環境保護署
Environmental Protection Department

Contract No. EP/SP/66/12
Integrated Waste Management Facilities, Phase 1
13th Quarterly EM&A Report

吉寶西格斯－振華聯營公司
KEPPEL SEGHERS - ZHEN HUA JOINT VENTURE

Quarterly EM&A Report No.13
(Period from 1 July to 30 September 2021)

(Clause 3.3, Further Environmental Permit FEP-01/429/2012/A)

Document No.

KSZHJV	/	312	/	Quarterly EM&A	/	00013	/	A
Issuer		**Project Code**		**Type of Document**		**Sequential No.**		**Revision Index**

	Prepared by:	Certified by:	Verified by:
Name	Joe Ho	F.C Tsang	Mandy To
Position	Environmental Team Member	Environmental Team Leader	Independent Environmental Checker
Signature			
Date:	28 December 2021	28 December 2021	28 December 2021

Revision History

A	First Submission	31 December 2021
Rev.	**DESCRIPTION OF MODIFICATION**	**DATE**

CONTENT

EXECUTIVE SUMMARY

A1. The Project, Integrated Waste Management Facility (IWMF), is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 499) (EIAO) and is currently governed by a Further Environmental Permit (FEP No. FEP-01/429/2012/A) for the construction and operation of the Project.

A2. In accordance with the Updated Environmental Monitoring and Audit (EM&A) Manual for the Project, EM&A works for marine water quality, noise, waste management and ecology should be carried out by Environmental Team (ET), Acuity Sustainability Consulting Limited (ASCL), during the construction phase of the Project.

A3. This is the 13th Quarterly EM&A Report, prepared by ASCL, for the Project summarizing and concluding the monitoring results and audit findings of the EM&A programme at and around Shek Kwu Chau (SKC) during the reporting period from 1 July 2021 to 30 September 2021.

A4. The EM&A works for construction noise, water quality, construction waste, coral, marine mammal and White-Bellied Sea Eagle (WBSE) were conducted during the reporting period in accordance with the Updated EM&A Manual.

A5. Weekly site inspections of the construction works were carried out by ET to audit the mitigation measures implementation status. Monthly joint site inspections were carried out by ET and IEC.

1. BASIC PROJECT INFORMATION

1.1. The Reporting Scope

1.1.1 This is the 13th Quarterly EM&A Report for the Project which summarizes the key findings of the EM&A programme during the reporting period from 1 July 2021 to 30 September 2021.

1.2. Project Organization

1.2.2 The Project Organization structure for Construction Phase is presented in **Figure 1.1**.

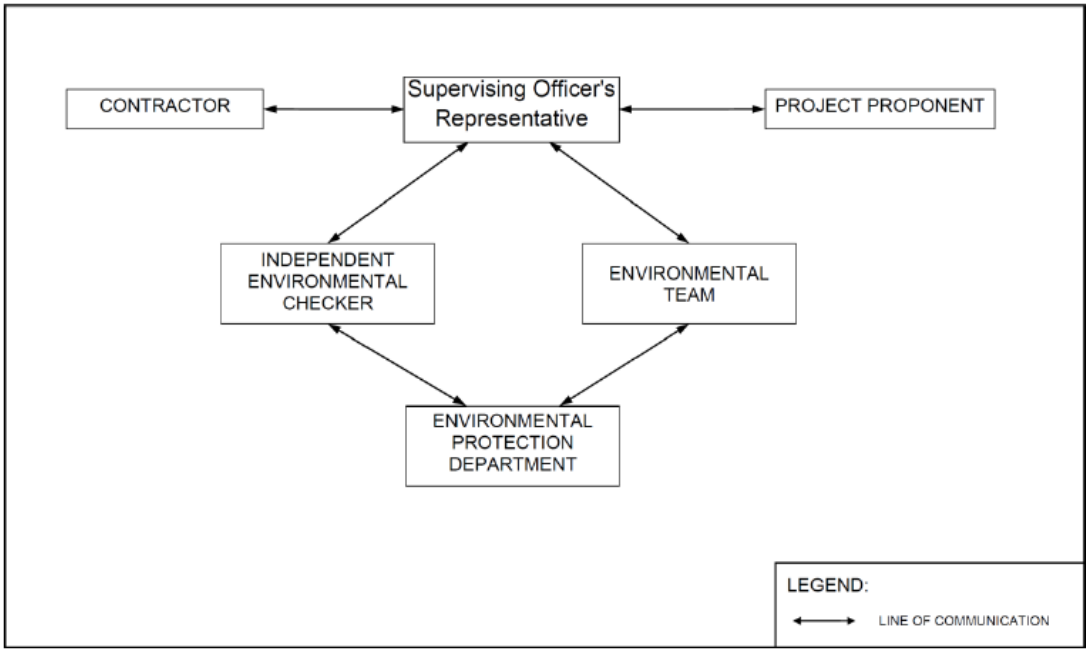


Figure 1.1 Project Organization Chart

1.2.3 Contact details of the key personnel are presented in **Table 1.1** below:

Table 1.1 Contact Details of Key Personnel

Party	Position	Name	Telephone no.
Environmental Protection Department	Project Proponent	Cheng Tak-Kuen	2594-6111
Keppel Seghers – Zhen Hua Joint Venture	Project Manager	Kenny Yu	2192-0606
Acuity Sustainability Consulting Limited	Environmental Team Leader	F.C. Tsang	2698-6833
ERM-Hong Kong, Limited	Independent Environmental Checker	Mandy To	2271-3000

1.3. Summary of Construction Works

1.3.1 Details of the major construction activities undertaken in this reporting period are shown in **Table 1.2** below. The construction programme is presented in **Appendix A**.

Table 1.2 Summary of the Construction Activities Undertaken during the Reporting Period

Location of works	Construction activities undertaken	Remarks on progress
Reclamation area	• Reclamation Works	• On-going
	• PVD Remedial Works	• On-going
	• Installation of Settlement Markers	• On-going
	• Site Investigation works for foundation	• On-going
	• Foundation works	• On-going
Seawall portion	• Installation of caisson	• On-going
	• Installation of Chinese Pod	• On-going
	• Caisson extension works, from +3mPD to +6mPD, at Seawall A and B	• On-going

1.3.2 The status for all environmental aspects is presented in **Table 1.3**.

Table 1.3 Summary of Status for Key Environmental Aspects under the Updated EM&A Manual

Parameters	Status
Water Quality	
Baseline Monitoring under Updated EM&A Manual and Detailed Plan on DCM	The baseline water quality monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Impact Monitoring	On-going
Regular DCM Monitoring	All DCM was completed on 14 October 2020, regular DCM monitoring for further 4 weeks (i.e form 16 October 2020 to 14 November 2020) was completed according to the approved Detailed Plan on Deep Cement Mixing
Initial Intensive DCM Monitoring	Conducted from 11 February 2019 to 10 March 2019, had not been resumed since there was no DCM related parameter exceeding the AL/LL.
Baseline Water Quality of wet season	Completed over 13 August 2018 to 7 September 2018
Noise	
Baseline Monitoring	The baseline noise monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4

Parameters	Status
Impact Monitoring	On-going
Waste Management	
Mitigation Measures in Waste Monitoring Plan	On-going
Coral	
Pre-translocation Survey and Coral Mapping	The Coral Translocation Plan was submitted and approved by EPD under EP Condition 2.12
Coral Translocation	Completed on 28 March 2018
Post-Translocation Coral Monitoring	Survey affected by missing of translocated and tagged coral colonies after typhoons in September 2018, completed on 28 March 2019.
Pre-construction Coral Survey and Tagging	Completed on 26 June 2018
Tagged Coral Monitoring	Survey obstructed due to missing of tagged coral colonies after typhoons in September 2018
Coral Survey and Re-tagging	Re-tagging at Indirect Impact Site was conducted on 23 November and Re-tagging at Control Site was conducted on 3 December 2018.
Post Re-tagging Coral Quarterly Monitoring	On-going
Marine Mammal	
Baseline Monitoring	The baseline marine mammal monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Impact Monitoring	On-going
Land-based Theodolite Tracking	30 days of theodolite surveys were started on 21 Feb 2019 and completed in May 2019.
Passive Acoustic Monitoring	30 days of PAM surveys were started on 1 May 2019 and completed until the end of May 2019.
White-bellied Sea Eagle	
Baseline Monitoring	The baseline WBSE monitoring result has been reported in Baseline Monitoring Report and submitted to EPD under FEP Condition 3.4
Impact Monitoring	On-going
Environmental Audit	
Site Inspection covering Measures of Air Quality, Noise Impact, Water Quality, Waste, Ecological Quality, Fisheries, Landscape and Visual	On-going
Mitigation Measures in Marine Mammal Watching Plan (MMWP)	Installation of caisson No.19 was completed on 18 March 2021, which the reclamation area had been totally enclosed by permanent structure. Floating type silt curtain at marine access was removed on 18 March 2021. No enclosed area shall be formed by deployment of silt curtain for the remaining works programme.
Mitigation Measures in Detailed Monitoring Programme on Finless Porpoise (DMPFP)	Installation of caisson No.19 was completed on 18 March 2021, which the reclamation area had been totally enclosed by permanent structure. Floating type silt curtain at marine access was removed on 18 March 2021. No enclosed area shall be formed by deployment of silt curtain for the

Parameters	Status
	remaining works programme.
Mitigation Measures in Vessel Travel Details	On-going
Daily Site Audit and Monitoring for Dredging Work	Completed

1.3.3 Other than the EM&A works by ET, environmental briefings, trainings and regular environmental management meetings were conducted, in order to enhance environmental awareness and closely monitor the environmental performance of the contractors.

1.3.4 The EM&A programme has been implemented in accordance with the recommendations presented in the approved EIA Report and the Updated EM&A Manual. A summary of updated implementation status of the environmental mitigation measures for the construction phase of the Project during the reporting period is provided in **Appendix B**.

2. MARINE WATER QUALITY MONITORING

2.1 Water Quality Parameters

2.1.1 Measurement of Dissolved Oxygen (DO), Turbidity, Suspended Solids (SS), Salinity and pH have been undertaken at the eleven monitoring stations during general water quality monitoring.

2.1.2 DO, temperature, salinity, turbidity and pH were measured in-situ and the SS was assayed in a HOKLAS laboratory.

2.1.3 In associate with the water quality parameters, other relevant data were also measured, such as monitoring location/position, time, water depth, sampling depth, tidal stages, weather conditions and any special phenomena or work underway nearby were also recorded.

