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 2021

香港電燈有限公司
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港燈
HK Electric

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

Report Title	Lamma Power Station Extension – Unit L11 & L12 Monthly EM&A Report (July 2021)
Date	13 August 2021
Certified by	(Mr. CHAN Hon Yeung, Environmental Team Leader)
Verified by	Mr. Y T Tang (AECOM Asia Company Limited, Independent Environmental Checker)

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EXECUTIVE SUMMARY

This is the 135th 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 2021.

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. The operational EM&A work for L9 and L10 is recorded in the separate monthly EM&A report for the Project "Operation of Lamma Power Station Extension".

In September 2016, the Government approved HK Electric to construct the third combined cycle gas-fired generating unit (L11) to implement the 2020 Fuel Mix Target. L11 is planned for commercial operation in 2022 and the associated construction work commenced in November 2016.

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 L11 Civil and Building Works	275kV Station Building Extension works, Main Station Building external works, site formation works, pipe jacking and construction of receiving pit
Unit L11 Mechanical Erection	Condenser installation, HRSG installation and turbine block installation
Unit L11 Electrical, Instrumentation & Control Erection	Cable installation
Unit L12 Civil and Building Works	Installation of columns and beam for Main Station Building, construction of No. 5 Chimney, construction of superstructure for ACB, sheet piling for No. 5 C.W. Culvert, and modification of seawall and pile cap construction for Cable Bridge (South)

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

EPD officials from Regional Office (South) visited Lamma Power Station on 16/7/2021. There was no adverse comment from EPD regarding the construction site.

Independent Environmental Checker (IEC) conducted a site inspection on 23/7/2021. The site conditions were generally satisfactory.

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-RS0039-21	01/02/21	31/07/21	Contractor	29/01/21
Construction Noise Permit	GW-RS0072-21	08/02/21	07/08/21	Contractor	05/02/21
Construction Noise Permit	GW-RS0436-21	01/07/21	31/12/21	Contractor	15/06/21
WPCO Discharge Licence	WT00034006-2019	08/08/19	31/08/24	Contractor	22/08/19
WPCO Discharge Licence	WT00037613-2021	15/04/21	30/04/26	Contractor	15/04/21
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.: 7031135	21/06/18	-	Contractor	21/06/18
Waste Disposal Billing Account	Account No.: 7027672	24/04/17	-	Contractor	24/04/17
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

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 against 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 L11 Civil and Building Works

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

Unit L11 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 L11 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.

Unit L12 Civil and Building Works

- 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;
- to treat wastewater in sedimentation pit and tanks before discharge and to ensure compliance with the WPCO discharge licence already obtained;
- to provide silt curtain as preventive measures at Northern Cable Bridge area.

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 2021.

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 L11 civil and building works were, 275kV Station Building Extension works, Main Station Building external works, site formation works, pipe jacking and construction of receiving pit. Construction activities for Unit L11 mechanical erection were condenser installation, HRSG installation and turbine block installation. Construction activity for Unit L11 electrical, instrumentation & control erection was cable installation. Construction activities for Unit L12 civil and building works were, installation of columns and beam for Main

Station Building, construction of No.5 Chimney, construction of superstructure for ACB, sheet piling for No. 5 C.W. Culvert, and modification of seawall and pile cap construction for Cable Bridge (South). 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 L11 Civil and Building Works		
1.	275kV Station Building Extension Works	**Air** – All regulated machine attached with valid exception/approval NRMM labels. – Water spraying on haul road. **Wastewater** – Wastewater should be treated in desilting pit and tanks for reuse on water spraying. **Waste Management** – Scrape metal would be recycled. – Chemical waste should be collected by licensed collector
2.	Main Station Building external works, site formation works, pipe jacking and construction of receiving pit	**Air** – All regulated machine attached with valid exception/approval NRMM labels. – Water truck and water sprinkler system was used. – Excavated slope and soil stock covered with cement or tarpaulin. – Backfilled surface was compacted. – Wheel washing facility was provided. **Wastewater** – 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 from every other day to weekly basis depends on the volume of sediment accumulated in order to maintain sufficient volume for wastewater treatment. **Waste Management**

Item	Construction Activities	Environmental Mitigation Measures
		– Excavated soil was temporary stored for backfilling. – Scrape metal would be recycled. – Timber would be reused as much as possible.
Unit L11 Mechanical Erection		
3.	Condenser installation HRSG installation Turbine block installation	**Air** – Dust suppression measures implemented according to the EMP. **Noise** – General noise mitigation measures employed at all work sites throughout the construction phase. **Waste Management** – Waste Management Plan submitted and implemented
Unit L11 Electrical, Instrumentation & Control Erection		
4.	Cable installation	**Air** – Dust suppression measures implemented according to the EMP. **Noise** – General noise mitigation measures employed at all work sites throughout the construction phase. **Waste Management** – Waste Management Plan submitted and implemented.
Unit L12 Civil and Building Works		
5.	<u>Unit L12 Main Station Building</u> Installation and Columns of beam Construction of No.5 Chimney <u>ACB</u> Construction of superstructure <u>No.5 C.W. Culvert</u>	**Air** – All regulated machine attached with valid exception/approval NRMM labels. – Water truck, and water sprinkler system would be used. – Water spraying for concrete breaking works. – Soil stock would be covered with cement or tarpaulin or keep the entire surface wet. – Wheel washing facility was provided. – **Noise** – Works conducted during restricted hours should

Item	Construction Activities	Environmental Mitigation Measures
	Sheet piling	comply with the valid CNP. – Noise emission label was provided for air compressor. **Wastewater** – 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 from every other day to weekly basis depends on the volume of sediment accumulated in order to maintain sufficient volume for wastewater treatment. **Waste Management** – Excavated soil was temporary stored for backfilling and reuse in other projects. – Scrape metal would be recycled. – Chemical waste should be collected by licensed collector.
6.	Cable Bridge (South): Modification of Seawall and Pile Cap Construction	**Air** – All regulated machine attached with valid exception/approval NRMM labels. – Soil stockpile covered with tarpaulin. – Wheel washing facilities was provided. – Water spraying on haul road and during concrete breaking. **Waste Management** – Excavated soil would be stored for backfilling. **Noise** – Works conducted during restricted hours should comply with the valid CNP. **Wastewater** - Wastewater would be treated in desilting tanks for reuse - Silt curtain was provided as preventive measures at Southern Cable Bridge area

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.

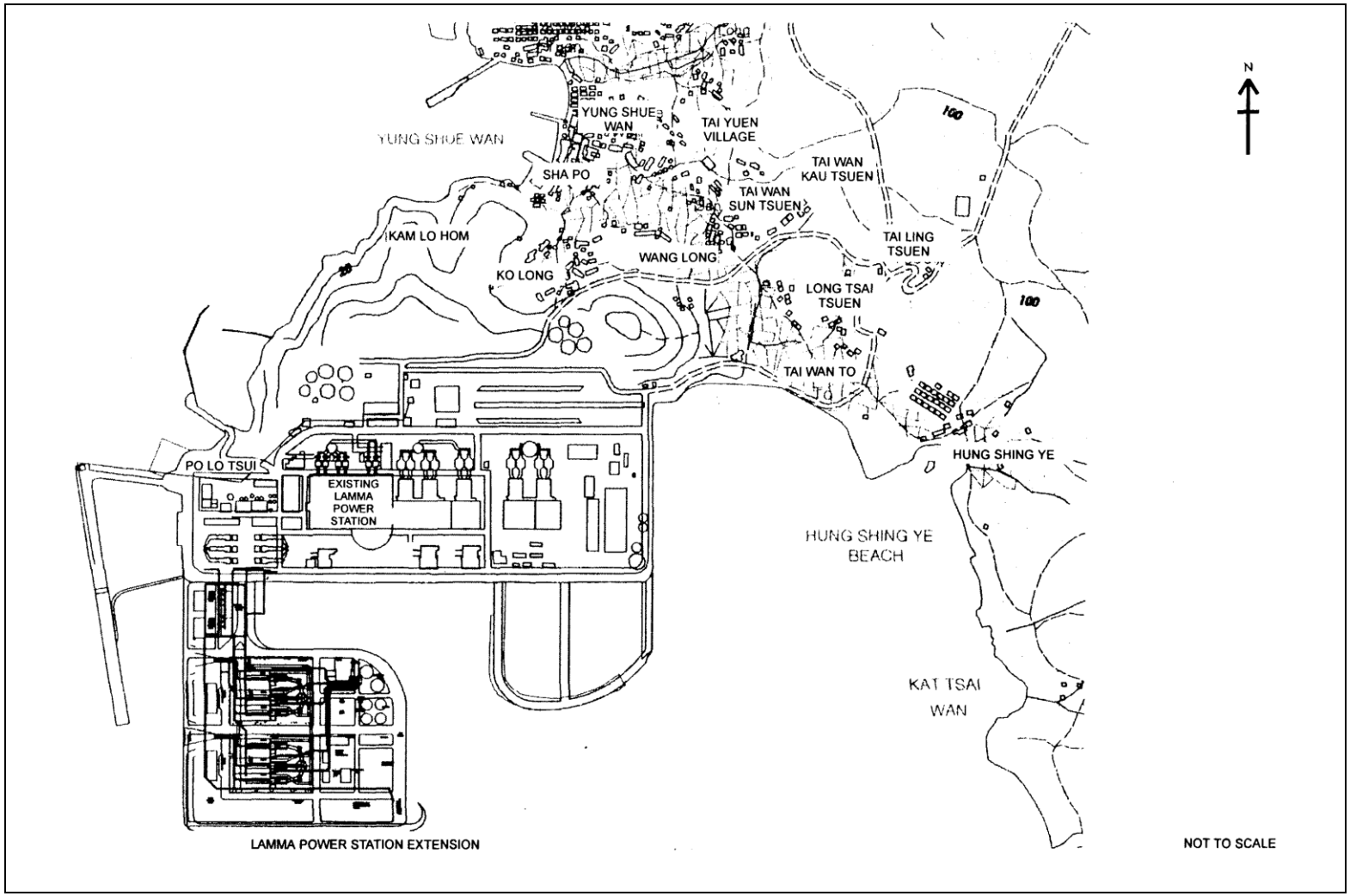


Figure 1.1 Layout of Work Site

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
24-hour sampling:	
Continuous TSP Dust Meter	TEOM continuous dust monitor Thermo Scientific
MINIVOL Portable Sampler	AIRMETRICS
1-hour sampling: 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.

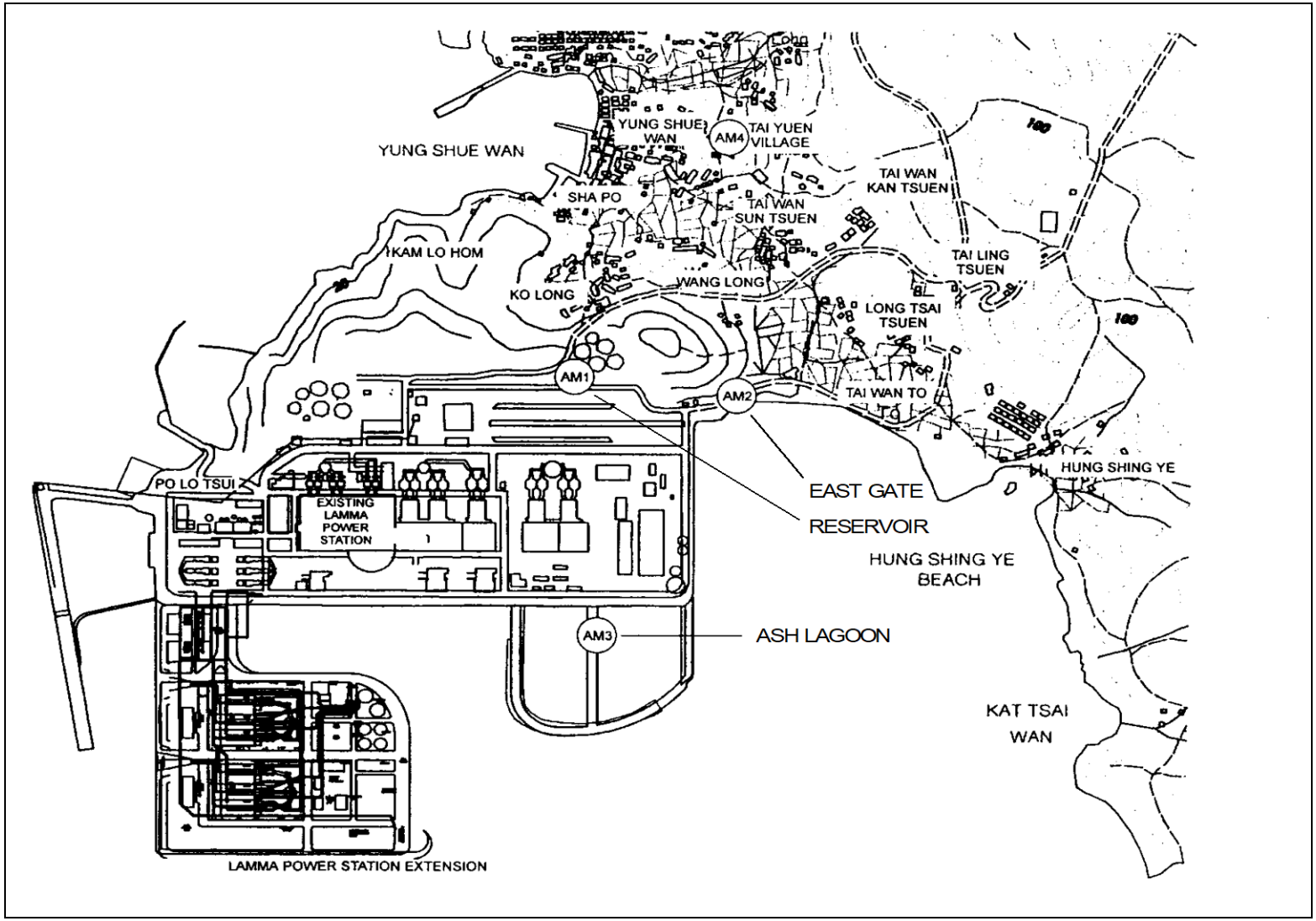


Figure 2.1 Location of Air Quality Monitoring Stations

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

Ash Lagoon Ching Lam	Day-time: 0700-1900 hrs on normal weekdays Evening-time & holidays: 0700-2300 hrs on holidays; and 1900-2300 hrs on all other days Night-time: 2300-0700 hrs of next day	Day-time: 30 minutes Evening-time & holidays: 5 minutes Night-time: 5 minutes	30-min L_{Aeq} 5-min L_{Aeq} 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 and April 2021 respectively. The next calibrations for the two noise monitoring stations were scheduled in September and October 2021.

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.

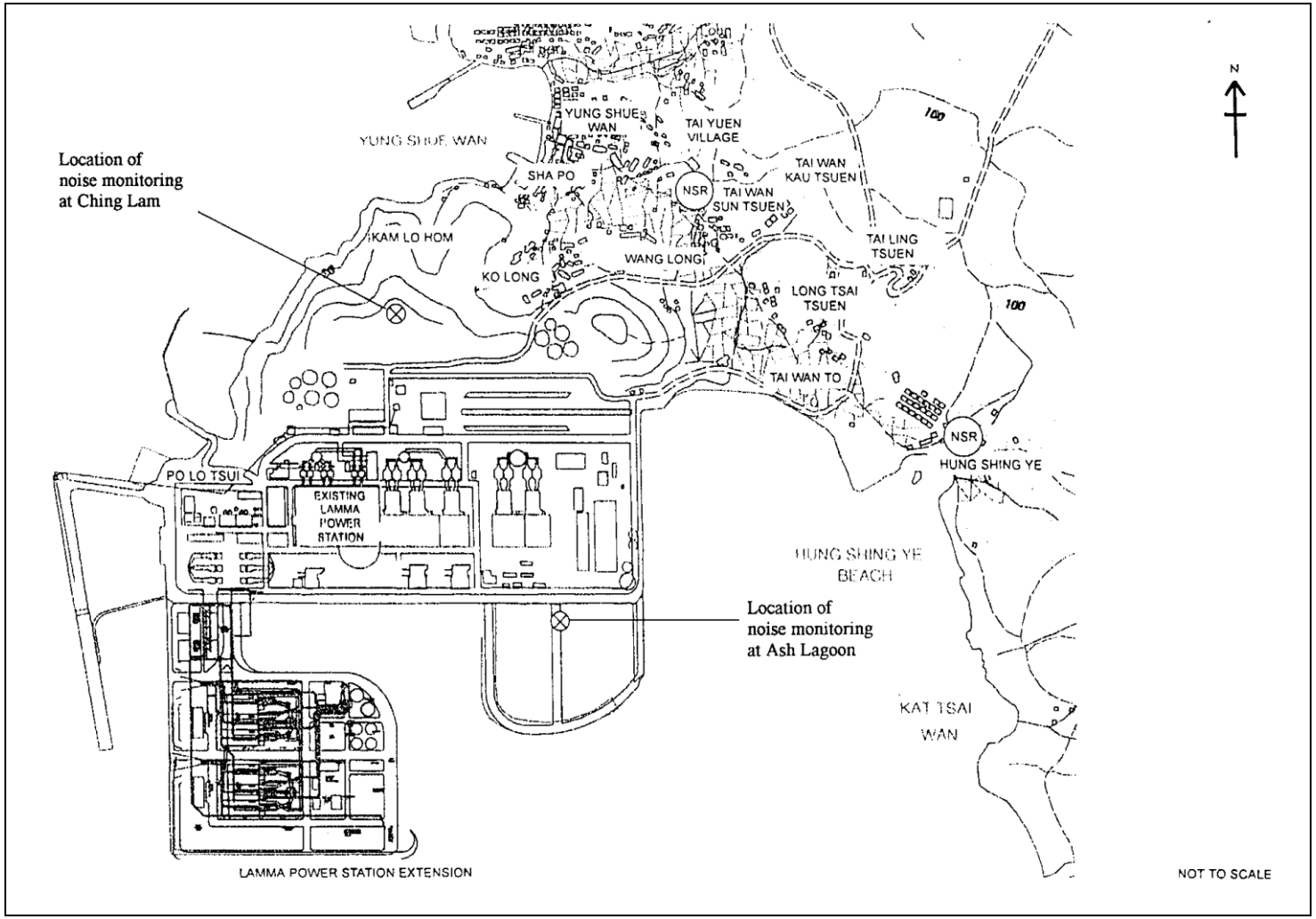


Figure 3.1 Location of Noise Monitoring Stations

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)	01/07/2021-31/07/2021	0	0	
2	Ambient TSP (1-hour)	01/07/2021-31/07/2021	0	0	
Noise					
1	Noise level at the critical NSR's predicted by the noise alarm monitoring system	01/07/2021-31/07/2021	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 2021 are shown in Table 4.2.

Table 4.2 Estimated Amounts of Waste in July 2021

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

0 Tonnes	4.39 Tonnes	31.35 Tonnes	0 Litres

The monthly waste flow tables prepared by the contractors are attached in Appendix K

4.4 Site Environmental Audit

EPD officials from Regional Office (South) visited Lamma Power Station on 16/7/2021. There was no adverse comment from EPD regarding the construction site.

Independent Environmental Checker (IEC) conducted a site inspection on 23/7/2021. The site conditions were generally satisfactory.

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-RS0039-21	01/02/21	31/07/21	Construction site for Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0072-21	08/02/21	07/08/21	Civil and Building Works for Unit L12. Operation of PME during restricted hours	Valid
Construction Noise Permit	GW-RS0436-21	01/07/21	31/12/21	Power Block Facilities works for Unit L11. Operation of PME during restricted hours	Valid
WPCO Discharge Licence#	WT00034006-2019	08/08/19	31/08/24	Civil and Building Works for Unit L11	Valid
WPCO Discharge Licence##	WT00037613-2021	15/04/21	30/04/26	Civil and Building Works for Unit L12 (No.5 C.W. Intake and Cable Bridge)	Valid

Description	Permit No.	Valid Period		Highlights	Status
		From	To		
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.: 7031135	21/06/18	-	Civil and Building Works for Unit L11	Valid
Waste Disposal Billing Account	Account No.: 7027672	24/04/17	-	E&M Erection of Power Block Facilities – L11	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

Notes: # - Water quality monitoring was carried out in May 2021 and the results of which had been reported separately by the contractor.
- Water quality monitoring was carried out in May 2021 and the results of which had been 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 2021, no complaint against the construction activities was received.

Table 4.4 Environmental Complaints Received in July 2021

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 L11 Civil and Building Works

Noise Impact

- 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.

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 L11 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 L11 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.

Unit L12 Civil and Building Works

Noise Impact

- 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.

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.
- To provide silt curtain as preventive measures at Northern Cable Bridge area.

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 against 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

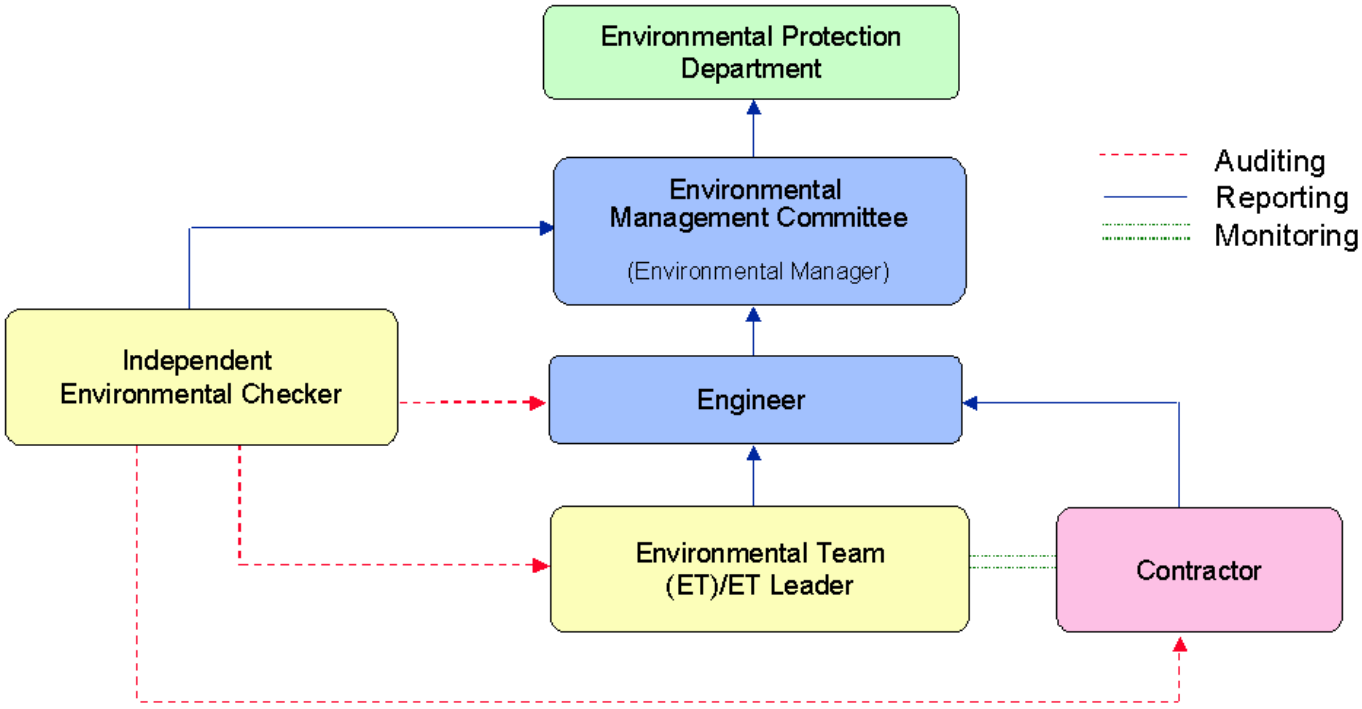


Figure A.1 Organisation of EM&A Programme at Construction Phase

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, $\mu g/m^3$	Limit Level, $\mu g/m^3$
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 $L_{Aeq,30\ min}$ (07:00-19:00 hrs on normal weekdays) (Note 1) 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 $L_{Aeq,5\ min}$ c. subject to statutory control under the Noise Control Ordinance (23:00-07:00 hrs of next day). Set to 45 dB(A) in $L_{Aeq,5\ min}$
Manual noise monitoring at the nearest Pak Kok Tsui residences to cable landing points N4 and N5		
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 2021 to October 2021)

24hr TSP Monitoring	1hr TSP Monitoring
4/July/2021	4/July/2021 1500hr to 1800hr
10/July/2021	10/July/2021 1500hr to 1800hr
16/July/2021	16/July/2021 1500hr to 1800hr
22/July/2021	22/July/2021 1500hr to 1800hr
28/July/2021	28/July/2021 1500hr to 1800hr
3/August/2021	3/August/2021 1500hr to 1800hr
9/August/2021	9/August/2021 1500hr to 1800hr
15/August/2021	15/August/2021 1500hr to 1800hr
21/August/2021	21/August/2021 1500hr to 1800hr
27/August/2021	27/August/2021 1500hr to 1800hr
2/September/2021	2/September/2021 1500hr to 1800hr
8/September/2021	8/September/2021 1500hr to 1800hr
14/September/2021	14/September/2021 1500hr to 1800hr
20/September/2021	20/September/2021 1500hr to 1800hr
26/September/2021	26/September/2021 1500hr to 1800hr
2/October/2021	2/October/2021 1500hr to 1800hr
8/October/2021	8/October/2021 1500hr to 1800hr
14/October/2021	14/October/2021 1500hr to 1800hr
20/October/2021	20/October/2021 1500hr to 1800hr
26/October/2021	26/October/2021 1500hr to 1800hr

APPENDIX D AIR QUALITY MONITORING RESULTS

Site: Lamma Power Station Extension

Month: July 2021

24 hour TSP Measurement:-

Date	TSP concentration (μg/m³)				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. (°)	Mean R.H. (%)
5/7/2021	15	21	13	11	24.8	80	79
11/7/2021	17	20	13	8	11.6	110	77
17/7/2021	9	13	9	18	19.7	80	80
23/7/2021	39	41	28	25	16.4	240	77
29/7/2021	25	24	17	11	12.3	230	82

1 hour TSP Measurement:-

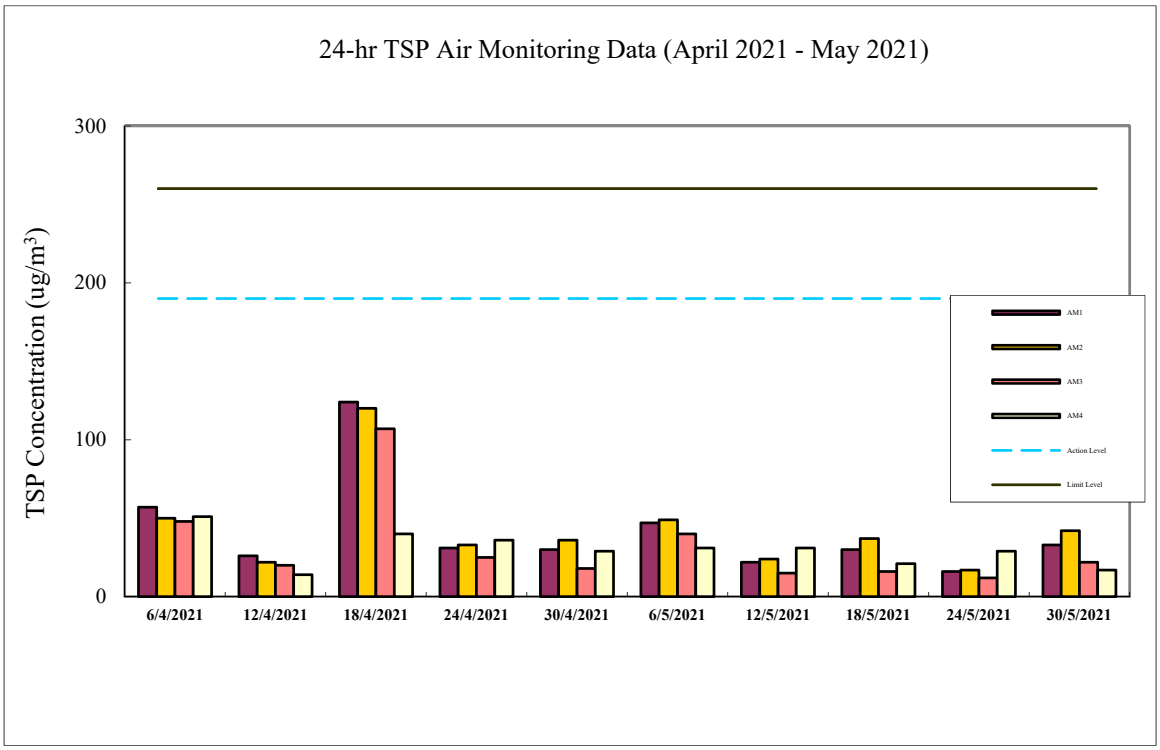
Date	Time	TSP concentration (μg/m³)		
		Reservoir (AM1)	East Gate (AM2)	Ash Lagoon (AM3)
5/7/2021	15:00 - 15:59	12	16	15
	16:00 - 16:59	9	12	15
	17:00 - 17:59	25	27	19
11/7/2021	15:00 - 15:59	20	15	13
	16:00 - 16:59	10	15	15
	17:00 - 17:59	18	26	14
17/7/2021	15:00 - 15:59	5	9	7
	16:00 - 16:59	4	9	6
	17:00 - 17:59	9	13	8
23/7/2021	15:00 - 15:59	101	76	49
	16:00 - 16:59	76	53	39
	17:00 - 17:59	52	48	30
29/7/2021	15:00 - 15:59	23	33	14
	16:00 - 16:59	20	19	16
	17:00 - 17:59	35	31	21

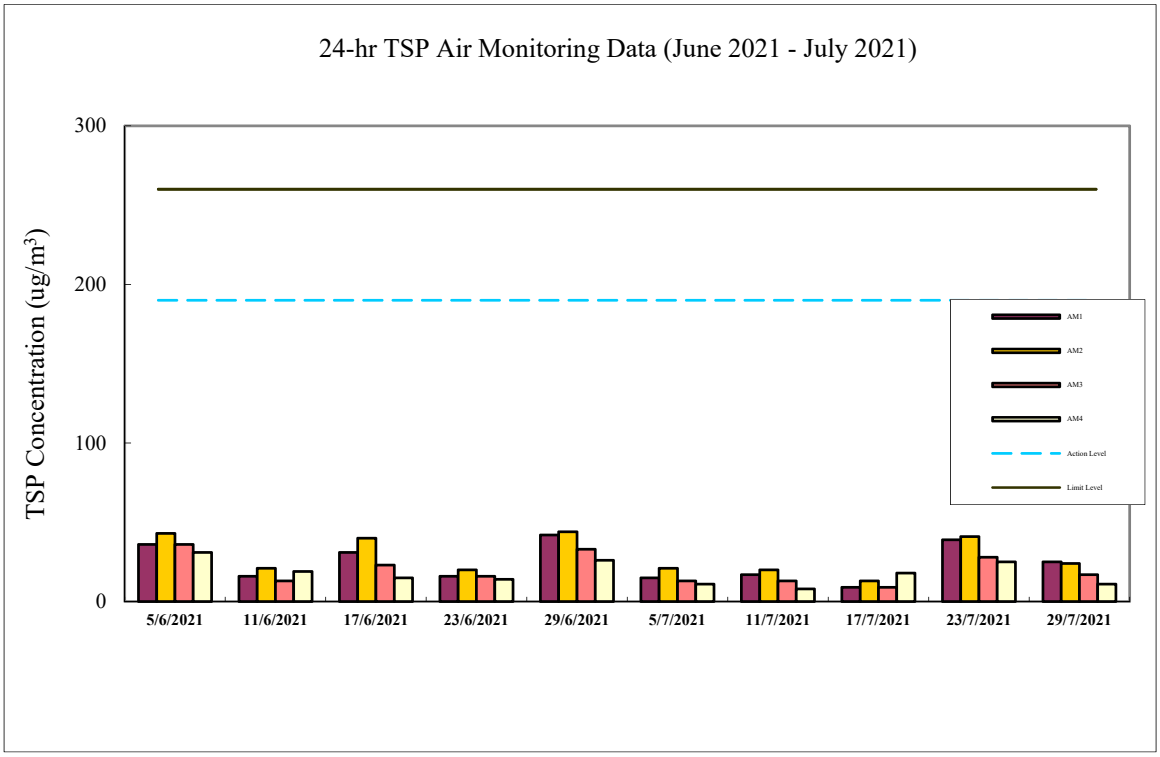
	1-hr TSP (μg/m³)	24-hr TSP (μg/m³)
Action Level	340	190
Limit Level	500	260

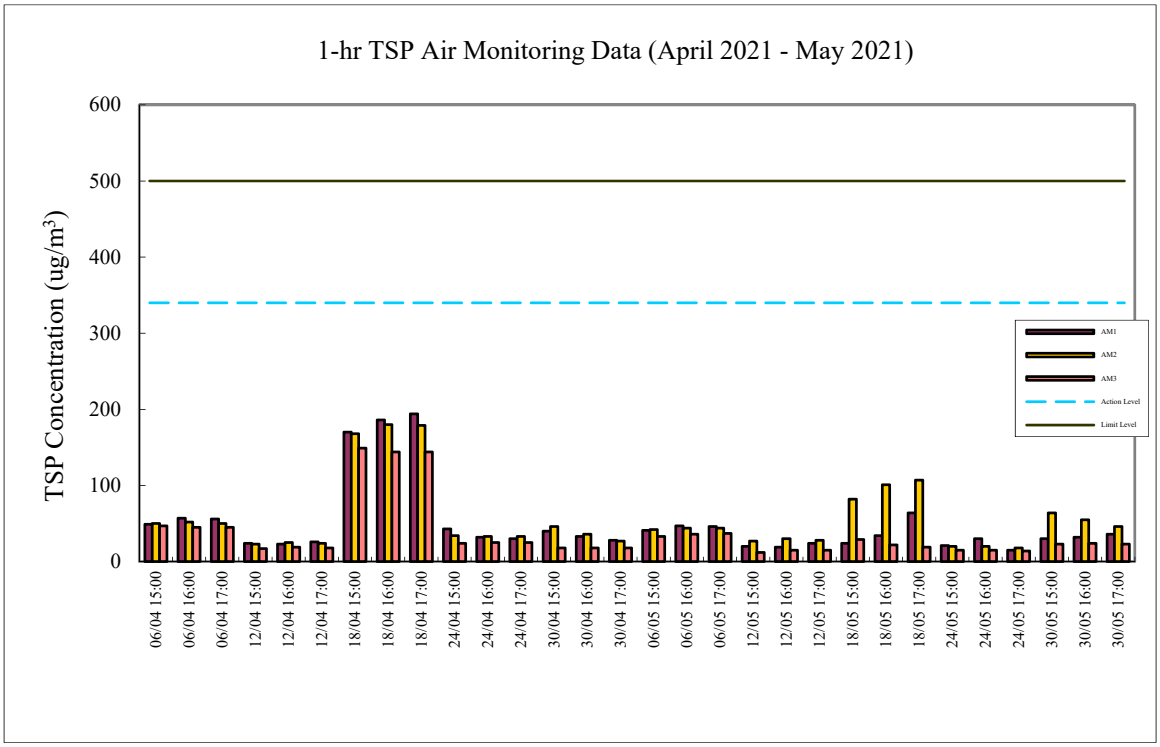
Calibration: Calibration details are shown in appendix F.

