Pipe Installation & Thrust box	45 days	Fri 7/5/21	Sun 20/6/21			
129	Backfill	14 days	Mon 21/6/21	Sun 4/7/21			
130	Construction of Storm Drain & Manholes	80 days	Tue 7/9/21	Thu 25/11/21			
131	Temp Paving and handover for Condenser Move in	20 days	Fri 26/11/21	Wed 15/12/21			
132	<b>Section B2 - (i) Southern part of L12 HRSG area and its surrounding at Area F6B including the foundations for Gas Exhaust Duct</b>	<b>243 days</b>	<b>Fri 1/1/21</b>	<b>Tue 31/8/21</b>			
133	Area Possession & Clearance	30 days	Sat 2/1/21	Sun 31/1/21			
134	Subletting / Fabrication / Delivery (for F6B Civil and E&M)	120 days	Sat 2/1/21	Sat 1/5/21			
135	Construction of Underground pits	35 days	Mon 1/2/21	Sun 7/3/21			
136	Excavation & Construct Pile Caps & Tie Beams & Piers	60 days	Mon 8/3/21	Thu 6/5/21			
137	Construction HRSG & Gas Duct foundations	45 days	Fri 7/5/21	Sun 20/6/21			
138	Construction of HRSG Equipment Room incl. ABWF & BS (except T&C)	150 days	Sun 4/4/21	Tue 31/8/21			
139	Construction underground utilities within HRSG	45 days	Wed 28/4/21	Fri 11/6/21			
140	Backfill & Construction on-grade slabs & RC plinths on top	60 days	Sat 12/6/21	Tue 10/8/21			
141	Backfill and Temporary paving	21 days	Wed 11/8/21	Tue 31/8/21			
142	<b>Section B2 (ii) - Remaining northern part of L12 HRSG area and its surrounding at Area F6A and F6C</b>	<b>319 days</b>	<b>Fri 1/1/21</b>	<b>Mon 15/11/21</b>			
143	Area Possession and Clearance at Area F6A	30 days	Sat 2/1/21	Sun 31/1/21			
144	Subletting / Fabrication / Delivery (for Area F6A and F6C civil)	90 days	Sat 2/1/21	Thu 1/4/21			
145	Construction of Underground pits	30 days	Sat 2/1/21	Sun 31/1/21			
146	Excavation & Construct Pile Caps & Tie Beams & Piers	60 days	Mon 1/2/21	Thu 1/4/21			
147	Construction underground utilities within HRSG	21 days	Fri 2/4/21	Thu 22/4/21			
148	Backfill & Construction on-grade slabs & RC plinths on top	21 days	Fri 23/4/21	Thu 13/5/21			
149	Construct RC Walls	90 days	Fri 4/6/21	Wed 1/9/21			
150	Construction of Underground utilities at F6C	60 days	Thu 2/9/21	Sun 31/10/21			
151	Backfill and Temporary paving	15 days	Mon 1/11/21	Mon 15/11/21			
152	<b>Section B2 - (iii) L12 Turbo Block foundation including the L12 MSB ground floor together with the equipment foundations between GL 12-F to 12-H and 12-1 to 12-6 for the installation of power generator, air inlet duct and lube oil reservoir</b>	<b>408 days</b>	<b>Fri 4/12/20</b>	<b>Sat 15/1/22</b>			
153	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21			
154	Subletting / Fabrication / Delivery (Civil+ABWF+BS for MSBL12)	150 days	Fri 25/12/20	Sun 23/5/21			
155	Complete excavation at Type A&C Construction Area	0 days	Sat 30/1/21	Sat 30/1/21			
156	Excavation & Pile Caps & Tie Beams + Slabs (Turbo Block North)	75 days	Sun 31/1/21	Thu 15/4/21			
157	Backfill and construction turbine block & equipment foundation	40 days	Tue 1/6/21	Sat 10/7/21			
158	Excavation & Pile Caps & Tie Beams + Slabs (Turbo Block South)	45 days	Sat 17/4/21	Mon 31/5/21			
159	Construction of internal drainage & on-grade slab	30 days	Sun 11/7/21	Mon 9/8/21			
160	Construction turbine block columns and upper portion for plant embed installation	21 days	Tue 7/9/21	Mon 27/9/21			
161	Concrete Turbine upper part foundation & clear falsework	30 days	Tue 28/9/21	Wed 27/10/21			
162	Construction of Lube Oil Room	45 days	Thu 28/10/21	Sat 11/12/21			
163	Concrete RC walls	50 days	Tue 7/9/21	Tue 26/10/21			
164	ABFW Works	30 days	Thu 4/11/21	Fri 3/12/21			
165	Building Services Works	45 days	Fri 19/11/21	Sun 2/1/22			
166	Remove temporary falsework and scaffolding for installation of power generator	13 days	Mon 3/1/22	Sat 15/1/22			
167	<b>Section B2 - (iv) G/F of L12 MSB including the Condenser Pit, Circulating Water Pipe Pit and equipment foundations between GL 12-B to 12-C and 12-1 to 12-6 for the installation of condenser</b>	<b>377 days</b>	<b>Fri 4/12/20</b>	<b>Wed 15/12/21</b>			
168	<b>Area Possession &amp; Clearance</b>	<b>45 days</b>	<b>Fri 4/12/20</b>	<b>Sun 17/1/21</b>			
169	Subletting / Fabrication / Delivery (for MSB L12 civil)	150 days	Fri 25/12/20	Sun 23/5/21			
170	<b>Excavation to foundation level at ELS SP Type A &amp; C</b>	<b>30 days</b>	<b>Fri 1/1/21</b>	<b>Sat 30/1/21</b>			
171	Install CW Outlet pipe	30 days	Sun 31/1/21	Mon 1/3/21			
172	Construction of CW Outlet Box + lowest tie beam & caps	50 days	Sun 31/1/21	Sun 21/3/21			
173	Construction of pile caps & tie beams & sump pits up to +2.5mPD	26 days	Mon 22/3/21	Fri 16/4/21			
174	Backfill & Construction of CW Inlet Box + tie beams	24 days	Sat 17/4/21	Mon 10/5/21			
175	Construction of pile caps & tie beams at SunShadeCover Area	18 days	Tue 11/5/21	Fri 28/5/21			
176	Backfill and Construction ground beams & trenches & equipment foundations	14 days	Tue 11/5/21	Mon 24/5/21			
177	Construction of indoor underground drainage	14 days	Tue 25/5/21	Mon 7/6/21			
178	Backfill & construction on-grade slabs	18 days	Tue 8/6/21	Fri 25/6/21			
179	Construction Column casting and RC walls	50 days	Thu 29/7/21	Thu 16/9/21			
180	ABFW Works	16 days	Fri 17/9/21	Sat 2/10/21			
181	Building Services Works	45 days	Sun 3/10/21	Tue 16/11/21			
182	Mis. Works and Ready for condenser move in	29 days	Wed 17/11/21	Wed 15/12/21			
183	<b>Section C - (i) Roads and external grounds surrounding L12 MSB and L12 HRSG in addition to the southern &amp; eastern areas mentioned above in Area F5</b>	<b>408 days</b>	<b>Fri 4/12/20</b>	<b>Sat 15/1/22</b>			
184	Area Possession & Clearance	30 days	Fri 4/12/20	Sat 2/1/21			
185	Subletting / Fabrication / Delivery	210 days	Fri 25/12/20	Thu 22/7/21			
186	Complete substructure & Steel Erection works for MSB	0 days	Wed 28/7/21	Wed 28/7/21			
187	Construction all utilities deeper than 2m from future road level	60 days	Thu 29/7/21	Sun 26/9/21			
188	Construction of cable trenches	90 days	Mon 27/9/21	Sat 25/12/21			
189	Backfill and lay temporary paving	21 days	Sun 26/12/21	Sat 15/1/22			
190	<b>Section C - (ii) Whole of L12 MSB including the pipe and cable rack along south facade of L12 MSB with all underground utilities at Area F4 including C.W. Inlet and Outlet Culvert except the deferred works</b>	<b>408 days</b>	<b>Fri 4/12/20</b>	<b>Sat 15/1/22</b>			
191	<b>Area Possession &amp; Clearance</b>	<b>45 days</b>	<b>Fri 4/12/20</b>	<b>Sun 17/1/21</b>			
192	Subletting / Fabrication / Delivery	120 days	Fri 25/12/20	Fri 23/4/21			
193	<b>Construction of pile caps &amp; tie beams at Transformer Area</b>	<b>30 days</b>	<b>Sun 31/1/21</b>	<b>Mon 1/3/21</b>			
194	Backfill and on-grade slab at transformer Area	21 days	Tue 2/3/21	Mon 22/3/21			
195	Construction of Fire Walls at Transformer Area	45 days	Tue 23/3/21	Thu 6/5/21			
196	Excavation & Construction Blow Down Sum pit (SP Type B)	50 days	Thu 25/2/21	Thu 15/4/21			
197	Preparation for S.Steelwork Erection	7 days	Fri 23/4/21	Thu 29/4/21			
198	Structural Delivery & Erection (Turbine Hall North fr G.L. 1-3/H->B)	35 days	Fri 30/4/21	Thu 3/6/21			
199	Structural Delivery & Erection (Equipment Floors)	55 days	Fri 4/6/21	Wed 28/7/21			
200	Structural Delivery & Erection (Turbine Hall South + East Elevation)	40 days	Thu 29/7/21	Mon 6/9/21			
201	Joint Tightening and touch up coating	145 days	Fri 4/6/21	Tue 26/10/21			
202	External Scaffolding Erection	150 days	Fri 4/6/21	Sun 31/10/21			
203	Construction 1/F RC Slab	14 days	Thu 29/7/21	Wed 11/8/21			
204	Construction 2/F RC Slab	18 days	Thu 12/8/21	Sun 29/8/21			
205	Construction 3/F RC Slab	18 days	Mon 30/8/21	Thu 16/9/21			
206	Construction 4/F RC Slab	18 days	Fri 17/9/21	Mon 4/10/21			
207	Construction 5/F RC Slab	18 days	Tue 5/10/21	Fri 22/10/21			
208	Construction 6/F RC Slab	14 days	Sat 23/10/21	Fri 5/11/21			
209	Construction Upper Roof RC Slab	10 days	Sat 6/11/21	Mon 15/11/21			
210	Construction Main Roof RC Slab	25 days	Tue 7/9/21	Fri 1/10/21			
211	Construction Defer Roof RC Slab (G.L. G-H)	14 days	Mon 8/11/21	Sun 21/11/21			
212	Construction of Staircase ST-01 & lift shaft & machine room	150 days	Fri 4/6/21	Sun 31/10/21			
213	Construction M/F RC Slab	14 days	Tue 3/8/21	Mon 16/8/21			
214	Lift Installation	75 days	Mon 1/11/21	Fri 14/1/22			
215	Construction of Staircase ST-02 except defer work	75 days	Fri 17/9/21	Tue 30/11/21			
216	Construction of RC plinth, kerbs & parapet Walls	75 days	Sat 2/10/21	Wed 15/12/21			