2.1.4 Impact water quality monitoring was conducted 3 days per week in the reporting period. All parameters were monitored during mid-flood and mid-ebb tides at three water depths for water quality monitoring. The interval between two sets of monitoring has not been less than 36 hours.

2.1.5 **Table 2.1** summarizes the monitoring parameters, frequency and duration of the impact water quality monitoring.

Table 2.1 Water Quality Monitoring Parameters, Frequency and Duration

Parameter, unit	Frequency	No. of Depths
• Water Depth(m) • Temperature(°C) • Salinity(ppt) • pH (pH unit) • Dissolved Oxygen (DO)(mg/L and % of saturation) • Turbidity(NTU) • Suspended Solids (SS), mg/L • Current velocity (m/s) • Direction (in NESW)	General water quality monitoring: 3 days per week, at mid-flood and mid-ebb tides	3 water depths: 1m below sea surface, mid-depth and 1m above sea bed. If the water depth is less than 3m, mid-depth sampling only. If water depth is less than 6m, mid-depth may be omitted.

2.2 Water Quality Monitoring Locations

2.2.1 Impact water quality monitoring was conducted at eleven monitoring locations during general water quality monitoring as shown in **Figure 2.1**.

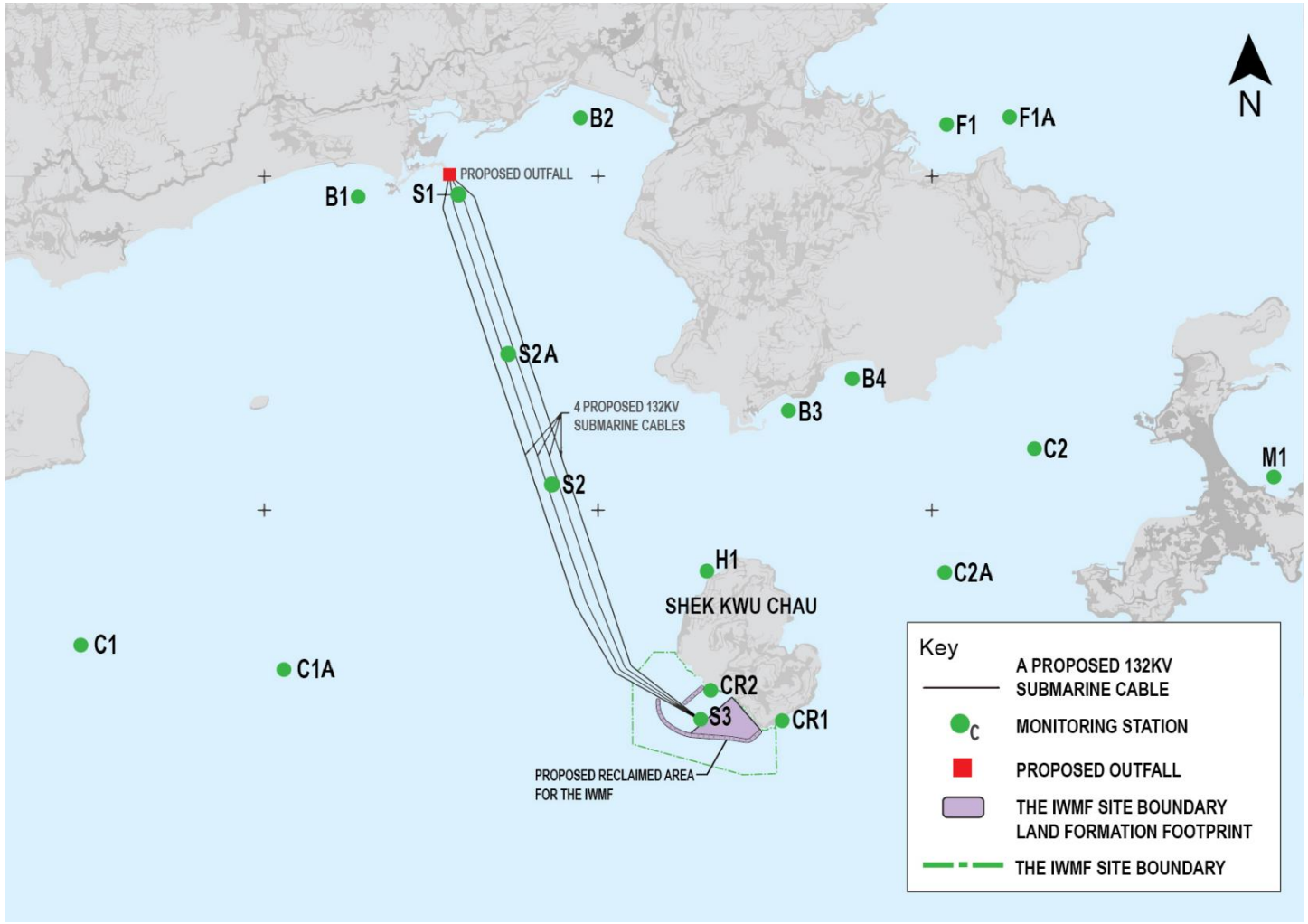


Figure 2.1 Water monitoring locations at Artificial Island near SKC

2.3 Action and Limit Levels

2.3.1 Based on the baseline monitoring data and the derivation criteria presented in the Baseline Monitoring Report, the Action/Limit Levels have been derived and are presented in **Table 2.2** and **Table 2.3** for both dry seasons (October – March) and wet seasons (April – September).

Table 2.2 Derived Action and Limit Levels for Water Quality Monitoring (Dry Season)

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	≤ 7.13	≤ 4
SS in mg/L	≥ 8 or 120% of control station's SS at the same tide of the same day of measurement, whichever is higher	≥ 10 or 130% of control station's SS at the same tide of the same day of measurement, whichever is higher
Turbidity in NTU	≥ 5.6 or 120% of control station's turbidity at the same tide of the same day of measurement, whichever is higher	≥ 12.81 or 130% of control station's turbidity at the same tide of the same day of measurement, whichever is higher
Temperature in°C	1.8°C above the temperature recorded at representative control station at the same tide of the same day	2°C above the temperature recorded at representative control station at the same tide of the same day

Notes:
i. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
ii. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
iii. For turbidity, SS and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table 2.3 Derived Action and Limit Levels for Water Quality (Wet Season)

Parameters	Action	Limit
Construction Phase Impact Monitoring		
DO in mg/L	≤ 5.28	≤ 4
SS in mg/L	≥ 12 or 120% of control station's SS at the same tide of the same day of measurement, whichever is higher	≥ 14 or 130% of control station's SS at the same tide of the same day of measurement, whichever is higher
Turbidity in NTU	≥ 4.0 or 120% of control station's turbidity at the same tide of the same day of measurement, whichever is higher	≥ 4.3 or 130% of control station's turbidity at the same tide of the same day of measurement, whichever is higher
Temperature in°C	1.8°C above the temperature recorded at representative control station at the same tide of the same day	2°C above the temperature recorded at representative control station at the same tide of the same day

Notes:
i. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
ii. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
iii. For turbidity, SS and Salinity, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

2.4 Monitoring Results and Observations

2.4.1 As confirmed by the Contractor on 14 October 2020, all DCM works was completed on 14 October 2020, the post DCM water quality monitoring was completed for further 4 weeks (i.e. from 16 October 2020 to 14 November 2020) according to the approved Detailed Plan on Deep Cement Mixing. As all DCM work and post DCM water quality monitoring were completed on 14 November 2020, no water quality monitoring was conducted at S1, S2A and S3 after 14 November 2020. Monitoring results of 6 key parameters: Salinity, DO, turbidity, SS, pH and temperature for general water quality monitoring during the reporting period, are summarized in **Table 2.4**, and results trending are presented graphically in **Appendix C.**