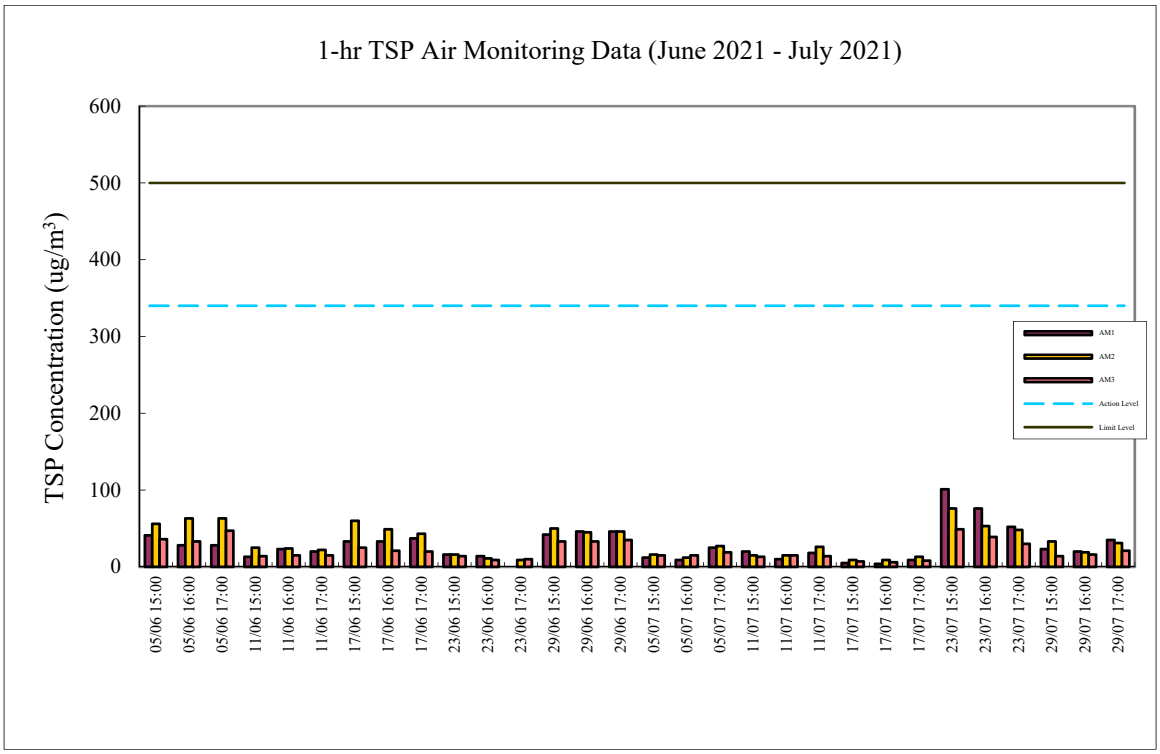
Equipment used:

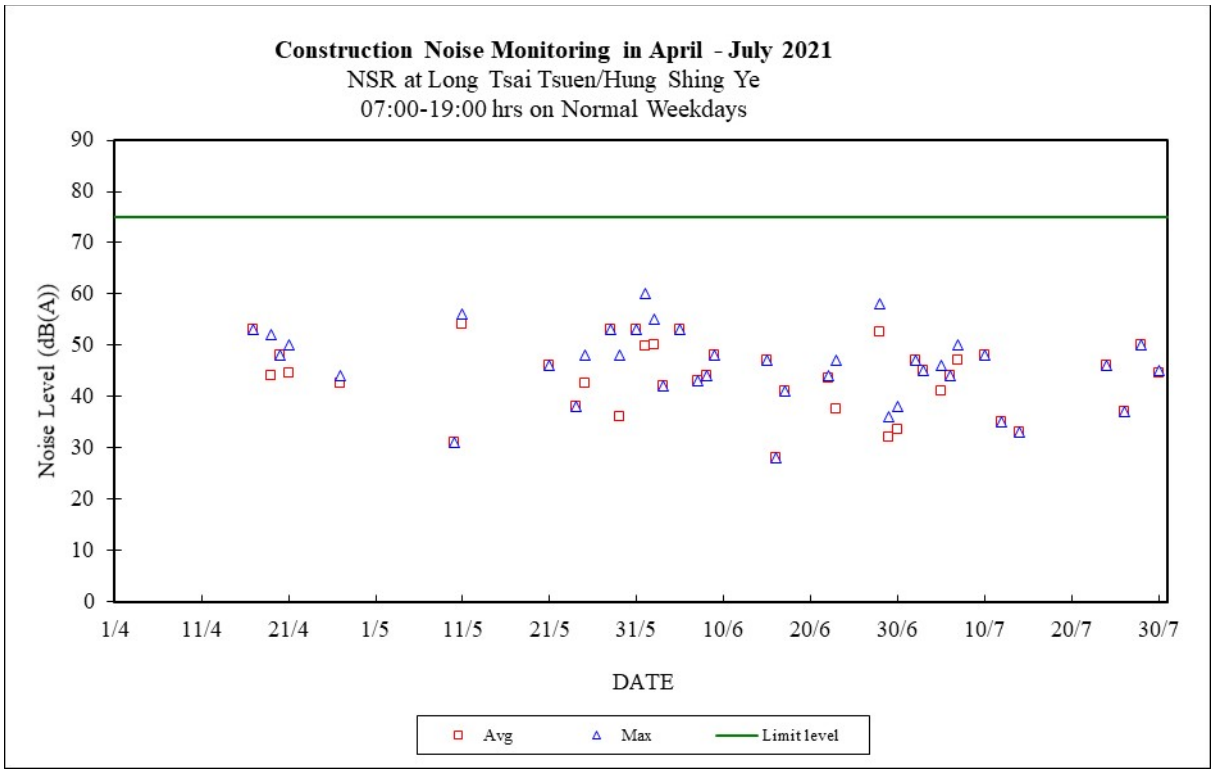
Location	1-hr TSP	24-hr TSP
Reservoir, East Gate and Ash Lagoon	TEOM	TEOM
Tai Yuen Village	-	MINIVOL Portable Sampler

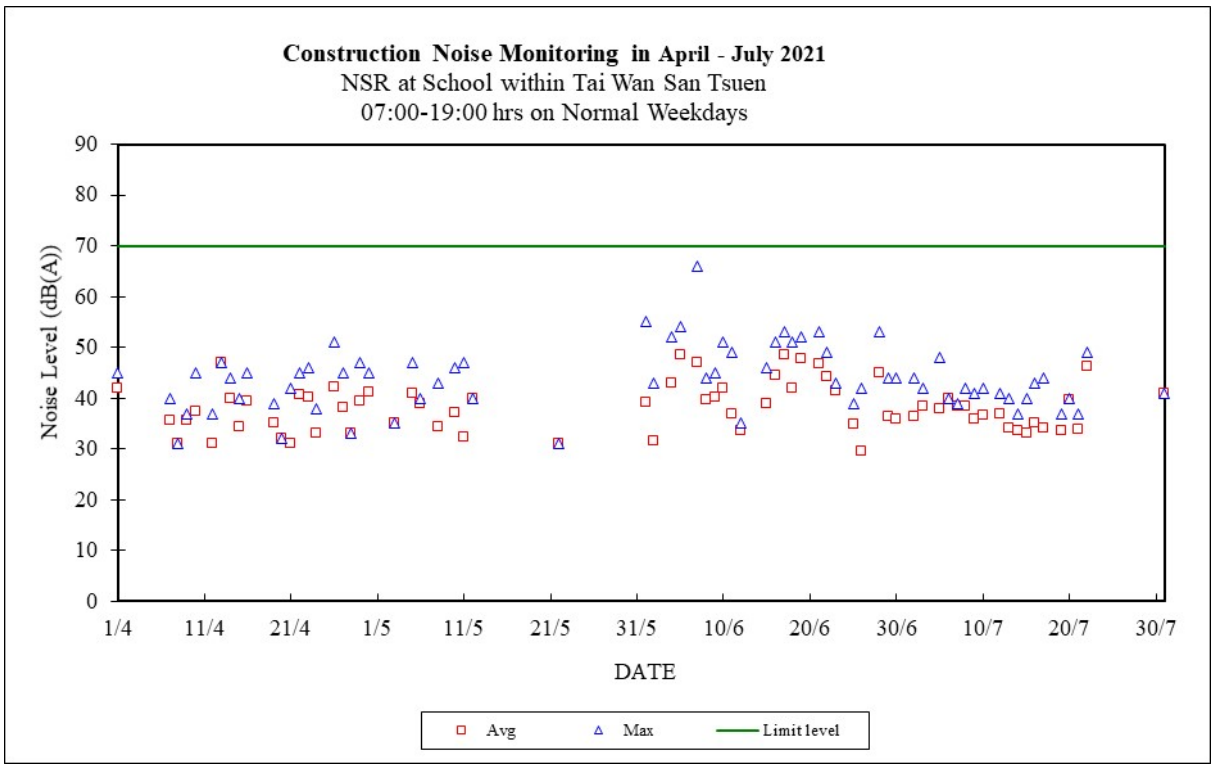


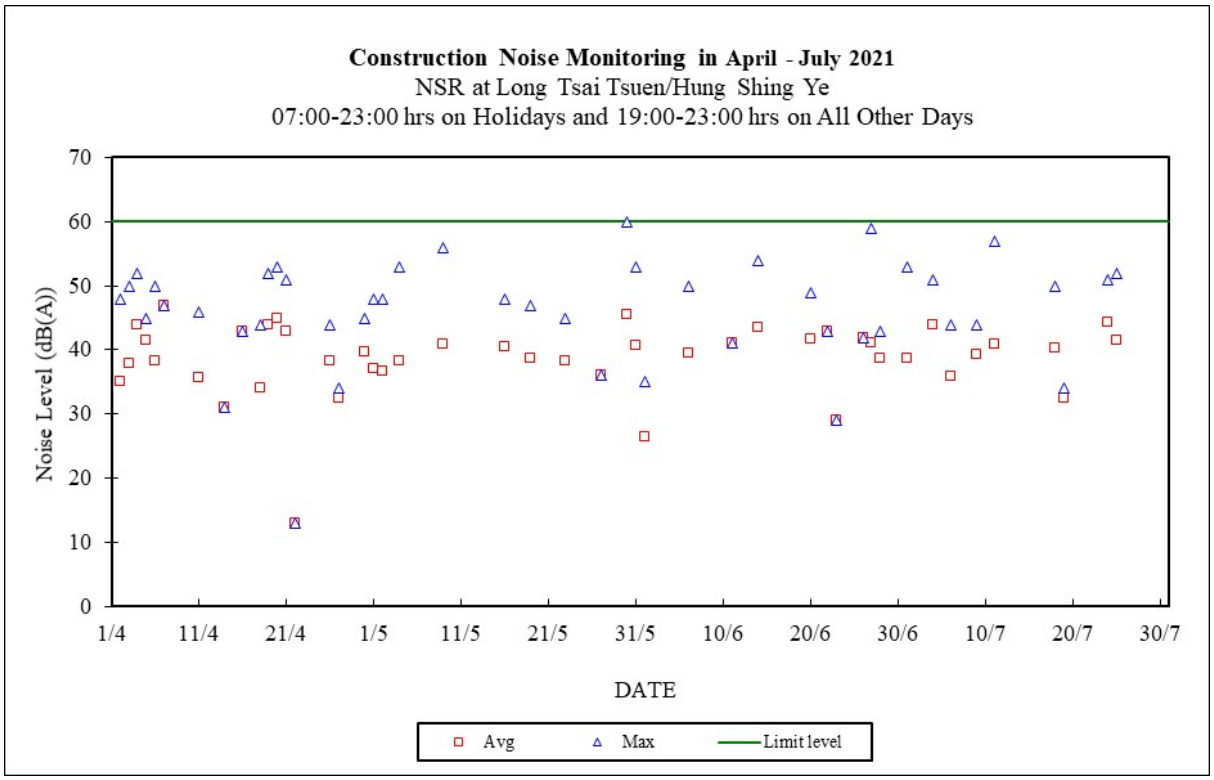


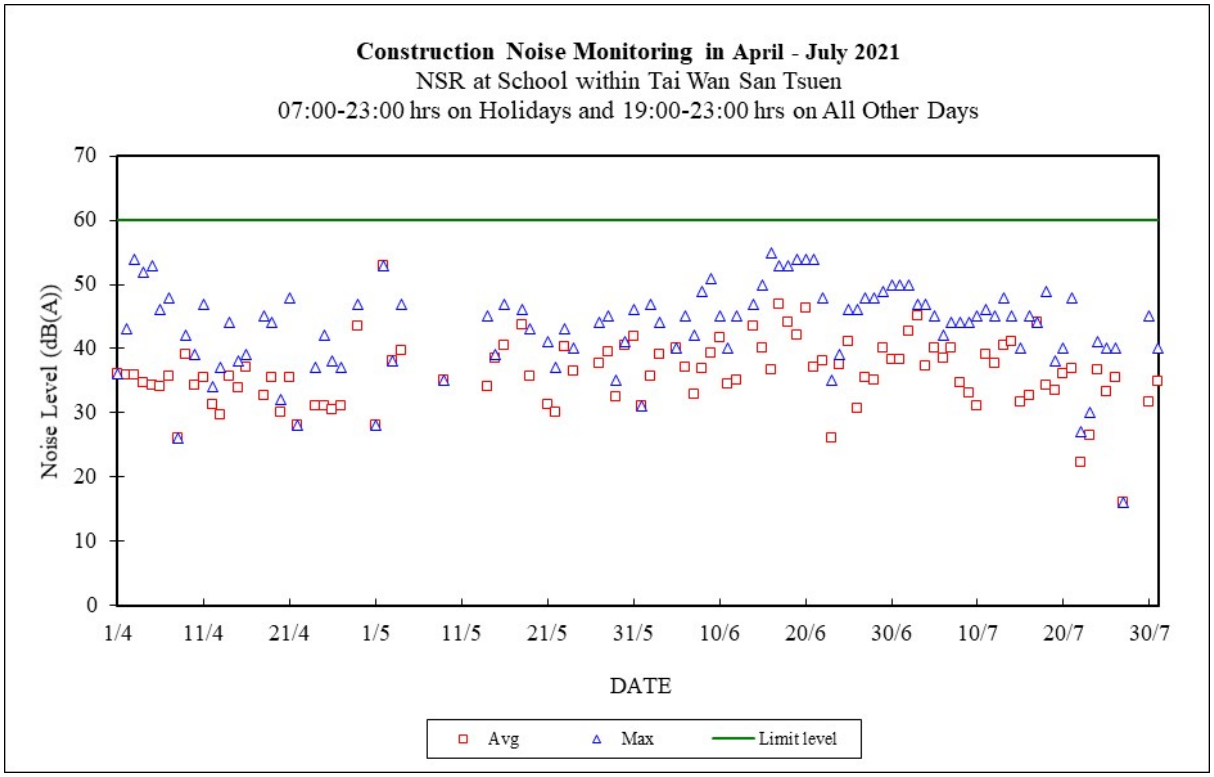

1-hr TSP Air Monitoring Data (April 2021 - May 2021)
TSP Concentration (ug/m3)
600
500
400
300
200
100
0
AM1
AM2
AM3
Action Level
Limit Level
06/04 15:00
06/04 16:00
06/04 17:00
12/04 15:00
12/04 16:00
12/04 17:00
18/04 15:00
18/04 16:00
18/04 17:00
24/04 15:00
24/04 16:00
24/04 17:00
30/04 15:00
30/04 16:00
30/04 17:00
06/05 15:00
06/05 16:00
06/05 17:00
12/05 15:00
12/05 16:00
12/05 17:00
18/05 15:00
18/05 16:00
18/05 17:00
24/05 15:00
24/05 16:00
24/05 17:00
30/05 15:00
30/05 16:00
30/05 17:00

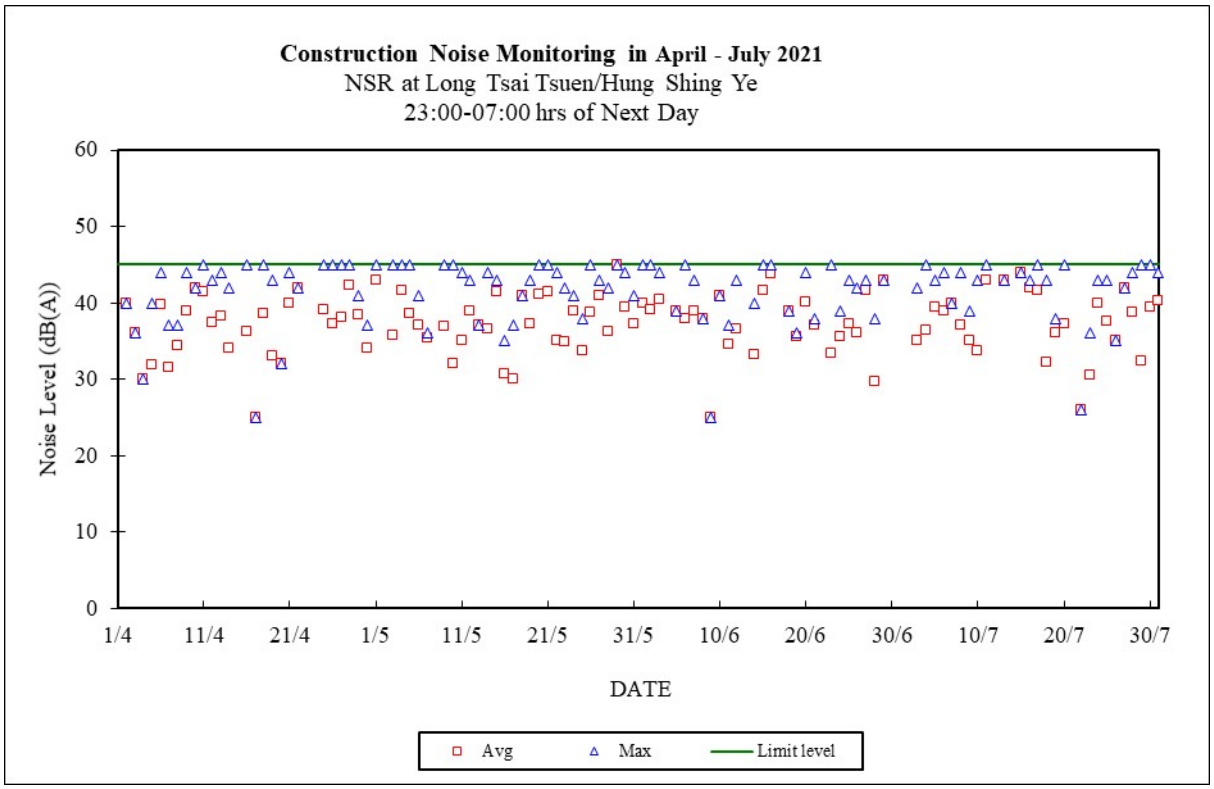

1-hr TSP Air Monitoring Data (June 2021 - July 2021)
TSP Concentration (ug/m3)
600
500
400
300
200
100
0
AM1
AM2
AM3
Action Level
Limit Level
05/06 15:00
05/06 16:00
05/06 17:00
11/06 15:00
11/06 16:00
11/06 17:00
17/06 15:00
17/06 16:00
17/06 17:00
23/06 15:00
23/06 16:00
23/06 17:00
29/06 15:00
29/06 16:00
29/06 17:00
05/07 15:00
05/07 16:00
05/07 17:00
11/07 15:00
11/07 16:00
11/07 17:00
17/07 15:00
17/07 16:00
17/07 17:00
23/07 15:00
23/07 16:00
23/07 17:00
29/07 15:00
29/07 16:00
29/07 17:00

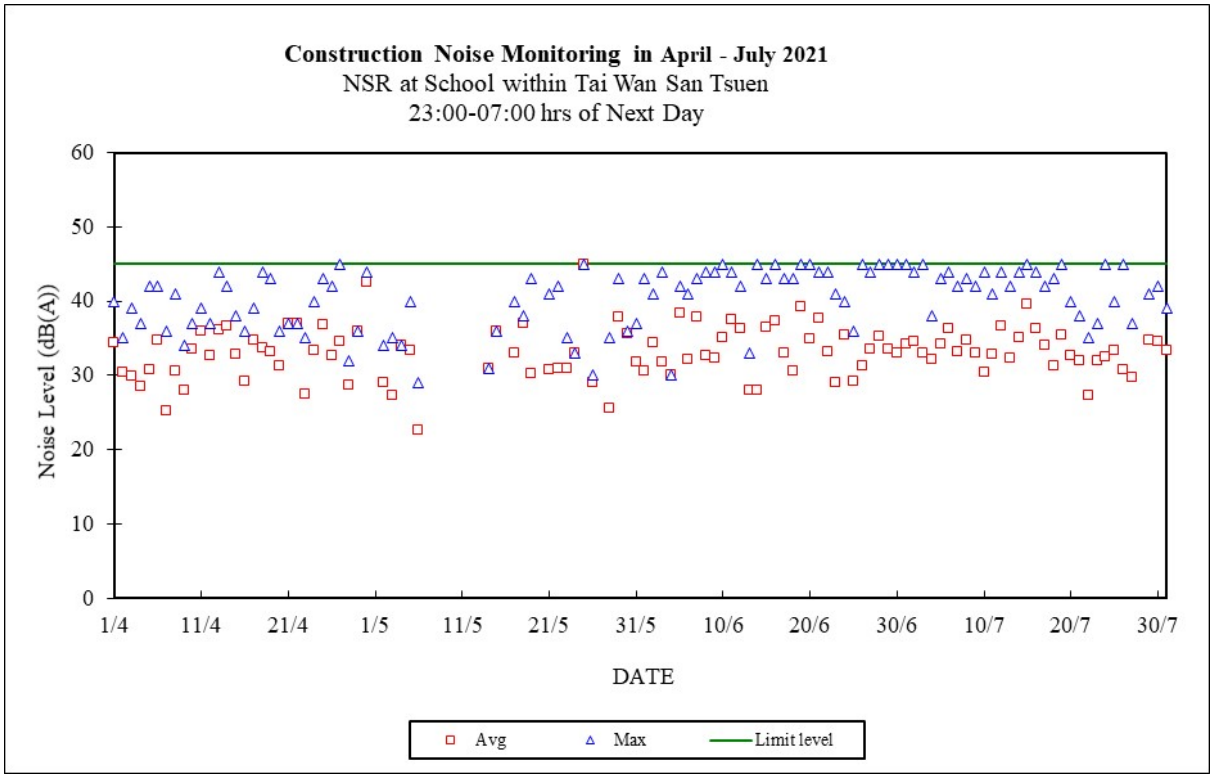

Construction Noise Monitoring in April - July 2021
NSR at Long Tsai Tsuen/Hung Shing Ye
07:00-19:00 hrs on Normal Weekdays
Noise Level (dB(A))
90
80
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at School within Tai Wan San Tsuen
07:00-19:00 hrs on Normal Weekdays
Noise Level (dB(A))
90
80
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at Long Tsai Tsuen/Hung Shing Ye
07:00-23:00 hrs on Holidays and 19:00-23:00 hrs on All Other Days
Noise Level (dB(A))
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at School within Tai Wan San Tsuen
07:00-23:00 hrs on Holidays and 19:00-23:00 hrs on All Other Days
Noise Level (dB(A))
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at Long Tsai Tsuen/Hung Shing Ye
23:00-07:00 hrs of Next Day
Noise Level (dB(A))
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at School within Tai Wan San Tsuen
23:00-07:00 hrs of Next Day
Noise Level (dB(A))
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level

Appendix E Continuous Noise Monitoring Results for July 2021

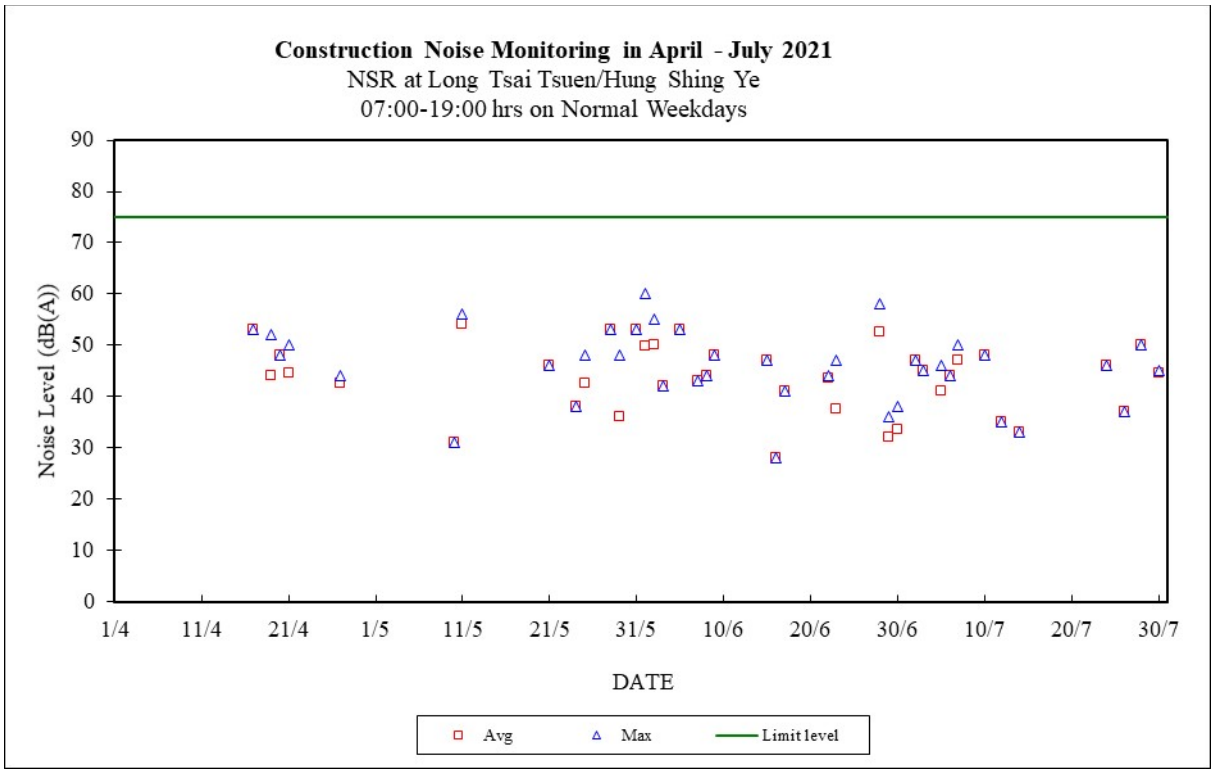
Site: Lamma Power Station Extension Construction
Measurement Location: Ash Lagoon and Ching Lam
Measurement Parameter: 30-min Leq (07:00-19:00 hrs on normal weekdays)
5-min Leq (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days, and 23:00-07:00 hrs of next day)
Noise Equipment: B&K 2250 sound level meters and B&K 4231 sound Level calibrator
Lab. Calibration Date: B&K 2250 sound level meters - 28/06/2020 (Ash Lagoon)
19/08/2019 (Ching Lam)
B&K 4231 calibrator - 05/10/2020

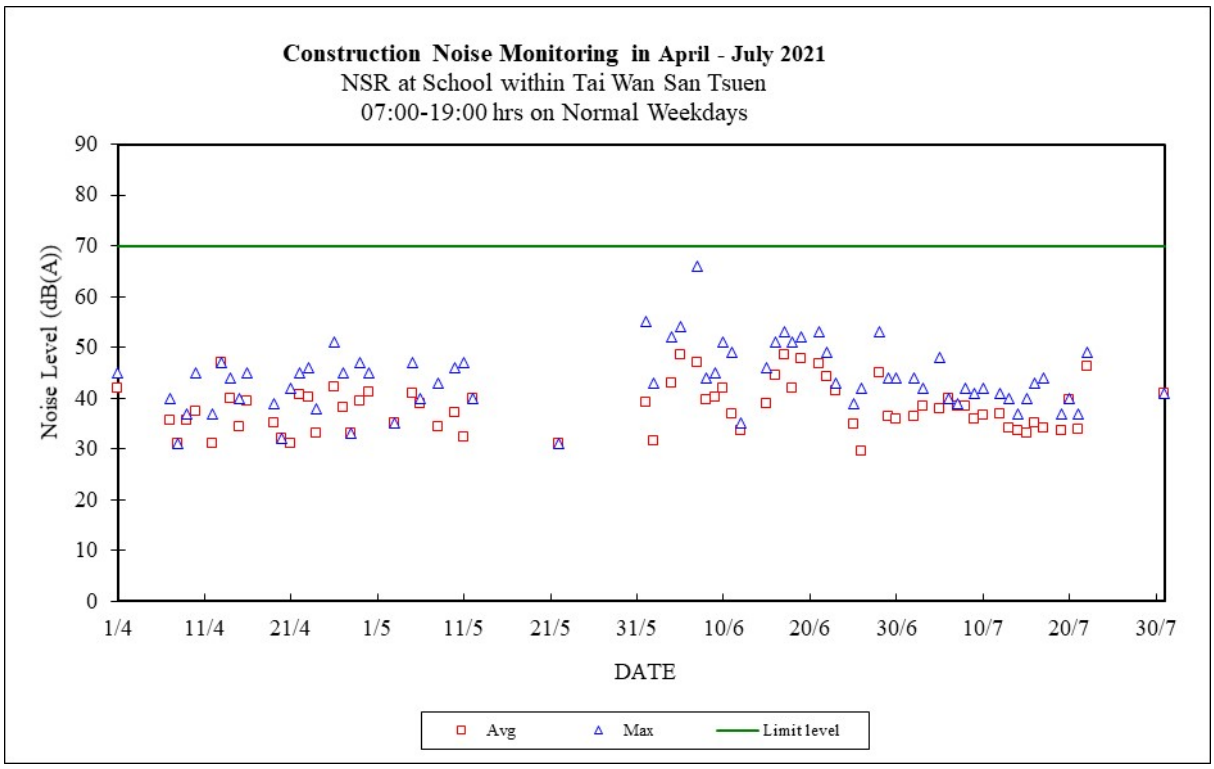
Date	Time	Calculated Noise Level at NSR at Long Tsai Tsuen/Hung Shing Ye (dB(A))		Limit Noise Level (dB(A))	Calculated Noise Level at NSR at the school within Tai Wan San Tsuen (dB(A))		Limit Noise Level (dB(A))
		Max	Avg		Max	Avg	
01/07/2021	07:00-23:00	53	39	60	50	38	60
01/07/2021	23:00-07:00	---	---	45	45	34	45
02/07/2021	07:00-19:00	47	47	75	44	37	70
02/07/2021	19:00-23:00	---	---	60	50	43	60
02/07/2021	23:00-07:00	---	---	45	44	35	45
03/07/2021	07:00-19:00	45	45	75	42	38	70
03/07/2021	19:00-23:00	---	---	60	47	45	60
03/07/2021	23:00-07:00	42	35	45	45	33	45
04/07/2021	07:00-23:00	51	44	60	47	37	60
04/07/2021	23:00-07:00	45	36	45	38	32	45
05/07/2021	07:00-19:00	46	41	75	48	38	70
05/07/2021	19:00-23:00	---	---	60	45	40	60
05/07/2021	23:00-07:00	43	40	45	43	34	45
06/07/2021	07:00-19:00	44	44	75	40	40	70
06/07/2021	19:00-23:00	44	36	60	42	39	60
06/07/2021	23:00-07:00	44	39	45	44	36	45
07/07/2021	07:00-19:00	50	47	75	39	38	70
07/07/2021	19:00-23:00	---	---	60	44	40	60
07/07/2021	23:00-07:00	40	40	45	42	33	45
08/07/2021	07:00-19:00	---	---	75	42	39	70
08/07/2021	19:00-23:00	---	---	60	44	35	60
08/07/2021	23:00-07:00	44	37	45	43	35	45
09/07/2021	07:00-19:00	---	---	75	41	36	70
09/07/2021	19:00-23:00	44	39	60	44	33	60
09/07/2021	23:00-07:00	39	35	45	42	33	45
10/07/2021	07:00-19:00	48	48	75	42	37	70
10/07/2021	19:00-23:00	---	---	60	45	31	60
10/07/2021	23:00-07:00	43	34	45	44	30	45
11/07/2021	07:00-23:00	57	41	60	46	39	60
11/07/2021	23:00-07:00	45	43	45	41	33	45
12/07/2021	07:00-19:00	35	35	75	41	37	70
12/07/2021	19:00-23:00	---	---	60	45	38	60
12/07/2021	23:00-07:00	---	---	45	44	37	45
13/07/2021	07:00-19:00	---	---	75	40	34	70
13/07/2021	19:00-23:00	---	---	60	48	40	60
13/07/2021	23:00-07:00	43	43	45	42	32	45

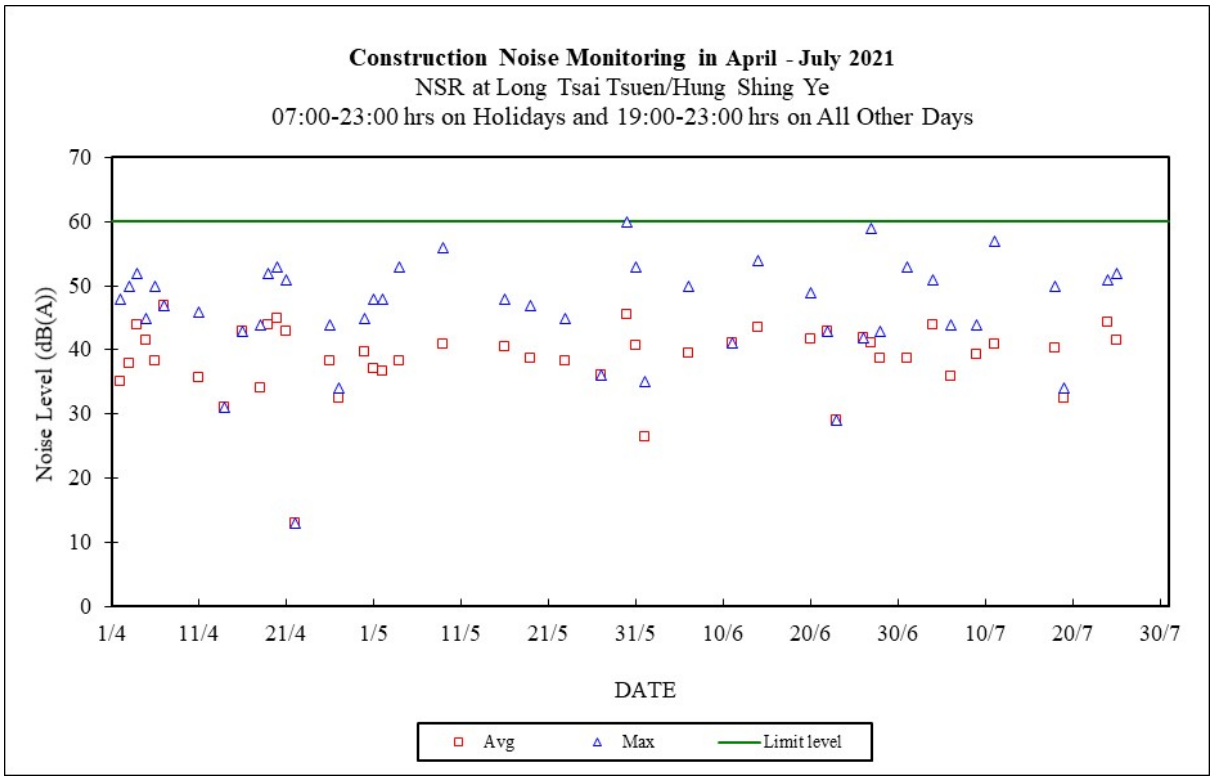
14/07/2021	07:00-19:00	33	33	75	37	34	70
14/07/2021	19:00-23:00	---	---	60	45	41	60
14/07/2021	23:00-07:00	---	---	45	44	35	45
15/07/2021	07:00-19:00	---	---	75	40	33	70
15/07/2021	19:00-23:00	---	---	60	40	32	60
15/07/2021	23:00-07:00	44	44	45	45	40	45
16/07/2021	07:00-19:00	---	---	75	43	35	70
16/07/2021	19:00-23:00	---	---	60	45	33	60
16/07/2021	23:00-07:00	43	42	45	44	36	45
17/07/2021	07:00-19:00	---	---	75	44	34	70
17/07/2021	19:00-23:00	---	---	60	44	44	60
17/07/2021	23:00-07:00	45	42	45	42	34	45
18/07/2021	07:00-23:00	50	40	60	49	34	60
18/07/2021	23:00-07:00	43	32	45	43	31	45
19/07/2021	07:00-19:00	---	---	75	37	34	70
19/07/2021	19:00-23:00	34	33	60	38	34	60
19/07/2021	23:00-07:00	38	36	45	45	36	45
20/07/2021	07:00-19:00	---	---	75	40	40	70
20/07/2021	19:00-23:00	---	---	60	40	36	60
20/07/2021	23:00-07:00	45	37	45	40	33	45
21/07/2021	07:00-19:00	---	---	75	37	34	70
21/07/2021	19:00-23:00	---	---	60	48	37	60
21/07/2021	23:00-07:00	---	---	45	38	32	45
22/07/2021	07:00-19:00	---	---	75	49	46	70
22/07/2021	19:00-23:00	---	---	60	27	22	60
22/07/2021	23:00-07:00	26	26	45	35	27	45
23/07/2021	07:00-19:00	---	---	75	---	---	70
23/07/2021	19:00-23:00	---	---	60	30	27	60
23/07/2021	23:00-07:00	36	31	45	37	32	45
24/07/2021	07:00-19:00	46	46	75	---	---	70
24/07/2021	19:00-23:00	51	44	60	41	37	60
24/07/2021	23:00-07:00	43	40	45	45	33	45
25/07/2021	07:00-23:00	52	41	60	40	33	60
25/07/2021	23:00-07:00	43	38	45	40	33	45
26/07/2021	07:00-19:00	37	37	75	---	---	70
26/07/2021	19:00-23:00	---	---	60	40	35	60
26/07/2021	23:00-07:00	35	35	45	45	31	45
27/07/2021	07:00-19:00	---	---	75	---	---	70
27/07/2021	19:00-23:00	---	---	60	16	16	60
27/07/2021	23:00-07:00	42	42	45	37	30	45
28/07/2021	07:00-19:00	50	50	75	---	---	70
28/07/2021	19:00-23:00	---	---	60	---	---	60
28/07/2021	23:00-07:00	44	39	45	---	---	45
29/07/2021	07:00-19:00	---	---	75	---	---	70
29/07/2021	19:00-23:00	---	---	60	---	---	60
29/07/2021	23:00-07:00	45	32	45	41	35	45
30/07/2021	07:00-19:00	45	45	75	---	---	70
30/07/2021	19:00-23:00	---	---	60	45	32	60
30/07/2021	23:00-07:00	45	39	45	42	35	45
31/07/2021	07:00-19:00	---	---	75	41	41	70
31/07/2021	19:00-23:00	---	---	60	40	35	60
31/07/2021	23:00-07:00	44	40	45	39	33	45