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Task  Split  Milestone  Summary




Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12

MASTER PROGRAMME

ID	Task Name	Duration	Start	Finish	Aug	Sep	Oct
217	Erection of Skylight & Roof Features	56 days	Sat 2/10/21	Fri 26/11/21			
218	Waterproofing & Flooring at Roof	50 days	Sat 27/11/21	Sat 15/1/22			
219	ABFW Works	120 days	Thu 12/8/21	Thu 9/12/21			
220	Building Services Works	135 days	Thu 2/9/21	Fri 14/1/22			
221	Metal Cladding, Windows and Louvres incl. roof feature	145 days	Fri 25/6/21	Tue 16/11/21			
222	Removal of external scaffolding	95 days	Tue 24/8/21	Fri 26/11/21			
223	Installation of Catwalk at south elevation	21 days	Fri 26/11/21	Thu 16/12/21			
224	Cladding, ABWF & BS Works	30 days	Fri 17/12/21	Sat 15/1/22			
225	Removal of temporary works & clearance for plant erection contractor	30 days	Fri 17/12/21	Sat 15/1/22			
226	<b>Section C - (iii) Link Bridge between L11 and L12 MSB includin their associated A&amp;A at L11 MSB</b>	<b>408 days</b>	<b>Fri 4/12/20</b>	<b>Sat 15/1/22</b>			
227	<b>BD Consent</b>	<b>0 days</b>	<b>Fri 4/12/20</b>	<b>Fri 4/12/20</b>			
228	Subletting / Fabrication / Delivery (For BS and ABWF)	250 days	Fri 25/12/20	Tue 31/8/21			
229	Clearing Works and plant set-up	30 days	Mon 16/8/21	Tue 14/9/21			
230	Dismantle of north scaffold for link bridge erection	0 days	Tue 24/8/21	Tue 24/8/21			
231	A&A works at South of L11 MSB	30 days	Tue 24/8/21	Wed 22/9/21			
232	Erection of link bridge structural steel	30 days	Thu 23/9/21	Fri 22/10/21			
233	Casting of bridge deck	11 days	Sat 23/10/21	Tue 2/11/21			
234	Metal roofing installation	24 days	Wed 3/11/21	Fri 26/11/21			
235	ABWF work	30 days	Sat 27/11/21	Sun 26/12/21			
236	BS Works	20 days	Mon 27/12/21	Sat 15/1/22			
237	Ready for power cable laying work by others	0 days	Sat 15/1/22	Sat 15/1/22			
238	<b>Section D - (ii) No. 5 Chimney with L12 Steel Flue Liner</b>	<b>485 days</b>	<b>Fri 1/1/21</b>	<b>Sat 30/4/22</b>			
239	Area Possession & Clearance	45 days	Fri 1/1/21	Sun 14/2/21			
240	Subletting / Fabrication / Delivery (For Civil and BS for Microwave Antenna and Equipment)	120 days	Fri 8/1/21	Fri 7/5/21			
241	Excavation & Pile Cap & Backfill + Ground slab	45 days	Sat 2/1/21	Mon 15/2/21			
242	Tower Crane erection (Optional)	28 days	Tue 19/1/21	Mon 15/2/21			
243	Construction of Wind Shiled + clearance for internal floors and flue	150 days	Tue 16/2/21	Thu 15/7/21			
244	Structural steel fabrication & Delivery for floors and staircase	90 days	Sat 10/4/21	Thu 8/7/21			
245	Erection of steel floors	60 days	Wed 9/6/21	Sat 7/8/21			
246	Construction of G/F room incl. Microwave Antenna Rm	45 days	Mon 17/5/21	Wed 30/6/21			
247	Construction of 1/F RC slab	14 days	Sun 8/8/21	Sat 21/8/21			
248	Construction of 2/F RC slab	14 days	Sun 22/8/21	Sat 4/9/21			
249	Construction of 3/F RC slab	16 days	Sun 5/9/21	Mon 20/9/21			
250	Construction of 4/F RC slab	16 days	Tue 21/9/21	Wed 6/10/21			
251	Construction of 5/F RC slab	18 days	Thu 7/10/21	Sun 24/10/21			
252	Construction of Roof RC slab	18 days	Mon 25/10/21	Thu 11/11/21			
253	Steel Flue fabrication and delivery	145 days	Fri 9/7/21	Tue 30/11/21			
254	Set up for steel flue installation	14 days	Wed 11/12/21	Tue 14/12/21			
255	Lift & install steel flue liner + cladding works	90 days	Wed 15/12/21	Mon 14/3/22			
256	<b>Section D (i) - ABWF and BS Works at Microwave Antenna Room and Chimney Windshield for installation of microwave and antenna</b>	<b>209 days</b>	<b>Fri 4/12/20</b>	<b>Wed 30/6/21</b>			
257	Remaining ABWF & BS Works	100 days	Fri 12/11/21	Sat 19/2/22			
258	Lift installation	90 days	Fri 12/11/21	Wed 9/2/22			
259	Installation Louvre & Doors	30 days	Tue 15/3/22	Wed 13/4/22			
260	Mis works, Demobilization and ready for gas duct connection	17 days	Thu 14/4/22	Sat 30/4/22			
261	<b>Section E - (iii) Administration and Control Building</b>	<b>513 days</b>	<b>Fri 4/12/20</b>	<b>Sat 30/4/22</b>			
262	Area Possession & Clearance + BD consent	60 days	Fri 4/12/20	Mon 1/2/21			
263	Subletting / Fabrication / Delivery (For Civil+BS+ABWF)	21 days	Fri 25/12/20	Thu 14/1/21			
264	Excavation works	45 days	Fri 4/12/20	Sun 17/1/21			
265	Main Earth Grid Installation	45 days	Sun 3/1/21	Tue 16/2/21			
266	Pile cap and Tie Beam	45 days	Sun 3/1/21	Tue 16/2/21			
267	Tower Crane Erection	30 days	Wed 10/2/21	Thu 11/3/21			
268	Substructure + Bearing walls + On grade slabs	30 days	Wed 17/2/21	Thu 18/3/21			
269	Construction of RC up to 1/F incl. staircases	50 days	Fri 19/3/21	Fri 7/5/21			
270	Construction of RC up to 2/F incl. staircases	55 days	Sat 8/5/21	Thu 1/7/21			
271	Construction of RC up to 3/F incl. staircases	55 days	Fri 2/7/21	Wed 25/8/21			
272	Tempoary Hoist erection	14 days	Thu 26/8/21	Wed 8/9/21			
273	Construction of RC up to 4/F incl. staircases	30 days	Thu 26/8/21	Fri 24/9/21			
274	Construction of RC up to R/F incl. staircases	30 days	Sat 25/9/21	Sun 24/10/21			
275	Construction of RC up to lift machine room	21 days	Mon 25/10/21	Sun 14/11/21			
276	Construction of RC up to UR/F	21 days	Mon 15/11/21	Sun 5/12/21			
277	External Wall Finish, Cladding + Windows and Louvres + Features	100 days	Sat 25/9/21	Sun 2/1/22			
278	Removal of external scaffolding	45 days	Mon 3/1/22	Wed 16/2/22			
279	Waterproofing & screeding	60 days	Mon 6/12/21	Thu 3/2/22			
280	ABWF at G/F	120 days	Sat 29/5/21	Sat 25/9/21			
281	<b>Section E (i) Complete Transformer Room for move in</b>	<b>60 days</b>	<b>Thu 2/9/21</b>	<b>Sun 31/10/21</b>			
282	Clearing Works and plant set-up	21 days	Sun 31/10/21	Sat 20/11/21			
283	Subletting / Fabrication / Delivery (For NSC Lift)	180 days	Fri 25/12/20	Tue 22/6/21			
284	ABWF at 1/F	100 days	Mon 26/7/21	Tue 2/11/21			
285	ABWF at 2/F	100 days	Sat 18/9/21	Sun 26/12/21			
286	ABWF at 3/F	120 days	Mon 25/10/21	Mon 21/2/22			
287	ABWF at 4/F	90 days	Wed 24/11/21	Mon 21/2/22			
288	ABWF at R/F	60 days	Wed 15/12/21	Sat 12/2/22			
289	ABWF at UR/F + Lift Machine Room	45 days	Wed 5/1/22	Fri 18/2/22			
290	Bridge Erection & Connection	50 days	Mon 7/2/22	Mon 28/3/22			
291	Building Services Works	160 days	Wed 3/11/21	Mon 11/4/22			
292	Submission of WW046 for completion	60 days	Wed 17/11/21	Sat 15/1/22			
293	Installation of Raised floors	60 days	Fri 7/1/22	Mon 7/3/22			
294	False ceiling after BS works	60 days	Tue 25/1/22	Fri 25/3/22			
295	<b>Section E (ii) Handover G/F, 1/F, 2/F &amp; Hoisting Well</b>	<b>0 days</b>	<b>Mon 28/2/22</b>	<b>Mon 28/2/22</b>			
296	Subletting / Fabrication / Delivery (For BS+ABWF)	149 days	Tue 14/9/21	Wed 9/2/22			
297	Construction of New UG Grey Water Tank	60 days	Mon 7/2/22	Thu 7/4/22			
298	Removal of Tower Crane	7 days	Thu 10/3/22	Wed 16/3/22			
299	External utilites and road work	45 days	Mon 24/1/22	Wed 9/3/22			
300	Submission of WW046 for completion	30 days	Tue 8/2/22	Wed 9/3/22			
301	Submision of FS inspection	14 days	Tue 12/4/22	Mon 25/4/22			
302	Submision for OP Inspection	14 days	Sun 17/4/22	Sat 30/4/22			
303	<b>Section F (i) - Gas Receiving Station and L12 Gas Receiving Station Equipment Room (GRS) Area Extension at Area F14</b>	<b>426 days</b>	<b>Sat 1/5/21</b>	<b>Thu 30/6/22</b>			
304	Area Possession & Clearance + BD consent	90 days	Sat 1/5/21	Thu 29/7/21			
305	Subletting / Fabrication / Delivery	60 days	Sat 22/5/21	Tue 20/7/21			
306	Plate load test	30 days	Sat 1/5/21	Sun 30/5/21			
307	Construction Equipment room extension	145 days	Mon 31/5/21	Fri 22/10/21			
308	Modification of existing drainage	45 days	Sat 23/10/21	Mon 6/12/21			
309	Excavation & earthing for Skid foundations	21 days	Tue 7/12/21	Mon 27/12/21			
310	Construction of Skid foundation	45 days	Tue 28/12/21	Thu 10/2/22			
311	Construct underground utilities and drainage	45 days	Fri 11/2/22	Sun 27/3/22			
312	Backfill and road works	60 days	Mon 28/3/22	Thu 26/5/22			
313	Relocate / install new fencing for completion	21 days	Fri 27/5/22	Thu 16/6/22			
314	Mis. Work and ready for OP inspection	14 days	Fri 17/6/22	Thu 30/6/22			
315	<b>Section F (ii) - Pipe and Cable rack and external work at Area F9A and F9B</b>	<b>515 days</b>	<b>Sat 2/1/21</b>	<b>Tue 31/5/22</b>			
316	BD consent + Site Possession at Area F9A & F9B	90 days	Sat 2/1/21	Thu 1/4/21			
317	Excavation & Plate load test	45 days	Fri 1/10/21	Sun 14/11/21			
318	Construction new footing for pipe rack	45 days	Mon 15/11/21	Wed 29/12/21			
319	Underground utilites and road works for completion	72 days	Thu 30/12/21	Fri 11/3/22			
320	Structural Steel fabrication & Delivery	90 days	Sun 12/12/21	Fri 11/3/22			
321	Erection of new pipe rack	60 days	Sat 12/3/22	Tue 10/5/22			
322	Mis. Work and ready for OP inspection	21 days	Wed 11/5/22	Tue 31/5/22			
323	<b>Section F (iii) - No. 5 CW Equipment Room, pipe and cable rack, external works at Area F10</b>	<b>273 days</b>	<b>Fri 1/10/21</b>	<b>Thu 30/6/22</b>			
324	Area Possession & Clearance + BD consent	90 days	Fri 1/10/21	Wed 29/12/21			
325	Subletting / Fabrication / Delivery For ABWF + BS	150 days	Fri 1/10/21	Sun 27/2/22			
326	Excavation & Plate load test	30 days	Sat 16/10/21	Sun 14/11/21			
327	Construction new footing for equipment room	45 days	Mon 15/11/21	Wed 29/12/21			
328	Superstructure for equipment room	90 days	Thu 30/12/21	Tue 29/3/22			
329	ABWF Works	70 days	Wed 30/3/22	Tue 7/6/22			
330	BS Works	90 days	Sat 2/4/22	Thu 30/6/22			
331	Construction RC Wall & plinths & drainage at Chlorinator area	45 days	Wed 30/3/22	Fri 13/5/22			
332	External wall finish & remove scaffolding	30 days	Sat 14/5/22	Sun 12/6/22			
333	Excavation & Plate load test for pipe rack extension	30 days	Sat 16/10/21	Sun 14/11/21			
334	Construction new footing for pipe rack	45 days	Mon 15/11/21	Wed 29/12/21			
335	Underground utilites and road works for completion	60 days	Thu 30/12/21	Sun 27/2/22			
336	Structural Steel fabrication & Delivery	90 days	Tue 30/11/21	Sun 27/2/22			
337	Backfilling and prepare for steel erection	8 days	Mon 28/2/22	Mon 7/3/22			