Table 2.4 Summary of Regular Impact Water Quality Monitoring Results

Locations		Parameters																					
		Salinity (ppt)			Dissolved Oxygen (mg/L)						pH			Turbidity (NTU)			Suspended Solids (mg/L)			Temp. (°C)		
					Surface & Middle			Bottom															
		July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep
B1	Avg.	30.49	30.35	31.06	8.12	8.48	8.35	8.11	8.43	8.44	8.35	8.30	8.39	2.9	3.0	3.0	4.03	4.68	6.54	29.2	28.6	28.9
	Min.	29.09	28.47	29.38	6.93	7.41	7.01	6.85	7.48	7.29	8.07	8.07	8.12	2.2	1.6	1.9	2.50	2.50	2.50	26.6	27.1	26.8
	Max.	31.51	32.17	32.18	9.46	9.37	9.48	9.30	9.69	9.60	8.65	8.62	8.62	3.7	4.3	4.2	10.10	9.00	10.00	30.4	29.8	29.9
B2	Avg.	30.53	30.43	30.85	8.14	8.57	8.41	8.11	8.54	8.48	8.35	8.28	8.38	2.8	3.0	3.0	4.34	5.18	6.84	29.2	28.5	28.8
	Min.	29.33	28.07	29.36	6.89	7.54	7.25	6.95	7.53	7.25	7.99	7.94	8.03	2.1	1.9	1.7	2.50	2.50	3.00	26.4	27.1	27.3
	Max.	31.38	31.86	32.21	9.41	9.56	9.57	9.15	9.42	9.48	8.64	8.60	8.60	3.9	4.9	4.3	17.00	9.00	10.00	30.5	30.0	30.1
B3	Avg.	30.50	30.33	30.82	8.16	8.46	8.44	8.15	8.56	8.38	8.36	8.28	8.36	2.9	3.0	3.1	4.39	6.02	6.55	29.2	28.6	28.8
	Min.	29.14	28.51	29.11	6.63	6.62	6.84	6.47	6.99	7.10	8.07	7.88	8.09	2.0	1.6	2.0	2.50	2.50	2.50	26.7	27.3	27.2
	Max.	31.28	31.99	32.09	9.41	9.56	9.57	9.15	9.58	9.66	8.58	8.52	8.59	3.9	4.5	4.3	17.20	10.00	9.00	30.9	29.9	30.1
B4	Avg.	30.53	30.35	30.93	8.04	8.51	8.32	8.13	8.48	8.22	8.35	8.28	8.37	2.9	3.0	3.1	4.39	5.74	6.96	29.2	28.5	28.9
	Min.	29.07	28.31	29.22	6.82	7.02	6.91	6.58	7.10	7.22	8.06	7.98	8.10	2.1	2.0	1.8	2.50	2.50	3.00	26.8	27.0	27.2
	Max.	31.74	32.02	32.52	9.29	9.63	9.68	9.40	9.50	9.67	8.64	8.66	8.61	3.9	4.0	4.9	11.20	12.00	9.00	30.9	29.6	30.1
C1A	Avg.	30.48	30.37	30.80	8.12	8.52	8.30	8.07	8.46	8.12	8.35	8.27	8.34	3.7	3.7	4.0	3.69	5.81	6.65	29.1	28.5	28.8
	Min.	29.09	27.91	28.76	6.76	6.66	6.57	6.67	6.95	7.00	8.16	7.91	8.07	2.6	2.0	2.2	2.50	2.50	2.50	26.5	26.9	26.9
	Max.	31.40	32.12	32.40	9.32	9.91	9.56	9.14	9.60	9.23	8.55	8.55	8.62	5.3	5.0	5.9	13.90	12.00	9.00	30.7	29.9	30.1
C2A	Avg.	30.47	30.31	30.87	8.11	8.52	8.47	8.16	8.44	8.39	8.35	8.30	8.35	3.6	3.8	4.0	4.52	6.28	6.94	29.1	28.6	28.8
	Min.	29.09	28.25	28.97	6.97	6.88	7.04	6.95	6.66	6.75	8.08	8.01	8.10	2.5	2.4	2.5	2.50	2.50	2.50	26.6	27.2	27.1
	Max.	31.45	32.03	32.25	9.34	9.97	9.72	9.32	9.91	9.41	8.64	8.65	8.62	5.6	5.6	5.7	18.10	21.00	10.00	30.9	29.9	30.1
CR1	Avg.	30.45	30.44	30.89	8.09	8.46	8.37	8.19	8.50	8.47	8.33	8.28	8.36	2.9	3.0	3.1	4.16	6.05	6.93	29.0	28.5	28.7
	Min.	29.26	27.96	28.61	6.83	6.77	7.14	7.14	7.47	7.42	7.98	7.90	8.07	1.9	1.9	1.9	2.50	2.50	2.50	26.3	27.3	26.7
	Max.	31.57	32.07	32.34	9.23	9.53	9.51	9.08	9.52	9.79	8.60	8.68	8.61	3.6	4.7	4.8	12.20	10.00	9.00	30.8	29.8	30.2
CR2	Avg.	30.48	30.35	30.80	8.05	8.41	8.38	8.08	8.41	8.26	8.33	8.28	8.34	2.9	3.0	3.1	4.53	6.50	7.19	29.1	28.5	28.7
	Min.	29.08	28.09	28.93	6.66	7.15	6.96	6.74	7.29	7.28	8.03	8.00	8.09	2.0	2.0	1.9	2.50	2.50	3.00	26.3	27.2	27.1
	Max.	31.52	32.13	32.17	9.39	10.07	9.50	9.25	10.0	9.50	8.64	8.63	8.61	4.0	4.4	5.1	14.50	11.00	10.00	30.8	29.8	30.1
F1A	Avg.	30.47	30.35	30.89	8.16	8.53	8.36	8.14	8.52	8.43	8.34	8.31	8.35	2.9	3.1	3.0	4.32	5.74	6.88	29.1	28.5	28.8
	Min.	29.14	28.16	29.65	6.79	7.03	7.19	6.98	7.30	7.20	7.98	7.94	8.06	2.0	1.8	1.8	2.50	2.50	3.00	26.5	27.0	26.8
	Max.	31.51	31.90	32.35	9.31	9.63	9.43	9.32	9.54	9.29	8.63	8.60	8.64	4.4	4.7	4.3	17.70	11.00	10.00	30.7	29.9	30.1

Locations		Parameters																				
		Salinity (ppt)			Dissolved Oxygen (mg/L)						pH			Turbidity (NTU)			Suspended Solids (mg/L)			Temp. (°C)		
					Surface & Middle			Bottom														
		July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep
H1	Avg.	30.48	30.36	30.87	8.09	8.63	8.41	8.16	8.50	8.43	8.33	8.32	8.35	2.9	2.9	2.9	4.32	5.83	7.12	29.2	28.5	28.8
	Min.	29.03	28.16	29.22	6.44	7.27	7.12	6.58	7.53	7.39	8.00	7.93	8.11	2.1	1.8	1.8	2.50	2.50	3.00	26.4	27.1	27.2
	Max.	31.42	32.12	32.42	9.24	9.58	9.33	9.28	9.46	9.35	8.62	8.65	8.57	4.3	4.4	4.3	18.90	15.00	10.00	30.7	29.8	30.1
M1	Avg.	30.48	30.36	30.84	8.17	8.50	8.25	8.04	8.49	8.23	8.34	8.28	8.33	2.9	3.1	3.0	4.27	5.97	6.91	29.0	28.5	28.7
	Min.	29.07	28.25	28.39	6.79	7.08	6.97	6.84	6.94	7.03	8.11	7.86	8.12	1.9	2.2	1.8	2.50	2.50	2.50	26.3	26.8	27.1
	Max.	31.50	31.95	32.57	9.46	9.66	9.64	9.20	9.64	9.55	8.64	8.64	8.59	4.2	4.5	4.6	9.90	13.00	10.00	30.5	29.9	30.1

Notes:

i. "Avg", “Min” and “Max” is the average, minimum and maximum respectively of the data from measurements conducted under mid-flood and mid-ebb tides at three water depths, except that of DO where the data for “Surface & Middle” and “Bottom” are calculated separately.

2.4.2 All of the monitoring results for SS, DO, turbidity and temperature obtained in the reporting period complied with their corresponding Action and Limit levels. For the salinity, pH, DO, turbidity, temperature and SS their trends were fluctuated independent to the site activities and presented in **Appendix C**.

2.4.3 No major pollution source and extreme weather which might affect the results were observed during the impact monitoring.

2.4.4 Details of the exceedance are presented in **Section 8**.

2.4.5 Implemented mitigation measures minimizing the adverse impacts on water are listed in the implementation schedule given in **Appendix B**.

3. NOISE MONITORING

3.1 Noise Monitoring Parameters

3.1.1 Impact noise monitoring was conducted weekly in the reporting period between 0700-1900 hours on normal weekdays. Additional impact noise monitoring was conducted weekly in the reporting period between 1900-0700 hours on all days as well as public holidays and Sundays.

3.1.2 Construction noise level measured in terms of the A-weighted equivalent continuous sound pressure level (L_{Aeq}). $L_{eq\ 30min}$ was used as the monitoring parameter for the time period between 0700 and 1900 hours on normal weekdays. $L_{eq\ 5min}$ was used as the monitoring parameter for the time period between 1900 and 0700 hours as well as public holidays and Sundays. **Table 3.1** summarizes the monitoring parameters, frequency and duration of the impact noise monitoring and additional impact noise monitoring.

Table 3.1 Noise Monitoring Parameters, Time, Frequency and Duration

Monitoring Station	Time	Duration	Parameters
M1/ N_S1, M2/ N_S2, M3/ N_S3	Day time: 0700-1900 hrs (during normal weekdays)	Once per week $L_{eq\ 5min}$/$L_{eq\ 30min}$ (average of 6 consecutive $L_{eq\ 5min}$)	L_{eq}, L_{10} & L_{90}
	Evening time: 1900-2300 hrs (including normal weekdays, also public holidays and Sundays)	Once per week $L_{eq\ 5min}$ (3 sets of $L_{eq\ 5min}$)	L_{eq}, L_{10} & L_{90}
	Night time: 2300-0700 hrs (including normal weekdays, also public holidays and Sundays)	Once per week $L_{eq\ 5min}$ (3 sets of $L_{eq\ 5min}$)	L_{eq}, L_{10} & L_{90}

3.2 Noise Monitoring Locations

3.2.1 Three noise monitoring locations for impact monitoring and additional impact monitoring at the nearby sensitive receivers are shown in **Figure 3.1**