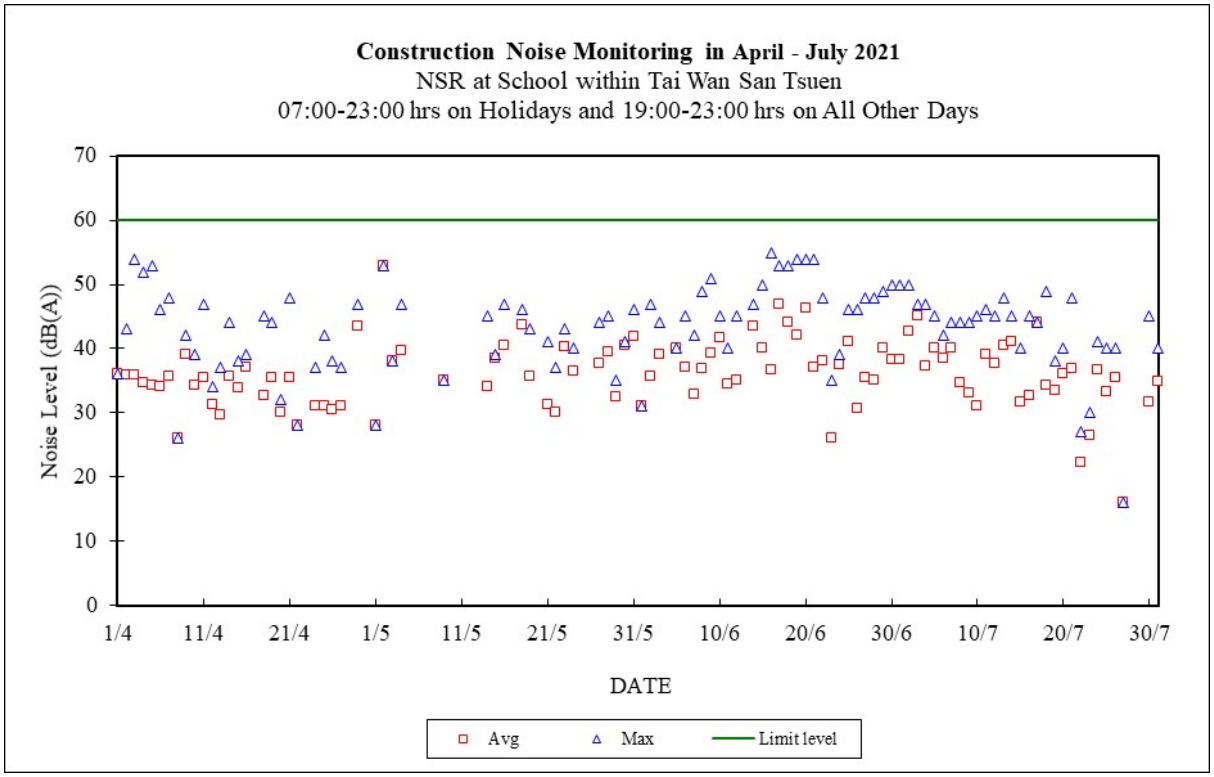
Note:

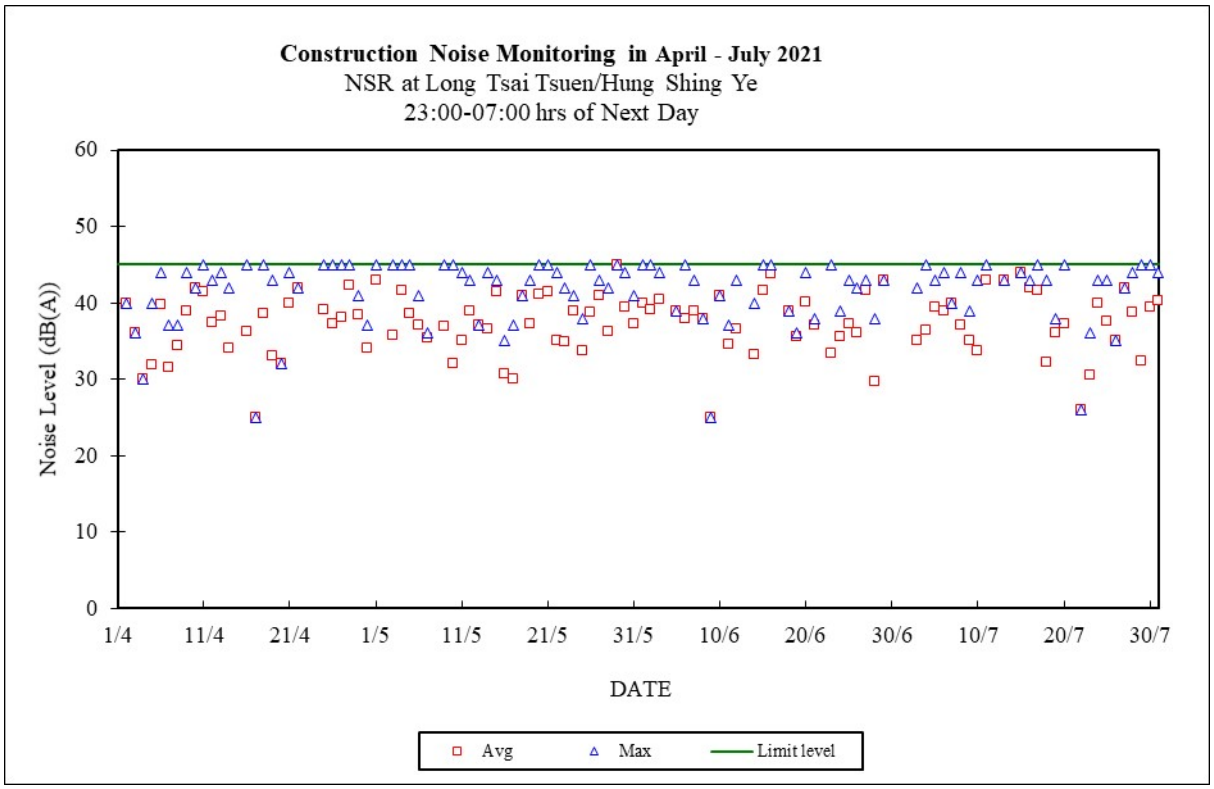
a. “---“ represents the measured noise monitoring data lower than the established notional background level/discarded under strong wind.
b. Continuous noise monitoring was also carried out at holidays & evening-time (07:00-23:00 hrs on holidays and 19:00-23:00 hrs on all other days) and night-time (23:00-07:00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

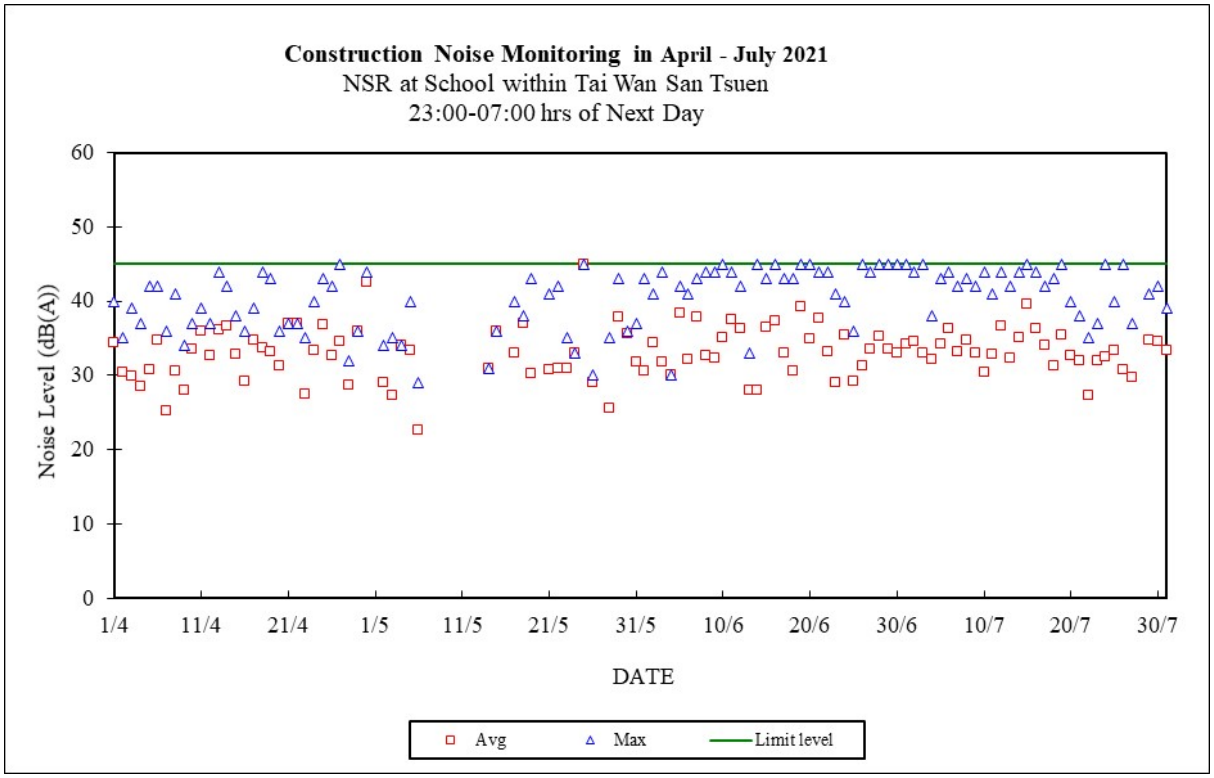

Construction Noise Monitoring in April - July 2021
NSR at Long Tsai Tsuen/Hung Shing Ye
07:00-19:00 hrs on Normal Weekdays
Noise Level (dB(A))
90
80
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at School within Tai Wan San Tsuen
07:00-19:00 hrs on Normal Weekdays
Noise Level (dB(A))
90
80
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at Long Tsai Tsuen/Hung Shing Ye
07:00-23:00 hrs on Holidays and 19:00-23:00 hrs on All Other Days
Noise Level (dB(A))
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at School within Tai Wan San Tsuen
07:00-23:00 hrs on Holidays and 19:00-23:00 hrs on All Other Days
Noise Level (dB(A))
70
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at Long Tsai Tsuen/Hung Shing Ye
23:00-07:00 hrs of Next Day
Noise Level (dB(A))
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level


Construction Noise Monitoring in April - July 2021
NSR at School within Tai Wan San Tsuen
23:00-07:00 hrs of Next Day
Noise Level (dB(A))
60
50
40
30
20
10
0
1/4
11/4
21/4
1/5
11/5
21/5
31/5
10/6
20/6
30/6
10/7
20/7
30/7
DATE
Avg
Max
Limit level

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: Jul Year: 2021

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)
5/7/2021	267.284	4	2.94	13.32
11/7/2021	270.171	4	2.96	12.64
17/7/2021	269.937	4	2.98	12.48
23/7/2021	269.720	4	2.88	11.97
29/7/2021	269.170	4	2.91	10.74

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)
5/7/2021	249.614	4	2.94	13.36
11/7/2021	249.352	4	2.91	13.30
17/7/2021	252.057	4	2.96	13.42
23/7/2021	251.800	4	2.88	13.14
29/7/2021	251.262	4	2.88	13.18

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)
5/7/2021	256.287	4	3.00	13.68
11/7/2021	256.138	4	3.00	13.68
17/7/2021	256.023	4	3.00	13.68
23/7/2021	256.758	4	3.00	13.68
29/7/2021	256.422	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
21/07/2021 / 11:00	WM Tam

Equipment / Item

Equipment / Item	Serial No. / No.
MINIVOL	5580
Used filter paper no.	MR48
New filter paper no.	MR49

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: 5.033
After: 5.033 (No adjustment)

II. General Services

1. Clean Rotameter: Yes
2. Clean / Replace Pump Valves: No
3. Clean / Replace Pump Diaphragms: No
4. Clean Impaction Inlet: Yes
5. Replace Timer Battery Every 6 months: Yes
6. Replace Inlet Filter: Yes

Remarks

N/A

Conducted by: WM 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)
01/07/2021	Passed	-0.03	Passed	0.17
02/07/2021	Passed	-0.01	Passed	0.17
03/07/2021	Passed	-0.01	Passed	0.17
04/07/2021	Passed	-0.02	Passed	0.16
05/07/2021	Passed	-0.03	Passed	0.16
06/07/2021	Passed	-0.01	Passed	0.13
07/07/2021	Passed	-0.02	Passed	0.17
08/07/2021	Passed	-0.01	Passed	0.16
09/07/2021	Passed	-0.01	Passed	0.16
10/07/2021	Passed	-0.02	Passed	0.17
11/07/2021	Passed	-0.01	Passed	0.18
12/07/2021	Passed	0.00	Passed	0.19
13/07/2021	Passed	-0.01	Passed	0.18
14/07/2021	Passed	0.01	Passed	0.17
15/07/2021	Passed	-0.02	Passed	0.17
16/07/2021	Passed	-0.03	Passed	0.15
17/07/2021	Passed	-0.05	Passed	0.14
18/07/2021	Passed	-0.05	Passed	0.15
19/07/2021	Passed	-0.03	Passed	0.13
20/07/2021	Passed	-0.04	Passed	0.18
21/07/2021	Passed	-0.03	Passed	0.16
22/07/2021	Passed	-0.01	Passed	0.15
23/07/2021	Passed	0.00	Passed	0.18
24/07/2021	Passed	-0.03	Passed	0.16
25/07/2021	Passed	-0.01	Passed	0.15
26/07/2021	Passed	-0.01	Passed	0.18
27/07/2021	Passed	-0.01	Passed	0.16
28/07/2021	Passed	-0.01	Passed	0.16
29/07/2021	Passed	-0.01	Passed	0.16
30/07/2021	Passed	-0.04	Passed	0.16
31/07/2021	Passed	-0.03	Passed	0.14

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 ± 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**
Action Level				
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
Limit level				
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	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. Repeat measurement to confirm finding Increase monitoring frequency to daily Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented Arrange meeting with Engineer and Contractor to discuss the remedial actions to be taken If exceedance stops, discontinue additional monitoring	ET / Contractor Advise Engineer on the effectiveness of the proposed remedial measures Verify the implementation of the remedial measures	failure in writing Checking monitoring data and Contractor's working methods Notify Contractor Discuss proposed remedial actions with ET and Contractor Ensure remedial measures properly implemented 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	avoid further exceedance Submit proposals for remedial actions to Engineer within 3 working days of notifications Implement the agreed proposals Resubmit proposals if problem still not under control Stop the relevant portion of works as determined by the Engineer until the exceedance is abated

Table G.2 Event and Action Plans for Construction Noise

Exceedance	ET Leader	IEC	Engineer	Contractor
Action Level	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.			
Limit Level	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.	Submit proposals for remedial actions to Engineer.
			Discuss with Contractor the remedial actions to be implemented.	Amend proposals if required by the Engineer.
		Verify the implementation of the remedial measures	Keep the Contractor informed of the efficacy of remedial actions.	Implement remedial actions immediately upon instruction from the Engineer.
	Discuss remedial actions required with Engineer.		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	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

Exceedance	ET Leader	IEC	Engineer	Contractor
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

Exceedance	ET Leader	IEC	Engineer	Contractor
	equipment and Contractor's working methods; Discuss mitigation measure with Engineer and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level.		implemented mitigation measures.	within 3 working days and discuss with Engineer; Implement the agreed mitigation measures.
Limit level exceeded by more than one consecutive sampling day	Repeat in-situ measurement to confirm findings; Identify source(s) of impact; Inform Contractor, IEC and EPD; Check monitoring data, all plant, equipment and Contractor's working methods; Discuss mitigation measure with Engineer and Contractor; Ensure mitigation measures are implemented; Increase the monitoring frequency to daily until no exceedance of Limit level for two consecutive days.	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 implemented mitigation measures; 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.	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 Engineer; Implement the agreed mitigation measures.. As directed by the Engineer, to slow down or to stop all or part of the marine work

Appendix H Summary of Site Audit Findings

L11 Civil and Building Works

Dates of Inspection: 8/7/2021, 13/7/2021, 23/7/2021 and 27/7/2021.

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.

L11 Mechanical, Electrical, Instrumentation & Control Erection Works

Dates of Inspection: 2/7/2021, 8/7/2021, 15/7/2021, 23/7/2021 and 29/7/2021.

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 Civil and Building Works

Dates of Inspection: 8/7/2021, 13/7/2021, 23/7/2021 and 27/7/2021.

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
	AIR QUALITY	
A1	For general construction works, the dust control measures stipulated under the Air Pollution Control (Construction Dust) Regulation shall be complied with, such as:	
	• the haul roads shall be sprayed with water to keep the entire road surface wet.	C
	• the load carried by vehicle shall be covered by impervious sheeting to ensure no leakage of dusty materials from the vehicle.	C
	• the heights from which fill materials are dropped shall be controlled to a practical level to minimise the fugitive dust arising from unloading.	C
A2	For the concrete batching plant, the following control measures are recommended:	
	• loading, unloading, handling, transfer or storage or any dusty materials shall be carried out in a totally enclosed system.	C
	• The materials which may generate airborne dust emissions shall be wetted by water spray system.	C
	• All receiving hoppers shall be enclosed on three sides up to 3m above unloading point.	C
	• All conveyor transfer points shall be totally enclosed.	C
	WATER QUALITY	
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: ** • reducing the number of dredgers working at any one time; • reducing the rate of working of the dredgers; • temporary suspension of operations; • phasing of the works so that dredging / filling is only undertaken at certain stages of the tidal cycle.	N/A

EM&A Log Ref.	Mitigation Measures	Implementation Status
B7	In addition to the above specific measures the following general working procedures shall be adopted. **	
	• fully-enclosed or watertight grabs shall be used to minimise loss of sediment during the raising of loaded grabs through the water column;	N/A
	• the descent speed of grabs shall be controlled to minimise the seabed impact speed and to reduce the volume of over dredging;	N/A
	• barges shall be loaded carefully to avoid splashing of material;	N/A
	• all barges used for the transport of dredged materials shall be fitted with tight bottom seals in order to prevent leakage of material during loading and transport;	N/A
	• all barges shall be filled to a level which ensures that material does not spill over during loading and transport to the disposal site and that adequate freeboard is maintained to ensure that the decks are not washed by wave action;	N/A
	• the speed of trailer dredgers shall be controlled to prevent propeller wash from stirring up the sea bed sediments;	N/A
	• "rainbowing" sand fill from trailer dredgers shall not be permitted; and	N/A
	• the works shall cause no visible foam, oil, grease or litter or other objectionable matter to be present in the water within and adjacent to the dredging site and along the route to the disposal site.	N/A
B8	Cumulative impacts shall be assessed through EM&A. Co-ordination with the EM&A consultants for other projects to determine if any exceedances are caused by the other projects or by HEC's activities. Should monitoring results indicate exceedances at sensitive receivers due to HEC's activities, then the above described mitigation measures shall be implemented until impacts reduce to acceptable levels. **	N/A
	NOISE	
C1	General noise mitigation measures shall be employed at all work sites throughout the construction phase.	C
C2	Mitigate against general construction noise during Sunday's and public holidays, either at source with portable noise barriers, or by rescheduling of some PMEs to less sensitive time periods.	C
C3	Mitigate against night time noise from dredging equipment, with silencers or mufflers. **	N/A
	LANDSCAPE & VISUAL IMPACTS	
D1	The following mitigation measures shall be allowed for landscape and visual improvement:	
	• Use rubble mound seawall along south and west edges of the reclamation to provide a more natural look.	C
	• Break the mass of main buildings by varying the height/division into smaller units.	C
	• Plant trees and vegetation for screening.	C
	• Adopt colour scheme to blend the buildings into the scenery.	C

EM&A Log Ref.	Mitigation Measures	Implementation Status
	WASTE MANAGEMENT	
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
	Dredging Waste	
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
	Storage, Collection and Transport of Waste	
E3	• Minimise windblown litter and dust during transportation by either covering trucks or transporting wastes in enclosed containers.	C
	• 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.	C
	• Disposal of waste at Licensed sites;	C
	• 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;	C

	• Segregate and sort the waste materials into 3 categories:
	  • public fill (e.g. concrete and rubble) for re-use on-site or disposal at a public filling area;
	  • re-use and/or recycling waste (e.g. steel and other metals);
	  • waste which cannot be re-used and/or recycled (e.g. wood, glass and plastic) for landfill disposal.
	  • 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.
		C

	• Maintain records of the quantities of wastes generated and disposed off-site for each category of waste.	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
	LAND CONTAMINATION	
F1	No land Contamination mitigation measures are required during the construction phase.	N/A
	MARINE ECOLOGY	

EM&A Log Ref.	Mitigation Measures	Implementation Status
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^3 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
	FISHERIES	
H1	No Fisheries-specific mitigation measures are required during the construction phase.	N/A
	RISK ASSESSMENT	
I1	No risk mitigation measures are required during the construction phase.	N/A

Remarks:

** - No dredging and reclamation work would be involved for L11 & L12 construction

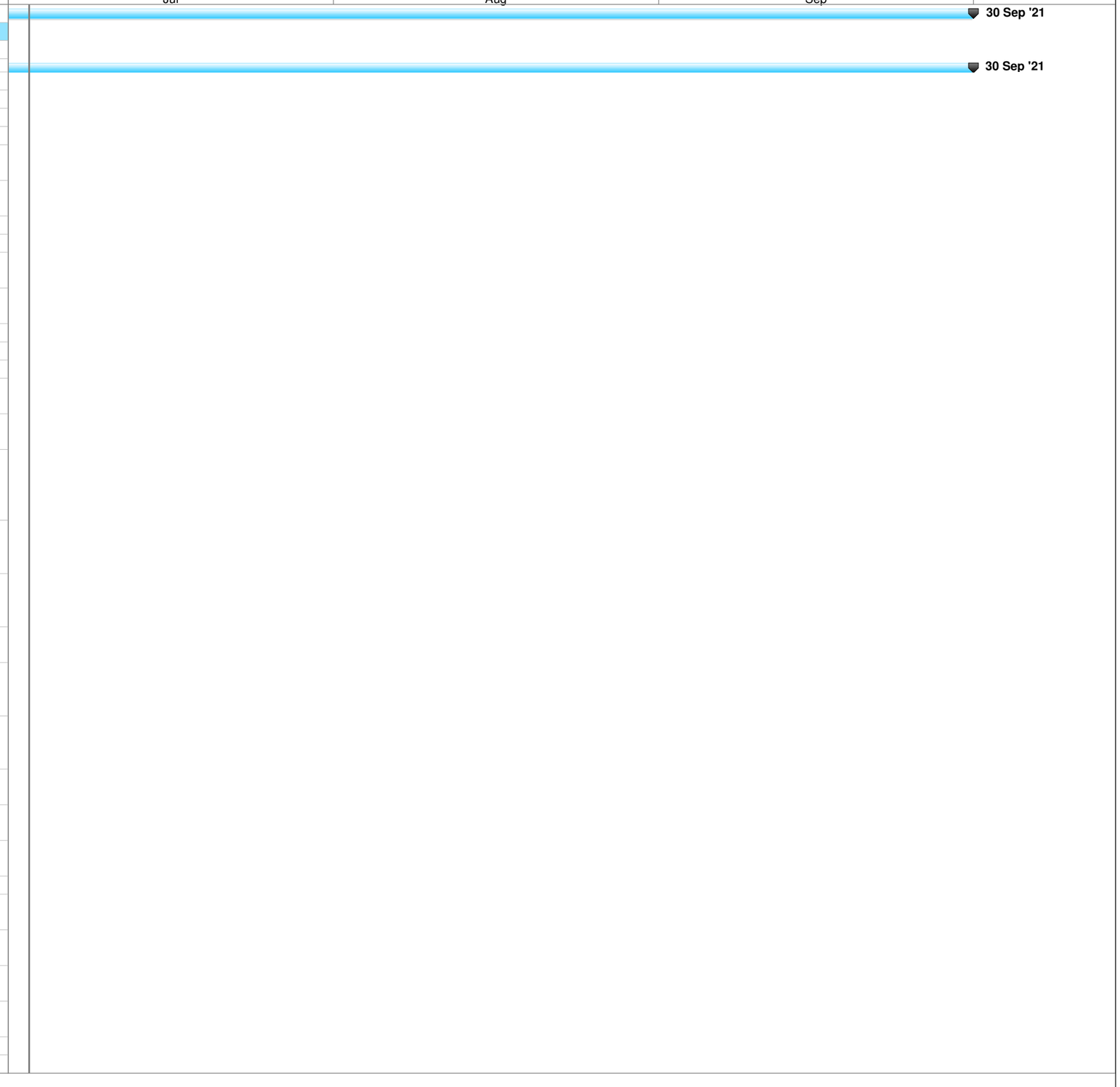
C - Compliance with mitigation measure

NC - Non-compliance with mitigation measure

N/A - Not Applicable

Contract No. 17/8002 Lamma Power Station Extension Civil and Building Works for Unit L11 | 17-8002 Master Prog Rev 3 | **Refer to CEM dated 26March2019**

ID	Task Name	Duration
1	**Civil and Building Works for Unit 11 and Assoicated Works**	**1197 days**
2	**Contract Key Dates**	**1197 days**
3	Contract Commencement Date	0 days
4	**Completion Dates**	**1044 days**
5	Section A1 - Ground treatment installation works at Zone 1A	0 days
6	Section A2 - Ground treatment installation works at Zone 1B	0 days
7	Section A3 - Ground treatment installation works at Zone 2	0 days
8	Section A4 - Ground treatment installation works at Zone 3	0 days
9	Section A5 (i) - Ground treatment installation works at Zone 4 - Band drain installation	0 days
10	Section A5 (ii) - Ground treatment installation works at Zone 4 - Surcharge filling	0 days
11	Section A6 (i) - A&A Works for No. 4 C.W. Outfall at Area E18	0 days
12	Section A6 (ii) - External works at Area E15	0 days
13	Section B1 (i) - Area south of L11 MSB and HRSG from GL11-F eastwards leading to Chimney Road at Area E1 & E2	0 days
14	Section B1 (ii) - Supporting structures for overhead cranes of L11 MSB including the associated roof structure except the roof deferred works	0 days
15	Section B1 (iii) - FSRU Civil works at Area E13	0 days
16	Section B2 - Retractable Cover D at Area E22	0 days
17	Section B3 - External works at Area B1, D2 and D4	0 days
18	Section C1 - Area south of L11 MSB from GL11-F westwards leading to Station Road at Area E3(A) & E3(B)	0 days
19	Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area E7 except the deferred works for Lube Oil Storage Tank	0 days
20	Section C2 - (ii) L11 Turbo Block foundation including the L11 MSB ground floor together with the equipment foundations between GL 11-F to 11-H and 11-1 to 11-6 for the installation of power generator, air inlet duct and lube oil reservoir	0 days
21	Section C2 - (iii) G/F of L11 MSB including the Condenser Pit, Circulating Water Pipe Pit and equipment foundations between GL 11-B to 11-C and 11-1 to 11-6 for the installation of condenser	0 days
22	Section D - (i) Roads and external grounds surrounding L11 MSB and L11 HRSG in addition to the southern & eastern areas mentioned above in Area E5 and E6	0 days
23	Section D - (ii) Remaining northern part of L11 HRSG area and its surrounding in Area E6	0 days
24	Section D - (iii) Whole of L11 MSB including the pipe and cable rack along south façade of L11 MSB with all underground utilities at Area E4 including C.W. Inlet and Outlet Culvert except the deferred works	0 days
25	Section D - (iv) Link Bridge between L10 and L11 MSB and at the south of L11 MSB including their associated alternations & additions (A&A) Works at L10 MSB	0 days
26	Section D - (v) Gas Duct Foundation, Pipe and Cable Rack and associated trench in Area E20	0 days
27	Section E1 - (i) Link BrIdge and Pipe and Cable Rack connecting L11 MSB to the western area of L11 MSB at Area E3	0 days
28	Section E1 - (ii) Gas Receiving Station and L11 Gas Receiving Station Equipment Room (GRS) Area Extension at Area E16	0 days
29	Section E1 - (iii) External Works at Area E15 (C)	0 days
30	Section E2 - Pipe and Cable Rack and trench at west of Chimney Road and Pipe and Cable Rack at south of Middle Road at Area E8 and E19	0 days
31	Section E3 - Gas Pipe Support Foundation and Pipe Trench and associated external works at Area E14, E15 (A) and E15 (B)	0 days
32	Section E4 - 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (A)	0 days
33	Section F - 275kV Station Building Extension and associated works at Area E17	0 days
34	Section G - A&A Works at No. 4 C.W. Intake at Area E12	0 days
35	Section H - L11 Steel flue liner at No. 4 Chimney	0 days



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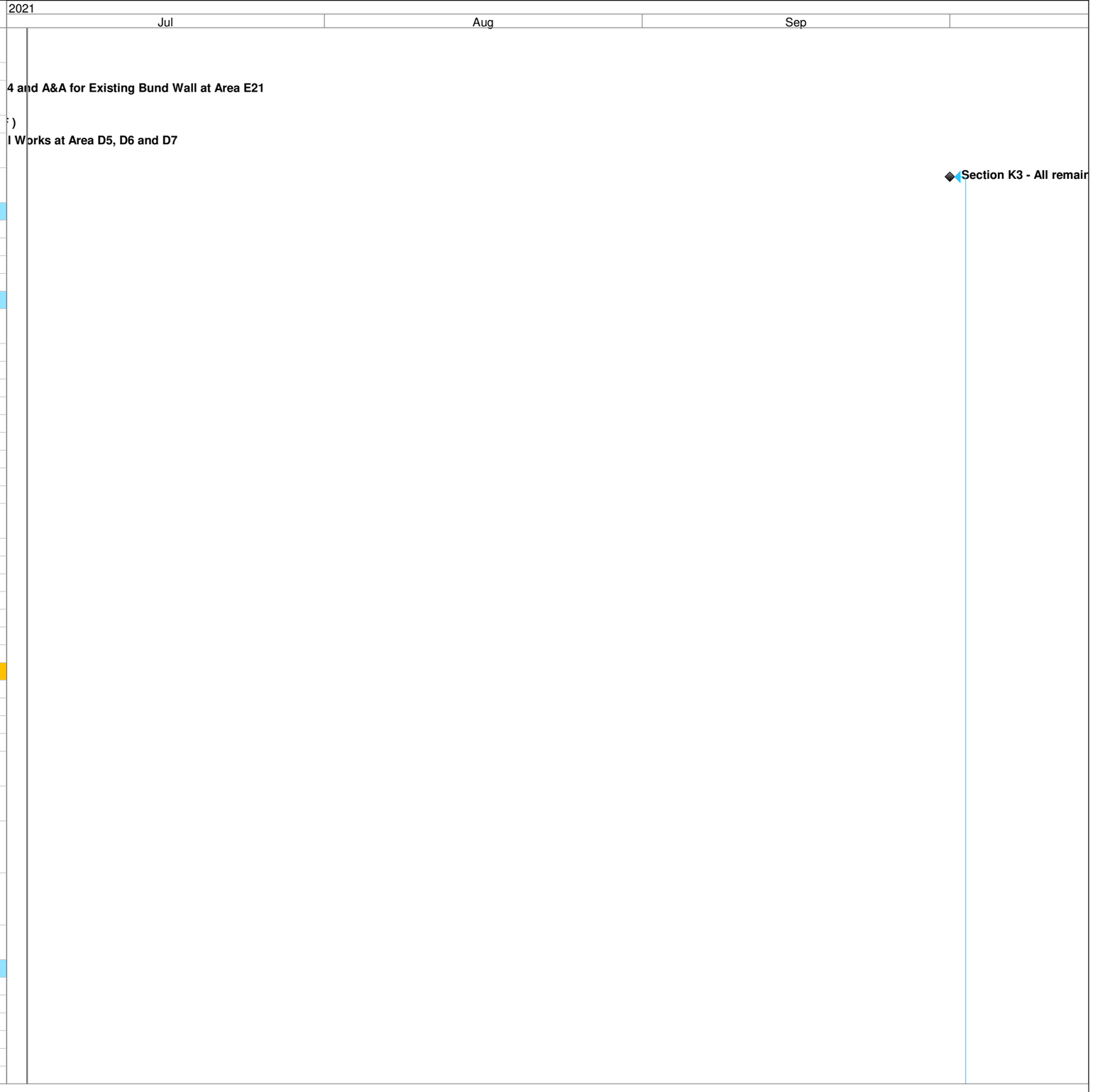
ID	Task Name	Duration
36	Section I - (i) 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (B)	0 days
37	Section I - (ii) Interconnector 2 Trench Modification Works at Area E10	0 days
38	Section J - (i) Demolition of Retractable Cover A&B & (ii) Foundation of LMX Light Oil Storage Tank Nos. 3 & 4 and A&A for Existing Bund Wall at	0 days
39	Section K1 - External works at Area 15 (E) and 15(F)	0 days
40	Section K2 - Removal of Southern Bund and External Works at Area D5, D6 and D7	0 days
41	Section K3 - All remaining works shall be completed for reporting completion to BD and ready for OP inspection	0 days
42	**General & Preliminary**	**318 days**
43	Set up Temporary Site Office and Utilities	90 days
44	Permit Applications & Statuary Submissions	120 days
45	Existing Utilities scanning & Excavation Permit	45 days
46	Tower Crane erection 2@MSB, 1@ 275	50 days
47	**Submission and Approval**	**554 days**
48	Method Statement / Temp Work Submission & Approval from HEC for General Works	240 days
49	BD Approval & Consent (If required)	120 days
50	BIM Model, CSD & CBWD Submission & Approval from HEC	200 days
51	Structure Steelwork Connection Design Submission & BD Approval	60 days
52	Structure Steelwork Shop Drawing & Approval	60 days
53	Metal Cladding, louvre & windows submission & BD Approval	60 days
54	Metal Cladding, louvre & windows shop drawing submission	60 days
55	Order, Off Site Fabrication and Delivery (S. Steel & Cladding & louvres)	180 days
56	Retractable Cover D BD Submission & Approval	90 days
57	No. 4 C.W. Outfall A&A BD 1st Submission	90 days
58	Sumission & Approval of Steel Flue Assessment Report and Design Drawings	60 days
59	Submission and Approval of Steel Flue Design from BD	60 days
60	Material Fabrication & Delivery for L11 Flue	100 days
61	Folding Shutters Shop Drawing Submission & Approval	120 days
62	Fabrication & Delivery of Folding Shutters	150 days
63	Sewage Pump System Design submission & approval	90 days
64	Fabrication & Delivery of Sewage Pump	180 days
65	Other material submission & approval & delivery	300 days
66	**Coordination with the Employer's Specialist Contractors**	**478 days**
67	Installation of Puddle Pipes at C.W. outlet Culvert	7 days
68	Installation of Puddle Pipes at C.W. Inlet Culvert	7 days
69	Template setting at L11 Turbo Block Foundation	60 days
70	Template setting of holding down bolts at HRSG column base	46 days
71	I-beam / channel base installation on top of transformer foundations at Transformer Area	30 days
72	Overhead crane erection at turbine hall using access through a temporary opening at L11 MSB roof between GL11-G to 11-H and 11-2 to 11-6	36 days
73	Condenser assembly and erection using access through a temporary façade opening at L11 MSB below 1/F along GL 11-6 from GL11-B to 11-C including a clear space below 1/F between GL 11-B to 11-C	127 days
74	Installation of power train equipment including air inlet duct using access through a temporary façade opening at L11 MSB below 1/F along GL 11-6 from GL11-F to 11-H including a clear space below 1/F of the above area	142 days
75	Installation of embedded materials such as holding down bolts for equipment foundations - Commencement	30 days
76	**Section A1 & A2 - Ground treatment at Zone 1A & 1B**	**92 days**
77	Plant establishment for earthworks	7 days
78	Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	45 days
79	Delivery of band drain	5 days
80	Plant establishment for band drain (1st rig)	10 days
81	Plant establishment for band drain (2nd rig)	7 days
82	Plant establishment for band drain (3rd rig)	7 days