REVISED MASTER PROGRAMME  
4 JAN 2021 Rev. 1-A



Task  Split  Milestone  Summary

**Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12**

**MASTER PROGRAMME**

ID	Task Name	Duration	Start	Finish	Aug	Sep	Oct
338	Erection of new pipe rack	70 days	Tue 8/3/22	Mon 16/5/22			
339	Mis. Work and ready for OP inspection	15 days	Tue 17/5/22	Tue 31/5/22			
340	<b>Section G (i) - External Work surrounding Area F11</b>	<b>153 days</b>	<b>Sun 1/5/22</b>	<b>Fri 30/9/22</b>			
341	Area Possession & Clearance after handover from No. 5 Intake Contractor	30 days	Sun 1/5/22	Mon 30/5/22			
342	Subletting / Fabrication / Delivery	30 days	Sun 1/5/22	Mon 30/5/22			
343	Submission WWO046 for commencement	30 days	Sun 1/5/22	Mon 30/5/22			
344	Construct Underground utilities and drainage	30 days	Sun 1/5/22	Mon 30/5/22			
345	Install new FS Hydrant	20 days	Tue 31/5/22	Sun 19/6/22			
346	Submission WWO046 for completion	30 days	Mon 20/6/22	Tue 19/7/22			
347	Construction Road extension	58 days	Mon 20/6/22	Tue 16/8/22			
348	Construction road paving and install fencing	30 days	Wed 17/8/22	Thu 15/9/22			
349	Ready for OP inspection	15 days	Fri 16/9/22	Fri 30/9/22			
350	<b>Section G (ii) - External Works at Area F12 &amp; F13</b>	<b>666 days</b>	<b>Fri 4/12/20</b>	<b>Fri 30/9/22</b>			
351	Area Possession & Clearance after handover from other	45 days	Fri 4/12/20	Sun 17/1/21			
352	Subletting / Fabrication / Delivery	180 days	Thu 4/3/21	Mon 30/8/21			
353	Excavation	21 days	Sat 23/10/21	Fri 12/11/21			
354	Submission WWO046 for commencement	30 days	Sat 13/11/21	Sun 12/12/21			
355	Construct Underground utilities and drainage	90 days	Mon 13/12/21	Sat 12/3/22			
356	Install new FS Hydrant	30 days	Sun 13/3/22	Mon 11/4/22			
357	Submission WWO046 for completion	30 days	Tue 12/4/22	Wed 11/5/22			
358	Construction Road extension	127 days	Thu 12/5/22	Thu 15/9/22			
359	Complete with Mis. Works for completion	15 days	Fri 16/9/22	Fri 30/9/22			
360	<b>Section G (iii) - FS Modification works along South Seafront Road at Area F15</b>	<b>183 days</b>	<b>Fri 1/4/22</b>	<b>Fri 30/9/22</b>			
361	Area Possession & Clearance after handover from other	45 days	Fri 1/4/22	Sun 15/5/22			
362	Subletting / Fabrication / Delivery	21 days	Fri 1/4/22	Thu 21/4/22			
363	Temporary Traffic Arrangement approval	14 days	Fri 1/4/22	Thu 14/4/22			
364	Utilities scanning and expose existing FS	14 days	Fri 15/4/22	Thu 28/4/22			
365	Determine new FS alignment	21 days	Fri 29/4/22	Thu 19/5/22			
366	Submission to FSD	14 days	Fri 20/5/22	Thu 2/6/22			
367	Modification of FS	60 days	Fri 3/6/22	Mon 1/8/22			
368	Backfill and reinstatement + report to FSD	60 days	Tue 2/8/22	Fri 30/9/22			
369	<b>Section G (iv) - 275kV cable trenches and External Works at Area F16</b>	<b>518 days</b>	<b>Sat 1/5/21</b>	<b>Fri 30/9/22</b>			
370	Area Possession & Clearance	60 days	Sat 1/5/21	Tue 29/6/21			
371	Subletting / Fabrication / Delivery	210 days	Wed 17/11/21	Tue 14/6/22			
372	Temporary Traffic Arrangement approval	60 days	Sat 1/5/21	Tue 29/6/21			
373	Removal of aboveground services	60 days	Wed 30/6/21	Sat 28/8/21			
374	Utilities scanning and expose existing UU	30 days	Sun 29/8/21	Mon 27/9/21			
375	Arrange of diversion existing UG utilities	90 days	Tue 28/9/21	Sun 26/12/21			
376	Construct new cable trenches	173 days	Mon 27/12/21	Fri 17/6/22			
377	Realignment / install new UG utilities	60 days	Sat 18/6/22	Tue 16/8/22			
378	backfill and reinstatement & ready for cable laying by others	45 days	Wed 17/8/22	Fri 30/9/22			
379	<b>Section G (v) - Shunt Reactor Compound and External Works at Area F17</b>	<b>666 days</b>	<b>Fri 4/12/20</b>	<b>Fri 30/9/22</b>			
380	Temporary Traffic Arrangement approval	45 days	Fri 4/12/20	Sun 17/1/21			
381	Subletting / Fabrication / Delivery	100 days	Fri 25/12/20	Sat 3/4/21			
382	BD approval & consent for sheetpile installation	90 days	Fri 4/12/20	Wed 3/3/21			
383	Area Possession & Clearance	14 days	Thu 4/3/21	Wed 17/3/21			
384	Removal of aboveground services	21 days	Thu 18/3/21	Wed 7/4/21			
385	Utilities scanning and expose existing UU	15 days	Thu 8/4/21	Thu 22/4/21			
386	Arrange of diversion existing UG utilities	45 days	Fri 23/4/21	Sun 6/6/21			
387	Install pipe piles	61 days	Sun 23/5/21	Thu 22/7/21			
388	BA14 for pipepile and BD consent for ELS	28 days	Fri 23/7/21	Thu 19/8/21			
389	Excavation & install earthing	35 days	Fri 20/8/21	Thu 23/9/21			
390	Construct Pile Caps and Tie Beams	45 days	Fri 24/9/21	Sun 7/11/21			
391	Backfill & Erect scaffold	21 days	Mon 8/11/21	Sun 28/11/21			
392	Construction of SRC Walls	75 days	Mon 29/11/21	Fri 11/2/22			
393	Wall finish and remove scaffolding	24 days	Sat 12/2/22	Mon 7/3/22			
394	Construct new cable trenches	60 days	Tue 8/3/22	Fri 6/5/22			
395	Realignment / install new UG utilities	117 days	Sat 7/5/22	Wed 31/8/22			
396	Backfill and reinstatement & ready for cable laying by others	30 days	Thu 1/9/22	Fri 30/9/22			
397	<b>Section G (vi) - 275kV cable trenches and External Works at Area F18</b>	<b>397 days</b>	<b>Sat 1/5/21</b>	<b>Wed 1/6/22</b>			
398	Temporary Traffic Arrangement approval	45 days	Sat 1/5/21	Mon 14/6/21			
399	Subletting / Fabrication / Delivery	60 days	Tue 15/6/21	Fri 13/8/21			
400	Area Possession & Clearance	15 days	Sat 1/5/21	Sat 15/5/21			
401	Removal of aboveground services	30 days	Sun 16/5/21	Mon 14/6/21			
402	Utilities scanning and expose existing UU	45 days	Tue 15/6/21	Thu 29/7/21			
403	Arrange of diversion existing UG utilities	60 days	Fri 30/7/21	Mon 27/9/21			
404	Construct new cable trenches	172 days	Tue 28/9/21	Fri 18/3/22			
405	Realignment / install new UG utilities	45 days	Sat 19/3/22	Mon 2/5/22			
406	backfill and reinstatement & ready for cable laying by others	30 days	Tue 3/5/22	Wed 1/6/22			
407	<b>Section G (vii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20A</b>	<b>301 days</b>	<b>Fri 4/12/20</b>	<b>Thu 30/9/21</b>			
408	Area Possession & Clearance	30 days	Fri 4/12/20	Sat 2/1/21			
409	Subletting / Fabrication / Delivery	60 days	Fri 25/12/20	Mon 22/2/21			
410	Temporary Traffic Arrangement approval	14 days	Fri 4/12/20	Thu 17/12/20			
411	ELS BD approval & consent	90 days	Fri 18/12/20	Wed 17/3/21			
412	Demolition of existing carriageway	30 days	Fri 11/12/20	Sat 9/1/21			
413	Removal of aboveground services	21 days	Sun 10/1/21	Sat 30/1/21			
414	Utilities scanning and expose existing UU	21 days	Sun 31/1/21	Sat 20/2/21			
415	Arrange of diversion existing UG utilities	30 days	Sun 21/2/21	Mon 22/3/21			
416	Install Sheet piles	45 days	Tue 23/3/21	Thu 6/5/21			
417	BA14 for sheetpile and BD consent for ELS	28 days	Fri 7/5/21	Thu 3/6/21			
418	Excavation and construction of new Flood wall	65 days	Fri 4/6/21	Sat 7/8/21			
419	Realignment / install new UG utilities	30 days	Sun 8/8/21	Mon 6/9/21			
420	backfill and construct new carriageway	18 days	Tue 7/9/21	Fri 24/9/21			
421	Mis. Work for completion	6 days	Sat 25/9/21	Thu 30/9/21			
422	<b>Section G (viii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20B</b>	<b>365 days</b>	<b>Fri 1/10/21</b>	<b>Fri 30/9/22</b>			
423	Area Possession & Clearance	45 days	Fri 1/10/21	Sun 14/11/21			
424	Subletting / Fabrication / Delivery	90 days	Fri 22/10/21	Wed 19/1/22			
425	Temporary Traffic Arrangement approval	14 days	Fri 1/10/21	Thu 14/10/21			
426	ELS BD approval & consent	90 days	Fri 15/10/21	Wed 12/1/22			
427	Demolition of existing carriageway	60 days	Fri 1/10/21	Mon 29/11/21			
428	Removal of aboveground services	21 days	Tue 30/11/21	Mon 20/12/21			
429	Utilities scanning and expose existing UU	21 days	Tue 21/12/21	Mon 10/1/22			
430	Arrange of diversion existing UG utilities	30 days	Tue 11/1/22	Wed 9/2/22			
431	Install Sheetpiles	55 days	Thu 10/2/22	Tue 5/4/22			
432	BA14 for sheetpile and BD consent for ELS	28 days	Wed 6/4/22	Tue 3/5/22			
433	Excavation and construction of new Flood wall	90 days	Wed 4/5/22	Mon 1/8/22			
434	Realignment / install new UG utilities	30 days	Tue 8/8/22	Wed 31/8/22			
435	backfill and construct new carriageway	21 days	Thu 1/9/22	Wed 21/9/22			
436	Mis. Work for completion	9 days	Thu 22/9/22	Fri 30/9/22			
437	<b>Section G (ix) - Bund wall modification works at South Seafront Road at Area F21</b>	<b>209 days</b>	<b>Fri 4/12/20</b>	<b>Wed 30/6/21</b>			
438	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21			
439	Subletting / Fabrication / Delivery	90 days	Fri 25/12/20	Wed 24/3/21			
440	Temporary Traffic Arrangement approval	14 days	Fri 4/12/20	Thu 17/12/20			
441	ELS BD approval & consent	0 days	Thu 17/12/20	Thu 17/12/20			
442	Demolition of existing carriageway	14 days	Fri 18/12/20	Thu 31/12/20			
443	Removal of aboveground services	14 days	Fri 1/1/21	Thu 14/1/21			
444	Utilities scanning and expose existing UU	21 days	Fri 15/1/21	Thu 4/2/21			
445	Arrange of diversion existing UG utilities	30 days	Fri 5/2/21	Sat 6/3/21			
446	Excavation and expose existing bund wall & demolish	18 days	Sun 7/3/21	Wed 24/3/21			
447	Construction new bund wall for road junction	45 days	Thu 25/3/21	Sat 8/5/21			
448	Realignment / install new UG utilities	30 days	Sun 9/5/21	Mon 7/6/21			
449	backfill and construct new carriageway	18 days	Tue 8/6/21	Fri 25/6/21			
450	Mis. Work for completion	5 days	Sat 26/6/21	Wed 30/6/21			
451	<b>Section G (x) - DAX Cable Diversion Works (from Part I to Part IV)</b>	<b>758 days</b>	<b>Fri 4/12/20</b>	<b>Sat 31/12/22</b>			
452	Temporary Traffic Arrangement approval	14 days	Fri 4/12/20	Thu 17/12/20			
453	Subletting / Fabrication / Delivery	90 days	Fri 25/12/20	Wed 24/3/21			
454	Area Possession & Clearance	45 days	Fri 4/12/20	Sun 17/1/21			
455	Identification of existing cable trench	7 days	Mon 18/1/21	Sun 24/1/21			
456	Part 1 Re-excavation works incl.construction of joint bay	246 days	Mon 25/1/21	Mon 27/9/21			
457	Part 2 Re-excavation works incl. joint bay	120 days	Mon 1/11/21	Mon 28/2/22			
458	Part 3 Re-excavation works incl. joint bay	242 days	Mon 1/11/21	Thu 30/6/22			
459	Part 4 Re-excavation works incl. joint bay & new oil tank pits	92 days	Sat 1/10/22	Sat 31/12/22			
460	Backfill & Reinstatement Part 1	61 days	Mon 1/11/21	Fri 31/12/21			