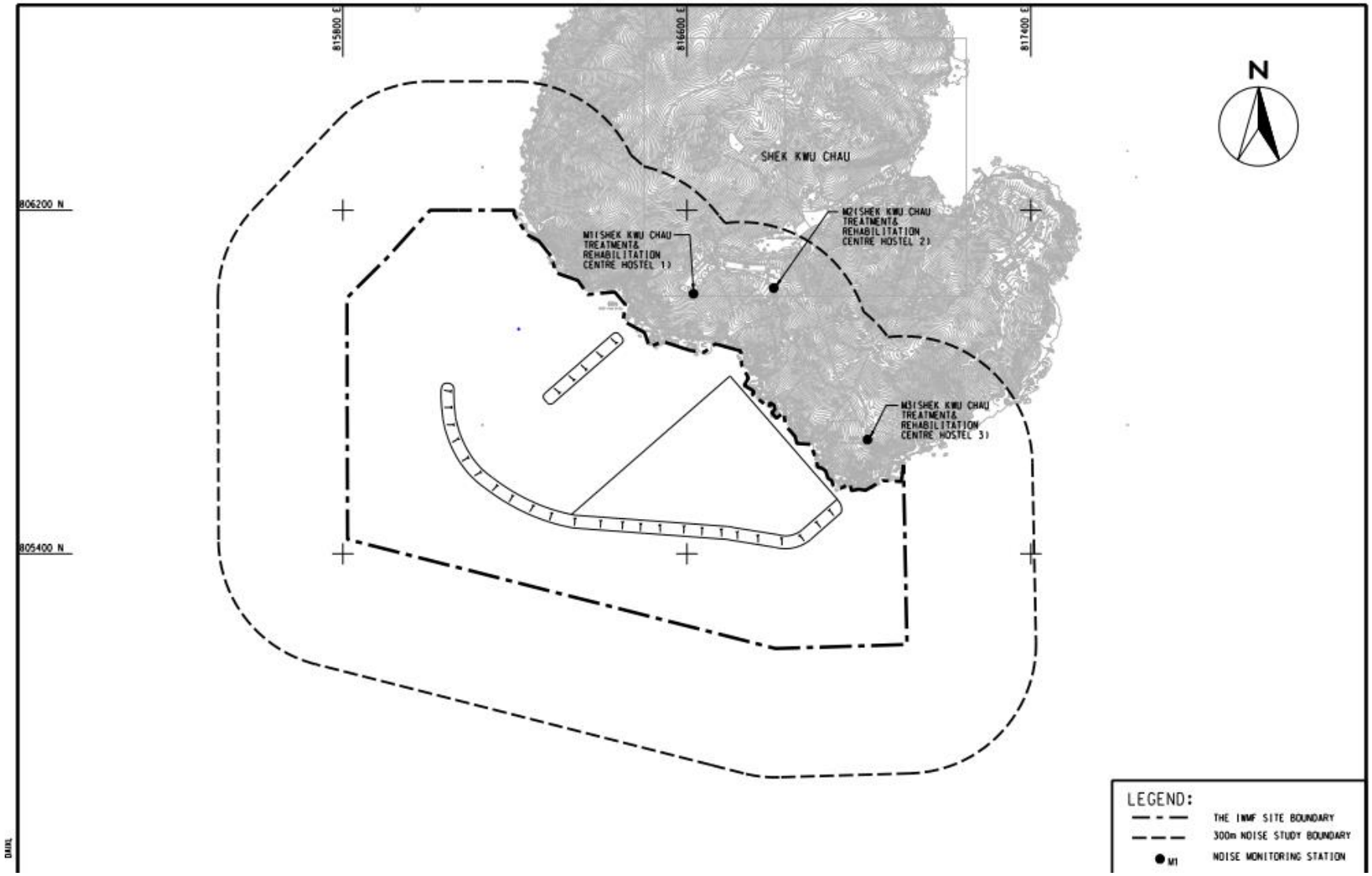


Figure 3.1 Noise monitoring locations at SKC

3.2.2 M1, M2 and M3 are Shek Kwu Chau Treatment and Rehabilitation Centre Hostel 1, 2 and 3 respectively of The Society for the Aid and Rehabilitation of Drug Abusers (SARDA) located at southern part of Shek Kwu Chau.

3.2.3 Measurements at M1 & M3 were conducted at a point 1m from the exterior of the sensitive receivers building façade and at a position 1.2m above the ground. Measurement setup at M3 has been varying with minor adjustment to minimize the disturbance to the users of Treatment Centre. Measurement at M2 was conducted at a point 1m from building façade of the ceiling of 1st floor level for avoidance of mutual disturbance with users of Treatment Centre. The minor adjustment of monitoring locations, which were in favour to mutual convenience with the users of Treatment Centre, were found with no effect on monitoring result based on on-site observation and experience from the Baseline monitoring of the Project.

3.2.4 The noise monitoring stations are summarized in **Table 3.2** below.

Table 3.2 Noise Monitoring Location

Station	NSR ID in EIA Report	Noise Monitoring Location	Type of sensitive receiver(s)	Measurement Type
M1	N_S1	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 1	Residential	Façade
M2	N_S2	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 2	Residential	Façade
M3	N_S3	Shek Kwu Chau Treatment & Rehabilitation Centre Hostel 3	Residential	Façade

3.3 Action and Limit Levels

3.3.1 The Action/Limit Levels in line with the criteria of Practice Note for Professional Persons (ProPECC PN 2/93) "Noise from Construction Activities – Non-statutory Controls" and Technical Memorandum on Environmental Impact Assessment Process issued by HKSAR Environmental Protection Department ["EPD"] under the Environmental Impact Assessment Ordinance, Cap 499, S.16 is presented in **Table 3.3.**

Table 3.3 Action and Limit Levels for Noise per Updated EM&A Manual

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

Notes: If works are to be carried out during restricted hours, the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority have to be followed.

3.4 Monitoring Results and Observations

3.4.1 Impact monitoring for noise impact for daytime was conducted in the reporting period. The impact noise levels at Noise Monitoring Stations at SKC (i.e. M1/ N_S1 to M3/ N_S3) are summarized in **Table 3.5**. Additional impact monitoring during restricted hours was conducted in the reporting period. The additional impact noise levels at Noise Monitoring Stations at SKC (i.e. M1/ N_S1 to M3/ N_S3) are summarized in **Table 3.6** and **Table 3.7** respectively. Trending of the noise monitoring results is presented graphically in **Appendix D**.

3.4.2 Major construction activity, major noise source and extreme weather which might affect the results were recorded during the impact monitoring.

3.4.3 According to our field observations, the major noise source identified at the noise monitoring stations in the reporting month are summarised in **Table 3.4**. Air-conditioner was found to be the major noise source near the monitoring station M3.

Table 3.4 Summary of Field Observation

Monitoring Station	Major Noise Source
M1	Nil
M2	Nil
M3	Air-conditioner

No data from impact monitoring during daytime had exceeded the stipulated limit level at 75 dB(A).

Table 3.5 Summary of Impact Noise Monitoring Results during Daytime (0700 – 1900 hrs)

Location	Noise in dB(A)								
	Range of $L_{eq\ 30min}$			Range of $L_{10\ 30min}$			Range of $L_{90\ 30min}$		
	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep
M1[1]	57.0 – 60.8	54.5 – 58.3	56.8 – 58.3	61.2 – 66.8	55.7 – 59.8	59.1 – 59.5	55.8 – 58.6	52.5 – 57.8	55.0 – 56.7
M2	57.5 – 60.2	55.1 – 60.5	55.1 – 56.9	60.4 – 64.3	56.7 – 60.8	56.3 – 58.6	54.8 – 59.7	53.0 – 54.8	53.2 – 54.8
M3	56.7 – 57.5	53.7 – 58.4	55.9 – 60.3	58.6 – 60.9	55.0 – 60.1	56.9 – 60.8	53.4 – 55.9	51.2 – 56.7	54.6 – 59.2

Note:
[1] The data is discarded because of the validity of the impact noise monitoring at M1 on 27 and 28 Sep 2021.

Applicable mitigation measures for construction works are fully implemented as shown in **Appendix B**, where double-glazed windows and air conditioning system were also installed and confirmed operable for the NSRs (N_S1, N_S2 & N_S3).

During the noise monitoring event, frontline staff of ET have inquired the treatment centre users on any noise disturbance from the construction activities at evening and night time, where no complaint and adverse opinions was received.

Data from impact monitoring during evening time and night time were compared with the NCO criteria. Where site inspection and auditing on Contractor's record have shown that the conditions stipulated in the Construction Noise Permit (CNP) issued by the Noise Control Authority for construction works during restricted hours were followed. No inappropriate practice were spotted during evening time and night time construction works, thus the stipulated requirement on noise impact control during night time and evening time was achieved.

Table 3.6 Summary of the Additional Impact Noise Monitoring Results during Evening Time (1900-2300 hrs)

Location	Noise in dB(A)								
	Range of $L_{eq\ 5min}$			Range of $L_{10\ 5min}$			Range of $L_{90\ 5min}$		
	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep
M1[1]	52.2 – 63.0	51.8 – 59.6	52.3 – 58.8	56.7 – 67.5	52.1 – 60.2	52.9 – 60.9	50.9 – 60.7	50.8 – 59.1	51.3 – 55.4
M2	56.0 – 65.8	54.7 – 57.9	52.1 – 57.0	57.3 – 67.1	55.9 – 60.8	53.7 – 59.8	51.3 – 61.4	52.4 – 54.4	50.9 – 53.9
M3	50.5 – 62.4	43.7 – 59.2	44.7 – 58.2	55.1 – 64.8	45.1 – 61.1	46.3 – 59.8	47.3 – 57.8	41.9 – 56.9	42.2 – 55.2

Note:
[1] The data is discarded because of the validity of the impact noise monitoring at M1 on 27 and 28 Sep 2021.

Table 3.7 Summary of Additional Impact Noise Monitoring Results during Night Time (2300 – 0700 hrs)

Location	Noise in dB(A)[1]								
	Range of $L_{eq\ 5min}$			Range of $L_{10\ 5min}$			Range of $L_{90\ 5min}$		
	July	Aug	Sep	July	Aug	Sep	July	Aug	Sep
M1[2]	52.3 – 59.5	44.7 – 53.9	51.4 – 56.9	55.3 – 62.4	45.7 – 54.6	51.9 – 58.7	50.3 – 57.6	43.0 – 52.9	51.0 – 54.4
M2	51.6 – 56.8	51.1 – 58.3	49.7 – 55.0	54.7 – 60.2	52.1 – 61.7	50.9 – 56.9	46.9 – 55.6	50.0 – 54.2	48.5 – 51.7
M3	49.4 – 60.0	41.5 – 57.1	44.2 – 53.0	51.2 – 62.3	42.7 – 60.9	45.7 – 54.6	43.8 – 56.4	38.5 – 52.7	39.8 – 52.7

Note:
[1] No construction work was conducted during the night time period in the reporting peroid.
[2] The data is discarded because of the validity of the impact noise monitoring at M1 on 27 and 28 Sep 2021.

4. WASTE

4.1 The waste generated from this Project includes inert construction and demolition (C&D) materials, and non-inert C&D materials. Non-inert C&D materials are made up of general refuse, vegetative wastes and recyclable wastes such as plastics and paper/cardboard packaging waste. Steel materials generated from the project are also grouped into non-inert C&D materials as the materials were not disposed of with other inert C&D materials.

4.2 As advised by the Contractor, for C&D waste, no metals were generated and collected by registered recycling collector. No paper was generated on site and collected by registered recycling collector. No plastic waste was collected by registered recycling collector. 600.0 L of chemical wastes were collected by licensed chemical waste collector. 71.5 m^3 of other types of wastes (e.g. general refuse) were generated on site and disposed of at Landfill. 116,290.5 m^3 of public fill and 43,882.0 m^3 of fill rock were imported during the reporting period.

4.3 Chemical waste generated from the cleaning of oil stain and leakage on deck of barges was stored in the chemical waste storage area on the barges.

4.4 With reference to relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting period are summarised in **Table 4.1**. Details of cumulative waste management data are presented as a waste flow table in **Appendix E**.

4.5 Although there is not much waste generation in the reporting period from the Project, the Contractor is reminded to sort and store any solid and liquid waste on-site properly prior to disposal.

Table 4.1 Quantities of Waste Generated from the Project

Reporting Month	**Actual Quantities of Inert C&D Materials Generated Monthly**								**Actual Quantities of C&D Wastes Generated Monthly**					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill			Metals	Paper / cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
						Sand	Public Fill	Rock						
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)			(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000m^3)
July 2021	0	0	0	0	0	0	105.1083	30.6065	0	0	0	0	0	0.0195
Aug 2021	0	0	0	0	0	0	11.1822	7.5180	0	0	0	0	0	0.0130
Sep 2021	0	0	0	0	0	0	0	5.7575	0	0	0	0	0.6	0.0390

Notes:

1. Broken concrete for recycling into aggregates.
2. Plastic refer to plastic bottles / containers, plastic sheets / foam from packaging materials.
3. Use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m^3 by volume.