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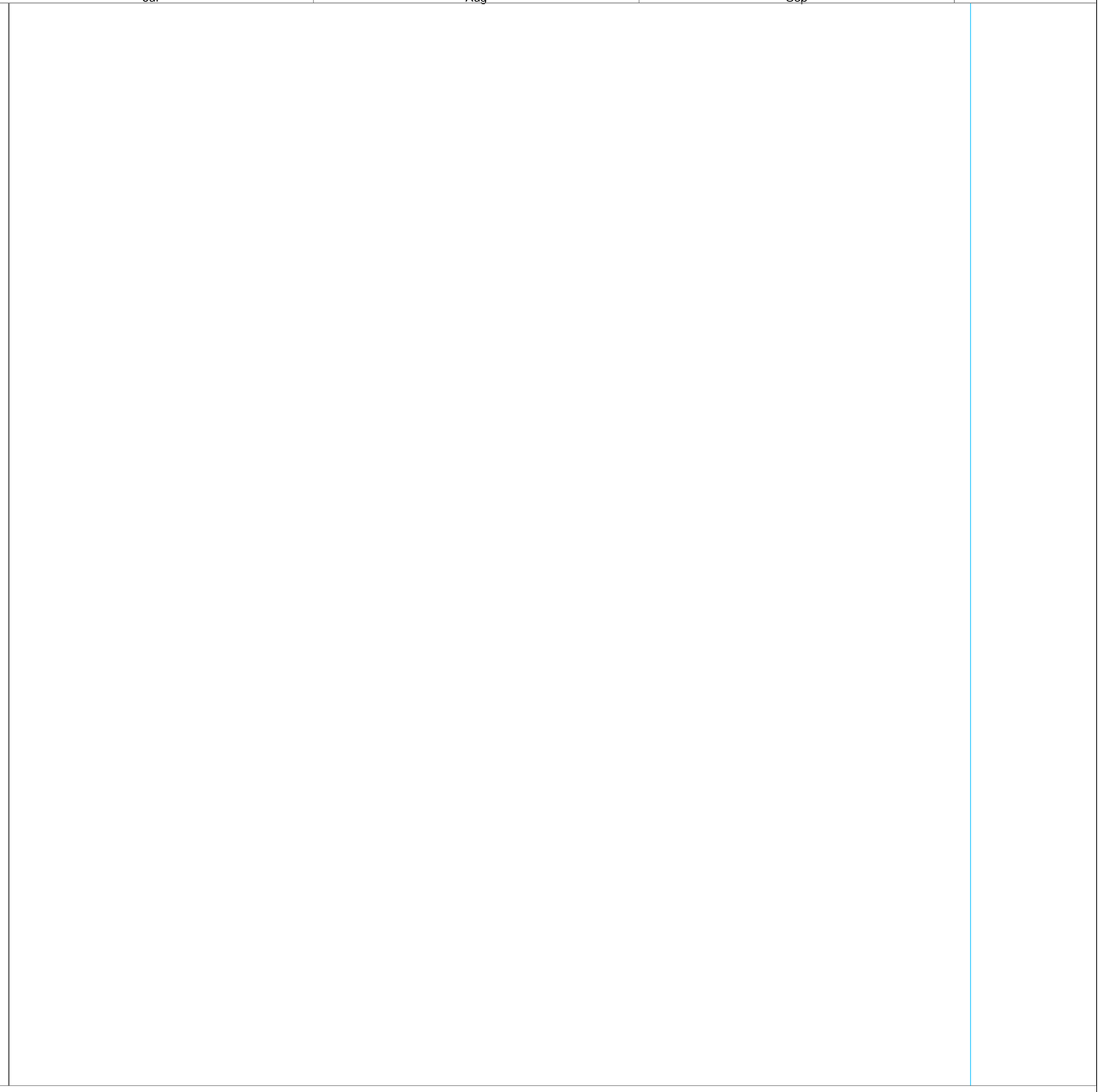
ID	Task Name	Duration
83	Vert. Band drain installation (1023 nos. x 44m)	45 days
84	Deposition of surcharge up to +8.3mPD	45 days
85	**Section A3 - Ground treatment installation works at Zone 2**	**158 days**
86	Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	30 days
87	Delivery of band drain	6 days
88	Vert. Band drain installation (1787 nos. x 44m)	50 days
89	Deposition of surcharge up to +8.3mPD	60 days
90	Additional Concrete Blocks + Extra Surcharge	60 days
91	**Section A4 - Ground treatment installation works at Zone 3**	**131 days**
92	Backfilling and compaction from existing ground +4.5mPD to +5.5mPD	12 days
93	Vert. Band drain installation	60 days
94	Deposition of surcharge up to +8.3mPD	45 days
95	Possession of Part 1 Defer portion at Zone 3	0 days
96	Vert. Band drain installation	10 days
97	Possession of Part 2 Defer portion at Zone 3	0 days
98	Vert. Band drain installation	7 days
99	Surcharge at deferred portion	14 days
100	**Section A5 (i) - Ground treatment installation works at Zone 4**	**83 days**
101	Site Preparation for Vertical Band Drain	3 days
102	Band drain installation	21 days
103	Possession of Defer portion at Zone 4	0 days
104	Vert. Band drain installation	28 days
105	**Section A5 (ii) - Surcharge works at Zone 4**	**30 days**
106	Deposition of surcharge up to +8.3mPD	30 days
107	**Section A6 (i) - A&A Works for No. 4 C.W. Outfall at Area E18**	**493 days**
108	BD Amendment, resubmission & approval for Jacking Pit	170 days
109	Consent for Jacking Pit ELS	28 days
110	Mobilization	0 days
111	Jacking Pit Sheetpile Installation (incl. Stop work notice + CNY)	60 days
112	Protective screen and preventive measure for U9 gas pipeline (VO)	28 days
113	Provision of temp support for U10 gas pipeline (VO) upon RMA allow access	28 days
114	ELS of jacking pit	30 days
115	Pipe Jacking set up & ground strengthing	18 days
116	Pipe Jacking	90 days
117	Receiving Pit BD Approval	170 days
118	Consent for Pipe & Sheet pile	28 days
119	Receiving Pit Pipe & Sheet pile installation	30 days
120	Consent for Receiving Pit ELS	28 days
121	ELS of Receiving pit	40 days
122	Allow modify existing outfall manhole for pipe jacking receiving	18 days
123	Culvert Pipe Intallation & water test	55 days
124	Inspection Manhole at Jacking Pit + backfill (Area E3(A))	18 days
125	Manhole extension at Outfall no. 4 + backfill + Reinstate of Outfall Rd	45 days
126	Sheetpile for L12 Outlet culvert (Connection to Jacking Pit)	45 days
127	Consent + ELS for remaining jacking pit	75 days
128	Outlet Culvert pipe installation + Thrust Box (remaining portion at A1 Area)	45 days
129	Sheet pile for future extension along GRS	60 days
130	**Section A6 (ii) - External works at Area E15(D)**	**37 days**
131	Arae possession & Clearance	6 days
132	Road & Surface Works	31 days
133	**Section B1 (i) - Area south of L11 MSB and HRSG from GL11-F eastwards leading to Chimney Road at Area E1 & E2**	**375 days**
134	Area Possession & Clearance	0 days
135	Excavation for CW Inlet Culvert (South of L11 HRSG)	21 days
136	Installation CW Inlet Culvert pipe	30 days
137	Construction of Thrust Box & Manholes,etc	14 days
138	Backfill	21 days
139	Install underground utilities	45 days
140	Backfill and Temporary paving for Condensor Move in (E1)	14 days
141	Backfill and Temporary paving for Condensor Move in (others)	30 days
142	**Section B1 (ii) - Supporting structures for overhead cranes of L11 MSB including the associated roof structure except the roof deferred works**	**482 days**
143	Area possession & Clearance	0 days
144	Erection of turbine hall roof except defer work	0 days



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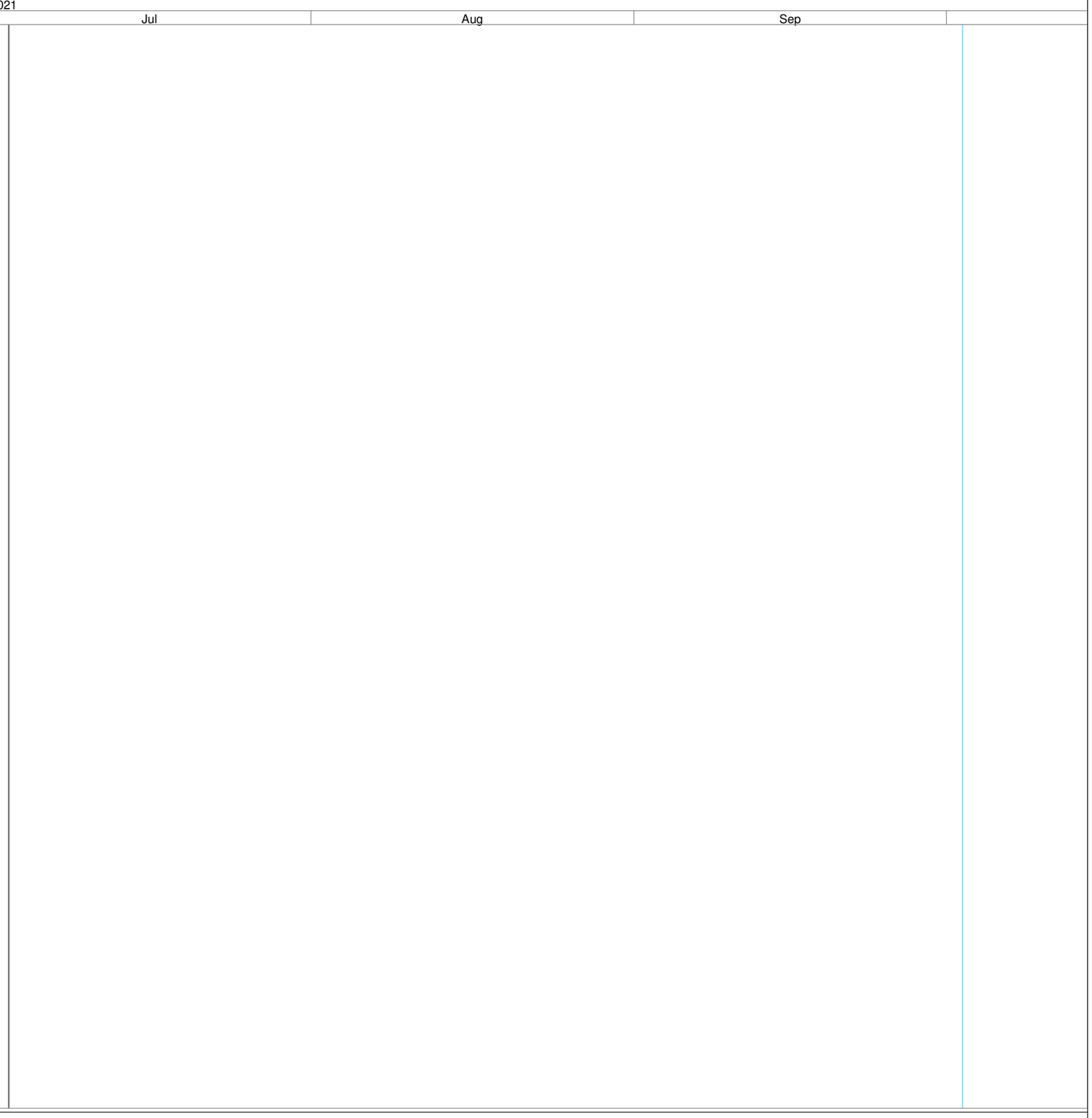
ID	Task Name	Duration
145	Installation of crane griders	21 days
146	Turbine hall wall claddings	60 days
147	**Section B1 (iii) - FSRU Civil works at Area E13 (GRS)**	**151 days**
148	Submission and approval for consent to work	0 days
149	Civil & Building Works	130 days
150	Ground reinstatement	21 days
151	**Section B2 - Retractable Cover D at Area E22**	**435 days**
152	Area Possession, Demolition and clearance work	60 days
153	Revise Structural Form and BD resubmission & approval	150 days
154	Foundation construction	60 days
155	Backfill & Ground reinstatement	30 days
156	Superstructure fabrication & delivery	90 days
157	Superstructure erection	90 days
158	E&M Installation and T&C	45 days
159	**Section B3 - External works at Area B1, D2 and D4**	**416 days**
160	Receive Area from HKE, Area Possession & Clearance	0 days
161	Removal of existing paving for band drain under Section A5(i)	30 days
162	Complete Vert. Band drain under Section A5(i)	0 days
163	Ground preparation for B1, D2 & D4 for handover to Plant contractor	90 days
164	**Section C1 - Area south of L11 MSB from GL11-F westwards leading to Station Road at Area E3(A) & E3(B)**	**466 days**
165	Area Possession & Clearance	0 days
166	Excavation for Type C (Area E3A)	21 days
167	Installation CW Outlet Culvert Pipe connect to Type C1	21 days
168	Installation CW Inlet Culvert pipe (South of L11 Condensor)	21 days
169	Construction of Thrust Box	10 days
170	Construction of Access Manhole	21 days
171	Backfill	14 days
172	Construction of Underground drainage and utilities	60 days
173	Construct Temp Paving for Condenser move in	45 days
174	**Section C2 - (i) Southern part of L11 HRSG area and its surrounding at Area E7 (No Defer Foundations)**	**295 days**
175	Area Possession & Clearance	0 days
176	Excavation & Pile Caps & Tie Beams (HRSG South Area E7)	45 days
177	Construction RC foundations	45 days
178	Construction RC plinths	30 days
179	Construction underground utilities	45 days
180	Backfill & Construction on-grade slabs	35 days
181	Backfill and Temporary paving	21 days
182	**Section C2 - (ii) L11 Turbo Block foundation including the L11 MSB ground floor together with the equipment foundations between GL 11-F to 11-H and 11-1 to 11-6 for the installation of power generator, air inlet duct and lube oil reservoir**	**496 days**
183	Area Possession & Clearance	0 days
184	Excavation & Pile Caps & Tie Beams (MSBL11 - Turbo Block North)	70 days
185	Excavation & Pile Caps & Tie Beams (MSBL11 - Turbo Block South)	30 days
186	Backfill and construction turbine block foundations	21 days
187	Construction of internal drainage	60 days
188	Construction RC walls incl. G/F rooms	90 days
189	Construction turbine block columns and upper portion for plant embed installation	21 days
190	Concrete Turbine upper part foundation & clear falsework	52 days
191	**Section C2 - (iii) G/F of L11 MSB including the Condenser Pit, Circulating Water Pipe Pit and equipment foundations between GL 11-B to 11-C and 11-1 to 11-6 for the installation of condenser**	**466 days**
192	Area Possession & Clearance	0 days
193	Excavation to foundation level at ELS Type A	18 days
194	Construction of CW Outlet Box + lowest tie beam & caps	40 days
195	Construction of pile caps & tie beams & hot well sump pit up to +2.5mPD	30 days
196	Backfill & Construction of CW Inlet Box + tie beams	18 days
197	Backfill and Construction ground beams & trenches	18 days



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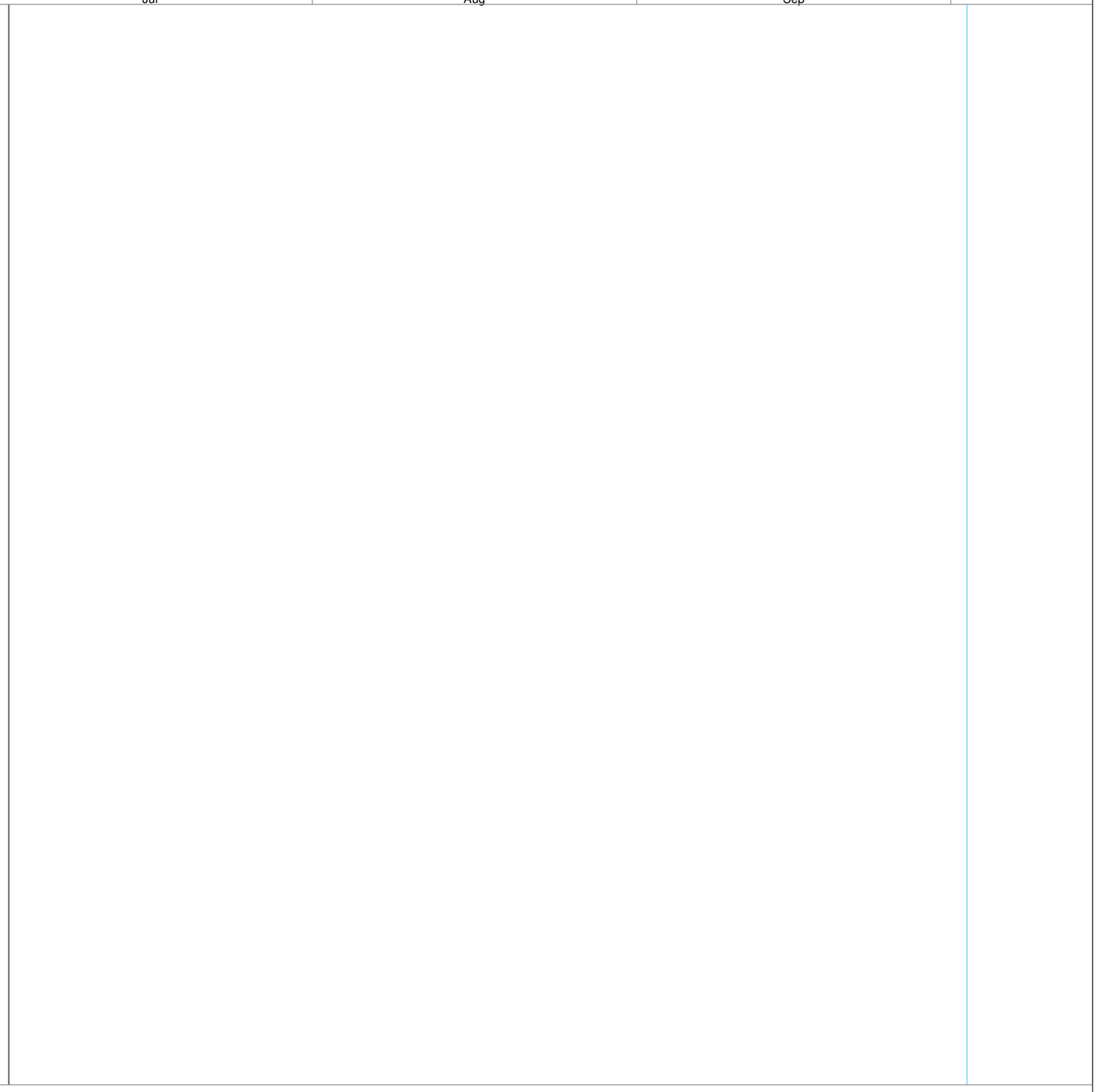
ID	Task Name	Duration
198	Construction of indoor underground drainage	12 days
199	Backfill & construction on-grade slabs	10 days
200	Construction Column casting and RC walls	30 days
201	Metal Cladding & Louvres for GLB-C/1-6	60 days
202	Mis. Works for plant erection	24 days
203	**Section D - (i) Roads and external grounds surrounding L11 MSB and L11 HRSG in addition to the southern & eastern areas mentioned above in Area E5 and E6**	**414 days**
204	Area Possession & Clearance	14 days
205	Excavation for Type C1 and open sheet pile	75 days
206	Install CW Outlet pipe & connect to prevous	21 days
207	Backfill	10 days
208	Undeground utilities and trenches	60 days
209	Construction of plant drainage, trenches & RC plinths	45 days
210	Remaining Undeground utilities & backfill (West of Tx Bay)	75 days
211	**Section D - (ii) Remaining northern part of L11 HRSG area and its surrounding in Area E6**	**375 days**
212	Area Possession & Clearance	0 days
213	Excavation & Pits & Pile Caps & Tie Beams (HRSG north Area E6)	45 days
214	Construction RC foundations	45 days
215	Construction RC plinths & HRSG Lift Pit & internal drainage	60 days
216	Backfill Construction on-grade slabs	28 days
217	Construction underground utilities	45 days
218	Backfill, Remaining utilities and temporary paving	85 days
219	Touch up and site clearance	13 days
220	**Section D - (iii) Whole of L11 MSB including the pipe and cable rack along south façade of L11 MSB with all underground utilities at Area E4 including C.W. Inlet and Outlet Culvert except the deferred works**	**526 days**
221	Area Possession & Clearance	0 days
222	Construction of pile caps & tie beams at Transformer Area	60 days
223	Excavation & Construction Blow Down Sum pit (Type B)	45 days
224	Construction of pile caps & tie beams at SunShadeCover Area	45 days
225	Preaparation for S.Steelwork Erection	14 days
226	Structural Delivery & Erection (Turhine Hall North fr G.L. 1-3/H->B)	30 days
227	Structural Delivery & Erection (Equipment Floors)	45 days
228	Structural Delivery & Erection (Turbine Hall South)	45 days
229	Fire Coating Application at Joint	120 days
230	External Scaffolding Erection	150 days
231	Construction 1/F RC Slab	14 days
232	Construction M/F RC Slab	7 days
233	Construction 2/F RC Slab	14 days
234	Construction 3/F RC Slab	14 days
235	Construction 4/F RC Slab	14 days
236	Construction 5/F RC Slab (Roof of turbine hall, except defer portion)	30 days
237	Construction Roof RC Slab	14 days
238	Construction Upper Roof RC Slab	12 days
239	Construction Defer Roof RC Slab (G.L. G-H)	30 days
240	Construction of Staircase ST-01 & lift shaft & machine room	120 days
241	Construction of Staircase ST-02 except defer work	76 days
242	Construction of RC plinth, kerbs & parapet Walls	30 days
243	Erection of Skylight & Roof Features	45 days
244	Waterproofing & Flooring at Roof	60 days
245	ABFW Works from 1/F to 5/F equipment rooms	150 days
246	Metal Cladding, Windows and Louvres incl. roof feature	100 days
247	Removal of external scaffolding	60 days
248	Building Services E&M Access & Installation	150 days
249	Remaining and Mis. works for Plant erection Full Access	18 days
250	**Section D - (iv) Link Bridge between L10 and L11 MSB and at the south of L11 MSB including their associated alternations & additions (A&A) Works at L10 MSB**	**526 days**
251	Area Possession & Clearance	0 days



17-8002 Master Prog Rev 3 | Task | Split | Milestone | Summary

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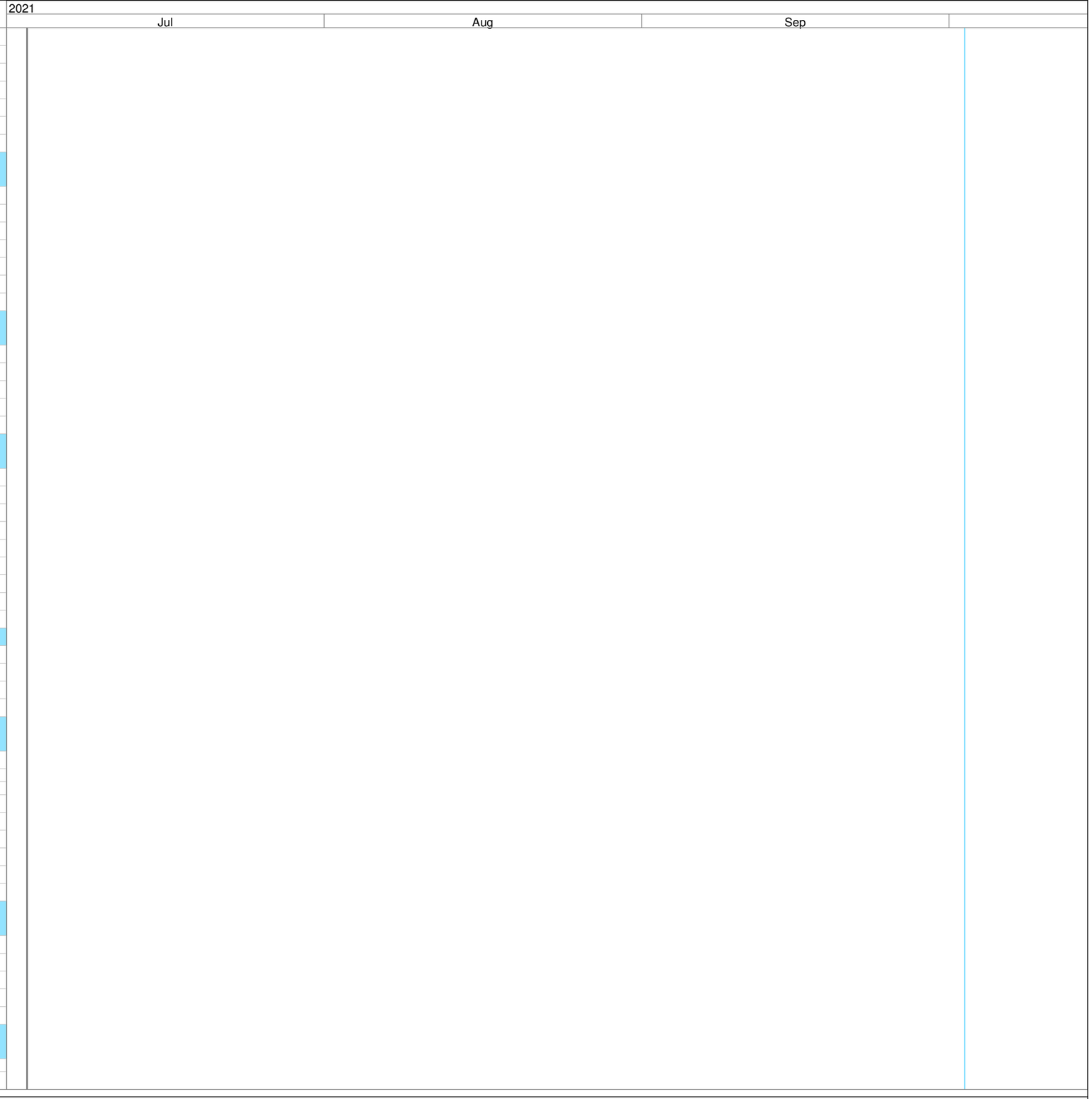
ID	Task Name	Duration
252	A&A works at South of L10 MSB	60 days
253	Erection of link bridge structural steel	21 days
254	Casting of bridge deck	7 days
255	Metal roofing installation	14 days
256	ABWF work	21 days
257	Form new opening at MSB for final connection	14 days
258	E&M Work for completion	21 days
259	**Section D - (v) Gas Duct Foundation, Pipe and Cable Rack and associated trench in Area E20**	**345 days**
260	Area Possession & Clearance + CNY	0 days
261	Sheet pile installation & submit as-built	75 days
262	Consent for excavation	28 days
263	Excavation & plate load test	45 days
264	Construction of foundation	45 days
265	Backfill & Underground utiltiies	30 days
266	Remaining Pipe & cable rack and associated trenchs in Area E20	115 days
267	**Section E1 - (i) Link BrIdge and Pipe and Cable Rack connecting L11 MSB to the western area of L11 MSB at Area E3**	**263 days**
268	Area Possession	0 days
269	Excavation & construction of new foundation	40 days
270	Backfill	10 days
271	Erection of Structural steel	30 days
272	Backfill & Ground works	55 days
273	**Section E1 - (ii) Gas Receiving Station and L11 Gas Receiving Station Equipment Room (GRS) Area Extension at Area E16**	**173 days**
274	Area Possession	0 days
275	Removal of Surcharge and excavation	14 days
276	Modification of Site Drainage	45 days
277	Construction of new RC for GRS Equipment Room	75 days
278	ABWF for GRS Equipment room	45 days
279	E&M Installation	45 days
280	Construction of new Gas pipe plinths & racks	45 days
281	Backfill and construction site drainage	21 days
282	External Paving and install new fencing	60 days
283	**Section E1 - (iii) External Works at Area E15 (C)**	**273 days**
284	Removal of Surcharge and excavation	45 days
285	Underground drianage, Utilities and RC plinths	123 days
286	Backfill and install surface utilities	45 days
287	Roadwork	60 days
288	**Section E2 - Pipe and Cable Rack and trench at west of Chimney Road and Pipe and Cable Rack at south of Middle Road at Area E8 and E19**	**495 days**
289	BD consent + Site Possession @ Area E8	0 days
290	Excavation & Plate load test	60 days
291	Foundation and Trench constructions	90 days
292	Backfill & underground utitiles + temp paving	60 days
293	Excavation & plate load test @ E19	60 days
294	Construction of foundations & trenches	45 days
295	Backfill & underground utitiles	60 days
296	Pipe & cable rack Erection	60 days
297	Ground reinstatement	60 days
298	**Section E3 - Gas Pipe Support Foundation and Pipe Trench and associated external works at Area E14, E15 (A) and E15 (B)**	**173 days**
299	Removal of surcharge / site clearance	21 days
300	Excavation & construction of pipe trench	30 days
301	Construction of gas pipe support foundation	30 days
302	Construction of underground drainage and utilities	60 days
303	Backfill & road work	32 days
304	**Section E4 - 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (A)**	**185 days**
305	Site possession	0 days
306	Obtain Permit to work & Road close permit	10 days