**Contract No. 19/83002 Lamma Power Station Extension Civil and Building Works for Unit L12**

**MASTER PROGRAMME**

ID	Task Name	Duration	Start	Finish	
461	Backfill & Reinstatement Part 2	61 days	Sun 1/5/22	Thu 30/6/22	
462	Backfill & Reinstatement Part 3	61 days	Thu 1/9/22	Mon 31/10/22	
463	<b>Section H - All remaining works shall be completed for reporting completion to BD and ready for OP inspection (PS1.4.4)</b>	<b>478 days</b>	<b>Mon 8/11/21</b>	<b>Tue 28/2/23</b>	
464	<b>Deferred works (MSB &amp; HRSG) Listed in PS 1.4.4</b>	<b>281 days</b>	<b>Mon 8/11/21</b>	<b>Mon 15/8/22</b>	
465	Construction of L12 MSB roof between GL12-G to 12-H and 12-2 to 12-6 after the overhead crane installation by the Employer's Specialist Contractors	38 days	Mon 8/11/21	Wed 15/12/21	15 Aug '22
466	Construction of walls of L12 MSB below 1/F along GL 12-6 from GL12-B to 12-C and the associated staircases including the enclosure	92 days	Mon 16/5/22	Mon 15/8/22	Construction of walls of L12 MSB below 1/F along GL 12-6 from GL12-B to 12-C and the associated staircases including the enclosure
467	Provision in associated with hoisting well	21 days	Mon 6/6/22	Sun 26/6/22	
468	Construction of internal partition wall at 1/F of L12 MSB along GL 12-C from GL 12-2 to 12-3 AND North Façade at 1/F of L12 MSB along GL 12-1 from GL 12-B to 12-C	30 days	Sat 16/4/22	Sun 15/5/22	MSB along GL 12-1 from GL 12-B to 12-C
469	Construction of metal fence and the associated Fire Services (F.S.) installations and installation of removable shelter at Transformer Area	92 days	Mon 16/5/22	Mon 15/8/22	Construction of metal fence and the associated Fire Services (F.S.) installations and installation of removable shelter at Transformer Area
470	<b>Deferred works (DAX1 and DAX2) Listed in PS 1.4.4</b>	<b>334 days</b>	<b>Wed 1/2/23</b>	<b>Sun 31/12/23</b>	
471	Backfilling of whole DAX1 compartment inside existing joint bay "STJ12" and the new oil tank pit A located aside existing joint bay "STJ12".	59 days	Wed 1/2/23	Fri 31/3/23	
472	Re-excavation of whole DAX2 compartment inside existing joint bay "STJ12".	61 days	Tue 1/8/23	Sat 30/9/23	
473	Backfilling of whole DAX2 compartment inside existing joint bay "STJ12" and the new oil tank pit B located aside existing joint bay "STJ12".	61 days	Wed 1/11/23	Sun 31/12/23	
474	<b>Deferred works (External Work) Listed in PS 1.4.4</b>	<b>121 days</b>	<b>Thu 1/12/22</b>	<b>Fri 31/3/23</b>	
475	Final reinstatement of access roads and pavement surrounding and within L12 MSB and L12 HRSG area	62 days	Thu 1/12/22	Tue 31/1/23	
476	Installation of trench cover and road reinstatement of gas pipe and cable trenches within Area F5, F14, F16, F17 and F18.	90 days	Sun 1/1/23	Fri 31/3/23	
477	Backfilling and road-reinstatement of 275kV cable trenches	90 days	Sun 1/1/23	Fri 31/3/23	
478	All Remaining work ready for OP inspection	0 days	Tue 28/2/23	Tue 28/2/23	
479	<b>STATUTORY SUBMISSION, INSPECTION &amp; APPROVAL</b>	<b>865 days?</b>	<b>Fri 15/1/21</b>	<b>Mon 29/5/23</b>	
480	<b>WSD Statutory Submission, Inspection and Approval WWO Part I to III Submission / Approval</b>	<b>256 days</b>	<b>Fri 15/1/21</b>	<b>Mon 27/9/21</b>	
481	WSD: Submit to WSD Form WWO 046 Part I to II - FOR ACB Building (for Ext Works at later stage)	0 days	Fri 15/1/21	Fri 15/1/21	
482	WSD: Vetting Form WWO 046 Part I and II Submission	90 days	Sat 16/1/21	Thu 15/4/21	
483	WSD: Issued of Form WWO 046 Part III by WSD - FOR ACB Building	0 days	Fri 16/4/21	Fri 16/4/21	
484	WSD: Prepare for 1st Amendment for Plumbing Plan	60 days	Fri 16/4/21	Mon 14/6/21	
485	WSD: Submit to WSD 1st Amendment for Plumbing Plan	0 days	Mon 14/6/21	Mon 14/6/21	
486	WSD: Vetting of Plumbing Plan by WSD	60 days	Tue 15/6/21	Fri 13/8/21	
487	WSD: 1st Approval for Plumbing Plan by WSD	0 days	Fri 13/8/21	Fri 13/8/21	
488	WSD: Prepare and Submit for Final Amendment for Plumbing Plan	45 days	Sat 14/8/21	Mon 27/9/21	
489	WSD: Vetting and Final Approval for Plumbing Plan by WSD	0 days	Mon 27/9/21	Mon 27/9/21	
490	<b>WSD Statutory Submission, Inspection and Approval WWO Part IV to V Fire Services Water Submission / Approval</b>	<b>34 days?</b>	<b>Tue 9/8/22</b>	<b>Sun 11/9/22</b>	
491	WSD: Form WWO 046 Part IV Submission (FS)	0 days	Mon 4/10/21	Mon 4/10/21	
492	WSD: WSD Received Form WWO046 Part IV and arrange for inspection (FS)	7 days	Tue 5/10/21	Mon 11/10/21	
493	WSD: WSD Inspection (FS)	7 days	Sat 30/10/21	Fri 5/11/21	
494	WSD: WWO 046 Part V Endorsement by WSD (FS)	12 days	Sat 6/11/21	Wed 17/11/21	
495	WSD: WSD Processing Water Supply Connection Certificate (FS)	7 days	Thu 18/11/21	Wed 24/11/21	
496	WSD: Issue by WSD Water Supply Connection Certificate (FS)	0 days?	Wed 24/11/21	Wed 24/11/21	
497	<b>WSD Statutory Submission, Inspection and Approval WWO Part IV to V Potable / Flush Water Submission / Approval</b>	<b>60 days</b>	<b>Mon 18/10/21</b>	<b>Fri 17/12/21</b>	
498	WSD: Form WWO 046 Part IV Submission (Fresh/Flush)	0 days	Mon 18/10/21	Mon 18/10/21	
499	WSD: WSD Acknowledge Form WWO 046	6 days	Tue 19/10/21	Sun 24/10/21	
500	WSD: WSD Inspection with Testing to lead (Fresh/Fluhs)	12 days	Mon 25/10/21	Fri 5/11/21	
501	WSD: Cleansing/Disinfecting Water Tanks / Piping System (Fresh/Flush)	6 days	Sat 6/11/21	Thu 11/11/21	
502	WSD: Collection of Sample for Testing at Accredited Lab (Fresh/Flush)	12 days	Fri 12/11/21	Tue 23/11/21	
503	WSD: Accredited Lab Testing Report of Sample to WSD	12 days	Wed 24/11/21	Sun 5/12/21	