5. CORAL

5.1 Coral Monitoring Parameters

5.1.1 Ten (10) tagged coral colonies at each site of suggested control site and indirect impact site are being monitored weekly for the first month and followed by monthly monitoring for three months. The selected Control Site is located at Yuen Kong Chau of Soko Islands about 7 km away from the project area. After the hitting of super typhoon Mangkhut in mid-September 2018, the coral re-tagging activities at indirect impact site and control site were conducted in November and December 2018 respectively. Tagged coral colonies at the proposed recipient site are being monitored quarterly for one year and the last post-translocation coral monitoring was completed on 28 Mar 2019. The selected recipient site R3 is located the opposite side of the Project area at about 2 km away.

5.1.2 Monitoring recorded the following parameters (using the same methodology adopted during the pre-translocation survey); the size, presence, health conditions (percentage of mortality/bleaching) and percentage of sediment of each trans-located coral colony. The general environmental conditions including weather, sea, and tidal conditions of survey sites were monitored.

5.1.3 Health status of coral was assessed by the following criteria:
Hard coral: Percentage of surface area exhibiting partial mortality and blanched/bleached area of each coral colony and degree of sedimentation.

5.2 Coral Monitoring Locations

Location of the ten tagged coral colonies at each of the proposed indirect impact site, control site, the recipient site R3 and REA transect at proposed indirect impact site are shown in **Figure 5.1**, **Figure 5.2** and **Figure 5.3** respectively:

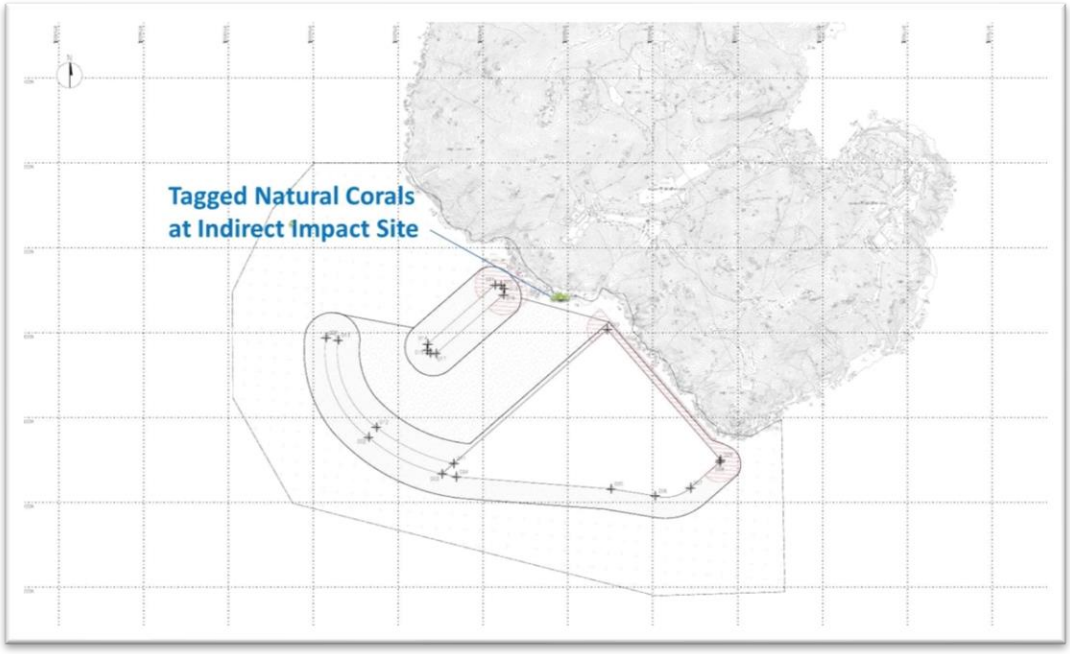


Figure 5.1 Tagged Natural Corals at Indirect Impact Site Near SKC for re-tagging after typhoon Mangkhut

Figure 5.2 Tagged Natural Corals at Control Site Near Yuen Kong Chau for re-tagging after typhoon Mangkhut

Figure 5.3 Tagged Translocation Corals at Recipient Site R3 near SKC

5.2.1 The GPS coordinates of the tagged coral colonies and retagged coral colonies at both indirect impact site, control site and recipient site R3 were shown in **Table 5.1**, **Table 5.2** and **Table 5.3** respectively.

Table 5.1 Tagged Natural Corals during Baseline and Re-tagged Natural Corals after Typhoon Manghkut at Control Site near Yuen Long Chau

Coral # note i	GPS Coordinates	
1	N22°09'45.96"	E113°54'57.81"
2R	N22°11'29.12"	E113°59'09.01"
3	N22°09'45.81"	E113°54'57.78"
4	N22°09'45.70"	E113°54'57.95"
5R	N22°11'29.10"	E113°59'09.18"
6	N22°09'45.75"	E113°54'58.02"
7R	N22°11'29.17"	E113°59'08.86"
7	N22°09'45.65"	E113°54'57.94"
8	N22°09'45.53"	E113°54'57.90"
9	N22°09'46.23"	E113°54'54.70"
10R	N22°11'29.18"	E113°59'08.91"

Notes:

i. The re-tagged corals were marked as ##**R**.

Table 5.2 Re-tagged Natural Corals after Typhoon Manghkut at Indirect Impact Site near SKC

Coral # note i	GPS Coordinates	
11R	N22°11'29.14"	E113°59'08.92"
12R	N22°11'29.12"	E113°59'09.01"
13R	N22°11'29.11"	E113°59'09.07"
14R	N22°11'29.13"	E113°59'09.12"
15R	N22°11'29.10"	E113°59'09.18"
16R	N22°11'29.07"	E113°59'09.23"
17R	N22°11'29.17"	E113°59'08.86"
18R	N22°11'29.14"	E113°59'08.94"
19R	N22°11'29.20"	E113°59'08.81"
20R	N22°11'29.18"	E113°59'08.91"

Notes:

i. The re-tagged corals were marked as ##**R**.

Table 5.3 GPS Coordinates of Recipient Site R3

Site	GPS Coordinates	
R3	N22°11'43.69"	E113°28.99"

5.3 Action and Limit Levels

5.3.1 Monitoring result was reviewed and compared against the below Action Level and Limit Level (AL/LL) as set with the below **Table 5.4** and **Table 5.5**.

Table 5.4 Action and Limit Levels for Construction Phase Coral Monitoring

Parameter	Action Level	Limit Level
Mortality	If during Impact Monitoring a 15% increase in the percentage of partial mortality on the corals occurs at more than 20% of the tagged indirect impact site coral colonies that is not recorded on the tagged corals at the control site, then the Action Level is exceeded.	If during Impact Monitoring a 25% increase in the percentage of partial mortality on the corals occurs at more than 20% of the tagged indirect impact site coral colonies that is not recorded on the tagged corals at the control site, then the Limit Level is exceeded.

Table 5.5 Action and Limit Levels for Post-Translocation Coral Monitoring

Parameter	Action Level	Limit Level
Mortality	If during Post-Translocation Monitoring a 15% increase in the percentage of partial mortality on the corals occurs at more than 20% of the translocated coral colonies that is not recorded on the original corals in the recipient site, then the Action Level is exceeded.	If during Post-Translocation Monitoring a 25% increase in the percentage of partial mortality on the corals occurs at more than 20% of the translocated coral colonies that is not recorded on the original corals in the recipient site, then the Limit Level is exceeded.

5.4 Monitoring Results and Observations

5.4.1 Ten (10) hard coral colonies were monitored at each site of Control and Indirect Impact sites as suggested in the Construction Phase Monitoring Plan. The general health conditions (size, mortality, bleaching and sediment) were recorded and summarized in **Table 5.7** and **Table 5.8**. Photos of each tagged coral colonies were taken during the monitoring activities and shown in **Appendix F.**

5.4.2 The 11th quarterly coral monitoring during construction phase at both Indirect Impact Site and Control Site was conducted on 21 September 2021 and the weather condition was summarized in **Table 5.6**.

Table 5.6 Weather Condition for the 11th Quarterly Coral Monitoring during Construction Phase at both Indirect Impact Site and Control Site

Date	Condition	Average Underwater Visibility
21 September 2021	- East wind force 3-4, - Sunny Day	Less than 0.5m

Table 5.7 Sizes, Condition, Mortality, Bleaching and Sediment of 10 Natural Coral Colonies at Control Site of 11th Quarterly Coral Monitoring (21 September 2021) during 37th to 39th Months Construction Phase Monitoring

Coral #	Species	Size (cm) – Max. Diameter	Condition	Mortality (%)		Bleaching (%)		Sediment (%)	
				Baseline (26 Jun 2018 & 3 Dec 2018)	21 Sep 2021	Baseline (26 Jun 2018 & 3 Dec 2018)	21 Sep 2021	Baseline (26 Jun 2018 & 3 Dec 2018)	21 Sep 2021
1	*Goniopora stutchburyi*	25	Fair	0	0	0	0	0	0
2R	*Goniopora stutchburyi*	10	Good	0	0	0	0	0	0
3	*Psammocora superficialis*	18	Fair	0	0	0	0	0	0
4	*Turbinaria peltata*	13	Good	0	0	0	0	0	0
5R	*Goniopora stutchburyi*	18	Good	0	0	0	0	0	0
6	*Cyphastrea serailia*	43	Fair	0	0	0	0	0	0
7R	*Coscinaraea* sp.	15	Good	0	0	0	0	0	0
8	*Goniopora stutchburyi*	21	Good	0	0	0	0	0	0
9	*Goniopora stutchburyi*	11	Fair	0	0	0	0	0	0
10R	*Goniopora stutchburyi*	20	Good	0	0	0	0	0	0

Notes:

i. The re-tagged corals were marked as ##R.