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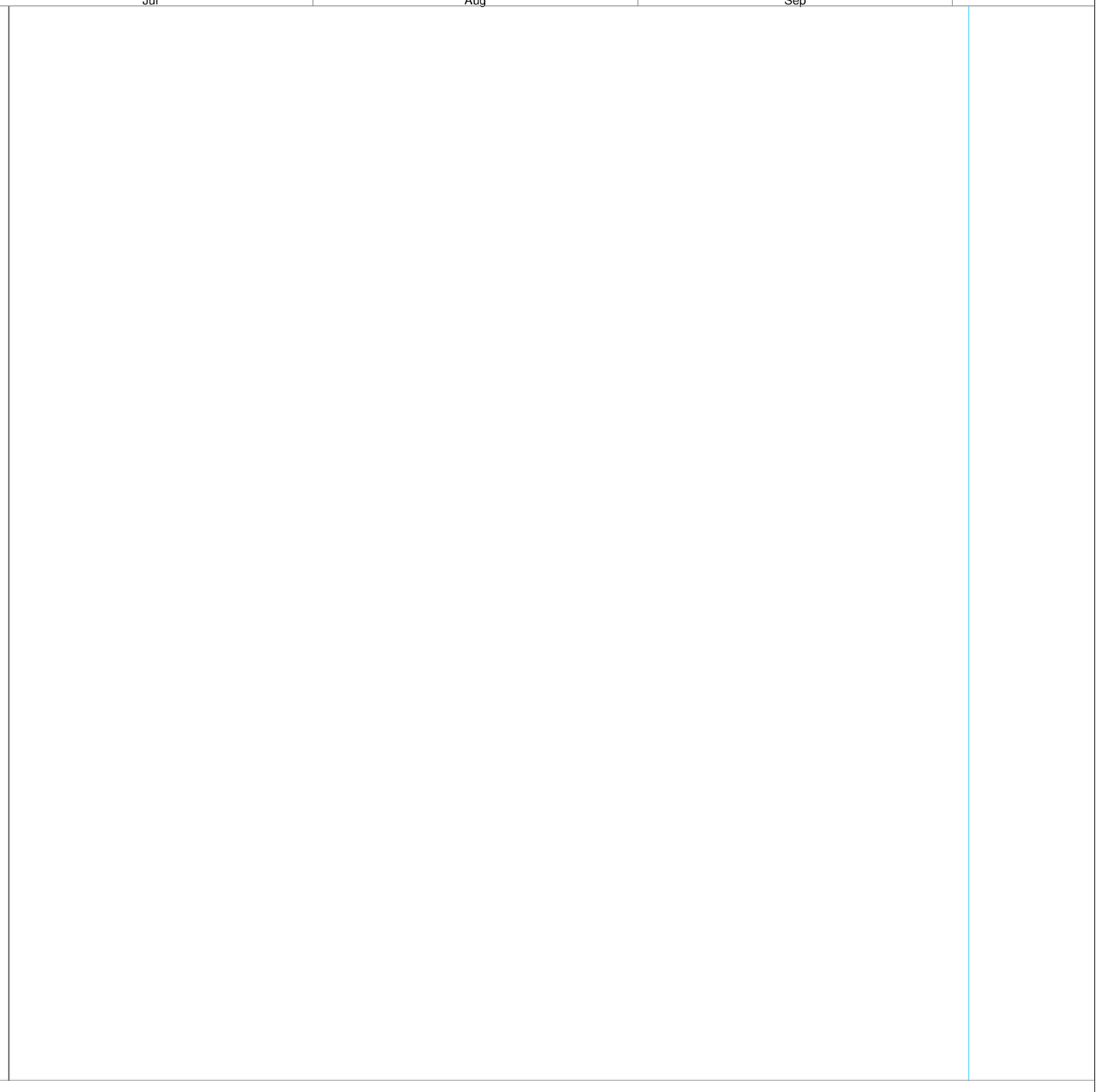
ID	Task Name	Duration
307	Excavation & construction new cable trench to 275kV	45 days
308	Excavation & construction new cable trench to L11MSB	130 days
309	**Section F - 275kV Station Building Extension and associated works at Area E17**	**709 days**
310	Installation of ELS for 275kV Switching Station near Staircase ST-3 and ST-6	14 days
311	Construction of Staircase ST-3	110 days
312	BD Amendment Approval on A&A	0 days
313	BD Amendment Approval on A&A ST3 & Drainage	0 days
314	OP inspection of Staircase ST-3	14 days
315	Consent of New Foundation Works (Stage 1)	0 days
316	Consent & BA10 for Demolition of Existing Staircase	0 days
317	Demolition of Exisiting Staircase and Submit BA14A	14 days
318	BD inspection for BA14A & Issue OP	28 days
319	Consent & BA10 for New Foundation Work (Stage 2)	28 days
320	Hoarding Modification	7 days
321	Pile Cap & Tie Beam Construction (Stage 1)	98 days
322	Erection of Tower Crane	40 days
323	Pile Cap and Tie Beam (Stage 2)	21 days
324	RC Construction up to 1/F (Stage 1)	30 days
325	RC Construction up to 1/F (Stage 2)	75 days
326	Construction of Staircase ST6	90 days
327	Shop Drawing Submission & Approval of Structural Steel	45 days
328	Structural Steel fabrication & Delivery	60 days
329	Erection of Structural Steel GL 17~18	30 days
330	Erection of Structural Steel GL 8~17	60 days
331	Metal Cladding Delivery	60 days
332	Metal Door, Window & Louvre Delivery	45 days
333	Erection of Working Platform and Scaffold	150 days
334	Install Decking	60 days
335	RC Walls from 1/F @ GIS Hall	40 days
336	Construction of 2/F RC slab	14 days
337	Construction of R/F RC slab	21 days
338	Construction of UR/F RC slab	14 days
339	Construction of GIS Hall Floor	60 days
340	Installation of Overhead Crane (By JEC)	60 days
341	Construction of staircase ST4, ST5, Lift Shaft & Equip Floors	150 days
342	Lift Installation	90 days
343	Concrete of RC walls, plinths, kerb & parapet walls & New trench for LV Power	30 days
344	ABWF Works @ G/F	50 days
345	ABWF Works @ 1/F	50 days
346	ABWF Works @ 2/F	75 days
347	ABWF Works @ R/F	30 days
348	ABWF Works @ UR/F	21 days
349	Waterproofing Works at R/F & UR/F	45 days
350	Building Services E&M Access & Installation & T&C	150 days
351	Metal Cladding, Windows and Louvres incl. Roof Feature	90 days
352	Shutter Erection	30 days
353	Removal of External Scaffolding + Tower Crane	35 days
354	External Underground Drainage and Utilities	30 days
355	Road & Paving Reinstatement	30 days
356	Ready for FSD & OP Inspection	0 days
357	**Section G - A&A Works at No. 4 C.W. Intake at Area E12**	**143 days**
358	Permit to work	0 days
359	Erection of temp. platform	14 days
360	Demolition work	30 days
361	Modify existing slab openings	75 days
362	Curing + Removal of platform	24 days
363	**Section H - L11 Steel flue liner at No. 4 Chimney**	**186 days**
364	Complete erection of L10 Steel flue	0 days
365	Modification of erection equipment	21 days
366	Erection temp. platform and demolition work	30 days
367	Structural steel delivery & Erection	85 days
368	Removal of temp. work	5 days
369	Reinstate G/F louvre wall and access door	45 days
370	**Section I - (i) 275kV cable trenching works connecting the 275kV Switching Station Extension and L11 MSB at Area E9 (B)**	**232 days**
371	Obtain Permit to work & Road close permit	0 days
372	Excavation & construction new cable trench	160 days
373	Re-excavate cable trench for cable laying	72 days
374	**Section I - (ii) Interconnector 2 Trench Modification Works at Area E10**	**275 days**
375	Obtain Permit to work & Road close permit	0 days
376	Re-excavate & new cable trench for cable laying	275 days



Contract No. 17/8002 Lamma Power Station Extension Civil and Building Works for Unit L11 | 17-8002 Master Prog Rev 3 | **Refer to CEM dated 26March2019**

ID	Task Name	Duration
377	**Section J - (i) Demolition of Retractable Cover A&B & (ii) Construction of new LOT 3 & 4**	**426 days**
378	Obtain permit to work & Road close permit	0 days
379	Erection of Hoarding	21 days
380	Removal of existing cover & structural steel	30 days
381	Demolish of existing bund wall and staircases	45 days
382	Demolish of existing slab & foundation	60 days
383	Consent for new work	30 days
384	Construction of new bund wall and foundation	100 days
385	Construction of new oil separator	80 days
386	Construct underground drainage and surface channel	40 days
387	Construction on-grade slab	60 days
388	Removal of hoarding and ground reinstatement	40 days
389	**Section K1 - External works at Area 15 (E) and 15(F)**	**365 days**
390	Removal of surcharge	30 days
391	Construct new drainage and utilities work	200 days
392	Road & Paving	135 days
393	**Section K2 - Removal of Southern Bund and External Works at Area D5, D6 and D7**	**365 days**
394	Demolition work	30 days
395	Construct new drainage and utilities work	200 days
396	Road & Paving	135 days
397	**Section K3 - All remaining works shall be completed for reporting completion to BD and ready for OP inspection (PS1.4.4)**	**623 days**
398	Completion of remaining roof after over headcrane move in	30 days
399	Construction of G/F Lube Oil Tank Room (BY TDK)	61 days
400	Construction of wall and staircase at G/F after Condensor Move in	90 days
401	Construction of Durasteel Steel wall panel after IBP installation	30 days
402	Construction of Transformer fence wall, cladding & associated FS services	122 days
403	Final restatement of road & paving around MSB & HRSG	122 days
404	Installation of trench covers and gratings after plant installation	151 days
405	Backfill and reinstatement after 275kV cable laying	122 days

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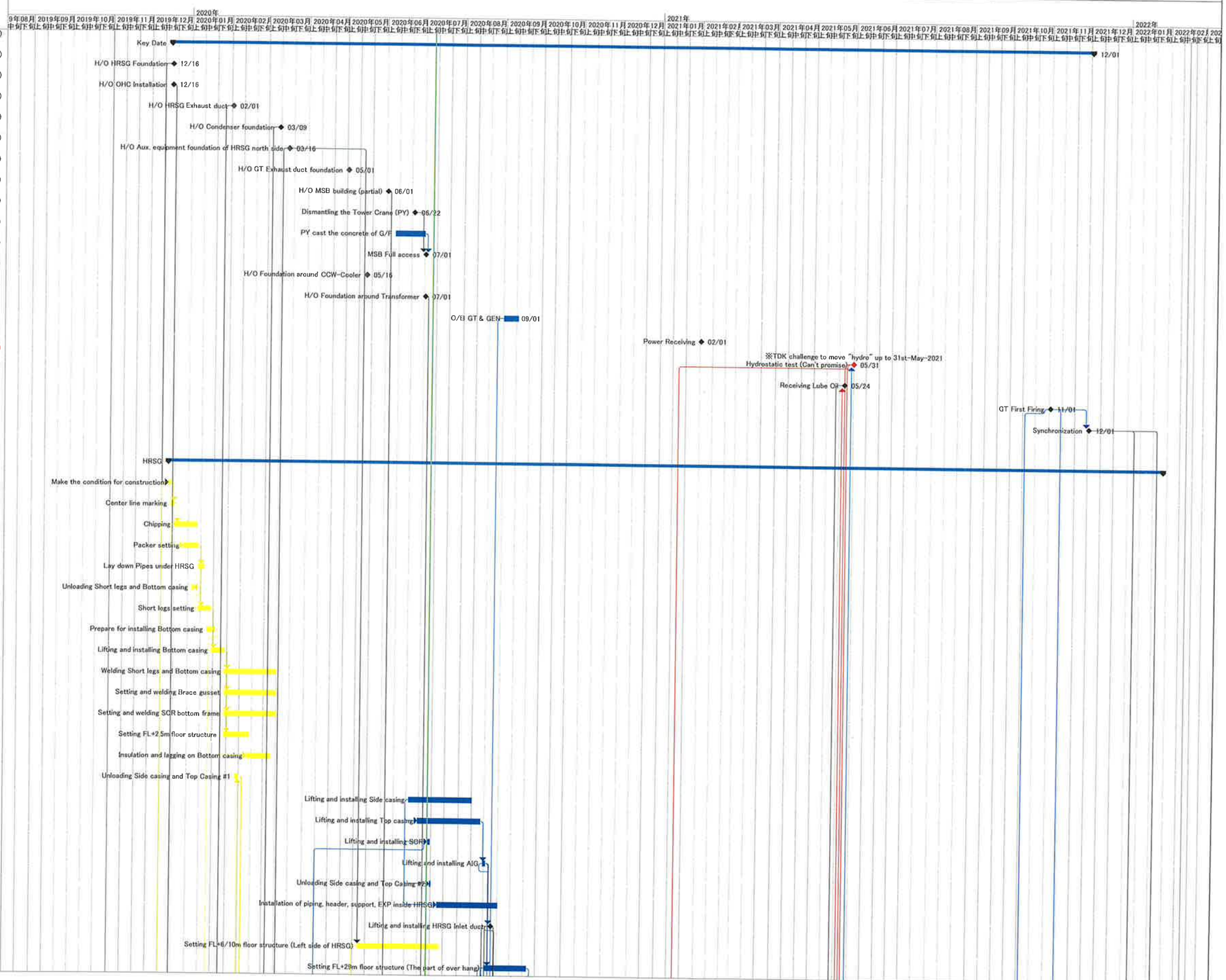
ID		タスク名	期間	開始日	終了日
1		Key Date	613日	19/12/16 (月)	21/12/01 (水)
2		H/O HRSG Foundation	1日	19/12/16 (月)	19/12/16 (月)
3		H/O OHC Installation	1日	19/12/16 (月)	19/12/16 (月)
4		H/O HRSG Exhaust duct	1日	20/02/01 (土)	20/02/01 (土)
5		H/O Condenser foundation	1日	20/03/09 (月)	20/03/09 (月)
6		H/O Aux. equipment foundation of HRSG north side	1日	20/03/16 (月)	20/03/16 (月)
7		H/O GT Exhaust duct foundation	1日	20/05/01 (金)	20/05/01 (金)
8		H/O MSB building (partial)	1日	20/06/01 (月)	20/06/01 (月)
9		Dismantling the Tower Crane (PY)	1日	20/06/22 (月)	20/06/22 (月)
10		PY cast the concrete of G/F	20日	20/06/08 (月)	20/06/30 (火)
11		MSB Full access	1日	20/07/01 (水)	20/07/01 (水)
12		H/O Foundation around CCW-Cooler	1日	20/05/16 (土)	20/05/16 (土)
13		H/O Foundation around Transformer	1日	20/07/01 (水)	20/07/01 (水)
14		O/B GT & GEN	10日	20/09/01 (火)	20/09/11 (金)
15		Power Receiving	1日	21/02/01 (月)	21/02/01 (月)
16		Hydrostatic test (Can't promise)	1日	21/05/31 (月)	21/05/31 (月)
17		Receiving Lube Oil	1日	21/05/24 (月)	21/05/24 (月)
18		GT First Firing	1日	21/11/01 (月)	21/11/01 (月)
19		Synchronization	1日	21/12/01 (水)	21/12/01 (水)
20					
21		HRSG	663日	19/12/16 (月)	22/01/28 (金)
22		Make the condition for construction	2日	19/12/16 (月)	19/12/17 (火)
23		Center line marking	3日	19/12/18 (水)	19/12/20 (金)
24		Chipping	15日	19/12/21 (土)	20/01/07 (火)
25		Packer setting	10日	19/12/28 (土)	20/01/08 (水)
26		Lay down Pipes under HRSG	4日	20/01/09 (木)	20/01/13 (月)
27		Unloading Short legs and Bottom casing	1日	20/01/04 (土)	20/01/06 (月)
28		Short legs setting	9日	20/01/09 (木)	20/01/18 (土)
29		Prepare for installing Bottom casing	3日	20/01/16 (木)	20/01/20 (月)
30		Lifting and installing Bottom casing	6日	20/01/20 (月)	20/01/29 (水)
31		Welding Short legs and Bottom casing	35日	20/01/30 (木)	20/03/10 (火)
32		Setting and welding Brace gusset	35日	20/01/30 (木)	20/03/10 (火)
33		Setting and welding SCR bottom frame	35日	20/01/30 (木)	20/03/10 (火)
34		Setting FL+2.5m floor structure	17日	20/01/30 (木)	20/02/18 (火)
35		Insulation and lagging on Bottom casing	17日	20/02/17 (月)	20/03/06 (金)
36		Unloading Side casing and Top Casing #1	2日	20/02/08 (土)	20/02/10 (月)
37		Lifting and installing Side casing	42日	20/06/23 (火)	20/08/10 (月)
38		Lifting and installing Top casing	42日	20/06/30 (火)	20/08/17 (月)
39		Lifting and installing SCR	2日	20/07/08 (水)	20/07/09 (木)
40		Lifting and installing AIG	2日	20/08/20 (木)	20/08/21 (金)
41		Unloading Side casing and Top Casing #2	1日	20/07/10 (金)	20/07/10 (金)
42		Installation of piping, header, support, EXP inside HRSG	40日	20/07/16 (木)	20/08/31 (月)
43		Lifting and installing HRSG Inlet duct	2日	20/08/25 (火)	20/08/26 (水)
44		Setting FL+6/10m floor structure (Left side of HRSG)	55日	20/05/15 (金)	20/07/17 (金)
45		Setting FL+29m floor structure (The part of over hang)	28日	20/08/22 (土)	20/09/23 (水)



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Construction Schedule of Unit-11

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ID	タスク名	期間	開始日	終了日
46	North side stair frame & EV structure	90日	20/08/22 (土)	20/12/04 (金)
47	Setting FL+29m floor structure (Above tube bundle)	30日	20/10/01 (木)	20/11/04 (水)
48	South side stair frame	60日	21/02/25 (木)	21/05/05 (水)
49	Setting roof structure (Including deferable structure)	120日	20/12/04 (金)	21/04/22 (木)
50	Prepare unloading Tube bundle	10日	20/09/04 (金)	20/09/16 (水)
51	Unloading Tube bundle #1 (9set)	3日	20/09/16 (水)	20/09/18 (金)
52	Prepare installing Tube bundle #1 (9set)	5日	20/09/19 (土)	20/09/24 (木)
53	Period for the installation of Power Train	0日	20/09/24 (木)	20/09/24 (木)
54	Lifting and installing Tube bundle #1 (9set)	12日	20/09/25 (金)	20/10/08 (木)
55	Unloading Tube bundle #2 (6set)	2日	20/10/10 (土)	20/10/12 (月)
56	Prepare installing Tube bundle #2 (6set)	4日	20/10/13 (火)	20/10/16 (金)
57	Lifting and installing Tube bundle #2 (6set)	8日	20/10/17 (土)	20/10/26 (月)
58	Lifting Down commer piping (pre-assembling)	8日	20/09/01 (火)	20/09/09 (水)
59	Lifting and setting HP-Drum	1日	20/10/14 (水)	20/10/14 (水)
60	Lifting and setting IP-Drum	1日	20/10/31 (土)	20/10/31 (土)
61	Lifting and setting LP-Drum	1日	20/11/04 (水)	20/11/04 (水)
62	Lifting and installing HRSG Outlet duct	2日	20/11/18 (水)	20/11/19 (木)
63	Adjusting HDR level (HP)	10日	20/11/05 (木)	20/11/16 (月)
64	Adjusting HDR level (IP & LP)	15日	20/11/17 (火)	20/12/03 (木)
65	Lifting and setting the silencer of HRSG	5日	21/04/23 (金)	21/04/28 (水)
66	Assembly accessory inside HRSG	180日	21/03/19 (金)	21/10/14 (木)
67	Excavation the foundation of UTAC (By Civil)	21日	21/02/01 (月)	21/02/24 (水)
68	Urea to Ammonia comversion system	90日	21/02/25 (木)	21/06/09 (水)
69	CO2 Fire fighting	50日	21/04/13 (火)	21/06/09 (水)
70	Installation the SCR catalyst	20日	22/01/06 (木)	22/01/28 (金)
71				
72	Lifting and hang Pipes (Left side of HRSG)	80日	20/07/16 (木)	20/10/16 (金)
73	Fitting Pipes (Inside of HRSG / HP)	90日	20/11/17 (火)	21/03/01 (月)
74	Fitting Pipes (Inside of HRSG / IP,LP)	90日	20/12/04 (金)	21/03/18 (木)
75	Lifting FL+29m and roof structure	40日	20/12/04 (金)	21/01/19 (火)
76	Lifting and hang Pipes (Upper HRSG)	60日	20/12/04 (金)	21/02/11 (木)
77	Fitting and welding Pipes in range of Hydrostatic	150日	20/11/17 (火)	21/05/10 (月)
78	Fitting and welding Pipes out range of Hydrostatic	160日	21/03/02 (火)	21/09/03 (金)
79				
80	Prepare for preassemble Side and Top Casing	10日	20/01/24 (金)	20/02/07 (金)
81	Preassembly Side casing (2set)	30日	20/02/11 (火)	20/03/16 (月)
82	Preassembly Top casing (HP and IP)	30日	20/02/11 (火)	20/03/16 (月)
83	Prepare for preassemble SCR	3日	20/03/20 (金)	20/03/24 (火)
84	Preassembly SCR	12日	20/03/24 (火)	20/04/06 (月)
85	Prepare for preassemble AIG	3日	20/07/27 (月)	20/07/30 (木)
86	Preassembly AIG	18日	20/07/30 (木)	20/08/20 (木)
87	Prepare for preassemble HRSG Inlet duct	4日	20/08/20 (土)	20/08/25 (木)
88	Preassembly HRSG Inlet duct	52日	20/08/25 (木)	20/08/25 (火)
89	Prepare for preassembly HRSG Outlet duct	4日	20/09/28 (月)	20/10/02 (金)
90	Preassembly HRSG Outlet duct	40日	20/10/02 (金)	20/11/18 (水)

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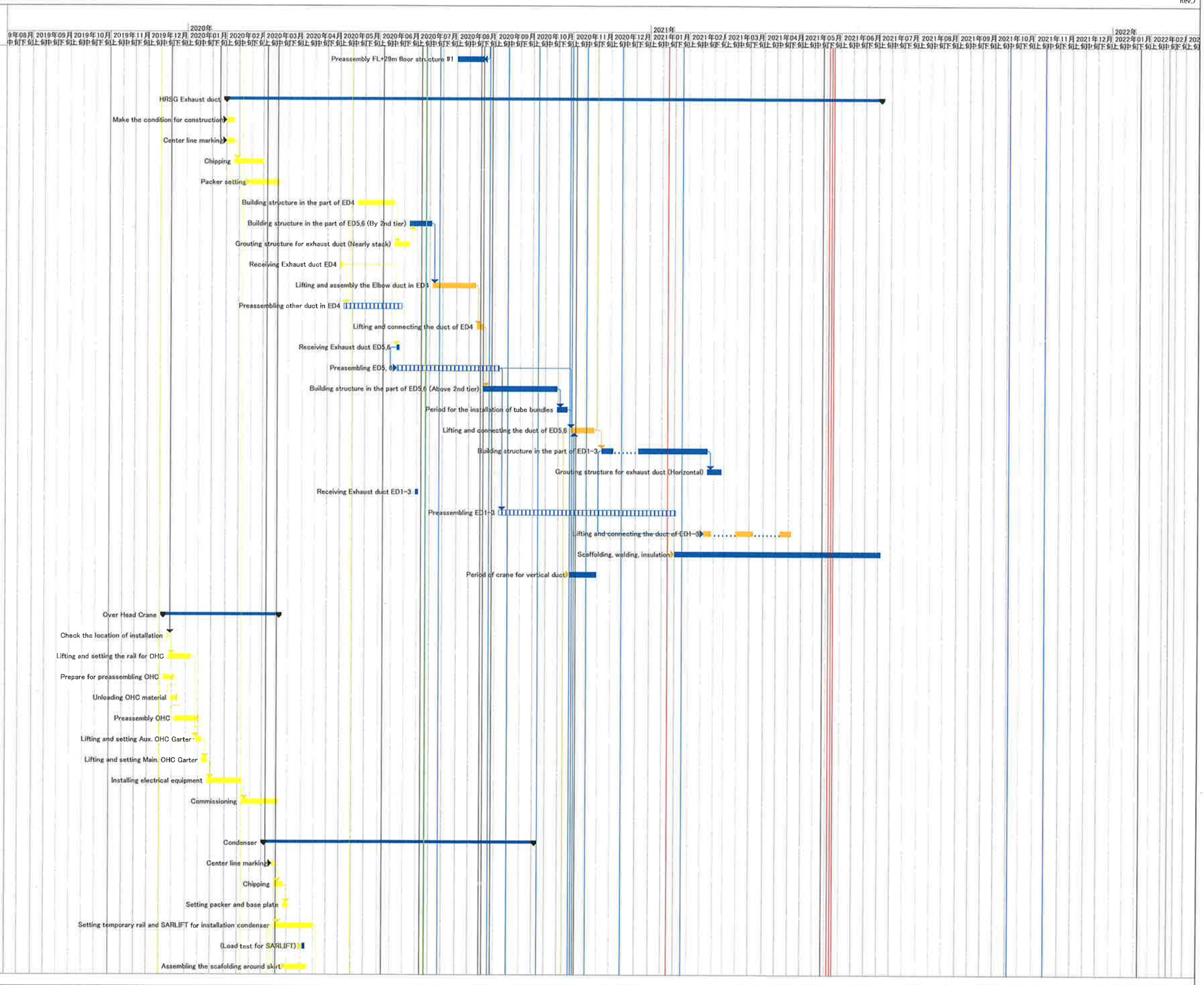
ID	タスク名	期間	開始日	終了日
91	Preassembly FL+29m floor structure #1	18日	20/08/01 (土)	20/08/22 (土)
92				
93	HRSG Exhaust duct	445日	20/02/01 (土)	21/07/02 (金)
94	Make the condition for construction	5日	20/02/01 (土)	20/02/06 (木)
95	Center line marking	5日	20/02/01 (土)	20/02/06 (木)
96	Chipping	20日	20/02/07 (金)	20/02/29 (土)
97	Packer setting	20日	20/02/19 (水)	20/03/12 (木)
98	Building structure in the part of ED4	25日	20/05/15 (金)	20/06/12 (金)
99	Building structure in the part of ED5,6 (By 2nd tier)	15日	20/06/25 (木)	20/07/11 (土)
100	Grouting structure for exhaust duct (Nearly stack)	10日	20/06/13 (土)	20/06/24 (水)
101	Receiving Exhaust duct ED4	2日	20/05/01 (金)	20/05/02 (土)
102	Lifting and assembly the Elbow duct in ED4	30日	20/07/13 (月)	20/08/15 (土)
103	Preassembling other duct in ED4	40日	20/05/04 (月)	20/06/18 (木)
104	Lifting and connecting the duct of ED4	5日	20/08/17 (月)	20/08/21 (金)
105	Receiving Exhaust duct ED5,6	2日	20/06/15 (月)	20/06/16 (火)
106	Preasembling ED5, 6	70日	20/06/15 (月)	20/09/03 (木)
107	Building structure in the part of ED5,6 (Above 2nd tier)	50日	20/08/22 (土)	20/10/19 (月)
108	Period for the installation of tube bundles	7日	20/10/20 (火)	20/10/27 (火)
109	Lifting and connecting the duct of ED5,6	15日	20/10/31 (土)	20/11/17 (火)
110	Building structure in the part of ED1-3	55日	20/11/24 (火)	21/02/15 (月)
111	Grouting structure for exhaust duct (Horizontal)	10日	21/02/16 (火)	21/02/26 (金)
112	Receiving Exhaust duct ED1-3	2日	20/06/30 (火)	20/07/01 (水)
113	Preassembling ED1-3	120日	20/09/04 (金)	21/01/21 (木)
114	Lifting and connecting the duct of ED1-3	25日	21/02/13 (土)	21/04/22 (木)
115	Scaffolding, welding, insulation	140日	21/01/21 (木)	21/07/02 (金)
116	Period of crane for vertical duct	18日	20/10/30 (金)	20/11/19 (木)
117				
118	Over Head Crane	75日	19/12/14 (土)	20/03/13 (金)
119	Check the location of installation	1日	19/12/17 (火)	19/12/17 (火)
120	Lifting and setting the rail for OHC	16日	19/12/18 (水)	20/01/04 (土)
121	Prepare for preassembling OHC	5日	19/12/14 (土)	19/12/20 (金)
122	Unloading OHC material	2日	19/12/20 (金)	19/12/23 (月)
123	Preassembly OHC	15日	19/12/23 (月)	20/01/09 (木)
124	Lifting and setting Aux. OHC Garter	4日	20/01/09 (木)	20/01/13 (月)
125	Lifting and setting Main. OHC Garter	4日	20/01/14 (火)	20/01/17 (金)
126	Installing electrical equipment	20日	20/01/18 (土)	20/02/13 (木)
127	Commissioning	25日	20/02/14 (金)	20/03/13 (金)
128				
129	Condenser	185日	20/03/03 (火)	20/10/02 (金)
130	Center line marking	2日	20/03/09 (月)	20/03/10 (火)
131	Chipping	6日	20/03/11 (水)	20/03/17 (火)
132	Setting packer and base plate	4日	20/03/18 (水)	20/03/21 (土)
133	Setting temporary rail and SARLIFT for installation condenser	28日	20/03/11 (水)	20/04/10 (金)
134	(Load test for SARLIFT)	1日	20/04/03 (金)	20/04/03 (金)
135	Assembling the scafolding around skirt	15日	20/03/20 (金)	20/04/05 (日)



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Construction Schedule of Unit-11

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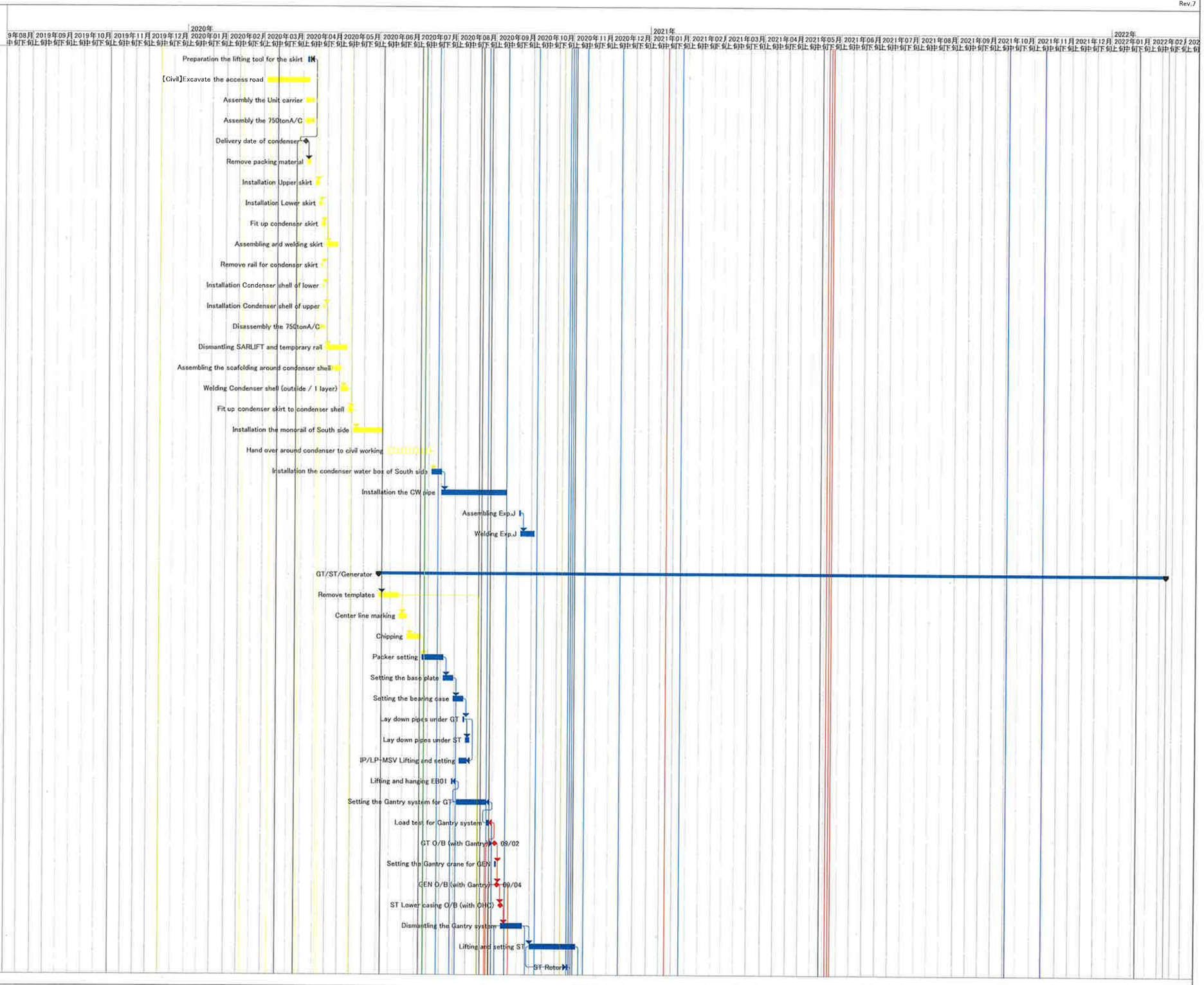
136	Preparation the lifting tool for the skirt	2日	20/04/05 (日)	20/04/06 (月)
137	【Civil】Excavate the access road	30日	20/03/03 (火)	20/04/05 (日)
138	Assembly the Unit carrier	4日	20/04/03 (金)	20/04/06 (月)
139	Assembly the 750tonA/C	4日	20/04/03 (金)	20/04/06 (月)
140	Delivery date of condenser	2日	20/04/01 (水)	20/04/02 (木)
141	Remove packing material	3日	20/04/04 (土)	20/04/06 (月)
142	Installation Upper skirt	2日	20/04/11 (土)	20/04/13 (月)
143	Installation Lower skirt	2日	20/04/14 (火)	20/04/15 (水)
144	Fit up condenser skirt	3日	20/04/16 (木)	20/04/18 (土)
145	Assembling and welding skirt	8日	20/04/20 (月)	20/04/28 (火)
146	Remove rail for condenser skirt	1日	20/04/16 (木)	20/04/16 (木)
147	Installation Condenser shell of lower	1日	20/04/17 (金)	20/04/17 (金)
148	Installation Condenser shell of upper	1日	20/04/18 (土)	20/04/18 (土)
149	Disassembly the 750tonA/C	1日	20/04/18 (土)	20/04/18 (土)
150	Dismantling SARLIFT and temporary rail	15日	20/04/20 (月)	20/05/06 (水)
151	Assembling the scafolding around condenser shell	5日	20/04/27 (月)	20/05/01 (金)
152	Welding Condenser shell (outside / 1 layer)	5日	20/05/02 (土)	20/05/07 (木)
153	Fit up condenser skirt to condenser shell	3日	20/05/08 (金)	20/05/11 (月)
154	Installation the monorail of South side	20日	20/05/12 (火)	20/06/03 (水)
155	Hand over around condenser to civil working	30日	20/06/08 (月)	20/07/11 (土)
156	Installation the condenser water box of South side	7日	20/07/13 (月)	20/07/20 (月)
157	Installation the CW pipe	45日	20/07/21 (火)	20/09/10 (木)
158	Assembling Exp.J	1日	20/09/21 (月)	20/09/21 (月)
159	Welding Exp.J	10日	20/09/22 (火)	20/10/02 (金)
160				
161	GT/ST/Generator	535日	20/06/02 (火)	22/02/15 (火)
162	Remove templates	14日	20/06/02 (火)	20/06/17 (水)
163	Center line marking	5日	20/06/18 (木)	20/06/23 (火)
164	Chipping	10日	20/06/24 (水)	20/07/04 (土)
165	Packer setting	15日	20/07/06 (月)	20/07/22 (水)
166	Setting the base plate	7日	20/07/23 (木)	20/07/30 (木)
167	Setting the bearing case	7日	20/07/31 (金)	20/08/07 (金)
168	Lay down pipes under GT	1日	20/08/08 (土)	20/08/08 (土)
169	Lay down pipes under ST	3日	20/08/10 (月)	20/08/12 (水)
170	IP/LP-MSV Lifting and setting	5日	20/08/05 (水)	20/08/10 (月)
171	Lifting and hanging EB01	1日	20/07/30 (木)	20/07/31 (金)
172	Setting the Gantry system for GT	21日	20/08/03 (月)	20/08/27 (木)
173	Load test for Gantry system	2日	20/08/27 (木)	20/08/29 (土)
174	GT O/B (with Gantry)	2日	20/09/01 (火)	20/09/02 (水)
175	Setting the Gantry crane for GEN	1日	20/09/03 (木)	20/09/03 (木)
176	GEN O/B (with Gantry)	2日	20/09/03 (木)	20/09/04 (金)
177	ST Lower casing O/B (with OHC)	2日	20/09/05 (土)	20/09/07 (月)
178	Dismantling the Gantry system	15日	20/09/08 (火)	20/09/24 (木)
179	Lifting and setting ST	31日	20/10/01 (木)	20/11/05 (木)
180	ST Rotor	1日	20/10/30 (金)	20/10/30 (金)