504	WSD: Vetting of Test Report by WSD	6 days	Mon 6/12/21	Sat 11/12/21	
505	WSD: Issue of WWO 046 Part V (Fresh/Flush)	0 days	Sat 11/12/21	Sat 11/12/21	
506	WSD: WSD Processing WWO1005 Water Certification (Fresh/Flush)	6 days	Sun 12/12/21	Fri 17/12/21	
507	WSD: Issue by WSD WWO 1005 Water Certification (Fresh/Flush)	0 days	Fri 17/12/21	Fri 17/12/21	
508	<b>EMSD LIFT Statutory Submission, Inspection and Approval</b>	<b>45 days</b>	<b>Sat 5/2/22</b>	<b>Mon 21/3/22</b>	
509	EMSD: Submission of Lift Form LES to EMSD	12 days	Sat 5/2/22	Wed 16/2/22	
510	EMSD: EMSD Makes arrangement for Lift Installation	5 days	Thu 17/2/22	Mon 21/2/22	
511	EMSD: EMSD Inspection to Lift Installation	14 days	Tue 22/2/22	Mon 7/3/22	
512	EMSD: Processing Lift Certificate (Form LE6)	14 days	Tue 8/3/22	Mon 21/3/22	
513	EMSD: Lift Issuance of Form 6 (Lift Certificate)	0 days	Mon 21/3/22	Mon 21/3/22	
514	<b>HKE Transformer Final Inspection</b>	<b>120 days</b>	<b>Thu 30/6/22</b>	<b>Thu 27/10/22</b>	
515	TX Room: Invite HKE For Transformer Room Inspection	7 days	Thu 30/6/22	Wed 6/7/22	
516	TX Room: Give Access to Transformer Room for HKE Contractor	0 days	Wed 6/7/22	Wed 6/7/22	
517	TX Room: Move-IN HKE Transformer Equipments	5 days	Thu 7/7/22	Mon 11/7/22	
518	TX Room: Install HKE Transformer, MEP Works & Testing	90 days	Tue 12/7/22	Sun 9/10/22	
519	TX Room: HKE Power Energization / Inspection	6 days	Mon 10/10/22	Sat 15/10/22	
520	TX Room: Metering Installation	12 days	Sun 16/10/22	Thu 27/10/22	
521	TX Room: HKE Power-ON Date	0 days	Thu 27/10/22	Thu 27/10/22	
522	<b>DSD Drainage Completion Memo</b>	<b>65 days</b>	<b>Mon 29/8/22</b>	<b>Tue 1/11/22</b>	
523	DSD: CCTV Survey Report on Completed Drainage	30 days	Mon 29/8/22	Tue 27/9/22	
524	DSD: Submitted CCTV Report & Form HPB1 of Completed Drainage to DSD For Technical Audit	7 days	Wed 28/9/22	Tue 4/10/22	
525	DSD: Completed Drainage System including TMC Inspection/Technical Audit by DSD	14 days	Wed 5/10/22	Tue 18/10/22	
526	DSD: Preparation of Drainage Connection Completion Memo by DSD	14 days	Wed 19/10/22	Tue 1/11/22	
527	DSD: Issue of Drainage Connection Completion Memo by DSD	0 days	Tue 1/11/22	Tue 1/11/22	
528	<b>EPD Submission, Inspection and Approval</b>	<b>60 days</b>	<b>Thu 30/6/22</b>	<b>Mon 29/8/22</b>	
529	EPD: License Application to EPD under APCO (Cap 311) for Generator Sets	0 days	Thu 30/6/22	Thu 30/6/22	
530	EPD: Vetting of Application by EPD under APCO (Cap 311) for Generator Sets	60 days	Fri 1/7/22	Mon 29/8/22	
531	EPD: Approval from EPD under APCO (Cap 311) for Generator Sets Installation	0 days	Mon 29/8/22	Mon 29/8/22	
532	<b>FSD VAC Statutory Submission, Inspection and Approval</b>	<b>150 days</b>	<b>Sat 16/7/22</b>	<b>Mon 12/12/22</b>	
533	Preparation of FSD VAC Drawings and Submission to HEC	60 days	Sat 16/7/22	Tue 13/9/22	
534	HEC: Review and Approval	30 days	Wed 14/9/22	Thu 13/10/22	
535	Preparation of VAC Drawings and Submission to FSD	30 days	Fri 14/10/22	Sat 12/11/22	
536	FSD: Review and Approval	30 days	Sun 13/11/22	Mon 12/12/22	
537	<b>FSD Statutory Submission, Inspection and Approval</b>	<b>91 days</b>	<b>Tue 28/2/23</b>	<b>Mon 29/5/23</b>	
538	Testing and Commissioning (Individual System - FSI Related)	45 days	Tue 28/2/23	Thu 13/4/23	
539	FSD: All Sections FS Ingration Test by NSC_BS	15 days	Fri 14/4/23	Fri 28/4/23	
540	FSD: Completion of FS Integration Test by NSC_BS for FS314/501	0 days	Fri 28/4/23	Fri 28/4/23	
541	FSD: Submit Form 213/314 & Form 501 Request for Inspection	0 days	Fri 28/4/23	Fri 28/4/23	
542	FSD: FSD Makes Arrangement for Inspection	7 days	Sat 29/4/23	Fri 5/5/23	
543	FSD: FSD Inspection	12 days	Sat 6/5/23	Wed 17/5/23	
544	FSD: Completion of FS Inspection	0 days	Wed 17/5/23	Wed 17/5/23	
545	FSD: FSD Processing FS Certificate Form 172	12 days	Thu 18/5/23	Mon 29/5/23	
546	FSD: Issue of Fire Services FS Certificate Form 172	0 days	Mon 29/5/23	Mon 29/5/23	
547	<b>PRACTICAL COMPLETION</b>	<b>216 days</b>	<b>Tue 30/5/23</b>	<b>Sun 31/12/23</b>	
548	<b>BD Inspection</b>	<b>97 days</b>	<b>Tue 30/5/23</b>	<b>Sun 3/9/23</b>	
549	BD: Application Form BA13 for OP Application	21 days	Tue 30/5/23	Mon 19/6/23	
550	BD: BD Inspection Date	15 days	Tue 20/6/23	Tue 4/7/23	
551	BD: Reinspection date with defects and rectification works	60 days	Wed 5/7/23	Sat 2/9/23	
552	<b>BD: Obtain Occupation Permit (OP) from BD</b>	<b>1 day</b>	<b>Sun 3/9/23</b>	<b>Sun 3/9/23</b>	
553	<b>As-Built Drawings &amp; Handover Documentation</b>	<b>120 days</b>	<b>Wed 14/6/23</b>	<b>Wed 11/10/23</b>	
554	Prepare and Submit As-Built Drawings & Handover Documentation	45 days	Wed 14/6/23	Fri 28/7/23	
555	Review and Approval	45 days	Sat 29/7/23	Mon 11/9/23	
556	As-Built Drawings & Handover Documentation - Revision by MC	30 days	Tue 12/9/23	Wed 11/10/23	
557	Revised As-Built Drawings & Handover Documentation - Final Submission	0 days	Wed 11/10/23	Wed 11/10/23	
558	<b>Completion of the Whole Contract Works</b>	<b>119 days</b>	<b>Mon 4/9/23</b>	<b>Sun 31/12/23</b>	
559	1st Client Inspection for Review and Comments	30 days	Mon 4/9/23	Tue 3/10/23	
560	Defects and Rectification works	60 days	Wed 4/10/23	Sat 2/12/23	
561	2nd Client Inspection	14 days	Sun 3/12/23	Sat 16/12/23	
562	Minor Defects Rectification Works and Final Inspection	15 days	Sun 17/12/23	Sun 31/12/23	
563	<b>PRACTICAL COMPLETION</b>	<b>0 days</b>	<b>Sun 31/12/23</b>	<b>Sun 31/12/23</b>	