Table 5.8 Sizes, Condition, Mortality, Bleaching and Sediment of 10 Natural Coral Colonies at Indirect Impact Site of 11th Quarterly Coral Monitoring (21 September 2021) during 37th to 39th Months Construction Phase Monitoring

Coral #	Species	Size (cm) – Max. Diameter	Condition	Mortality (%)		Bleaching (%)		Sediment (%)	
				Baseline (23 Nov 2018)	21 Sep 2021	Baseline (23 Nov 2018)	21 Sep 2021	Baseline (23 Nov 2018)	21 Sep 2021
11R	*Cyphastrea serailia*	48	Good	0	0	0	0	0	0
12R	*Favites chinensis*	27	Good	0	0	0	0	0	0
13R	*Turbinaria peltata*	21	Good	0	0	0	0	0	0
14R	*Favites chinensis*	8	Good	0	0	0	0	0	0
15R	*Goniopora stutchburyi*	11	Good	0	0	0	0	0	0
16R	*Psammocora superficialis*	27	Good	0	0	0	0	0	0
17R	*Favites chinensis*	15	Good	0	0	0	0	0	0
18R	*Psammocora superficialis*	39	Good	0	0	0	0	0	0
19R	*Psammocora superficialis*	42	Good	0	0	0	0	0	0
20R	*Psammocora superficialis*	29	Good	0	0	0	0	0	0

Notes:

i. The re-tagged corals were marked as ##R.

5.4.3 The re-tagging activity had been done at both Indirect Impact Site and Control Site on November 2018 and December 2018 respectively. A total of 20 tagged coral colonies (10 at control site and 10 at indirect impact site including the re-tagged coral colonies) were monitored. Similar to the baseline results performed in June, November and December 2018 and the results of the previous five quarterly coral monitoring during construction phase, the health condition of all tagged and re-tagged coral colonies at Indirect Impact Site and Control site were good in general. No increased mortality was recorded during the survey in September 2021.

5.4.4 No sediment, bleaching or increased mortality in the general condition of coral colonies were observed during the 11th quarterly coral monitoring period. No deterioration of the coral community was observed in the ecological monitoring results when compared with the baseline ecological monitoring results. There is no AL/LL exceedance during the monitoring period.

6. MARINE MAMMAL

6.1 Survey Methods

6.1.1 Vessel-based Line-transect Survey

For the vessel-based marine mammal surveys, the monitoring team adopted the standard line-transect method (Buckland et al. 2001) as same as that adopted during the EIA study and pre-construction phase monitoring to allow fair comparison of marine mammal monitoring results.

Eight transect lines are set at Southeast Lantau survey area, including Shek Kwu Chau, waters between Shek Kwu Chau and the Soko Islands, inshore waters of Lantau Island (e.g. Pui O Wan) as well as southwest corner of Cheung Chau as shown in **Figure 6.1** below:

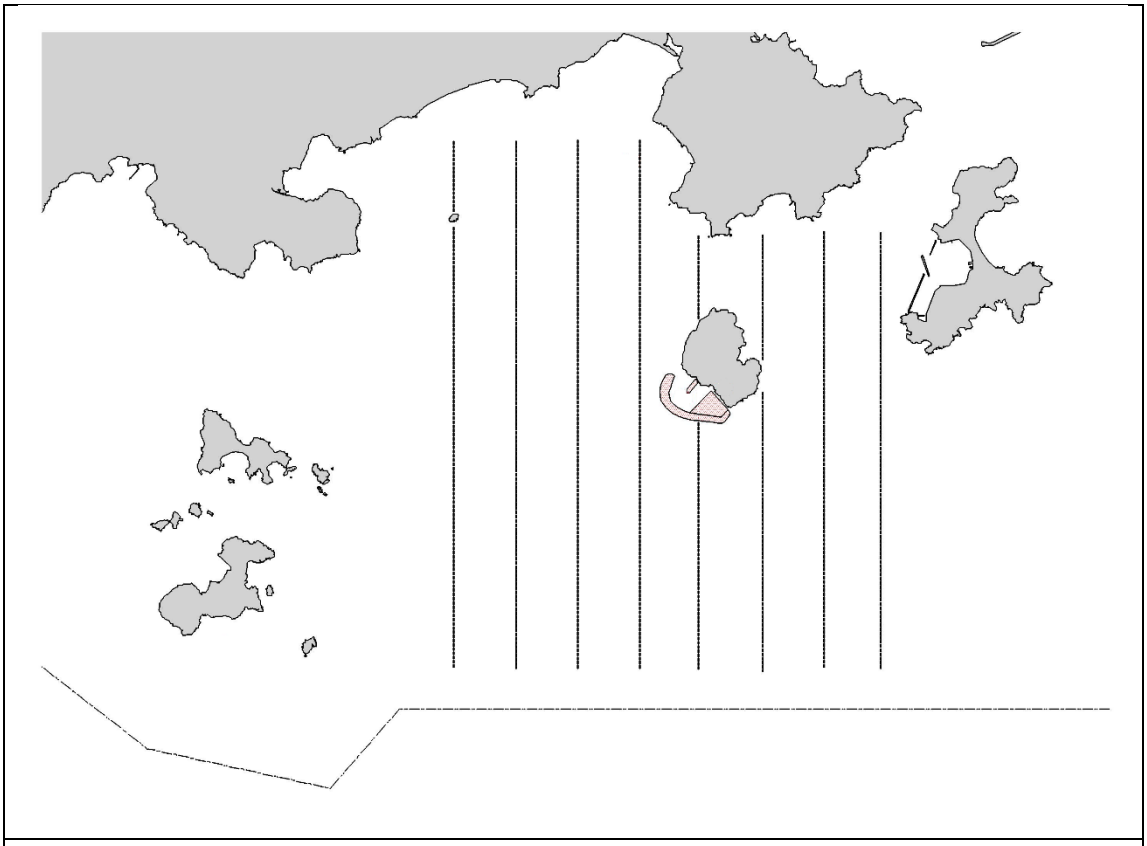


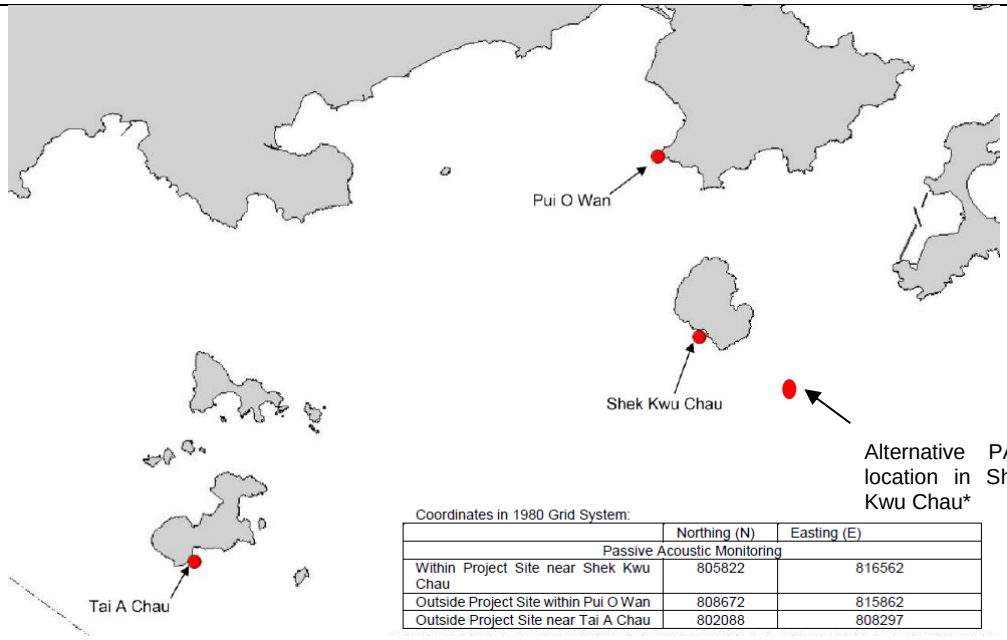
Figure 6.1 Line Transects for Marine Mammal Surveys

In comparison to the baseline monitoring results, results from the analyzed construction phase monitoring data would allow the detection of any changes of their usage of habitat, in response to the scheduled construction works.

6.1.2 Passive Acoustic Monitoring (PAM)

The PAM aims to study the usage of an area by Finless Porpoise by using an array of automated static porpoise detectors (e.g. C-POD) which would be deployed at different locations to detect the unique ultra-high frequency sounds produced by Finless Porpoise. During the construction period, the PAM survey will be conducted including placement of two passive porpoise detectors outside the Project Area as control site (i.e.

within Pui O Wan and to the south of Tai A Chau) and one porpoise detector within the Project Area (i.e. near Shek Kwu Chau) as shown in **Figure 6.2** below.



Coordinates in 1980 Grid System:

	Northing (N)	Easting (E)
Passive Acoustic Monitoring		
Within Project Site near Shek Kwu Chau	805822	816562
Outside Project Site within Pui O Wan	808672	815862
Outside Project Site near Tai A Chau	802088	808297

Note*: The alternative PAM device adjacent to the Project site was deployed from 5 Mar to 11 Apr 2019, which contained a full 37 days acoustic monitoring data set. After the confirmation of loss of the original PAM within the Project site, this data set was proposed to replace that of the original one, as consulted with AFCD accordingly.

Figure 6.2 Locations of Passive Acoustic Monitoring

These three detectors will be deployed on-site to carry out 24-hours monitoring for a period listed as **Table 6.1** below during the construction phase.

Table 6.1 PAM Deployment Period

Season	Months	Deployment Period
Peak Season	December, January, February, March, April or May	At least 30 days during the peak months of porpoise occurrence in South Lantau waters

6.1.2.1 The automated static porpoise detectors shall detect the presence and number of finless porpoise and Chinese White Dolphins respectively over the deployment period, with the false signal such as boat sonar and sediment transport noise distinguished and filtered out. The detectors shall be deployed and retrieved by professional dive team on the seabed of the three selected location shown in **Figure 6.2**. During each deployment, the C-POD unit serial numbers as well as the time and date of deployments shall be recorded. Information including the GPS positions and water depth at each of the deployment locations shall also be obtained.

6.1.2.2 The diel patterns (i.e. 24-hour activity pattern) of finless porpoise occurrence among the three sites at Shek Kwu Chau, Tai A Chau and Pui O Wan shall be analyzed. Peaks and troughs of finless porpoise occurrence per hour of day would be identified and compared with the results obtained from pre-construction monitoring.

6.1.3 Land-based Theodolite Tracking

The Land-based Theodolite Tracking study would use the same station as in the AFCD monitoring study(same as the baseline monitoring location), which is situated at the southwest side of Shek Kwu Chau (GPS position: 22º11.47' N and 113º59.33' E) as shown in below **Figure 6.3**. The station was selected based on its height above

sea level (at least 20 metres), close proximity to shore, and relatively unobstructed views of the entire Project Area to the southwest of Shek Kwu Chau. The height of the Shek Kwu Chau Station established by the HKCRP team is 74.6 m high at mean low water, and only a few hundred metres to the IWMF reclamation site, which is ideal for the purpose for the present behavioural and movement monitoring of finless porpoises as well during construction phase considering there as an un-obstructed vantage point at a height above the Project Site.