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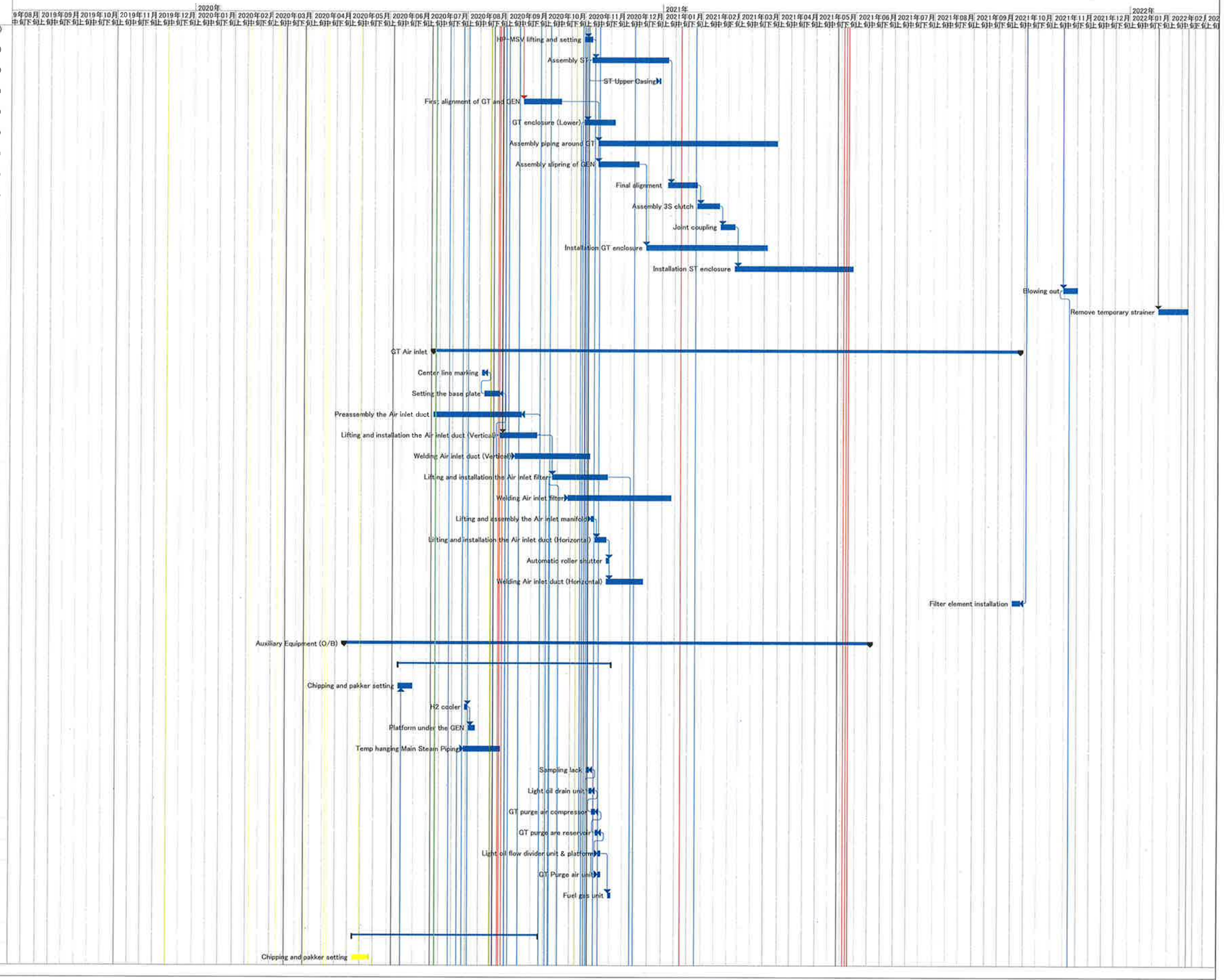
181	HP-MSV lifting and setting	5日	20/10/31 (土)	20/11/05 (木)
182	Assembly ST	51日	20/11/06 (金)	21/01/04 (月)
183	ST Upper Casing	1日	20/12/29 (火)	20/12/29 (火)
184	First alignment of GT and GEN	25日	20/09/14 (月)	20/10/12 (月)
185	GT enclosure (Lower)	20日	20/10/31 (土)	20/11/23 (月)
186	Assembly piping around GT	120日	20/11/11 (水)	21/03/30 (火)
187	Assembly slipring of GEN	28日	20/11/11 (水)	20/12/12 (土)
188	Final alignment	20日	21/01/05 (火)	21/01/27 (水)
189	Assembly 3S clutch	15日	21/01/28 (木)	21/02/13 (土)
190	Joint coupling	10日	21/02/15 (月)	21/02/25 (木)
191	Installation GT enclosure	80日	20/12/19 (土)	21/03/22 (月)
192	Installation ST enclosure	80日	21/02/26 (金)	21/05/29 (土)
193	Blowing out	10日	21/11/10 (水)	21/11/20 (土)
194	Remove temporary strainer	20日	22/01/24 (月)	22/02/15 (火)
195				
196	GT Air inlet	394日	20/07/06 (月)	21/10/08 (金)
197	Center line marking	2日	20/08/13 (木)	20/08/15 (土)
198	Setting the base plate	10日	20/08/15 (土)	20/08/27 (木)
199	Preassembly the Air inlet duct	60日	20/07/06 (月)	20/09/12 (土)
200	Lifting and installation the Air inlet duct (Vertical)	25日	20/08/27 (木)	20/09/24 (木)
201	Welding Air inlet duct (Vertical)	50日	20/09/08 (火)	20/11/04 (水)
202	Lifting and installation the Air inlet filter	37日	20/10/07 (水)	20/11/18 (水)
203	Welding Air inlet filter	70日	20/10/19 (月)	21/01/07 (木)
204	Lifting and assembly the Air inlet manifold	2日	20/11/06 (金)	20/11/07 (土)
205	Lifting and installation the Air inlet duct (Horizontal)	8日	20/11/09 (月)	20/11/17 (火)
206	Automatic roller shutter	2日	20/11/18 (水)	20/11/19 (木)
207	Welding Air inlet duct (Horizontal)	25日	20/11/18 (水)	20/12/16 (水)
208	Filter element installation	5日	21/10/02 (土)	21/10/08 (金)
209				
210	Auxiliary Equipment (O/B)	353日?	20/04/28 (火)	21/06/12 (土)
211	1&3 around Power Train & North west of MSB	143日?	20/06/09 (火)	20/11/21 (土)
212	Chipping and pakker setting	10日	20/06/09 (火)	20/06/19 (金)
213	H2 cooler	2日	20/07/31 (金)	20/08/01 (土)
214	Platform under the GEN	5日	20/08/03 (月)	20/08/07 (金)
215	Temp hanging Main Steam Piping	25日	20/07/30 (木)	20/08/27 (木)
216	Sampling lack	2日	20/11/03 (火)	20/11/05 (木)
217	Light oil drain unit	2日	20/11/05 (木)	20/11/07 (土)
218	GT purge air compressor	2日	20/11/07 (土)	20/11/10 (火)
219	GT purge are reservoir	2日	20/11/10 (火)	20/11/12 (木)
220	Light oil flow divider unit & platform	2日	20/11/12 (木)	20/11/13 (金)
221	GT Purge air unit	2日	20/11/12 (木)	20/11/13 (金)
222	Fuel gas unit	2日	20/11/20 (金)	20/11/21 (土)
223				
224	2 MSB Inside North-West	125日?	20/05/05 (火)	20/09/26 (土)
225	Chipping and pakker setting	10日	20/05/05 (火)	20/05/16 (土)



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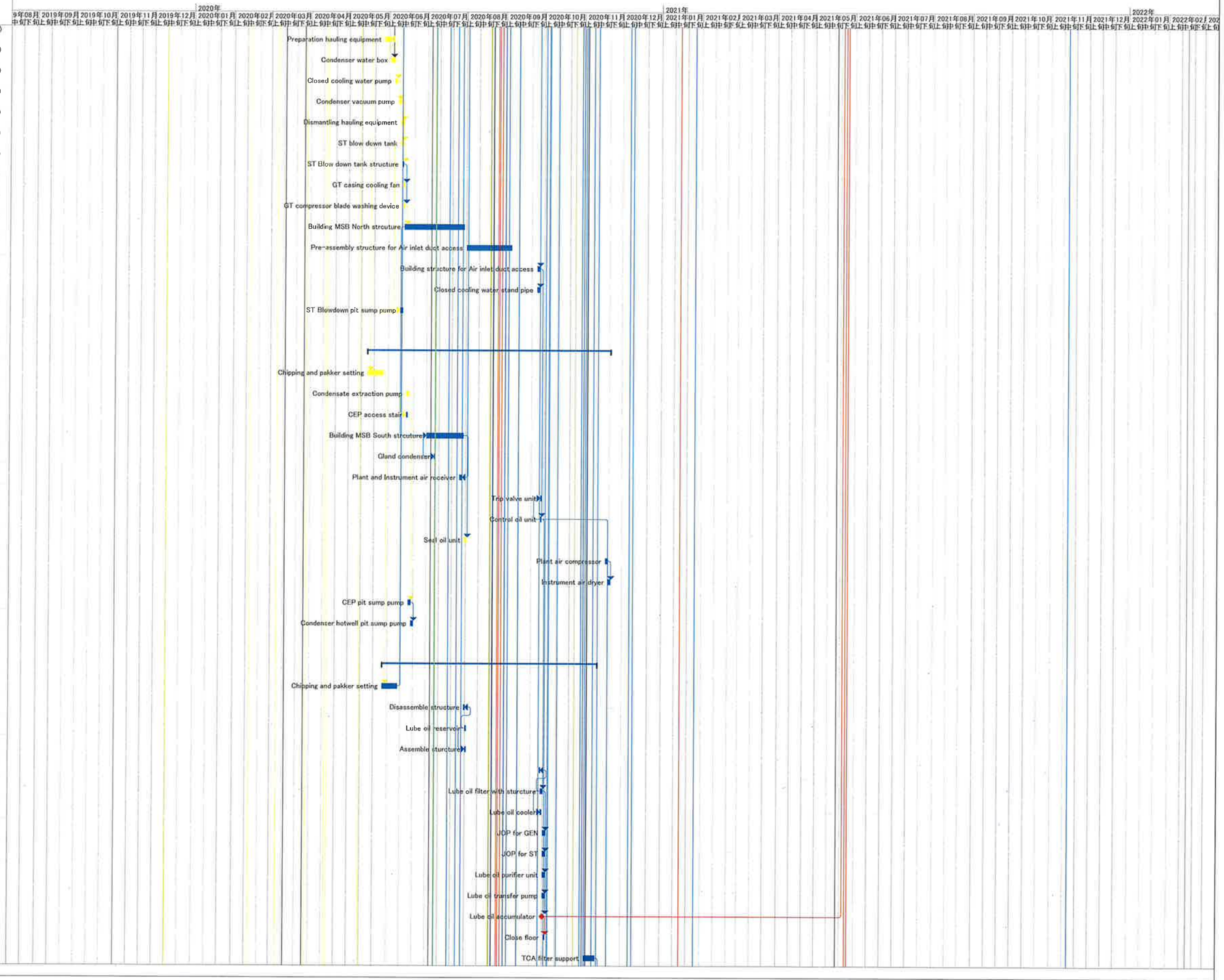
ID	タスク名	期間	開始日	終了日
226	Preparation hauling equipment	4日	20/05/28 (木)	20/06/02 (火)
227	Condenser water box	3日	20/06/02 (火)	20/06/04 (木)
228	Closed cooling water pump	2日	20/06/05 (金)	20/06/06 (土)
229	Condenser vacuum pump	2日	20/06/08 (月)	20/06/09 (火)
230	Dismantling hauling equipment	2日	20/06/10 (水)	20/06/11 (木)
231	ST blow down tank	1日	20/06/10 (水)	20/06/10 (水)
232	ST Blow down tank structure	1日	20/06/11 (木)	20/06/11 (木)
233	GT casing cooling fan	1日	20/06/12 (金)	20/06/12 (金)
234	GT compressor blade washing device	1日	20/06/12 (金)	20/06/12 (金)
235	Building MSB North strcuture	40日	20/06/13 (土)	20/07/29 (水)
236	Pre-assembly structure for Air inlet duct access	30日	20/08/01 (土)	20/09/04 (金)
237	Building structure for Air inlet duct access	2日	20/09/25 (金)	20/09/26 (土)
238	Closed cooling water stand pipe	2日	20/09/25 (金)	20/09/26 (土)
239	ST Blowdown pit sump pump	2日	20/06/10 (水)	20/06/11 (木)
240				
241	6 MSB Inside South-West	163日?	20/05/16 (土)	20/11/21 (土)
242	Chipping and pakker setting	10日	20/05/16 (土)	20/05/27 (水)
243	Condensate extraction pump	2日	20/06/15 (月)	20/06/16 (火)
244	CEP access stair	1日	20/06/15 (月)	20/06/15 (月)
245	Building MSB South strcuture	25日	20/07/01 (水)	20/07/29 (水)
246	Gland condenser	1日	20/07/07 (火)	20/07/07 (火)
247	Plant and Instrument air receiver	2日	20/07/27 (月)	20/07/28 (火)
248	Trip valve unit	1日	20/09/28 (月)	20/09/28 (月)
249	Control oil unit	1日	20/09/28 (月)	20/09/28 (月)
250	Seal oil unit	2日	20/07/31 (金)	20/08/01 (土)
251	Plant air compressor	2日	20/11/18 (水)	20/11/19 (木)
252	Instrument air dryer	2日	20/11/20 (金)	20/11/21 (土)
253	CEP pit sump pump	2日	20/06/17 (水)	20/06/18 (木)
254	Condenser hotwell pit sump pump	2日	20/06/19 (金)	20/06/20 (土)
255				
256	7 Lube oil room	144日?	20/05/28 (木)	20/11/11 (水)
257	Chipping and pakker setting	10日	20/05/28 (木)	20/06/08 (月)
258	Disassemble structure	1日	20/07/31 (金)	20/08/01 (土)
259	Lube oil reservoir	1日	20/08/01 (土)	20/08/01 (土)
260	Assemble sturcture	1日	20/08/01 (土)	20/08/01 (土)
261	Open floor	1日	20/09/28 (月)	20/09/28 (月)
262	Lube oil filter with sturcture	2日	20/09/29 (火)	20/09/30 (水)
263	Lube oil cooler	1日	20/09/29 (火)	20/09/29 (火)
264	JOP for GEN	2日	20/10/01 (木)	20/10/02 (金)
265	JOP for ST	2日	20/10/01 (木)	20/10/02 (金)
266	Lube oil purifier unit	2日	20/10/01 (木)	20/10/02 (金)
267	Lube oil transfer pump	2日	20/10/01 (木)	20/10/02 (金)
268	Lube oil accumulator	1日	20/10/01 (木)	20/10/01 (木)
269	Close floor	1日	20/10/02 (金)	20/10/02 (金)
270	TCA filter support	8日	20/11/02 (月)	20/11/10 (火)



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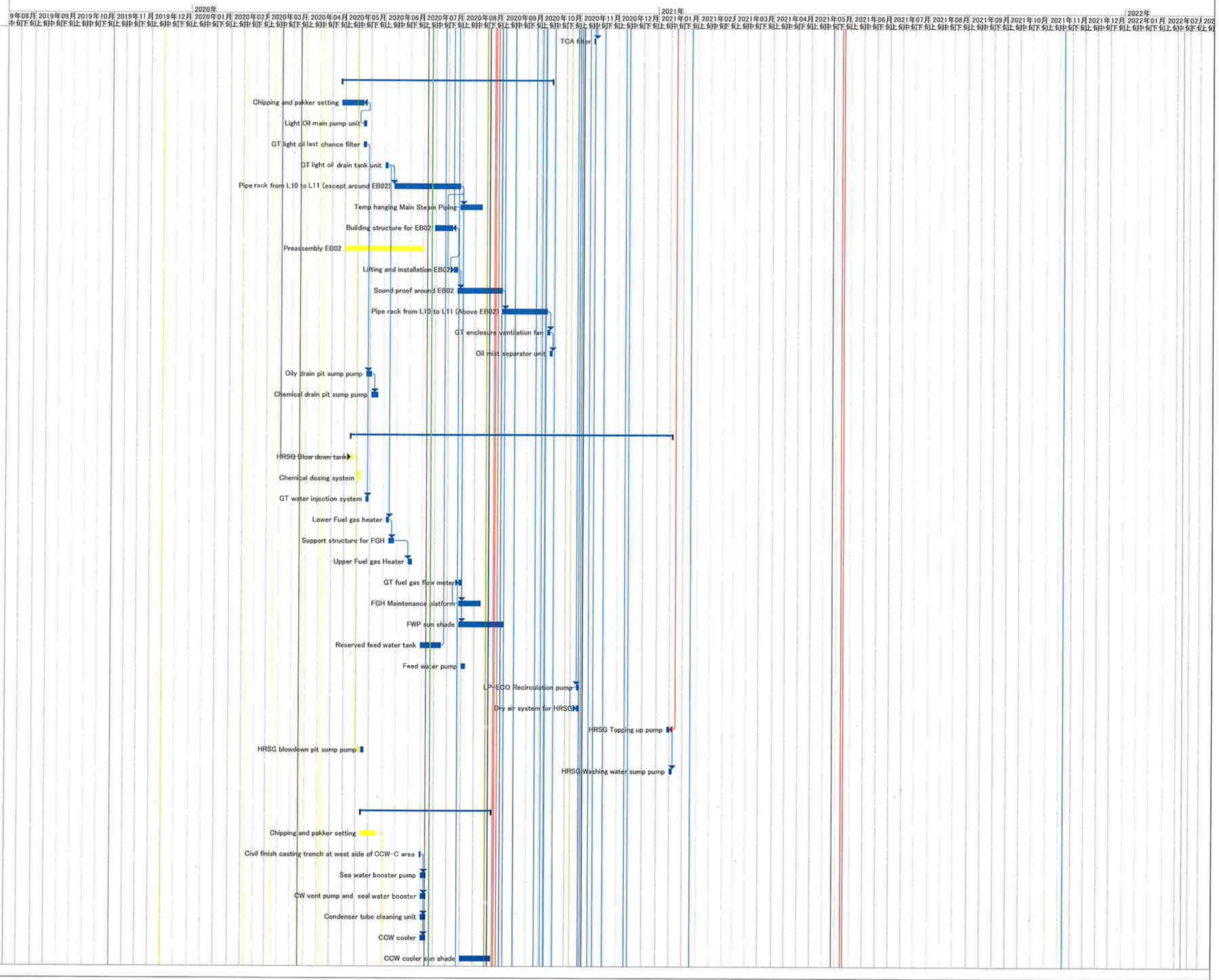
271	TCA filter	1日	20/11/11 (水)	20/11/11 (水)
272				
273	9 East of MSB	142日?	20/04/28 (火)	20/10/09 (金)
274	Chipping and pakker setting	15日	20/04/28 (火)	20/05/15 (金)
275	Light Oil main pump unit	2日	20/05/15 (金)	20/05/16 (土)
276	GT light oil last chance filter	2日	20/05/15 (金)	20/05/16 (土)
277	GT light oil drain tank unit	2日	20/06/01 (月)	20/06/02 (火)
278	Pipe rack from L10 to L11 (except around EB02)	45日	20/06/08 (月)	20/07/29 (水)
279	Temp hanging Main Steam Piping	15日	20/07/30 (木)	20/08/15 (土)
280	Building structure for EB02	12日	20/07/10 (金)	20/07/24 (金)
281	Preassembly EB02	52日	20/05/01 (金)	20/06/30 (火)
282	Lifting and installation EB02	2日	20/07/25 (土)	20/07/27 (月)
283	Sound proof around EB02	30日	20/07/28 (火)	20/08/31 (月)
284	Pipe rack from L10 to L11 (Above EB02)	30日	20/09/01 (火)	20/10/05 (月)
285	GT enclosure ventilation fan	2日	20/10/06 (火)	20/10/07 (水)
286	Oil mist separator unit	2日	20/10/08 (木)	20/10/09 (金)
287	Oily drain pit sump pump	4日	20/05/18 (月)	20/05/21 (木)
288	Chemical drain pit sump pump	4日	20/05/22 (金)	20/05/26 (火)
289				
290	10 North of HRSG	216日?	20/05/06 (水)	21/01/12 (火)
291	HRSG Blow down tank	2日	20/05/06 (水)	20/05/07 (木)
292	Chemical dosing system	2日	20/05/12 (火)	20/05/13 (水)
293	GT water injection system	2日	20/05/18 (月)	20/05/19 (火)
294	Lower Fuel gas heater	2日	20/06/03 (水)	20/06/04 (木)
295	Support structure for FGH	3日	20/06/05 (金)	20/06/08 (月)
296	Upper Fuel gas Heater	2日	20/06/20 (土)	20/06/22 (月)
297	GT fuel gas flow meter	2日	20/07/30 (木)	20/07/31 (金)
298	FGH Maintenance platform	15日	20/07/30 (木)	20/08/15 (土)
299	FWP sun shade	30日	20/07/30 (木)	20/09/02 (水)
300	Reserved feed water tank	14日	20/06/30 (火)	20/07/15 (水)
301	Feed water pump	2日	20/08/01 (土)	20/08/03 (月)
302	LP-ECO Recirculation pump	2日	20/10/30 (金)	20/10/31 (土)
303	Dry air system for HRSG	2日	20/10/30 (金)	20/10/31 (土)
304	HRSG Topping up pump	1日	21/01/09 (土)	21/01/11 (月)
305	HRSG blowdown pit sump pump	2日	20/05/15 (金)	20/05/16 (土)
306	HRSG Washing water sump pump	2日	21/01/11 (月)	21/01/12 (火)
307				
308	12 CCW cooler area	87日	20/05/15 (金)	20/08/24 (月)
309	Chipping and pakker setting	10日	20/05/15 (金)	20/05/26 (火)
310	Civil finish casting trench at west side of CCW-C area	1日	20/06/30 (火)	20/06/30 (火)
311	Sea water booster pump	4日	20/07/01 (水)	20/07/04 (土)
312	CW vent pump and seal water booster	4日	20/07/01 (水)	20/07/04 (土)
313	Condenser tube cleaning unit	4日	20/07/01 (水)	20/07/04 (土)
314	CCW cooler	4日	20/07/01 (水)	20/07/04 (土)
315	CCW cooler sun shade	20日	20/08/01 (土)	20/08/24 (月)



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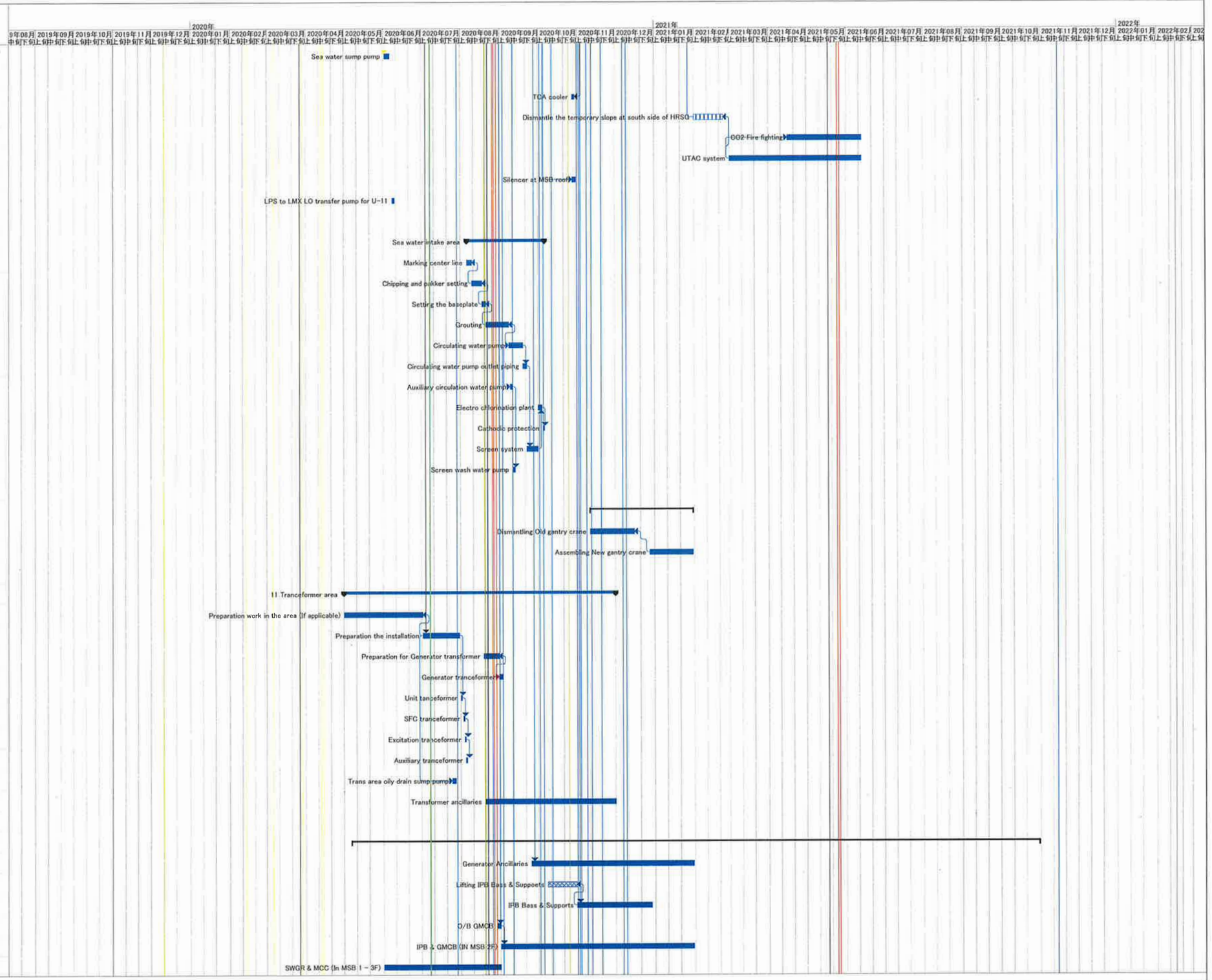
316	Sea water sump pump	4日	20/06/02 (火)	20/06/05 (金)
317				
318	TCA cooler	2日	20/10/28 (水)	20/10/30 (金)
319	Dismantle the temporary slope at south side of HRSG	20日	21/02/01 (月)	21/02/24 (水)
320	CO2 Fire fighting	50日	21/04/16 (金)	21/06/12 (土)
321	UTAC system	90日	21/03/01 (月)	21/06/12 (土)
322	Silencer at MSB roof	3日	20/10/28 (水)	20/10/30 (金)
323	LPS to LMX LO transfer pump for U-11	2日	20/06/08 (月)	20/06/09 (火)
324				
325	Sea water intake area	52日	20/08/06 (木)	20/10/05 (月)
326	Marking center line	3日	20/08/06 (木)	20/08/10 (月)
327	Chipping and pakker setting	7日	20/08/10 (月)	20/08/18 (火)
328	Setting the baseplate	3日	20/08/18 (火)	20/08/21 (金)
329	Grouting	15日	20/08/21 (金)	20/09/08 (火)
330	Circulating water pump	10日	20/09/08 (火)	20/09/18 (金)
331	Circulating water pump outlet piping	2日	20/09/19 (土)	20/09/21 (月)
332	Auxiliary circulation water pump	2日	20/09/09 (水)	20/09/10 (木)
333	Electro chlorination plant	3日	20/10/01 (木)	20/10/03 (土)
334	Cathodic protection	1日	20/10/05 (月)	20/10/05 (月)
335	Screen system	8日	20/09/22 (火)	20/09/30 (水)
336	Screen wash water pump	2日	20/09/11 (金)	20/09/12 (土)
337				
338	Replacement of Gantry crane for CW pump	70日	20/11/11 (水)	21/01/30 (土)
339	Dismantling Old gantry crane	30日	20/11/11 (水)	20/12/16 (水)
340	Assembling New gantry crane	30日	20/12/28 (月)	21/01/30 (土)
341				
342	11 Tranceformer area	183日	20/05/01 (金)	20/11/30 (月)
343	Preparation work in the area (If applicable)	53日	20/05/01 (金)	20/07/02 (木)
344	Preparation the installation	25日	20/07/02 (木)	20/07/30 (木)
345	Preparation for Generator transformer	10日	20/08/19 (水)	20/08/31 (月)
346	Generator tranceformer	3日	20/08/31 (月)	20/09/02 (水)
347	Unit tanceformer	1日	20/08/01 (土)	20/08/01 (土)
348	SFC tranceformer	1日	20/08/03 (月)	20/08/03 (月)
349	Excitation tranceformer	1日	20/08/04 (火)	20/08/04 (火)
350	Auxiliary tranceformer	1日	20/08/05 (水)	20/08/05 (水)
351	Trans area oily drain sump pump	2日	20/07/25 (土)	20/07/27 (月)
352	Transformer ancillaries	88日	20/08/20 (木)	20/11/30 (月)
353				
354	Electrical work	465日?	20/05/07 (木)	21/10/30 (土)
355	Generator Ancillaries	110日	20/09/25 (金)	21/01/30 (土)
356	Lifting IPB Bass & Suppoets	20日	20/10/08 (木)	20/10/31 (土)
357	IPB Bass & Supports	50日	20/10/31 (土)	20/12/28 (月)
358	O/B GMCB	2日	20/08/29 (土)	20/08/31 (月)
359	IPB & GMCB (IN MSB 2F)	131日	20/09/01 (火)	21/01/30 (土)
360	SWGR & MCC (In MSB 1 – 3F)	79日	20/06/01 (月)	20/08/31 (月)



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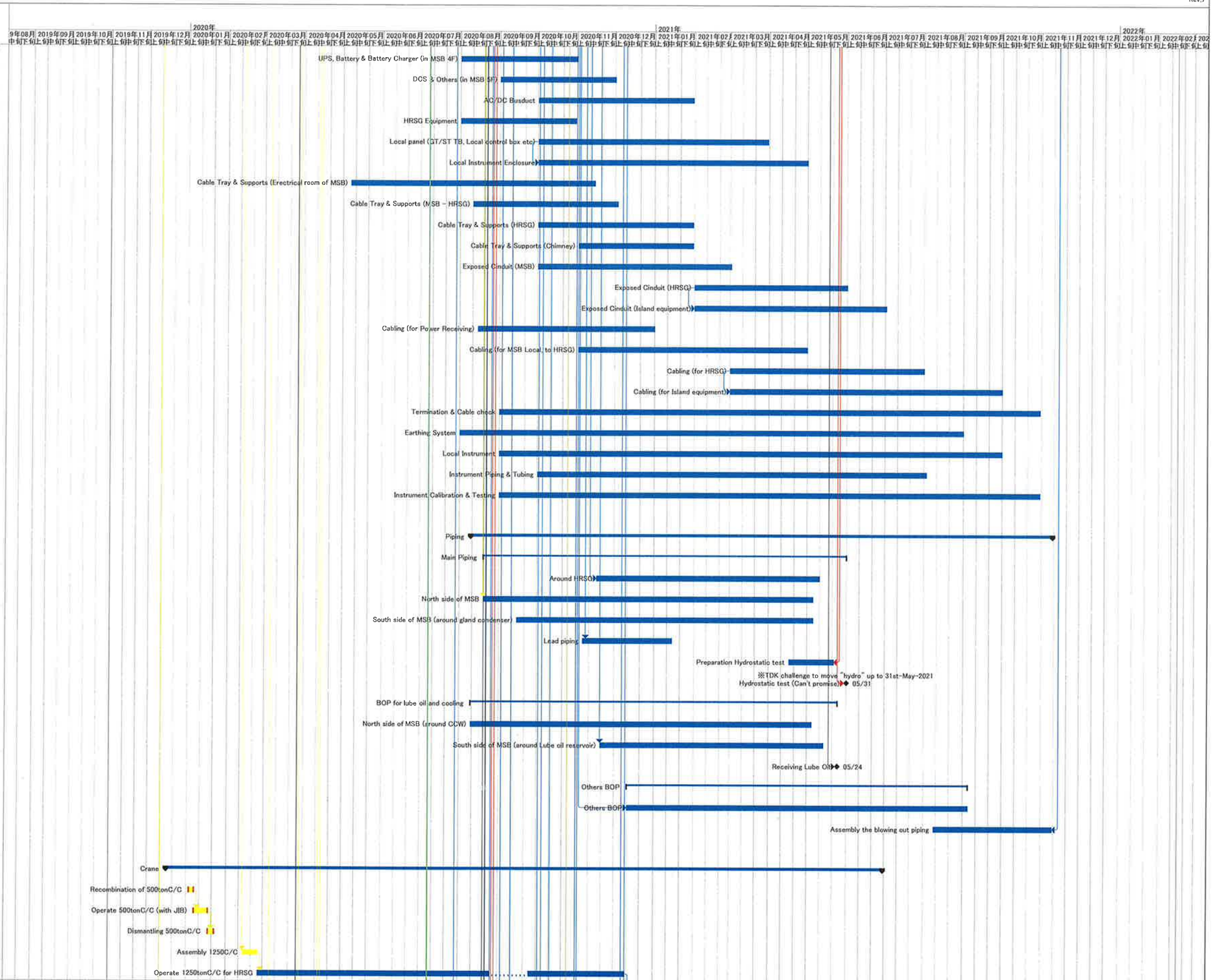
361	UPS, Battery & Battery Charger (in MSB 4F)	79日	20/08/01 (土)	20/10/31 (土)
362	DCS & Others (in MSB 5F)	78日	20/09/01 (火)	20/11/30 (月)
363	AC/DC Busduct	105日	20/10/01 (木)	21/01/30 (土)
364	HRSG Equipment	78日	20/08/01 (土)	20/10/30 (金)
365	Local panel (GT/ST TB, Local control box etc)	155日	20/10/01 (木)	21/03/30 (火)
366	Local Instrument Enclosure	182日	20/10/01 (木)	21/04/30 (金)
367	Cable Tray & Supports (Erectrical room of MSB)	165日	20/05/07 (木)	20/11/14 (土)
368	Cable Tray & Supports (MSB – HRSG)	98日	20/08/11 (火)	20/12/02 (水)
369	Cable Tray & Supports (HRSG)	105日	20/10/01 (木)	21/01/30 (土)
370	Cable Tray & Supports (Chimney)	78日	20/11/02 (月)	21/01/30 (土)
371	Exposed Cinduit (MSB)	130日	20/10/01 (木)	21/03/01 (月)
372	Exposed Cinduit (HRSG)	103日	21/02/01 (月)	21/05/31 (月)
373	Exposed Cinduit (Island equipment)	130日	21/02/01 (月)	21/07/01 (木)
374	Cabling (for Power Receiving)	119日	20/08/15 (土)	20/12/31 (木)
375	Cabling (for MSB Local, to HRSG)	155日	20/11/02 (月)	21/04/30 (金)
376	Cabling (for HRSG)	132日	21/03/01 (月)	21/07/31 (土)
377	Cabling (for Island equipment)	184日	21/03/01 (月)	21/09/30 (木)
378	Termination & Cable check	365日	20/09/01 (火)	21/10/30 (土)
379	Earthing System	339日	20/08/01 (土)	21/08/31 (火)
380	Local Instrument	339日	20/09/01 (火)	21/09/30 (木)
381	Instrument Piping & Tubing	262日	20/10/01 (木)	21/08/02 (月)
382	Instrument Calibration & Testing	365日	20/09/01 (火)	21/10/30 (土)
383				
384	Piping	392日	20/08/10 (月)	21/11/10 (水)
385	Main Piping	244日	20/08/20 (木)	21/05/31 (月)
386	Around HRSG	150日	20/11/17 (火)	21/05/10 (月)
387	North side of MSB	222日	20/08/20 (木)	21/05/05 (水)
388	South side of MSB (around gland condenser)	200日	20/09/15 (火)	21/05/05 (水)
389	Lead piping	60日	20/11/06 (金)	21/01/14 (木)
390	Preparation Hydrostatic test	30日	21/04/17 (土)	21/05/22 (土)
391	Hydrostatic test (Can't promise)	1日	21/05/31 (月)	21/05/31 (月)
392	BOP for lube oil and cooling	247日	20/08/10 (月)	21/05/24 (月)
393	North side of MSB (around CCW)	230日	20/08/10 (月)	21/05/04 (火)
394	South side of MSB (around Lube oil reservoir)	150日	20/11/20 (金)	21/05/13 (木)
395	Receiving Lube Oil	1日	21/05/24 (月)	21/05/24 (月)
396	Others BOP	230日	20/12/11 (金)	21/09/04 (土)
397	Others BOP	230日	20/12/11 (金)	21/09/04 (土)
398	Assembly the blowing out piping	80日	21/08/09 (月)	21/11/10 (水)
399				
400	Crane	480日	19/12/16 (月)	21/06/29 (火)
401	Recombination of 500tonC/C	3日	20/01/03 (金)	20/01/06 (月)
402	Operate 500tonC/C (with JIB)	10日	20/01/07 (火)	20/01/17 (金)
403	Dismantling 500tonC/C	4日	20/01/18 (土)	20/01/22 (水)
404	Assembly 1250C/C	10日	20/02/14 (金)	20/02/25 (火)
405	Operate 1250tonC/C for HRSG	222日	20/02/26 (水)	20/12/09 (水)