ID	Task Name	Duration	Start	Finish	August 2022												September 2022							Octo			
					31	03	06	09	12	15	18	21	24	27	30	02	05	08	11	14	17	20	23		26	29	
1	19-83014 - Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamma Power Station Extension	222 days	Thu 12/16/21	Thu 09/15/22	[Gantt bar]																						
2	Cable Bridge	222 days	Thu 12/16/21	Thu 09/15/22	[Gantt bar]																						
3	Precast beam installation	67 days	Thu 12/16/21	Thu 03/10/22	[Gantt bar]																						
4	Construction of Diaphragm Beams	41 days	Fri 03/11/22	Tue 05/03/22	[Gantt bar]																						
5	DB10 & DB11	17 days	Fri 03/11/22	Wed 03/30/22	[Gantt bar]																						
6	Rebar Bending	6 days	Fri 03/11/22	Thu 03/17/22	[Gantt bar]																						
7	Rebar Fixing	4 days	Fri 03/18/22	Tue 03/22/22	[Gantt bar]																						
8	Fwk Erection	4 days	Wed 03/23/22	Sat 03/26/22	[Gantt bar]																						
9	Concreting	1 day	Mon 03/28/22	Mon 03/28/22	[Gantt bar]																						
10	Fwk Removal	2 days	Tue 03/29/22	Wed 03/30/22	[Gantt bar]																						
11	DB8 & DB9	17 days	Mon 03/28/22	Wed 04/20/22	[Gantt bar]																						
12	Rebar Bending	6 days	Mon 03/28/22	Sat 04/02/22	[Gantt bar]																						
13	Rebar Fixing	4 days	Mon 04/04/22	Fri 04/08/22	[Gantt bar]																						
14	Fwk Erection	4 days	Sat 04/09/22	Wed 04/13/22	[Gantt bar]																						
15	Concreting	1 day	Thu 04/14/22	Thu 04/14/22	[Gantt bar]																						
16	Fwk Removal	2 days	Tue 04/19/22	Wed 04/20/22	[Gantt bar]																						
17	DB7	13 days	Thu 04/14/22	Tue 05/03/22	[Gantt bar]																						
18	Rebar Bending	4 days	Thu 04/14/22	Thu 04/21/22	[Gantt bar]																						
19	Rebar Fixing	3 days	Fri 04/22/22	Mon 04/25/22	[Gantt bar]																						
20	Fwk Erection	3 days	Tue 04/26/22	Thu 04/28/22	[Gantt bar]																						
21	Concreting	1 day	Fri 04/29/22	Fri 04/29/22	[Gantt bar]																						
22	Fwk Removal	2 days	Sat 04/30/22	Tue 05/03/22	[Gantt bar]																						
23	Construction of 200mm thk RC middle slab	35 days	Thu 03/31/22	Tue 05/17/22	[Gantt bar]																						
24	Slab (6000+8581 Length)	11 days	Thu 03/31/22	Wed 04/13/22	[Gantt bar]																						
25	Install left-in sub-frame	6 days	Thu 03/31/22	Thu 04/07/22	[Gantt bar]																						
26	Rebar Bending	2 days	Fri 04/08/22	Sat 04/09/22	[Gantt bar]																						
27	Rebar Fixing	2 days	Mon 04/11/22	Tue 04/12/22	[Gantt bar]																						
28	Concreting	1 day	Wed 04/13/22	Wed 04/13/22	[Gantt bar]																						
29	Slab (8581+8581 Length)	11 days	Thu 04/21/22	Wed 05/04/22	[Gantt bar]																						
30	Install left-in sub-frame	6 days	Thu 04/21/22	Wed 04/27/22	[Gantt bar]																						
31	Rebar Bending	2 days	Thu 04/28/22	Fri 04/29/22	[Gantt bar]																						
32	Rebar Fixing	2 days	Sat 04/30/22	Tue 05/03/22	[Gantt bar]																						
33	Concreting	1 day	Wed 05/04/22	Wed 05/04/22	[Gantt bar]																						
34	Slab (8581+6000 Length)	11 days	Wed 05/04/22	Tue 05/17/22	[Gantt bar]																						
35	Install left-in sub-frame	6 days	Wed 05/04/22	Wed 05/11/22	[Gantt bar]																						
36	Rebar Bending	2 days	Thu 05/12/22	Fri 05/13/22	[Gantt bar]																						
37	Rebar Fixing	2 days	Sat 05/14/22	Mon 05/16/22	[Gantt bar]																						
38	Concreting	1 day	Tue 05/17/22	Tue 05/17/22	[Gantt bar]																						
39	Remedial Work to DB11	28 days	Thu 05/12/22	Tue 06/14/22	[Gantt bar]																						
40	Construction of remaining 200mm thk. RC middle slab	7 days	Wed 06/15/22	Wed 06/22/22	[Gantt bar]																						
41	Stage 2 PT stressing	6 days	Wed 06/29/22	Tue 07/05/22	[Gantt bar]																						
42	Construction of Abutment at LPS (PCB 6-12)	22 days	Wed 07/06/22	Sat 07/30/22	[Gantt bar]																						
43	Construction of End Beam EB1 with Shear Key NSK1	12 days	Wed 07/06/22	Tue 07/19/22	[Gantt bar]																						
44	Construction of Abutment Wall AW2	10 days	Wed 07/20/22	Sat 07/30/22	[Gantt bar]																						
45	Construction of Abutment at LMX (PCB 6-12)	38 days	Wed 07/06/22	Thu 08/18/22	[Gantt bar]																						
46	Construction of late cast portion of pile cap PC6	12 days	Wed 07/06/22	Tue 07/19/22	[Gantt bar]																						
47	Construction of End Beam EB2	10 days	Wed 07/20/22	Sat 07/30/22	[Gantt bar]																						
48	Construction of Abutment Wall AW3	8 days	Mon 08/01/22	Tue 08/09/22	[Gantt bar]																						
49	Construction of Abutment Wall AW1 for Maintenance Chamfer	8 days	Wed 07/20/22	Thu 07/28/22	[Gantt bar]																						
50	Cast mass concrete retaining wall	8 days	Wed 08/10/22	Thu 08/18/22	[Gantt bar]																						
51	Construction of Abutment at LPS (PCB 1-5)	93 days	Tue 05/03/22	Sat 08/20/22	[Gantt bar]																						
52	Construction of Shear Key NSK2	10 days	Mon 05/16/22	Thu 05/26/22	[Gantt bar]																						
53	Construction of End Beam EB1 with Shear Key NSK1	12 days	Fri 05/27/22	Fri 06/10/22	[Gantt bar]																						
54	Construction of Abutment Wall AW2	10 days	Sat 06/11/22	Wed 06/22/22	[Gantt bar]																						
55	Construction of Type 1 Retaining Wall	1 day	Tue 05/03/22	Tue 05/03/22	[Gantt bar]																						
56	Wall	1 day	Tue 05/03/22	Tue 05/03/22	[Gantt bar]																						
57	Concreting	1 day	Tue 05/03/22	Tue 05/03/22	[Gantt bar]																						
58	Construction of Type 2 Retaining Wall	24 days	Sat 05/07/22	Mon 06/06/22	[Gantt bar]																						
59	Mass Concrete Fill	8 days	Sat 05/07/22	Tue 05/17/22	[Gantt bar]																						
60	Bottom Slab	7 days	Wed 05/18/22	Wed 05/25/22	[Gantt bar]																						
61	Rebar Fixing	3 days	Wed 05/18/22	Fri 05/20/22	[Gantt bar]																						
62	Fwk Erection	3 days	Sat 05/21/22	Tue 05/24/22	[Gantt bar]																						
63	Concreting	1 day	Wed 05/25/22	Wed 05/25/22	[Gantt bar]																						
64	Wall	9 days	Thu 05/26/22	Mon 06/06/22	[Gantt bar]																						
65	Rebar Fixing	4 days	Thu 05/26/22	Mon 05/30/22	[Gantt bar]																						
66	Fwk Erection	4 days	Tue 05/31/22	Sat 06/04/22	[Gantt bar]																						
67	Concreting	1 day	Mon 06/06/22	Mon 06/06/22	[Gantt bar]																						
68	Rockfill	7 days	Tue 06/07/22	Tue 06/14/22	[Gantt bar]																						
69	Cable trench	58 days	Wed 06/15/22	Sat 08/20/22	[Gantt bar]																						
70	Trench 275-22 & 25	28 days	Wed 06/15/22	Sat 07/16/22	[Gantt bar]																						
71	Remaining Trenches	30 days	Mon 07/18/22	Sat 08/20/22	[Gantt bar]																						
72	Construction of Abutment at LMX (PCB 1-5)	97 days	Thu 04/28/22	Mon 08/22/22	[Gantt bar]																						
73	Construction of Shear Key SSK1	10 days	Mon 05/16/22	Thu 05/26/22	[Gantt bar]																						
74	Construction of End Beam EB2	10 days	Fri 05/27/22	Wed 06/08/22	[Gantt bar]																						
75	Construction of Abutment Wall AW3	8 days	Thu 06/09/22	Fri 06/17/22	[Gantt bar]																						
76	Construction of Abutment Wall AW1 for Maintenance Chamfer	8 days	Sat 06/18/22	Mon 06/27/22	[Gantt bar]																						
77	Cast mass concrete retaining wall	8 days	Sat 06/18/22	Mon 06/27/22	[Gantt bar]																						
78	Cast Planter end wall	9 days	Thu 04/28/22	Tue 05/10/22	[Gantt bar]																						
79	Cable Trench	51 days	Fri 06/24/22	Mon 08/22/22	[Gantt bar]																						
80	Trench 275-22 & 25	21 days	Fri 06/24/22	Mon 07/18/22	[Gantt bar]																						
81	Remaining Trenches	30 days	Tue 07/19/22	Mon 08/22/22	[Gantt bar]																						
82	Installation of Precast Panel	48 days	Sat 06/11/22	Fri 08/05/22	[Gantt bar]																						
83	Stormwater Drainage work	26 days	Wed 07/06/22	Thu 08/04/22	[Gantt bar]																						
84	E&M work	26 days	Wed 07/06/22	Thu 08/04/22	[Gantt bar]																						
85	Sand Backfilling	12 days	Fri 08/05/22	Thu 08/18/22	[Gantt bar]																						
86	Road paving works	12 days	Fri 08/19/22	Thu 09/01/22	[Gantt bar]																						
87	Miscellaneous works	12 days	Fri 09/02/22	Thu 09/15/22	[Gantt bar]																						