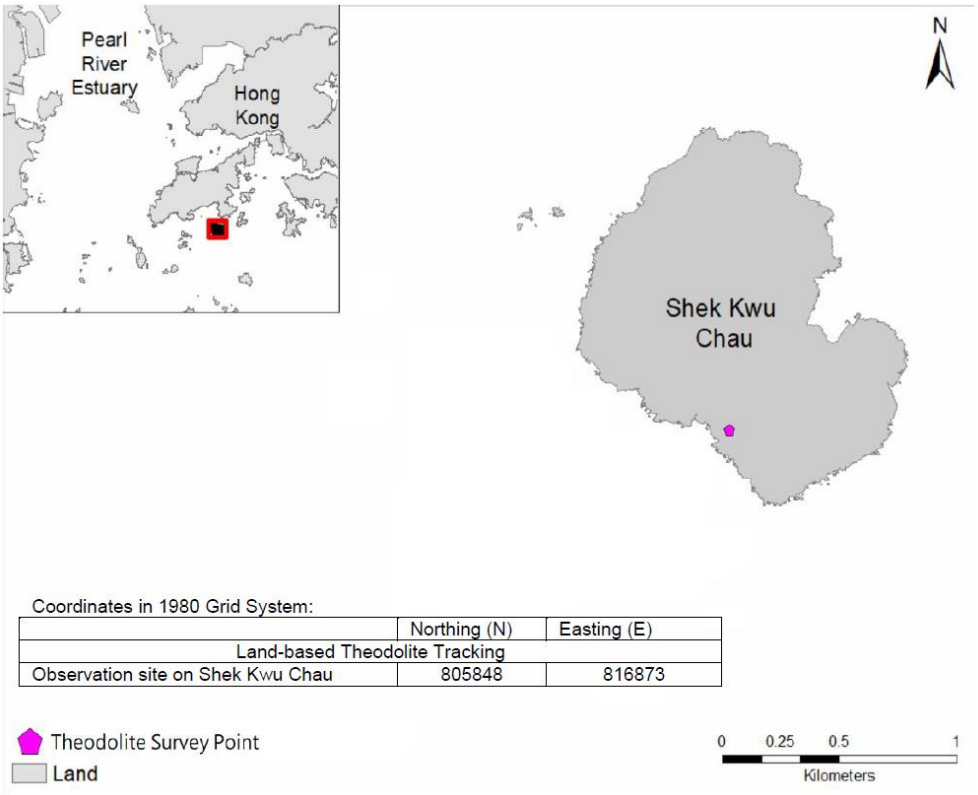


Figure 6.3 Locations of Land-based Theodolite Tracking

6.1.3.1 During the construction phase, Land-based Theodolite Tracking will be carried out for approximately six hours of tracking for each day of field work for a period listed as **Table 6.2** below, preferably at the initial stage of the construction period (i.e. December 2018 to May 2019).

Table 6.2 Land-based Theodolite Tracking Survey Period

Season	Months	Survey Period
Peak Season	December, January, February, March, April or May	30 days during the peak months of porpoise occurrence in South Lantau waters

6.1.3.2 The monitoring period for land-based theodolite tracking will be proposed to be overlapped with the PAM. The monitoring team consists of one experienced theodolite operator and at least two field observers for assistance. To conduct theodolite tracking, the observers will search systematically for Finless Porpoise using the unaided eye and 7 x 50 handheld binoculars on each survey day throughout the study area. When an individual or group of porpoises is located, a theodolite tracking session will be initiated and focal follow methods will be used to track the porpoise(s). Behavioural state data (i.e. resting, milling, travelling, feeding and socializing) shall also be recorded every 5 minutes for the focal individual or group.

Positions of porpoises and boats shall be measured using a digital theodolite connected to a laptop computer. This tracking survey will be conducted during the peak season between December 2018 and May 2019 for 30 surveys spanning across 15-16 weeks during the peak season to provide good temporal coverage during the initial stage of the construction period.

6.2 Specific Mitigation Measures

6.2.1 Monitored exclusion zones

During the installation/re-installation/relocation process of floating type silt curtains, in order to avoid the accidental entrance and entrapment of marine mammals within the silt curtains, a monitored exclusion zone of 250 m radius from silt curtain should be implemented and monitored by competent Marine Mammal Observers (MMOs). Marine Mammal Exclusion Zone (MMEZ) would also be implemented for precautionary purpose for DCM works.

6.2.2 Marine mammal watching plan

Upon the completion of silt curtain installation/re-installation/relocation, marine mammal watching plan would be implemented to observe the presence of any marine mammal around the localized silt curtain or being trapped by the localized silt curtain.

6.3 Results and Observations

6.3.1 Vessel-based Line-transect Survey

Three monthly surveys were conducted during the reporting period. As this is covering designated off-peak season (June - November), one survey was completed in each month. A total on effort (transects only) survey length of 121.7 km was completed, 114.1 km at Beaufort Sea State 2 or better (**Table 6.3**). One (1) Finless Porpoise sighting was recorded; and the details of recorded sightings were summarized (**Table 6.4, Figure 6.4**).

Table 6.3 Summary of Vessel-based Line-transect Survey Effort

Date	Area*	Beaufort	Effort (km)	Season	Vessel	Effort Type**
22 July 2021	SEL	1	21.8	SUMMER	SEAMAR HK	P
		2	18.4			
		3	0.3			
10 August 2021	SEL	1	19.7	SUMMER	SEAMAR HK	P
		2	17.3			
		3	3.1			
14 September 2021	SEL	0	2.5	AUTUMN	SEAMAR HK	P
		1	20.3			
		2	14.1			
		3	4.2			

* As shown in **Figure. 6.1**

** P (from AFCD) denotes the ON EFFORT survey on the transect line, not the adjoining passages

Table 6.4 Summary of Sightings Recorded during July 2021 to September 2021 of Vessel-based Line-transect Survey Effort

Date	Species	Sighting No.	Time	Group Size	PSD	Behaviour	Lat.	Long.	Area	Effort	Season
14 Sep 2021	Finless Porpoise	98	10:38	1	23.67	Unknown	22.18857	114.003	SEL	On	AUTUMN

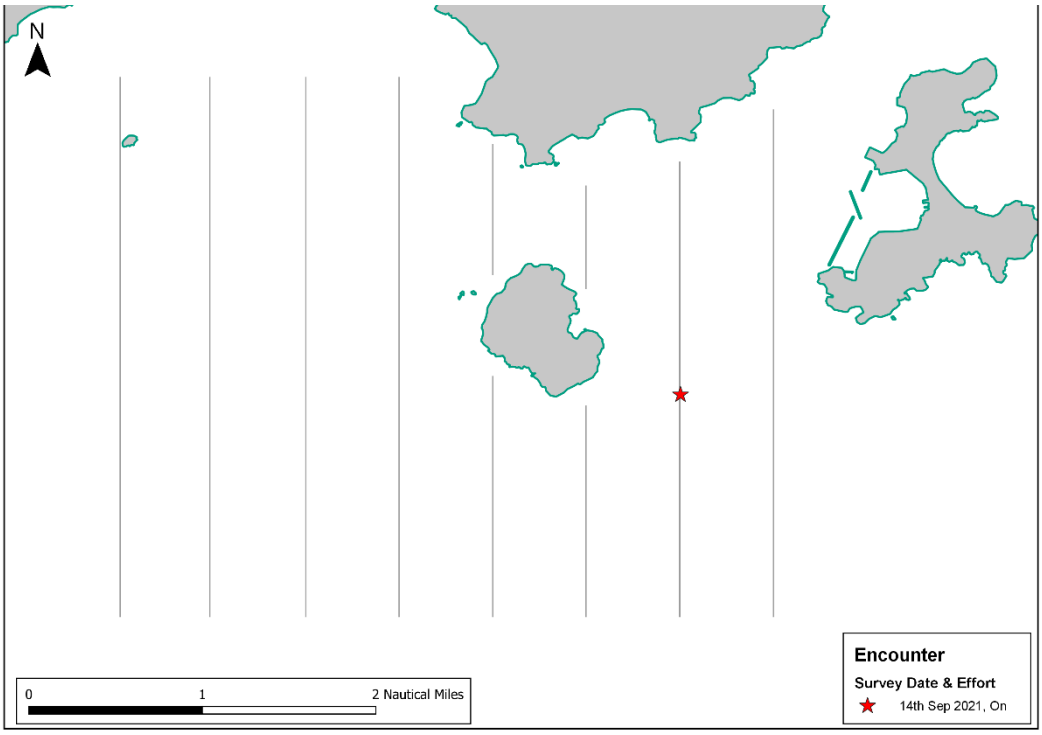


Figure 6.4 Location of sightings recorded during July to September 2021 Vessel-based Line-transect Survey

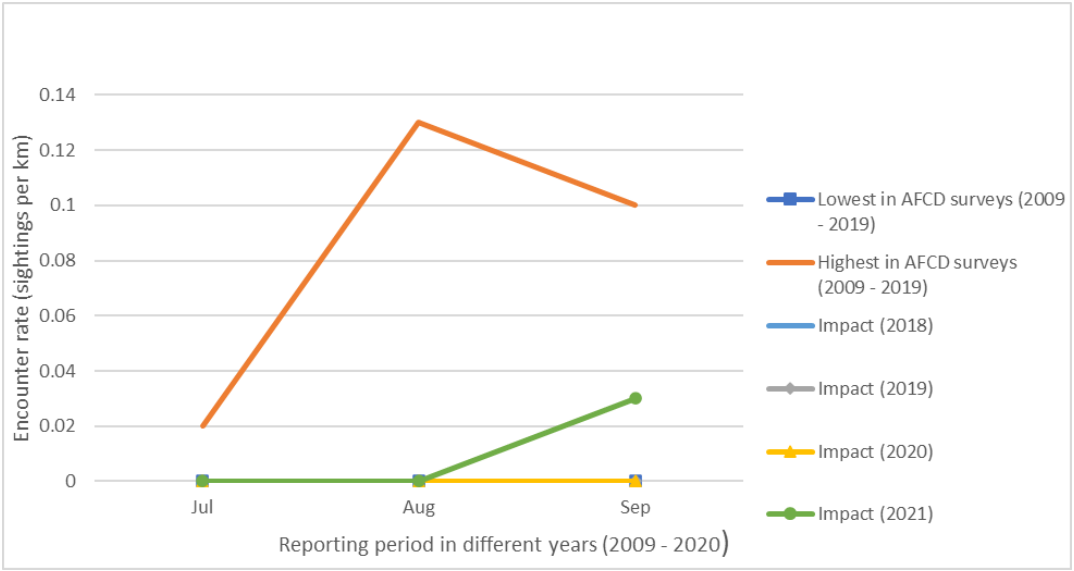


Figure 6.5 Plot of encounter rate during July to September in 2009 – 2021 from different surveys

6.3.1.1 A review of the long term AFCD marine mammal monitoring programme, the EIA and the pre-construction baseline monitoring report for this project was conducted. Both the EIA and the pre-construction baseline monitoring were conducted during the peak porpoise months Dec 2008 to May 2009 and Feb to April 2018, respectively. The AFCD long term monitoring data and impact monitoring in 2019 and 2020 should be compared directly to Impact Survey results of the reporting periods.