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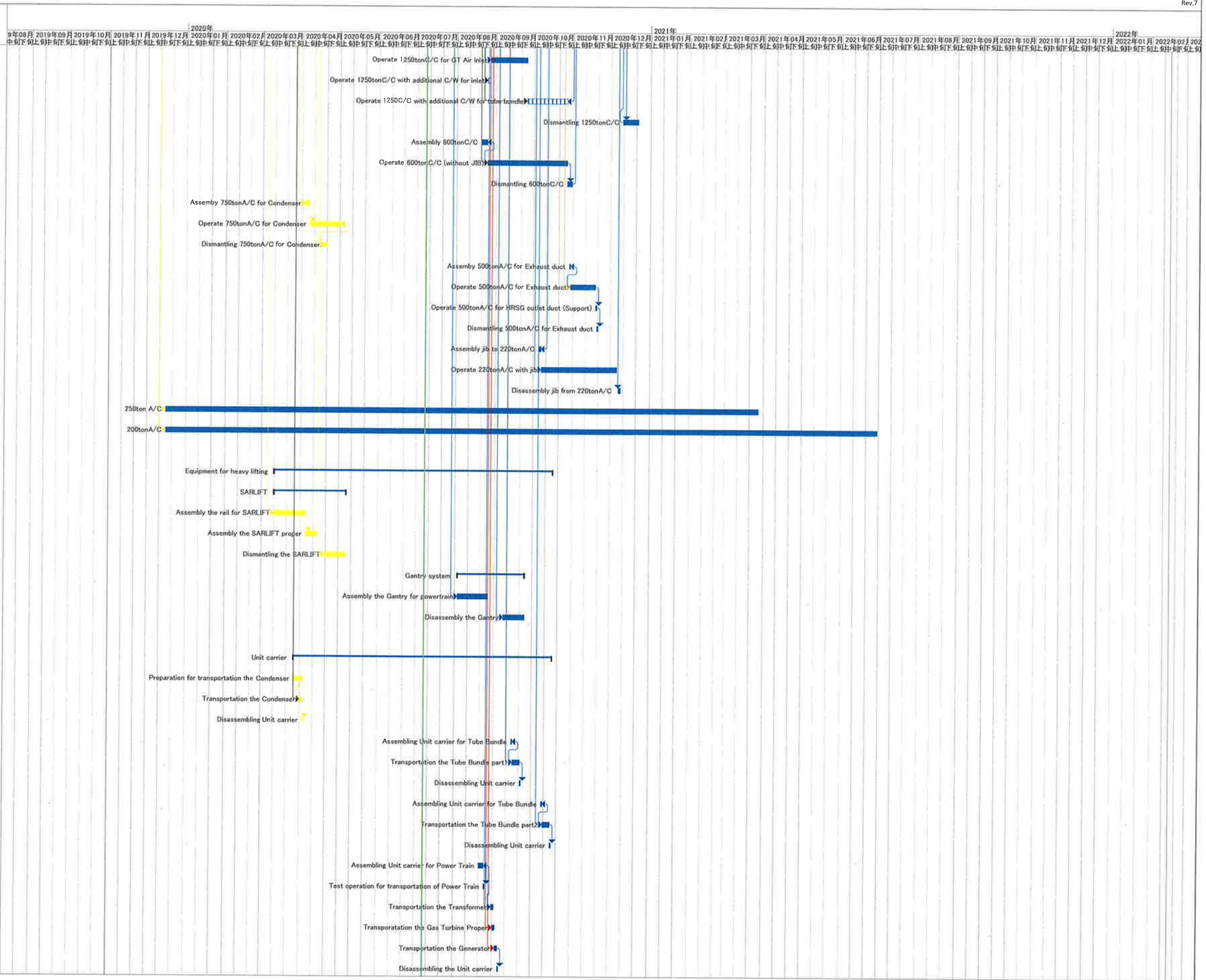
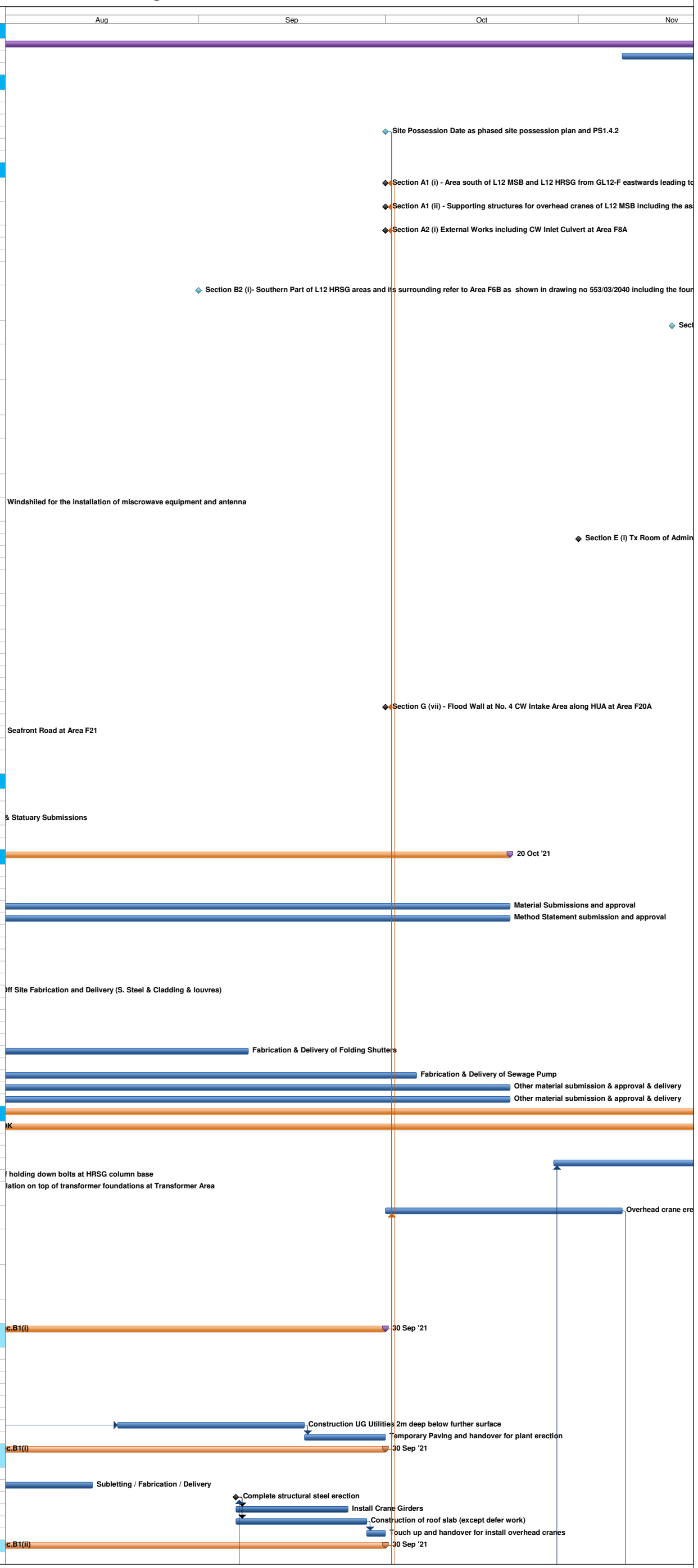
ID	タスク名	期間	開始日	終了日
406	Operate 1250tonC/C for GT Air inlet	25日	20/08/27 (木)	20/09/24 (木)
407	Operate 1250tonC/C with additional C/W for inlet	2日	20/08/25 (火)	20/08/26 (水)
408	Operate 1250C/C with additional C/W for tube bundle	27日	20/09/25 (金)	20/10/26 (月)
409	Dismantling 1250tonC/C	10日	20/12/10 (木)	20/12/21 (月)
410	Assembly 600tonC/C	4日	20/08/20 (木)	20/08/25 (火)
411	Operate 600tonC/C (without JIB)	54日	20/08/25 (火)	20/10/26 (月)
412	Dismantling 600tonC/C	4日	20/10/27 (火)	20/10/30 (金)
413	Assemby 750tonA/C for Condenser	4日	20/04/03 (金)	20/04/06 (月)
414	Operate 750tonA/C for Condenser	22日	20/04/07 (火)	20/05/01 (金)
415	Dismantling 750tonA/C for Condenser	2日	20/04/18 (土)	20/04/20 (月)
416	Assemby 500tonA/C for Exhaust duct	1日	20/10/29 (木)	20/10/30 (金)
417	Operate 500tonA/C for Exhaust duct	17日	20/10/30 (金)	20/11/18 (水)
418	Operate 500tonA/C for HRSG outlet duct (Support)	1日	20/11/19 (木)	20/11/19 (木)
419	Dismantling 500tonA/C for Exhaust duct	1日	20/11/20 (金)	20/11/20 (金)
420	Assembly jib to 220tonA/C	2日	20/10/05 (月)	20/10/07 (水)
421	Operate 220tonA/C with jib	52日	20/10/07 (水)	20/12/05 (土)
422	Disassembly jib from 220tonA/C	2日	20/12/07 (月)	20/12/08 (火)
423	250ton A/C	400日	19/12/16 (月)	21/03/27 (土)
424	200tonA/C	480日	19/12/16 (月)	21/06/29 (火)
425				
426	Equipment for heavy lifting	190日	20/03/11 (水)	20/10/16 (金)
427	SARLIFT	50日	20/03/11 (水)	20/05/06 (水)
428	Assembly the rail for SARLIFT	22日	20/03/11 (水)	20/04/04 (土)
429	Assembly the SARLIFT proper	8日	20/04/05 (日)	20/04/13 (月)
430	Dismantling the SARLIFT	15日	20/04/20 (月)	20/05/06 (水)
431	Gantry system	46日	20/08/03 (月)	20/09/24 (木)
432	Assembly the Gantry for powertrain	21日	20/08/03 (月)	20/08/26 (水)
433	Disassembly the Gantry	15日	20/09/08 (火)	20/09/24 (木)
434				
435	Unit carrier	176日	20/03/27 (金)	20/10/16 (金)
436	Preparation for transportation the Condenser	4日	20/03/27 (金)	20/04/01 (水)
437	Transportation the Condenser	2日	20/04/01 (水)	20/04/02 (木)
438	Disassembling Unit carrier	1日	20/04/03 (金)	20/04/03 (金)
439	Assembling Unit carrier for Tube Bundle	1日	20/09/15 (火)	20/09/16 (水)
440	Transportation the Tube Bundle part1	5日	20/09/16 (水)	20/09/21 (月)
441	Disassembling Unit carrier	1日	20/09/22 (火)	20/09/22 (火)
442	Assembling Unit carrier for Tube Bundle	1日	20/10/09 (金)	20/10/10 (土)
443	Transportation the Tube Bundle part2	5日	20/10/10 (土)	20/10/15 (木)
444	Disassembling Unit carrier	1日	20/10/16 (金)	20/10/16 (金)
445	Assembling Unit carrier for Power Train	3日	20/08/21 (金)	20/08/25 (火)
446	Test operation for transportation of Power Train	1日	20/08/25 (火)	20/08/25 (火)
447	Transportation the Transformer	2日	20/08/31 (月)	20/09/01 (火)
448	Transporatation the Gas Turbine Proper	2日	20/09/01 (火)	20/09/02 (水)
449	Transportation the Generator	2日	20/09/03 (木)	20/09/04 (金)
450	Disassembling the Unit carrier	1日	20/09/05 (土)	20/09/05 (土)



1. Change the starting date of installation below
   - Installation HRSG was re-started from 23rd-Jun
   - Installation Exhaust duct was re-started from15st-May
2. To consider that structure of Takasago portion is delayed
4. To consider the delay of H/O date from PDC
5. Add the schedule of the electric work and the replacement the gantry crane for CWP

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

ID	Task Name	Duration
1	**KEY DATES & MILESTONES**	**1123 days**
2	Contract Period	1123 days
3	Deferred Work Completion Key Dates	784 days
4	Substantial Completion of the Whole Contract Works (1123 Days)	0 days
5	**SITE POSSESSION DATES**	**513 days**
6	Site Possession Date as phased site possesion plan and PS1.4.2	0 days
7	Site Possession Date as phased site possesion plan and PS1.4.2	0 days
8	Site Possession Date as phased site possession plan and PS1.4.2	0 days
9	Site Possession Date as phased site possession plan and PS1.4.2	0 days
10	Site Possession Date as phased site possesion plan and PS1.4.2	0 days
11	Site Possession Date as phased site possesion plan and PS1.4.2	0 days
12	**COMPLETION DATES as per PS1.4.2 Time for Completion**	**609 days**
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
14	Section A1 (ii) - Supporting structures for overhead cranes of L12 MSB including the associated roof structure except the roof deferred works	0 days
15	Section A2 (i) External Works including CW Inlet Culvert at Area F8A	0 days
16	Section A2 (ii) External Works including CW Intet Culvert at Area F8B	0 days
17	Section A2 (iii) External Works including CW Inlet Culvert at Area F8C	0 days
18	Section B1 - Area south of L12 MSB from GL12-F westwards leading to Station Road at Area F3	0 days
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
20	Section B2 (ii) - Remaining northern part of Ll2 HRSG area and its surrounding at Area F6A and F6C	0 days
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
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
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
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
25	Section C - (iii) Link Bridge between L11 and L12 MSB including their associated A&A at L11 MSB	0 days
26	Section D - (i) Microwave Antenna Room and Chimney Windshiled for the installation of miscrowave equipment and antenna	0 days
27	Section D (ii) - No. 5 Chimney with L12 Steel Flue liner	0 days
28	Section E (i) Tx Room of Adminintration and Control Building	0 days
29	Section E (ii) - G/F,1/F, 2/F & Hoisting Well of Admin. & Control Building	0 days
30	Section E (iii) - Whole of Admin. And Control Building	0 days
31	Section F (i) - Gas Receiving Station and L12 Gas Receiving Station Equipment Room (GRS) Area Extension at Area F14	0 days
32	Setion F (ii) - Pipe and Cable rack and external work at Area F9A and F9B	0 days
33	Section F (iii) - No. 5 CW Equipment Room, pipe and cable rack, external works at Area F10	0 days
34	Section G (i) - External Work surrounding Area F11	0 days
35	Section G (ii) - External Works at Area F12 & F13	0 days
36	Section G (iii) - FS Modification works along South Seafront Road at Area F15	0 days
37	Section G (iv) - 275kV cable trenches and External Works at Area F16	0 days
38	Section G (v) - Shunt Reactor Compound and External Works at Area F17	0 days
39	Section G (vi) - 275kV cable trenches and External Works at Area F18	0 days
40	Section G (vii) - Flood Wall at No. 4 CW Intake Area along HUA at Area F20A	0 days
41	Seciton G (viii) - Flood wall at No. 5 CW Intake Area along HUA at Area F20B	0 days
42	Seciton G (ix) - Bund wall modification works at South Seafront Road at Area F21	0 days
43	Section G (x) - DAX Cable Diversion Works (from Part I to Part IV)	0 days
44	Section H - All remaining works shall be completed for reporting completion to BD and ready for OP inspection	0 days
45	**GENERAL & PRELIMINARY**	**228 days**
46	First Mobilization	18 days
47	Set up Temporary Site Office and Welfare Factiliites	90 days
48	Permit Applications & Statuary Submissions	120 days
49	Existing Utilities scanning & Excavation Permit	45 days
50	Tower Crane erections	60 days
51	**TECHNICAL SUBMISSION AND APPROVAL**	**314 days**
52	BD Approval & Consent (If required)	0 days
53	Submission and Approval of Master Programme	14 days
54	Work Execuation Overal Plan submission & approval	14 days
55	Material Submissions and approval	300 days
56	Method Statement submission and approval	300 days
57	BIM Model, CSD & CBWD Submission & approval	120 days
58	Structure Steelwork Connection Design Submission & BD approval	45 days
59	Structure Steelwork Shop Drawing & Approval	30 days
60	Metal Cladding, louvre & windows submission & BD approval	45 days
61	Metal Cladding, louvre & windows shop drawing submission	45 days
62	Order, Off Site Fabrication and Delivery (S. Steel & Cladding & louvres)	120 days
63	ELS Submission and BD approval	90 days
64	No. 5 Chimney windshield temporary work submission, approval & fabrication	60 days
65	Steel Flue Assessment Report and Design Drawings submission & approval	60 days
66	Folding Shutters Shop Drawing Submission & Approval	30 days
67	Fabrication & Delivery of Folding Shutters	180 days
68	Sewage Pump System Design submission & approval	45 days
69	Fabrication & Delivery of Sewage Pump	180 days
70	Other material submission & approval & delivery	180 days
71	Other material submission & approval & delivery	180 days
72	**CONSTRUCTION**	**1123 days**
73	**Coordination with the Employer's Specialist Contractors**	**421 days**
74	Installation of Puddle Pipes at C.W. outlet Culvert	7 days
75	Installation of Puddle Pipes at C.W. Inlet Culvert	7 days
76	Template setting at L12 Turbo Block Foundation	45 days
77	Template setting of holding down bolts at HRSG column base	45 days
78	I-beam / channel base installation on top of transformer foundations at Transformer Area	45 days
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
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
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
82	Installation of embedded materials such as holding down bolts for equipment foundations - Commencement	0 days
83	**Section A1 (i) - Area south of L12 MSB and L12 HRSG from GL12-F eastwards leading to Chimney Road at Area F1 & F2**	**301 days**
84	Area Possession & Clearance	30 days
85	Subletting / Fabrication / Delivery (both for Area F1 and Area F2)	60 days
86	Excavation for CW Inlet Culvert (Type D Construction Area)	14 days
87	Installation CW Inlet Culvert pipe + testing	30 days
88	Construction of Thrust Box & Manholes,etc	14 days
89	Backfill	14 days
90	Construction UG Utilities 2m deep below further surface	30 days
91	Temporary Paving and handover for plant erection	13 days
92	**Section A1 (ii) - Supporting structures for overhead cranes of L12 MSB including the associated roof structure except the roof deferred workss**	**301 days**
93	Area Possession & Clearance	45 days
94	Subletting / Fabrication / Delivery	210 days
95	Complete structural steel erection	0 days
96	Install Crane Girders	18 days
97	Construction of roof slab (except defer work)	21 days
98	Touch up and handover for install overhead cranes	3 days
99	**Section A2 (i) External Works including CW Inlet Culvert at Area F8A**	**301 days**
100	BD consent for Sheetpile installation	30 days



REVISED MASTER PROGRAMME
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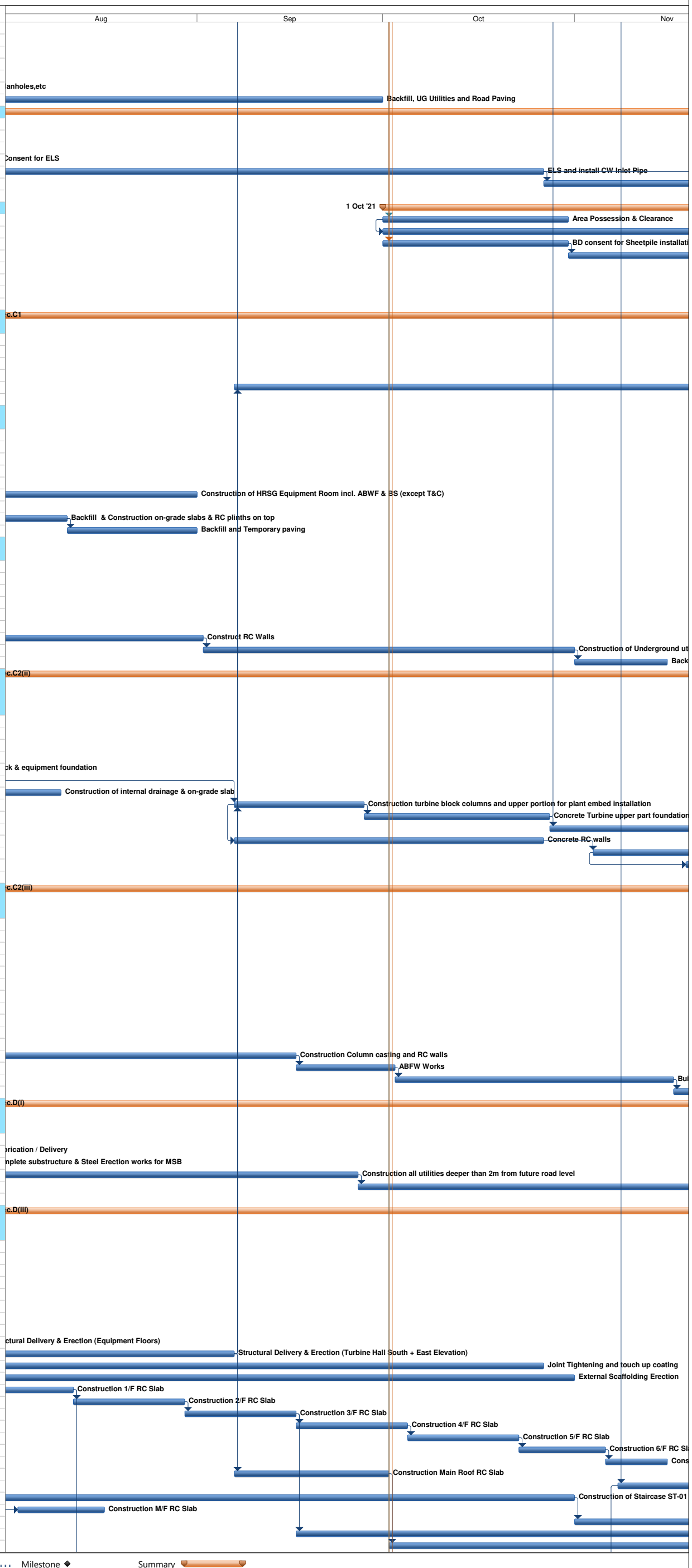
Task — Split — Milestone ◆ — Summary

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

MASTER PROGRAMME

ID	Task Name	Duration
101	Subletting / Fabrication / Delivery (both for Area F8A-F8B)	30 days
102	Area Possession & Clearance	14 days
103	Install Sheet pile	55 days
104	BD Consent for ELS	28 days
105	ELS and install CW Inlet Pipe (NW to N direction)	60 days
106	Construction of Thrust Box & Manholes,etc	36 days
107	Backfill, UG Utilities and Road Paving	79 days
108	**Section A2 (ii) External Works including CW Intet Culvert at Area F8B**	**483 days**
109	Area Possession & Clearance	30 days
110	BD consent for Sheetpile installation	30 days
111	Install Sheet pile	90 days
112	BD Consent for ELS	28 days
113	ELS and install CW Inlet Pipe	90 days
114	Construction of Thrust Box & Manholes,etc	60 days
115	Backfill, UG Utilities and Road Paving	96 days
116	**Section A2 (iii) External Works including CW Inlet Culvert at Area F8C**	**182 days**
117	Area Possession & Clearance	30 days
118	Subletting / Fabrication / Delivery (for Area F8C)	60 days
119	BD consent for Sheetpile installation	30 days
120	Install Sheet pile	34 days
121	BD Consent for ELS	28 days
122	ELS and install CW Inlet Pipe	40 days
123	Construction of Thrust Box & Manholes,etc	30 days
124	Backfill, UG Utilities and Road Paving	20 days
125	**Section B1 - Area south of L12 MSB from GL12-F westwards leading to Station Road at Area F3**	**377 days**
126	Area Possession & Clearance	30 days
127	Subletting / Fabrication / Delivery	120 days
128	Complete CW Pipe Installation & Thrust box	45 days
129	Backfill	14 days
130	Construction of Storm Drain & Manholes	80 days
131	Temp Paving and handover for Condenser Move in	20 days
132	**Section B2 - (i) Southern part of L12 HRSG area and its surrounding at Area F6B including the foundations for Gas Exhaust Duct**	**243 days**
133	Area Possession & Clearance	30 days
134	Subletting / Fabrication / Delivery (for F6B Civil and E&M)	120 days
135	Construction of Underground pits	35 days
136	Excavation & Construct Pile Caps & Tie Beams & Piers	60 days
137	Construction HRSG & Gas Duct foundations	45 days
138	Construction of HRSG Equipment Room incl. ABWF & BS (except T&C)	150 days
139	Construction underground utilities within HRSG	45 days
140	Backfill & Construction on-grade slabs & RC plinths on top	60 days
141	Backfill and Temporary paving	21 days
142	**Section B2 (ii) - Remaining northern part of Ll2 HRSG area and its surrounding at Area F6A and F6C**	**319 days**
143	Area Possessiong and Clearance at Area F6A	30 days
144	Subletting / Fabrication / Delivery (for Area F6A and F6C civil)	90 days
145	Construction of Underground pits	30 days
146	Excavation & Construct Pile Caps & Tie Beams & Piers	60 days
147	Construction underground utilities within HRSG	21 days
148	Backfill & Construction on-grade slabs & RC plinths on top	21 days
149	Construct RC Walls	90 days
150	Construction of Underground utilities at F6C	60 days
151	Backfill and Temporary paving	15 days
152	**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**	**408 days**
153	Area Possession & Clearance	45 days
154	Subletting / Fabrication / Delivery (Civil+ABWF+BS for MSBL12)	150 days
155	Complete excavation at Type A&C Construction Area	0 days
156	Excavation & Pile Caps & Tie Beams + Slabs (Turbo Block North)	75 days
157	Backfill and construction turbine block & equipment foundation	40 days
158	Excavation & Pile Caps & Tie Beams + Slabs (Turbo Block South)	45 days
159	Construction of internal drainage & on-grade slab	30 days
160	Construction turbine block columns and upper portion for plant embed installation	21 days
161	Concrete Turbine upper part foundation & clear falsework	30 days
162	Construction of Lube Oil Room	45 days
163	Concrete RC walls	50 days
164	ABFW Works	30 days
165	Building Services Works	45 days
166	Remove temporary falsework and scaffolding for installation of power generator	13 days
167	**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**	**377 days**
168	**Area Possession & Clearance**	**45 days**
169	Subletting / Fabrication / Delivery (for MSB L12 civil)	150 days
170	**Excavation to foundation level at ELS SP Type A & C**	**30 days**
171	Install CW Outlet pipe	30 days
172	Construction of CW Outlet Box + lowest tie beam & caps	50 days
173	Construction of pile caps & tie beams & sump pits up to +2.5mPD	26 days
174	Backfill & Construction of CW Inlet Box + tie beams	24 days
175	Construction of pile caps & tie beams at SunShadeCover Area	18 days
176	Backfill and Construction ground beams & trenches & equipment foundations	14 days
177	Construction of indoor underground drainage	14 days
178	Backfill & construction on-grade slabs	18 days
179	Construction Column casting and RC walls	50 days
180	ABFW Works	16 days
181	Building Services Works	45 days
182	Mis. Works and Ready for condenser move in	29 days
183	**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**	**408 days**
184	Area Possession & Clearance	30 days
185	Subletting / Fabrication / Delivery	210 days
186	Complete substructure & Steel Erection works for MSB	0 days
187	Construction all utilities deeper than 2m from future road level	60 days
188	Construction of cable trenches	90 days
189	Backfill and lay temporary paving	21 days
190	**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**	**408 days**
191	**Area Possession & Clearance**	**45 days**
192	Subletting / Fabrication / Delivery	120 days
193	**Construction of pile caps & tie beams at Transformer Area**	**30 days**
194	Backfill and on-grade slab at transformer Area	21 days
195	Construction of Fire Walls at Transformer Area	45 days
196	Excavation & Construction Blow Down Sum pit (SP Type B)	50 days
197	Preaparation for S.Steelwork Erection	7 days
198	Structural Delivery & Erection (Turhine Hall North fr G.L. 1-3/H->B)	35 days
199	Structural Delivery & Erection (Equipment Floors)	55 days
200	Structural Delivery & Erection (Turbine Hall South + East Elevation)	40 days
201	Joint Tightening and touch up coating	145 days
202	External Scaffolding Erection	150 days
203	Construction 1/F RC Slab	14 days
204	Construction 2/F RC Slab	18 days
205	Construction 3/F RC Slab	18 days
206	Construction 4/F RC Slab	18 days
207	Construction 5/F RC Slab	18 days
208	Construction 6/F RC Slab	14 days
209	Construction Upper Roof RC Slab	10 days
210	Construction Main Roof RC Slab	25 days
211	Construction Defer Roof RC Slab (G.L. G-H)	14 days
212	Construction of Staircase ST-01 & lift shaft & machine room	150 days
213	Construction M/F RC Slab	14 days
214	Lift Installation	75 days
215	Construction of Staircase ST-02 except defer work	75 days
216	Construction of RC plinth, kerbs & parapet Walls	75 days



REVISED MASTER PROGRAMME
4 JAN 2021 Rev. 1-A

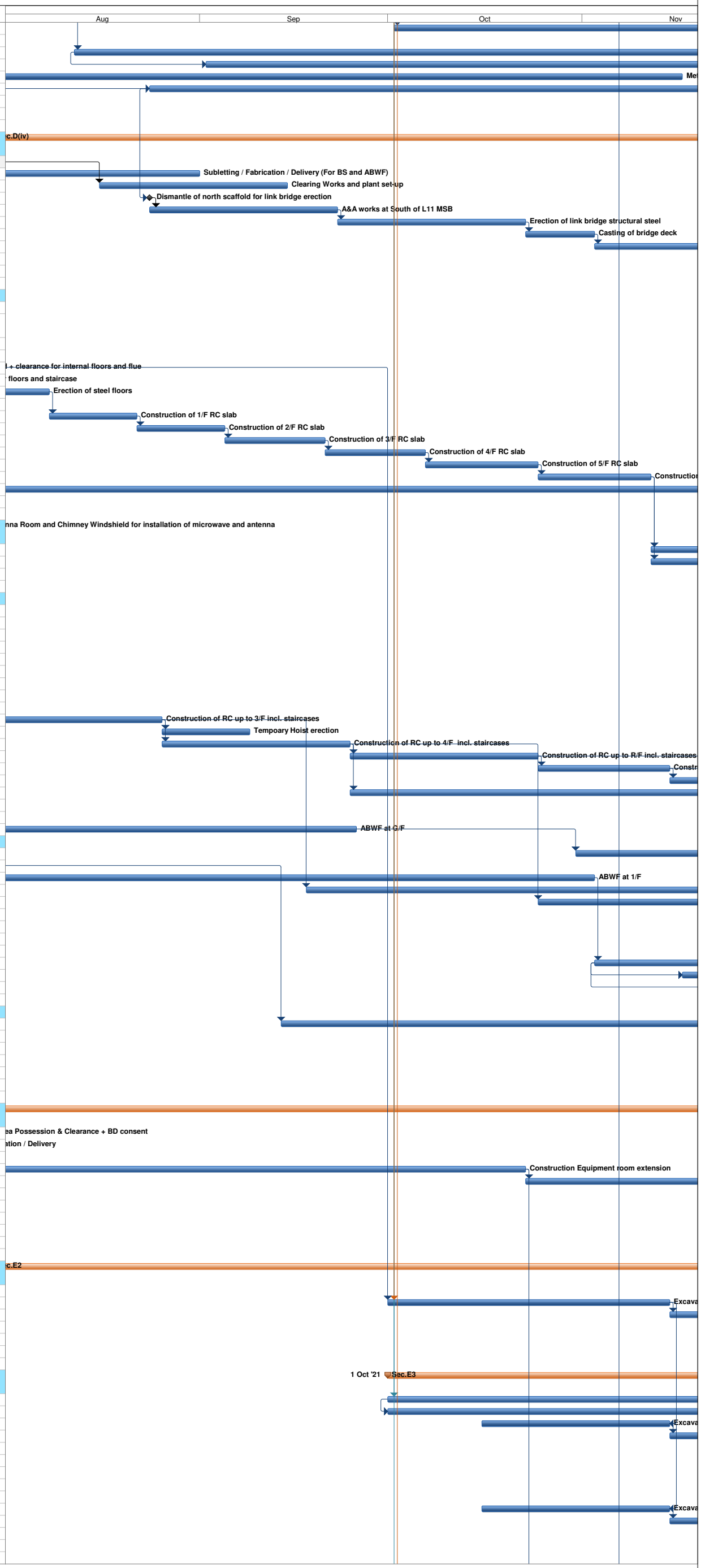
Paul Y

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



REVISED MASTER PROGRAMME
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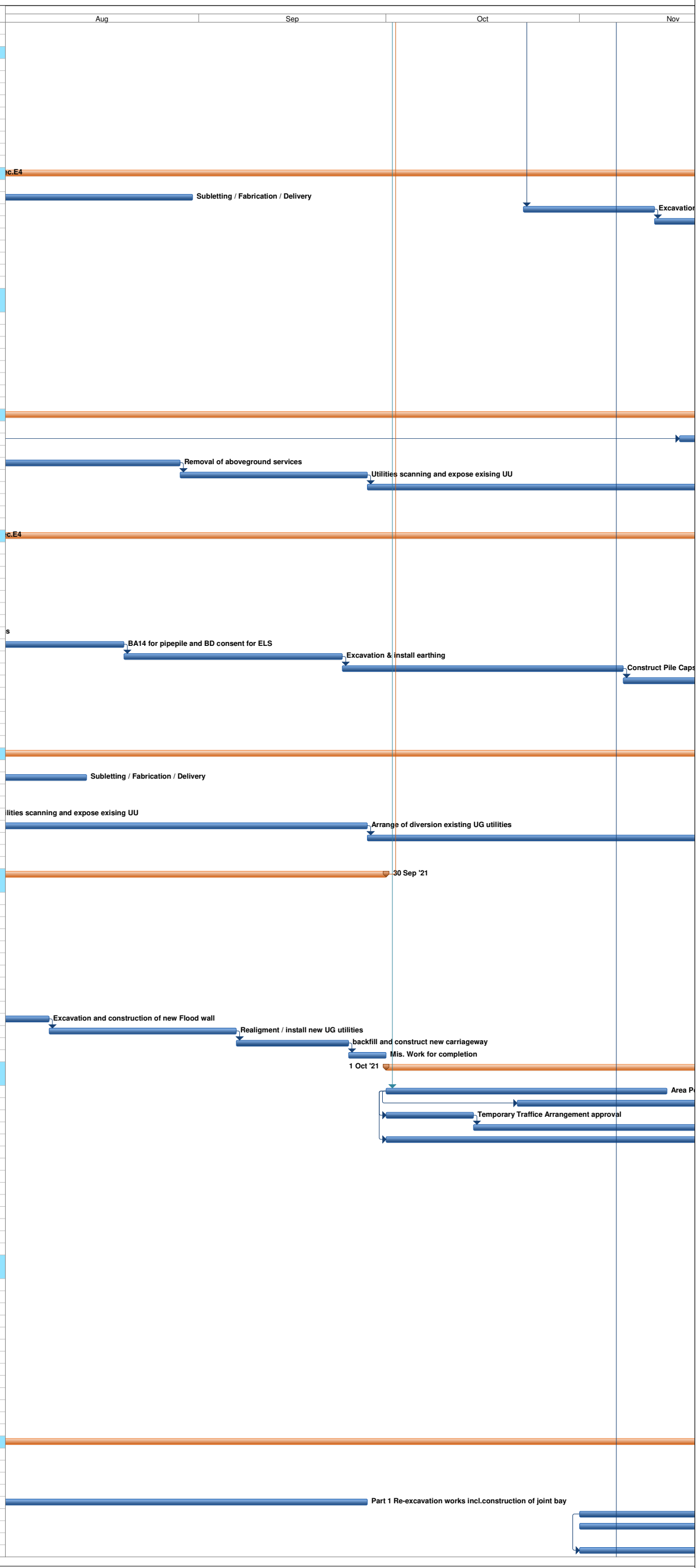
Task Split Milestone Summary