Project: 19-83014 - No. 5 Intake and Cable Bridge  
 Date: 4 May 2022  
 Rev. 7 - Programme for Cable Bridge

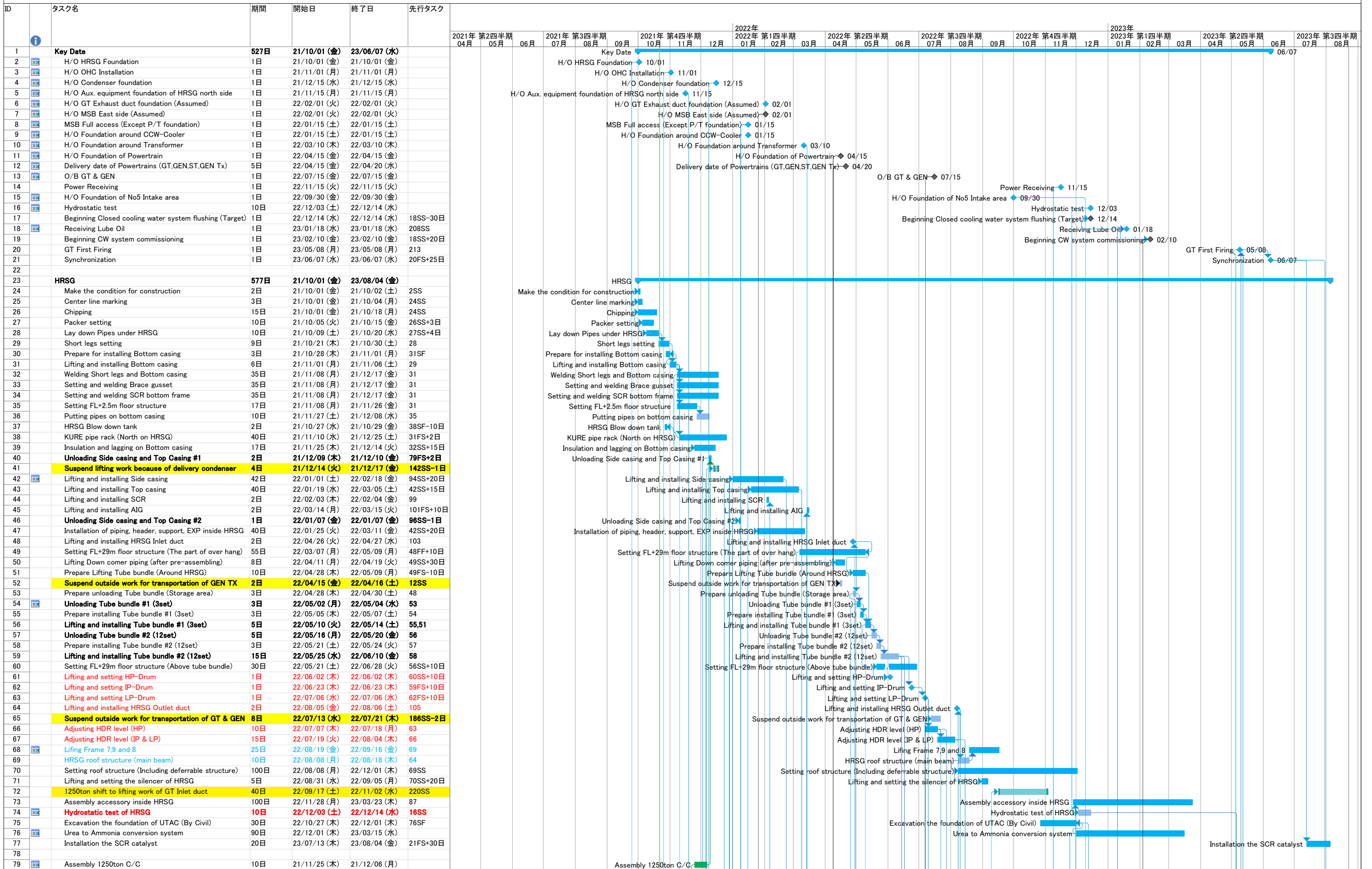
Task Split

Legend:

- Milestone (Blue bar)
- Project Summary (Black diamond)
- External Milestone (Grey diamond)
- Inactive Milestone (White diamond)
- Manual Task (White bar)
- Manual Summary Rollup (Green bar)
- Start-only (Black bar)
- Progress (Black bar)
- Summary (Dotted bar)
- External Tasks (Black arrow)
- Inactive Task (Grey bar)
- Inactive Summary (White bar)
- Duration-only (White bar)
- Manual Summary (Light blue bar)
- Finish-only (Black arrow)
- Deadline (Green arrow)

Page 1

Construction Schedule of Unit-12



NOTE  
 1. The key date is subjected in the KOM held on 30th-Sep.  
 2. The east area on the MSB is assumed to be handedover before B-Feb-2022 according to the above key date changed.

3.Considered the affection of KURE's schedule belows;  
 i) Because of delaying the side casing,installation Inlet duct is postponed.  
 ii) Because of delivery 12 TBs in one time, no enough area for pre-ass'y Outlet duct and GT Inlet duct on schedule.







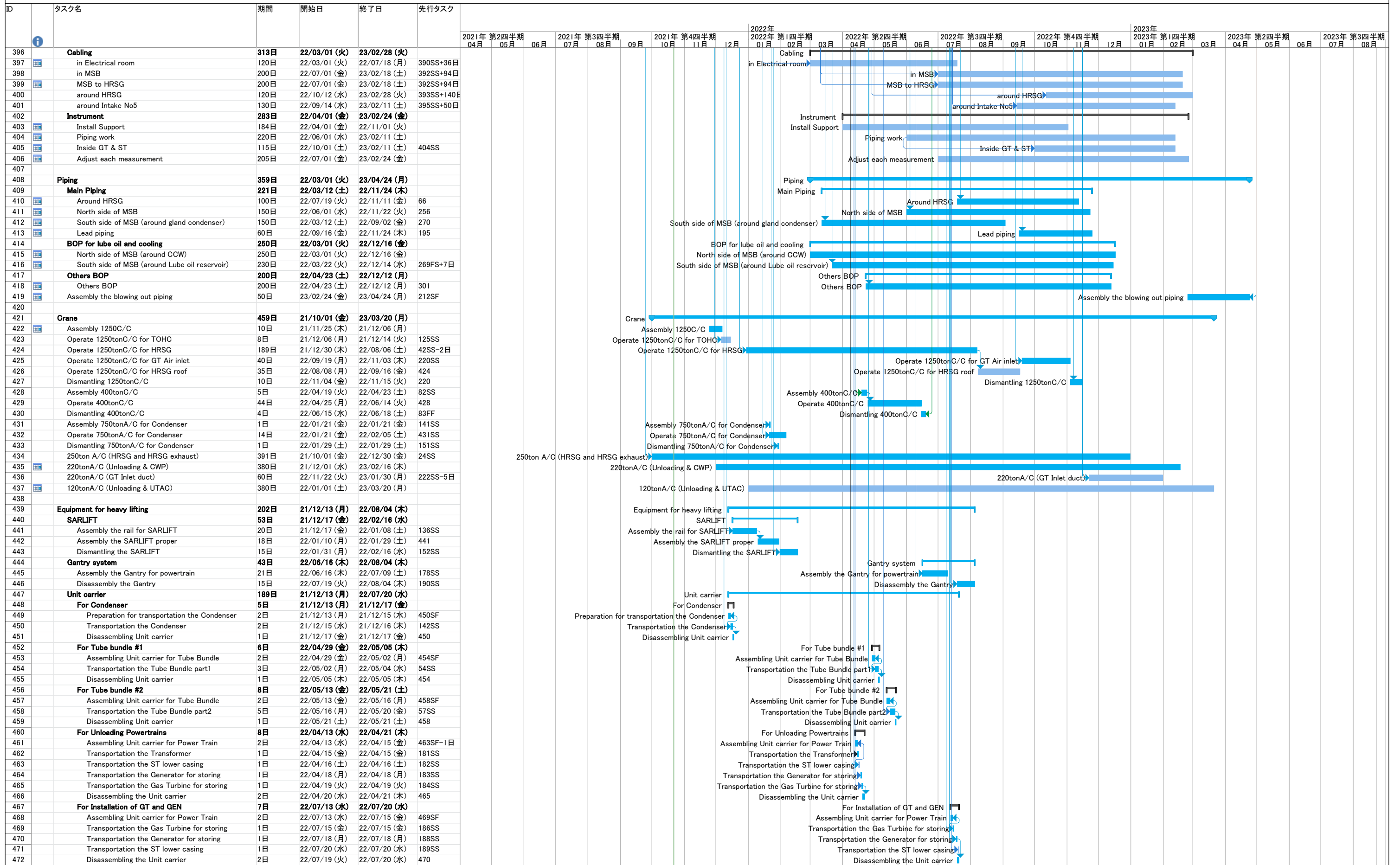








Construction Schedule of Unit-12



NOTE  
 1. The key date is subjected in the KOM held on 30th-Sep.  
 2. The east area on the MSB is assumed to be handedover before B-Feb-2022 according to the above key date changed.  
 3. Considered the affection of KURE's schedule belows;  
 i) Because of delaying the side casing, installation Inlet duct is postponed.  
 ii) Because of delivery 12 TBs in one time, no enough area for pre-ass'y Outlet duct and GT Inlet duct on schedule.

### Monthly Waste Flow Table for July 2022

Project: Lamma Power Station Extension Civil and Building Works for Unit L12

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2020, 2021 & 2022

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly						
	Excavated Materials				Non-excavated Materials				Metals (steel bar / metal strip) <sup>(1)</sup>	Metals (aluminum can) <sup>(1)</sup>	Paper / cardboard packaging <sup>(1)</sup>	Plastics <sup>(1) &amp; (4)</sup>	Chemical waste (wasted lubricant oil/oil container)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities							
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000L)	(in '000kg)	(in '000kg)	
Dec 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 2021	0.00	0.00	21020.16	0.00	0.00	0.00	0.00	0.00	8.82	0.00	0.00	0.00	0.00	0.00	0.00
Feb 2021	0.00	0.00	18083.97	0.00	0.00	0.00	0.00	0.00	18.25	0.00	0.25	0.00	0.00	0.00	0.00
Mar 2021	0.00	0.00	9048.21	0.00	0.00	0.00	0.00	0.00	7.69	0.00	0.00	0.00	0.00	0.00	2.61
Apr 2021	0.00	0.00	3205.15	0.00	0.00	0.00	0.00	0.00	28.08	0.00	0.00	0.00	0.00	0.00	14.45
May 2021	0.00	0.00	6267.49	0.00	0.00	0.00	0.00	0.00	34.68	0.00	0.00	0.00	0.00	0.00	0.00
Jun 2021	0.00	0.00	6555.38	0.00	0.00	0.00	0.00	0.00	26.87	0.00	0.00	0.00	0.00	0.00	25.03
Jul 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.95	0.00	0.00	0.00	0.00	0.00	10.97
Aug 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.55	0.00	0.00	0.00	0.00	0.00	3.49
Sep 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.28	0.00	49.15
Oct 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.47	0.00	0.00	0.00	0.00	0.00	62.08
Nov 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.08	0.00	0.00	0.00	0.00	0.00	34.17
Dec 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.36	0.00	0.00	0.00	0.00	0.00	52.18
Jan 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.93	0.00	0.00	0.00	0.00	0.00	42.73
Feb 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.62
Mar 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.21	0.00	0.000	0.00	0.00	0.00	25.70
Apr 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51	0.00	0.00	0.00	0.00	0.00	0.00	52.83
May 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.36	0.00	0.00	0.00	0.00	0.00	38.60
Jun 2022	0.00	0.00	6645.22	0.00	0.00	0.00	0.00	5.70	0.00	0.00	0.000	0.00	0.00	0.00	37.38
Jul 2022	0.00	0.00	4710.98	0.00	0.00	0.00	0.00	6.58	11.55	0.00	0.000	0.00	0.00	0.00	25.22
Total	0.00	0.00	75536.55	0.00	0.00	0.00	0.00	17.79	259.85	0.00	0.25	0.00	0.40	0.28	485.21

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
75554.34 tonnes	260.10 tonnes	485.21 tonnes	0.28 tonnes

Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 75554.34 tonnes of inert C&D material were generated from the Project, of which 75536.55 tonnes were reused in this and other contracts, and the remaining 5.51 tonnes were disposed as public fill to Fill Banks / Sorting Facilities.

(b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.

(c) 11550 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.

(d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

Notes:

- (1) metal, paper & plastic were collected by recycler
- (2) The performance target of waste recycling are specified in the Contract.
- (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
- (5) Broken concrete for recycling into aggregates.
- (6) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.

### Monthly Waste Flow Table for July 2022

Project: Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamna Power Station Extension

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2020, 2021 & 2022

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly						
	Excavated Materials			Non-excavated Materials					Metals (steel bar / metal strip) <sup>(1)</sup>	Metals (aluminum can) <sup>(1)</sup>	Paper / cardboard packaging <sup>(1)</sup>	Plastics <sup>(1) &amp; (4)</sup>	Chemical waste (wasted lubricant oil/oil container)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities							
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000L)	(in '000kg)	(in '000kg)	
Oct 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nov 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.21	0.00	0.00	0.00	0.00	0.00	0.00
Jan 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mar 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.49
Apr 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.42	4.85	
May 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	22.61
Jun 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jul 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aug 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Sep 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	37.84
Oct 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.93
Nov 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dec 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jan 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	46.25
Feb 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.45
Mar 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.86
Apr 2022	0.00	0.00	15076.75	0.00	0.00	0.00	0.00	10.27	0.00	0.00	0.000	0.00	0.00	0.00	43.60
May 2022	0.00	0.00	29148.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	54.64
Jun 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00	11.79
Jul 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	24.04	0.00	0.00	0.000	0.00	0.00	0.00	35.90
Total	0.00	0.00	44225.70	0.00	0.00	0.00	0.00	34.31	4.21	0.00	0.00	0.00	0.60	0.42	333.21

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
44260.01 tonnes	4.21 tonnes	333.21 tonnes	0.42 tonnes

Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 44260.01 tonnes of inert C&D material were generated from the Project, of which 44225.70 tonnes were reused in this and other contracts, and the remaining 10.27 tonnes were disposed as public fill to Fill Banks / Sorting Facilities.

(b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.

(c) 0 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.

(d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

Notes:

- (1) metal, paper & plastic were collected by recycler
- (2) The performance target of waste recycling are specified in the Contract.
- (3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.
- (4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.
- (5) Broken concrete for recycling into aggregates.

**Monthly Waste Flow Table for July 2022**

Project: LAMMA POWER STATION EXTENSION – Unit 12 Complete Erection, Inspection, Testing & Commissioning of Power Block Facilities

Contractor: Taihei Dengyo Kaisha, Ltd.

Record by: Stephen Sin

Year of Record: 2021, 2022

MM.YYYY	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of Non-inert C&D Materials Generated Monthly						
	Excavated Materials				Non-excavated Materials				Metals (steel bar / metal strip) <sup>(1)</sup>	Metals (aluminum can) <sup>(1)</sup>	Paper / cardboard packaging <sup>(1)</sup>	Plastics <sup>(1), (4)</sup>	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse	
	Disposed in Public Fill	Disposed in Sorting Facilities	Others (e.g. Reused in the Contract / Other Projects)	Broken Concrete or Construction Waste Collected by Recycled Company	Reused in the Contract	Reused in other Projects	Disposed in Public Fill	Disposed in Sorting Facilities							
(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in L)	(in '000kg)		
Nov 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Dec 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Jan 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.36	
Feb 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.29	
Mar 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	13.59	
Apr 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.42	
May 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.93	
Jun 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.60	
Jul 2022	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.57	
<b>Total</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	106.76	

Total Inert C&D Waste Materials Generated	Non-inert C&D Materials		
	C&D Materials Recycled	C&D Waste Disposed of at Landfill	Chemical Waste
0.00 tonnes	0.00 tonnes	106.76 tonnes	0 Liters

- Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 0.00 tonnes of inert C&D material were generated from the Project, of which 0 tonnes were reused in this and other contracts, and the remaining 0.00 tonnes were disposed in Public Fill and Sorting Facilities.
- (b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.
- (c) 0 kg of metals, 0 kg of papers/ cardboard packing and 0 kg of plastics were sent to recyclers for recycling during the reporting period.
- (d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at Landfill.

Notes:

(1) metal, paper & plastic were collected by recycler

(2) The performance target of waste recycling are specified in the Contract.

(3) The waste flow table shall also include C&D materials that are specified in the Contract to be imported for use at the Site.

(4) Plastics refer to plastic bottles/ containers, plastic/ foam from packaging material.

(5) Broken concrete for recycling into aggregates.

(6) Disposal of inert waste to public fill or sorting facilities will **NOT** be considered as recycled waste.