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

MASTER PROGRAMME

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



REVISED MASTER PROGRAMME
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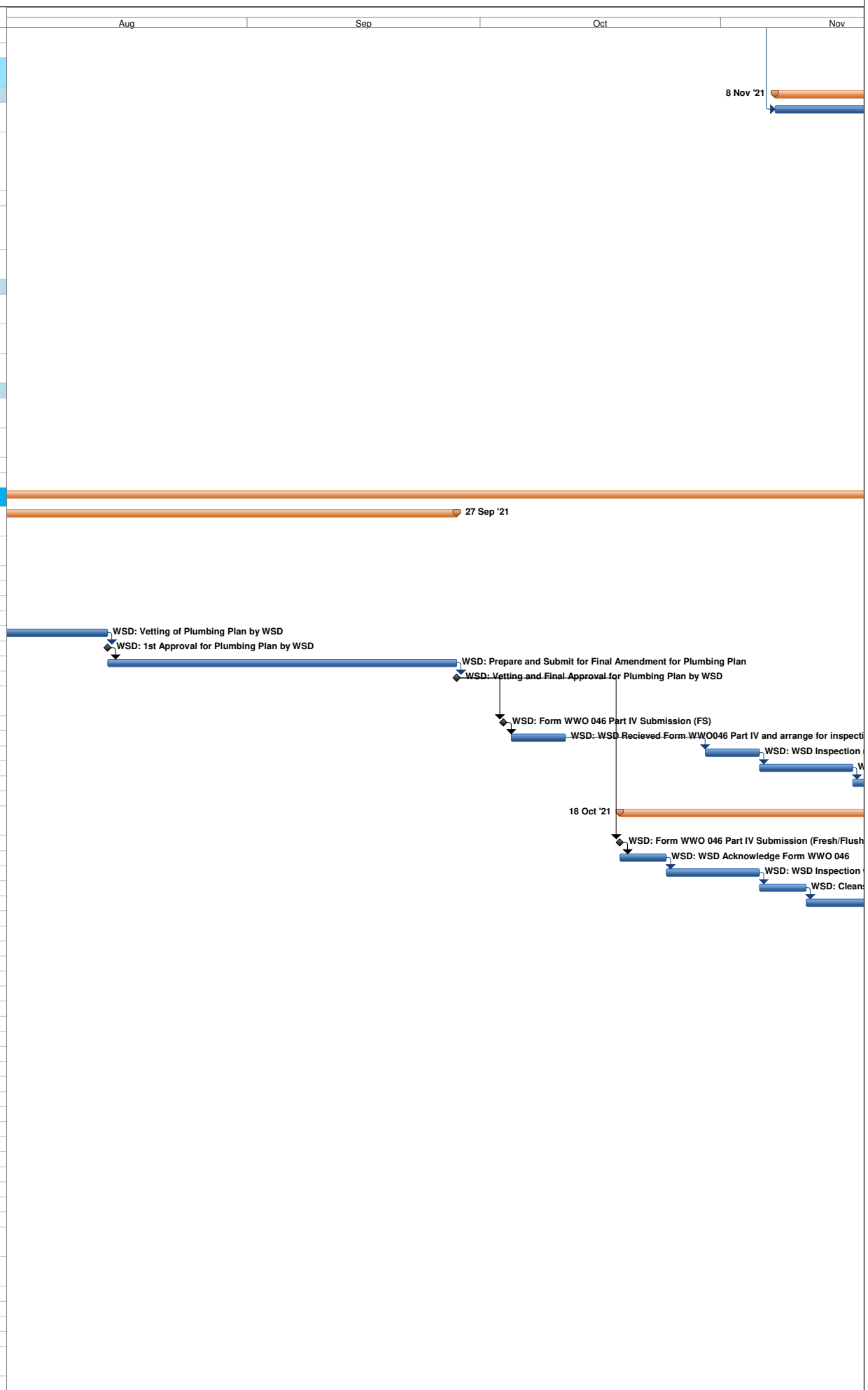
Task Split Milestone Summary

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

ID	Task Name	Duration
461	Backfill & Reinstatement Part 2	61 days
462	Backfill & Reinstatement Part 3	61 days
463	**Section H - All remaining works shall be completed for reporting completion to BD and ready for OP inspection (PS1.4.4)**	**478 days**
464	**Deferred works (MSB & HRSG) Listed in PS 1.4.4**	**281 days**
465	Construction ofL12 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
466	Construction of walls ofL12 MSB below 1/F along GL 12-6 from GL12-B to 12-C and the associated staircases including the enclosure walls between G/F and 1/F. The Contractor shall allow access for the Employer's Specialist Contractors to use the hoisting we	92 days
467	Provision in associated with hoisting well	21 days
468	Construction of internal partition wall at 1/F ofL12 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
469	Construction of metal fence and the associated Fire Services (F.S.) installations and installation of removable shelter at Transformer Area	92 days
470	**Deferred works (DAX1 and DAX2) Listed in PS 1.4.4**	**334 days**
471	Backfilling of whole DAXl compartment inside existing joint bay "STJI2" and the new oil tank pit A located aside existing joint bay "STJI2".	59 days
472	Re-excavation of whole DAX2 compartment inside existing joint bay "STJI2".	61 days
473	Backfilling of whole DAX2 compartment inside existing joint bay "STJI2" and the new oil tank pit B located aside existing joint bay "STJI2".	61 days
474	**Deferred works (External Work) Listed in PS 1.4.4**	**121 days**
475	Final reinstatement of access roads and pavement surrounding and within L12 MSB and L12 HRSG area	62 days
476	Installation of trench cover and road reinstatement of gas pipe and cable trenches within Area F5, F14, F16, F17 and F18.	90 days
477	Backfilling and road-reinstatement of 275kV cable trenches	90 days
478	All Remaining work ready for OP inspection	0 days
479	**STATUTORY SUBMISSION, INSPECTION & APPROVAL**	**865 days?**
480	**WSD Statutory Submission, Inspection and Approval WWO Part I to III Submission / Approval**	**256 days**
481	WSD : Submit to WSD Form WWO 046 Part I to II - FOR ACB Building (for Ext Works at later stage)	0 days
482	WSD: Vetting Form WWO 046 Part I and II Submission	90 days
483	WSD: Issued of Form WWO 046 Part III by WSD - FOR ACB Building	0 days
484	WSD: Prepare for 1st Amendment for Plumbing Plan	60 days
485	WSD: Submit to WSD 1st Amendment for Plumbing Plan	0 days
486	WSD: Vetting of Plumbing Plan by WSD	60 days
487	WSD: 1st Approval for Plumbing Plan by WSD	0 days
488	WSD: Prepare and Submit for Final Amendment for Plumbing Plan	45 days
489	WSD: Vetting and Final Approval for Plumbing Plan by WSD	0 days
490	**WSD Statutory Submission, Inspection and Approval WWO Part IV to V Fire Services Water Submission / Approval**	**34 days?**
491	WSD: Form WWO 046 Part IV Submission (FS)	0 days
492	WSD: WSD Recieved Form WWO046 Part IV and arrange for inspection (FS)	7 days
493	WSD: WSD Inspection (FS)	7 days
494	WSD: WWO 046 Part V Endorsement by WSD (FS)	12 days
495	WSD: WSD Processing Water Supply Connection Certificate (FS)	7 days
496	WSD: Issue by WSD Water Supply Connection Certificate (FS)	0 days?
497	**WSD Statutory Submission, Inspection and Approval WWO Part IV to V Potable /Flush Water Submission / Approval**	**60 days**
498	WSD: Form WWO 046 Part IV Submission (Fresh/Flush)	0 days
499	WSD: WSD Acknowledge Form WWO 046	6 days
500	WSD: WSD Inspection with Testing to lead (Fresh/Fluhs)	12 days
501	WSD: Cleansing/Disinfecting Water Tanks / Piping System (Fresh/Flush)	6 days
502	WSD: Collection of Sample for Testing at Accredited Lab (Fresh/Flush)	12 days
503	WSD:Accredited Lab Testing Report of Sample to WSD	12 days
504	WSD: Vetting of Test Report by WSD	6 days
505	WSD: Issue of WWO 046 Part V (Fresh/Flush)	0 days
506	WSD: WSD Processing WW01005 Water Certification (Fresh/Flush)	6 days
507	WSD: Issue by WSD WWO 1005 Water Certification (Fresh/Flush)	0 days
508	**EMSD LIFT Statutory Submission, Inspection and Approval**	**45 days**
509	EMSD: Submission of Lift Form LE5 to EMSD	12 days
510	EMSD: EMSD Makes arrangement for Lift Installation	5 days
511	EMSD: EMSD Inspection to Lift Installation	14 days
512	EMSD: Processing Lift Certificate (Form LE6)	14 days
513	EMSD: Lift Issuance of Form 6 (Lift Certificate)	0 days
514	**HKE Transformer Final Inspection**	**120 days**
515	TX Room: Invite HKE For Transformer Room Inspection	7 days
516	TX Room: Give Access to Transformer Room for HKE Contractor	0 days
517	TX Room: Move-IN HKE Transformer Equipments	5 days
518	TX Room: Install HKE Transformer, MEP Works & Testing	90 days
519	TX Room: HKE Power Energization / Inspection	6 days
520	TX Room: Metering Installation	12 days
521	TX Room: HKE Power-ON Date	0 days
522	**DSD Drainage Completion Memo**	**65 days**
523	DSD: CCTV Survey Report on Completed Drainage	30 days
524	DSD: Submitted CCTV Report & Form HPB1 of Completed Drainage to DSD For Technical Audit	7 days
525	DSD: Completed Drainage System including TMC Inspection/Technical Audit by DSD	14 days
526	DSD: Preparation of Drainage Connection Completion Memo by DSD	14 days
527	DSD: Issue of Drainage Connection Completion Memo by DSD	0 days
528	**EPD Submission, Inspection and Approval**	**60 days**
529	EPD: License Application to EPD under APCO (Cap 311) for Generator Sets	0 days
530	EPD: Vetting of Application by EPD under APCO (Cap 311) for Generator Sets	60 days
531	EPD: Approval from EPD under APCO (Cap 311) for Generator Sets Installation	0 days
532	**FSD VAC Statutory Submission, Inspection and Approval**	**150 days**
533	Preparation of FSD VAC Drawings and Submission to HEC	60 days
534	HEC: Review and Approval	30 days
535	Preparation of VAC Drawings and Submission to FSD	30 days
536	FSD: Review and Approval	30 days
537	**FSD Statutory Submission, Inspection and Approval**	**91 days**
538	Testing and Commissioning (Individual System - FSI Related)	45 days
539	FSD: All Sections FS Ingration Test by NSC_BS	15 days
540	FSD: Completion of FS Integration Test by NSC_BS for FS314/501	0 days
541	FSD: Submit Form 213/314 & Form 501 Request for Inspection	0 days
542	FSD: FSD Makes Arrangement for Inspection	7 days
543	FSD: FSD Inspection	12 days
544	FSD: Completion of FS Inspection	0 days
545	FSD: FSD Processing FS Certicate Form 172	12 days
546	FSD: Issue of Fire Services FS Certificate Form 172	0 days
547	**PRACTICAL COMPLETION**	**216 days**
548	**BD Inspection**	**97 days**
549	BD: Application Form BA13 for OP Application	21 days
550	BD: BD Inspection Date	15 days
551	BD: Reinspection date with defects and rectification works	60 days
552	**BD: Obtain Occupation Permit (OP) from BD**	**1 day**
553	**As-Built Drawings & Handover Documentation**	**120 days**
554	Prepare and Submit As-Built Drawings & Handover Documentation	45 days
555	Review and Approval	45 days
556	As-Built Drawings & Handover Documentation - Revision by MC	30 days
557	Revised As-Built Drawings & Handover Documentation - Final Submission	0 days
558	**Completion of the Whole Contract Works**	**119 days**
559	1st Client Inspection for Review and Comments	30 days
560	Defects and Rectification works	60 days
561	2nd Client Inspection	14 days
562	Minor Defects Rectification Works and Final Inspection	15 days
563	**PRACTICAL COMPLETION**	**0 days**



REVISED MASTER PROGRAMME
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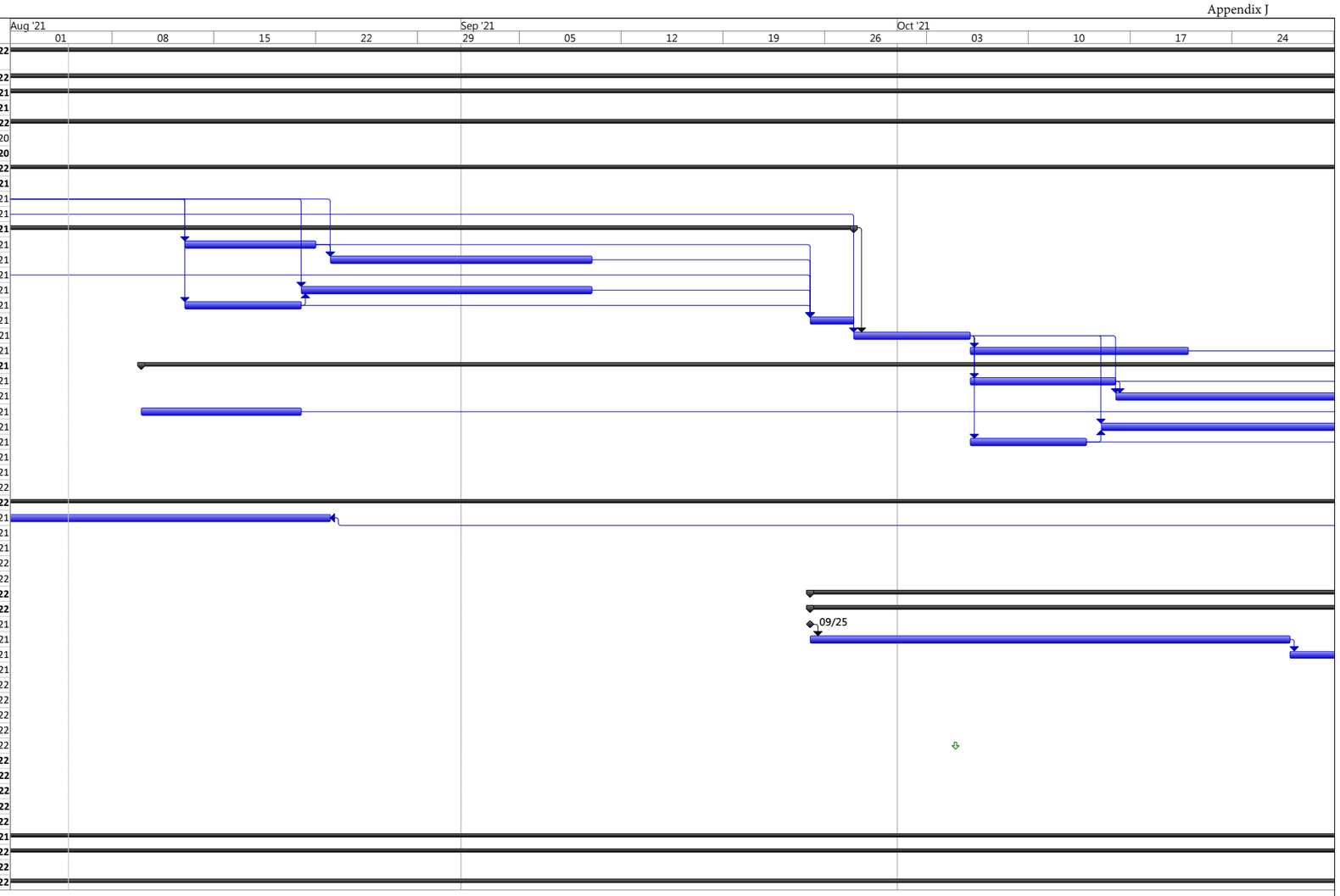
Task — Split — Milestone ◆ — Summary

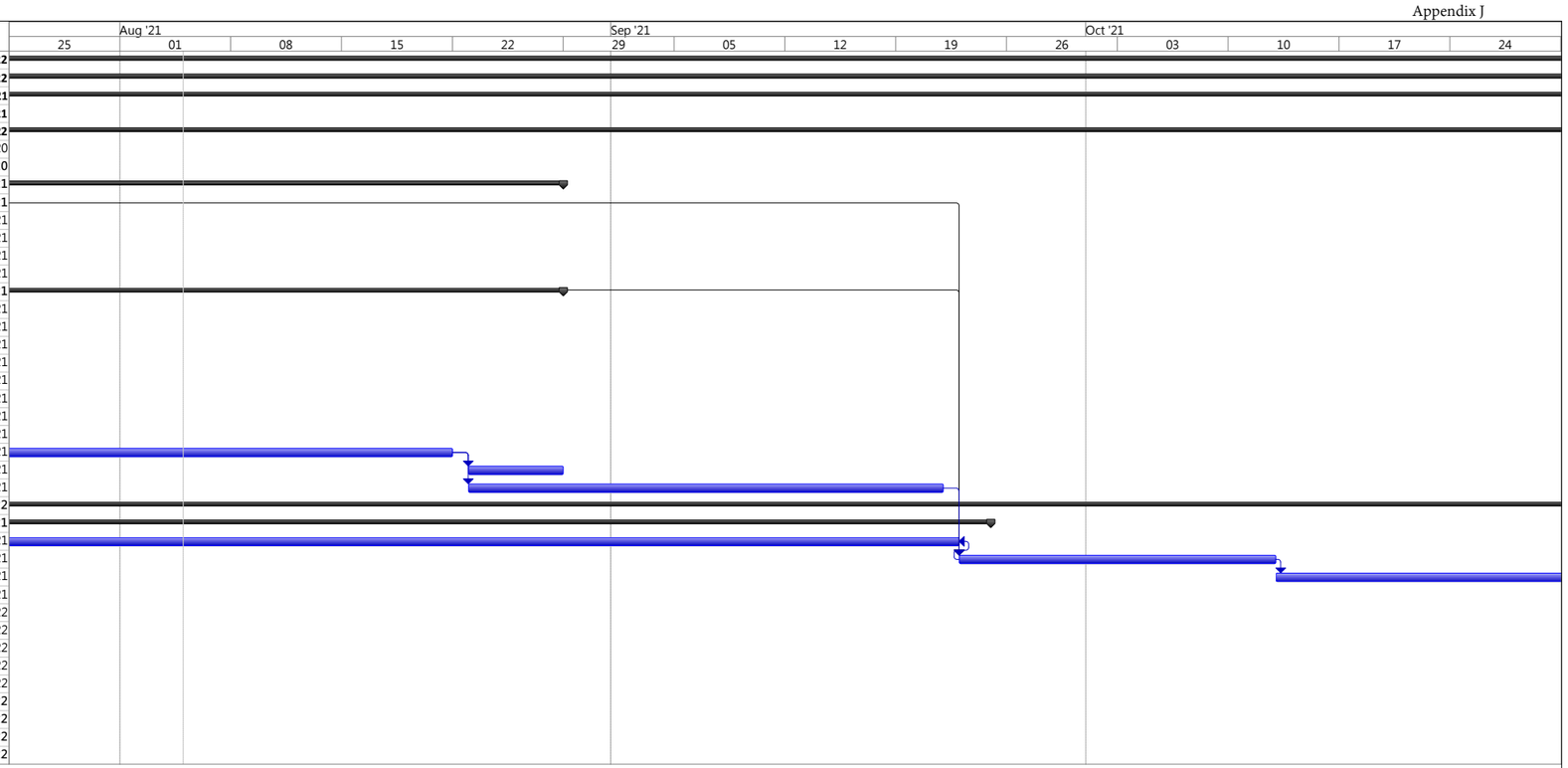
ID	Task Name	Duration	Start	Finish
1	**19-83014 - Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamma Power Station Extension**	**664 days**	**Mon 10/05/20**	**Fri 12/23/22**
2	**Contract Details**	**518 days**	**Mon 10/05/20**	**Thu 07/07/22**
15	**Submission**	**308 days**	**Wed 10/28/20**	**Wed 11/10/21**
36	**Procurement**	**166 days**	**Mon 10/19/20**	**Thu 05/13/21**
45	**No.5 C.W. Intake**	**589 days**	**Mon 10/05/20**	**Tue 09/27/22**
46	Erect of Hoarding and Door Gate	12 days	Mon 10/05/20	Sat 10/17/20
47	**Install Monitoing Instrumentation**	**16 days**	**Sat 10/17/20**	**Fri 11/06/20**
54	**ELS works for No. C.W. Intake**	**323 days**	**Tue 12/29/20**	**Sat 01/29/22**
55	**Installation of pipe pile wall**	**147 days**	**Tue 12/29/20**	**Wed 06/30/21**
64	Excavate upto +4.50mPD	6 days	Fri 07/02/21	Thu 07/08/21
65	Installation the 1st row of waling (WT1) and strut (CS1)	12 days	Fri 07/09/21	Thu 07/22/21
66	**Installation of 1st row of Tie Back**	**65 days**	**Tue 07/13/21**	**Mon 09/27/21**
67	RW01 (01-22)	8 days	Fri 08/13/21	Sat 08/21/21
68	RW01 (23-70)	16 days	Mon 08/23/21	Thu 09/09/21
69	RW01F (01-28)	10 days	Tue 07/13/21	Fri 07/23/21
70	RW01F (29-77)	17 days	Sat 08/21/21	Thu 09/09/21
71	RW01F (78-98)	7 days	Fri 08/13/21	Fri 08/20/21
72	Pull Out Test for Tie Back	2 days	Sat 09/25/21	Mon 09/27/21
73	Excavate upto +2.70mPD	6 days	Tue 09/28/21	Tue 10/05/21
74	Installation the 2nd row of waling (WT2) and strut (CS2)	12 days	Wed 10/06/21	Wed 10/20/21
75	**Installation of 2nd row of Tie Back**	**85 days**	**Tue 08/10/21**	**Fri 11/19/21**
76	RW02 (01-22)	8 days	Wed 10/06/21	Fri 10/15/21
77	RW02 (23-70)	16 days	Sat 10/16/21	Wed 11/03/21
78	RW02F (01-28)	10 days	Tue 08/10/21	Fri 08/20/21
79	RW02F (29-77)	17 days	Fri 10/15/21	Wed 11/03/21
80	RW02F (78-98)	7 days	Wed 10/06/21	Wed 10/13/21
81	Pull Out Test for Tie Back	2 days	Thu 11/18/21	Fri 11/19/21
82	Excavate uoto +1.00mPD	6 days	Sat 11/20/21	Fri 11/26/21
83	Excavate upto -7.50mPD	52 days	Sat 11/27/21	Sat 01/29/22
84	**Temporary removal of sea wall**	**236 days**	**Fri 05/21/21**	**Fri 03/04/22**
85	Application of Marine Permit	78 days	Fri 05/21/21	Mon 08/23/21
86	Install silt curtain wall	2 days	Thu 11/25/21	Sat 11/27/21
87	Tempoary removal of sea wall (USS)	26 days	Sat 11/27/21	Wed 12/29/21
88	Removal of existing culvert off-site (USS)	26 days	Thu 12/30/21	Sat 01/29/22
89	Prepare formation level for intake chamber	26 days	Mon 01/31/22	Fri 03/04/22
90	**Construction of No. 5 C.W. Intake Chamber**	**266 days**	**Sat 09/25/21**	**Thu 08/18/22**
91	**Off-site fabrication for Bottom Part of Intake Chamber (From -7.20mPD to +3.20mPD**	**107 days**	**Sat 09/25/21**	**Sat 02/05/22**
92	Semisubmersible Barge Return to Casting Yard	0 days	Sat 09/25/21	Sat 09/25/21
93	Setup work on Semisubmersible Barge	26 days	Sat 09/25/21	Wed 10/27/21
94	Bottom Slab (from -7.20mPD to -5.50mPD, 1596m3)	31 days	Thu 10/28/21	Thu 12/02/21
95	External Wall (from -6.35mPD to -5.50mPD, 701m3)	11 days	Fri 12/03/21	Wed 12/15/21
96	External Wall (from -5.00mPD to -1.50mPD, 380m3)	13 days	Thu 12/16/21	Mon 01/03/22
97	External Wall (from -1.50mPD to +3.00mPD, 571m3)	18 days	Tue 01/04/22	Mon 01/24/22
98	Temporary metal gate and support frame	8 days	Tue 01/25/22	Sat 02/05/22
99	Delivery of Precast instake Chamber	3 days	Wed 03/02/22	Fri 03/04/22
100	Installation of Precast intake Chamber	12 days	Sat 03/05/22	Fri 03/18/22
101	**In-situ casting for Top Part of Intake Chamber (From +3.00mPD to +7.20mPD)**	**118 days**	**Sat 03/26/22**	**Thu 08/18/22**
115	**Reinstatement of sea wall**	**104 days**	**Sat 03/26/22**	**Tue 08/02/22**
119	**Backfilling Works and Strut removal**	**122 days**	**Sat 03/19/22**	**Tue 08/16/22**
126	**Steel Gantry Frame at No. 5 C.W. Intake Chamber**	**36 days**	**Wed 08/17/22**	**Tue 09/27/22**
129	**E&M Works**	**240 days**	**Sat 11/27/21**	**Sat 09/17/22**
134	**External works including CW Inlet Culvert at Area F8C**	**210 days**	**Fri 03/12/21**	**Wed 11/24/21**
147	**No 5 CW Equipment Room, pipe and cable rack, external works at Area F10**	**426 days**	**Wed 04/14/21**	**Thu 09/15/22**
168	**External Work Surrounding Area F11**	**115 days**	**Fri 08/12/22**	**Fri 12/23/22**
175	**Cable Bridge**	**444 days**	**Wed 11/11/20**	**Mon 05/16/22**



Project: 19-83014 - No. 5 Intake and Cable Br
Date: 23 Jan 2021
Rev. 2(a) - Combined L12 Area (Draft)

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

ID	Task Name	Duration	Start	Finish
1	**19-83014 - Civil Works for No. 5 C.W. Intake and Cable Bridge at Lamma Power Station Extension**	**518 days**	**Mon 10/05/20**	**Thu 07/07/22**
2	**Contract Details**	**518 days**	**Mon 10/05/20**	**Thu 07/07/22**
15	**Submission**	**308 days**	**Wed 10/28/20**	**Wed 11/10/21**
36	**Procurement**	**166 days**	**Mon 10/19/20**	**Thu 05/13/21**
45	**Cable Bridge**	**442 days**	**Wed 11/11/20**	**Fri 05/13/22**
46	Erect of Hoarding and Door Gate	12 days	Wed 11/11/20	Tue 11/24/20
47	**Install Monitoing Instrumentation**	**2 days**	**Wed 11/25/20**	**Thu 11/26/20**
54	**Pile Cap Construction**	**196 days**	**Wed 12/30/20**	**Sat 08/28/21**
55	**LPS Pile Cap (PC5)**	**80 days**	**Thu 01/21/21**	**Mon 05/03/21**
56	Excavation to F.E.L. by open cut (From +4.50mPD to +1.95mPD)	42 days	Thu 01/21/21	Sat 03/13/21
57	Socket H-pile head treatment (14 nos)	6 days	Mon 03/15/21	Sat 03/20/21
58	Construction of Pile Cap PC5	26 days	Mon 03/22/21	Sat 04/24/21
59	Backfilling to pile cap level	6 days	Mon 04/26/21	Mon 05/03/21
60	**LMX Pile Cap (PC6)**	**196 days**	**Wed 12/30/20**	**Sat 08/28/21**
61	Expose existing 275kV cable trench by hand dig method	12 days	Wed 12/30/20	Wed 01/13/21
62	Install pipe pile (P1-P47)	24 days	Thu 01/28/21	Sat 02/27/21
63	Submission of BA14, as-built plan and record	14 days	Mon 03/01/21	Tue 03/16/21
64	BD Excavation Consent	0 days	Tue 04/20/21	Tue 04/20/21
65	Excavate to 500mm below strut level	6 days	Wed 04/21/21	Tue 04/27/21
66	Install waling system (W1)	6 days	Wed 04/28/21	Wed 05/05/21
67	Excavate to F.E.L.	12 days	Thu 05/06/21	Thu 05/20/21
68	Timming to COL for Dia 2180mm Bored Pile (8nos)	26 days	Fri 05/21/21	Mon 06/21/21
69	Constrcution of Pile Cap PC6	52 days	Tue 06/22/21	Sat 08/21/21
70	Backfilling to pile cap level	6 days	Mon 08/23/21	Sat 08/28/21
71	Exisitng Seawall modification works (USS)	26 days	Mon 08/23/21	Tue 09/21/21
72	**Construction of Cable Bridge**	**326 days**	**Wed 04/07/21**	**Fri 05/13/22**
73	**Off-site precast beam construction (PCB1-PCB12)**	**142 days**	**Wed 04/07/21**	**Fri 09/24/21**
88	Application of Marine Permit	78 days	Tue 06/22/21	Thu 09/23/21
89	Erect precast beam (PCB1-PCB12)	16 days	Thu 09/23/21	Tue 10/12/21
90	Construction of Diaphragm Beams (DB7-DB11)	36 days	Wed 10/13/21	Wed 11/24/21
91	Stage 2 PT Stressing	6 days	Thu 12/02/21	Wed 12/08/21
92	Constrcution of 200mm thk R.C. Middle Slab	36 days	Thu 12/09/21	Sat 01/22/22
93	Installation of Precast Panel (for planter and kerb)	52 days	Mon 01/24/22	Mon 03/28/22
94	Casting of 250mm thk. R.C. Top Slab	18 days	Tue 03/08/22	Mon 03/28/22
95	Road paving work	24 days	Mon 04/11/22	Fri 05/13/22
96	Installation of steel parapet	24 days	Mon 04/11/22	Fri 05/13/22
97	**Construction of Abutment at LPS**	**114 days**	**Thu 12/09/21**	**Tue 05/03/22**
104	**Construction of Abutment at LMX**	**110 days**	**Thu 12/09/21**	**Wed 04/27/22**
111	**Stormwater Drainage**	**32 days**	**Tue 03/29/22**	**Wed 05/11/22**
113	**E&M works**	**32 days**	**Tue 03/29/22**	**Wed 05/11/22**



Project: 19-83014 - No. 5 Intake and Cable Br
Date: 23 Jan 2021
Rev. 2(a) - Combined L12 Area (Draft)

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

Monthly Waste Flow Table for Jul 2021

Project: Lamma Power Station Extension - Civil and Building Works for Unit L11

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2018, 2019, 2020 & 2021

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										
	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	Metals (steel bar / metal strip) (1)	Metals (aluminum can) (1)	Paper / cardboard packaging (1)	Plastics (1) & (4)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	(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)
Jul 2018	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 2018	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 2018	3160.23	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
Oct 2018	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 2018	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	8.87
Dec 2018	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	10.67
Jan 2019	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 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.66	0.00	0.00	0.00	0.60	0.00
Mar 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.05	0.00	0.00	0.00	0.00	0.00
Apr 2019	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	19.09
May 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.63	0.00	0.00	0.00	0.00	59.75
Jun 2019	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	14.64
Jul 2019	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	2.66
Aug 2019	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 2019	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	27.31
Oct 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.109	0.00	0.00	4.76
Nov 2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	4.87
Dec 2019	0.00	0.00	0.00	0.00	0.00	10226.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	18.19
Jan 2020	0.00	0.00	0.00	0.00	0.00	7981.09	0.00	0.00	0.00	0.00	0.157	0.00	0.00	26.89
Feb 2020	0.00	0.00	0.00	0.00	0.00	8782.98	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00
Mar 2020	0.00	0.00	0.00	0.00	0.00	20252.12	0.00	0.00	0.00	0.00	0.000	0.00	0.00	78.96
Apr 2020	0.00	0.00	0.00	0.00	0.00	12976.86	0.00	0.00	8.30	0.00	0.000	0.00	0.00	68.75
May 2020	0.00	0.00	0.00	0.00	0.00	20203.01	0.00	0.00	0.00	0.00	0.000	0.00	0.00	0.00
Jun 2020	0.00	0.00	0.00	0.00	0.00	28030.33	0.00	0.00	0.00	0.00	0.000	0.00	0.00	58.49
Jul 2020	0.00	0.00	0.00	0.00	0.00	12481.37	0.00	0.00	0.00	0.00	0.000	0.00	0.00	33.88
Aug 2020	0.00	0.00	0.00	0.00	0.00	11179.56	0.00	0.00	0.00	0.00	0.000	0.00	0.60	73.73
Sep 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.53	0.00	0.286	0.00	0.00	64.93
Oct 2020	0.00	0.00	0.00	0.00	0.00	10762.20	0.00	0.00	7.12	0.00	0.297	0.00	0.00	83.34
Nov 2020	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.46	0.00	0.000	0.00	0.20	61.21
Dec 2020	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	59.98
Jan 2021	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	51.37
Feb 2021	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	44.94
Mar 2021	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	34.57
Apr 2021	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	30.92
May 2021	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	18.65
Jun 2021	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	10.76
Jul 2021	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
Total	3160.23	0.00	0.00	0.00	0.00	142875.75	0.00	0.00	74.83	0.00	0.849	0.00	2.00	972.18

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
146035.98 tonnes	75.68 tonnes	972.18 tonnes	2000 Liters

Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total 146035.98 tonnes of inert C&D material were generated from the Project, of which 142875.75 tonnes were reused in this and other contracts, and the remaining 3160.23 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 f

(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.

Monthly Waste Flow Table for July 2021

Project: LAMMA POWER STATION EXTENSION – Unit 11 Complete Erection, Inspection, Testing & Commissioning of Power Block Facilities

Contractor: Taihei Dengyo Kaisha, Ltd.

Record by: Stephen Sin

Year of Record: 2019, 2020, 2021

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										
	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	Metals (steel bar / metal strip) (1)	Metals (aluminum can) (1)	Paper / cardboard packaging (1)	Plastics (1) & (4)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	(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 2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dec 2019	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 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
Feb 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
Mar 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	3.35
Apr 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	11.61
May 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	12.39
Jun 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	13.03
Jul 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	16.32
Aug 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	2600	10.38
Sep 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	10.20
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	12.02
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	2400	26.18
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	15.38
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	21.65
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	10.40
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	17.43
Apr 2021	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2400	20.24
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	14.08
June 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	17.43
July 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	20.38
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7400	252.47

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	252.47 tonnes	7400 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 Contractt.

(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 Jul 2021

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

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										
	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	Metals (steel bar / metal strip) (1)	Metals (aluminum can) (1)	Paper / cardboard packaging (1)	Plastics (1) & (4)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	(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)
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
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
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
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	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	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
Jun 2021	0.00	0.00	6555.38	0.00	0.00	0.00	0.00	0.00	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	4.39	0.00	0.00	0.00	0.00	10.97
Total	0.00	0.00	64180.35	0.00	0.00	0.00	0.00	0.00	101.91	0.00	0.25	0.00	0.00	53.06

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
64180.35 tonnes	102.16 tonnes	53.06 tonnes	0 Liters

Where (A) Inert C&D materials include bricks, concrete, building debris, rubble and excavated spoil. In total, 64180.35 tonnes of inert C&D material were generated from the Project, of which 0.00 tonnes were reused in this and other contracts, and the remaining 0.00 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) 4390 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 Jul 2021

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

Contractor: Paul Y. Construction Company, Limited

Record by: Ben Lam

Year of Record: 2020 & 2021

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										
	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	Metals (steel bar / metal strip) (1)	Metals (aluminum can) (1)	Paper / cardboard packaging (1)	Plastics (1) & (4)	Chemical waste (wasted lubricant oil/oil container)	Other, e.g. general refuse
	(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)
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
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
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
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
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
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	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	0.00	0.60	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	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
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
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.21	0.00	0.00	0.00	0.60	34.95

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	4.21 tonnes	34.95 tonnes	600 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 0.00 tonnes were reused in this and other contracts, and the remaining 0.00 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.
(6) Disposal of inert waste to public fill or sorting facilities will NOT be considered as recycled waste.