6.3.1.2 A review of the Beaufort Sea state survey conditions between 2009 and 2018 (only data available from AFCD at time of writing; (AFCD 2018; 2017; 2016; 2015; 2014; 2013; 2012; 2011; 2010)) shows that survey conditions in July and September 2021 were the upper % limits of previous AFCD surveys, similar to impact monitoring surveys conducted in 2021.

6.3.1.3 A review of all the porpoise sightings in the survey area for July to September between 2009-2020 indicates that it is rare to record sightings in this month in July to September. Given the similar survey conditions and the encounter rate recorded for porpoise in the project area during the reporting period, the encounter rates in effort for July to September 2021 were between 0.00km^{-1} and 0.03km^{-1} (see Figure 6.5), it is noted that the encounter rate of impact survey is higher when compared to other years and other survey types. It is noted that effort varied between years and the average number of sightings was 0.02 km^{-1} for the AFCD long term monitoring programme in September. Therefore, this months' encounter rate of 0.03 km^{-1} (eqv. 0.9 encounters per 40km) is higher than the AFCD average for September 2021.

6.3.1.4 Data and records of the implemented mitigation measures, including construction vessel routing and speed control, marine mammal watching plan and avoidance of noisy work during the peak season, are collected form the Contractor and now under detail review. As surveys continue for this project, data shall be constantly re-evaluated across survey months to discern trends and impacts, if any.

6.3.2 PAM and Land-based Theodolite Tracking

6.3.2.1 30 days of PAM surveys were started at 1 May 2019 and completed until the end of May 2019. Multiple PAM systems were deployed at three sites. The PAM system located at the IWMF was lost, however, an alternative data set has been identified. The PAM systems at the two control sites Tai A Chau and Pui O were recovered on 3 August 2019. A summary of marine mammal detections shows that porpoise were recorded every day of deployment at each site, but at varying frequencies. The detailed theodolite result was presented in 17th Monthly EM&A report (November 2019) while detailed PAM result was presented in 18th Monthly EM&A report (December 2019).

6.3.2.2 For the baseline study, the DPM for each site was 11,160 (Shek Kwu Chau), 16,089 (Tai A Chau) and 3645 (Pui O Wan), totalling 30,894 DPM across all three sites, compared to DPMs of 4740 (Shek Kwu Chau), 7725 (Tai A Chau) and 23,986 (Pui O Wan), totalling 36,451 DPM, for the impact phase study. As the impact phase study was longer than the baseline study, it is not appropriate to directly compare total counts of DPM, however, the DPM rate (the average number of detections per day) for each site can be more directly compared. During the baseline study, Shek Kwu Chau averaged 338.2 DPM per day compared to 124.8 DPM per day, during the impact phase study. This showed a decrease in the daily average of porpoise detection at Shek Kwu Chau. During the baseline study, Tai A Chau averaged 487.6 DPM per day compared to 179.7 DPM per day, during the impact phase study. This showed a decrease in the daily average of porpoise detection at Tai A Chau. During the baseline study, Pui O Wan averaged 98.5 DPM per day compared to 557.8 DPM per day,

during the impact phase study. This showed a significant increase in the daily average of porpoise detections at Pui O Wan (**Table 6.6**).

6.3.2.3 Overall, the PAM study showed that porpoise continue to consistently utilise the Shek Kwu Chau habitat immediately adjacent to the IWMF construction activities, although to a lesser degree than that prior to construction activities. In addition, the Pui O Wan site, which is 2.5 km away from the IWMF construction area, was also consistently utilised during the impact phase PAM study. A continued assessment of fine scale habitat use, particularly through PAM which yields large quantities of data, would allow a more comprehensive assessment of the EIA predictions.

Table 6.6 Summary Statistic Comparison of Baseline (2018) and Impact Phase (2019) Passive Acoustic Monitoring

Baseline data									
Site	**Unit ID**	**Start**	**End**	**Days**	**DPD % Days**	**Total DPM**	**DPM /Day**	**% False Positive DPM**	**Time Lost %**
Shek Kwu Chau	2891	2018/02/09	2018/03/13	32.11	100	11160	338.2	0.0	1.00
Tai A Chau	2868	2018/02/09	2018/03/13	32.5	100	16089	487.6	1.0	2.00
Pui O Wan	2891	2018/03/13	2018/04/17	34.85	97.3	3645	98.5	2.0	31.87
Total				99.01		30894	312.0		
Impact Phase									
Site	**Unit ID**	**Start**	**End**	**Days**	**DPD % Days**	**Total DPM**	**DPM /Day**	**% False Positive DPM**	**Time Lost %**
Shek Kwu Chau	IWMF_BU_20190305_01	2019/03/05	2019/04/11	37.91	100	4740	124.8	0.0	0
Tai A Chau	IWMF_20190411_02	2019/04/11	2019/05/23	41.94	100	7725	179.7	0.0	0
Pui O Wan	IWMF_20190411_01	2019/04/11	2019/05/23	42.02	100	23986	557.8	0.0	0
Total				121.9		36451	299.1		

6.3.2.4 Theodolite surveys were completed in May 2019. In total, thirty four days of theodolite tracking were completed between February - May 2019, comprising 167 hours and 49 minutes of observation. No Chinese white dolphin was observed and only one finless was recorded. The finless porpoise encounter rate was calculated as 0.006 finless porpoise per hour, in all weather conditions.

6.3.2.5 A total of 2620 vessels of ten different types were observed and tracked within or in the proximity of the IWMF construction site. These comprised fishing boats (236), speed boats (29), container boats (155), government boats (22), high speed ferries (53), others (13) and IWMF-Related construction platforms (974), tug boats(240), transportation boats (363), construction boats (531 and approximately 8 buoys were present marking the site boundary. The detailed Land-based Theodolite Tracking Report was presented in 5th Quarterly EM&A report and 17th Monthly EM&A report.

6.3.2.6 The baseline theodolite tracking was conducted immediately prior to and during the site preparation activities of the site. The baseline data records a decrease in porpoise sightings as site preparation activities commenced and notes that the decrease was most likely due to the onset of site preparation activities. The impact theodolite tracking conducted for this study records a marked increase in the number of Project related vessels and platforms and, in agreement with baseline conclusions, shows a concomitant decrease in finless porpoise sightings.

6.3.2.7 Screen grab of sound spectrogram for sighting recorded during the reporting period are presented in **Appendix G**.

7. WHITE-BELLIED SEA EAGLE

7.1 WBSE Monitoring Parameters

7.1.1 The objective of the construction phase monitoring should be to verify the utilisation of the area by WBSE, their responses to construction disturbance, as well as the effectiveness of the proposed mitigation measures. Throughout the construction phase, field surveys should be conducted twice per month during their core breeding season (from December to May), and once per month outside their core breeding season (from June to November). The monitoring frequency should be increased to weekly during the incubation period of each year. In order to confirm their foraging ground near the construction site, it is necessary to conduct daily monitoring during the first week of nestling period in each year.

7.1.2 Since the location of the WBSE nest was located at the southwest of SKC within the hillside shrubland, it is impossible to observe the eggs during incubation period. Therefore, monitoring with increased frequency during incubation period could not be carried out. Daily monitoring will be carried out once any chick is recorded during the monitoring day.

7.2 Results and Observations

7.2.1 Three monitoring surveys for monthly construction phase were conducted during the reporting period. Since there is no landing point along the western part of SKC, boat survey was used for the monitoring survey. In order to increase the chance of finding the WBSEs, monitoring survey was carried out either early in the morning or later in the afternoon. The weather conditions of monitoring survey were shown in **Table 7.1**.

Table 7.1 Weather Conditions during the WBSE Monitoring (Monthly)

Date	Condition	Temperature (℃)
22nd July 2021	- Southwest wind force 3 to 4 - Sunny Day	32
26th August 2021	- Southwest wind force 5 to 6 - Sunny Day	32
21st September 2021	- East wind force 3 to 4 - Sunny Day	30

7.2.2 Two WBSE adults were recorded near SKC island during the survey in July, August and September 2021. No abnormal behaviour of the adults was recorded during the reporting period. All marine works during the monitoring period did not show any impact to the WBSE.

7.2.3 No disturbances from anthropogenic activities on the island were recorded during the monitoring survey. No invasion of other fauna species was recorded as well.

Figure 7.1 Location of WBSE Nest on SKC

7.2.4 No invasion of other fauna species was recorded and no sign of using the construction site as a foraging ground was recorded as well.

7.2.5 During the reporting period, no abnormal behaviour of the recorded adults and chick was shown. All marine works during the thirty-seventh to thirty-nineth months construction period did not show any influence on the WBSE.

7.2.6 Photo records of the WBSE taken during the reporting period are presented in **Appendix H**.

8. SUMMARY OF MONITORING EXCEEDANCE, COMPLAINTS, NOTIFICATION OF SUMMONS AND PROSECUTIONS

8.1 No exceedance of the Action and Limit Levels of the regular construction noise, coral and WBSE monitoring was recorded during the reporting period.

8.2 During the general water quality monitoring period for July to September 2021. None of general water quality monitoring results of SS, DO, turbidity and temperature obtained during the reporting period had exceeded the Limit Level.

8.3 No notification of summons and prosecution was received in the reporting period.

8.4 Statistics on complaints, notifications of summons and successful prosecutions are summarized in **Appendix I**.

9. EM&A SITE INSPECTION

9.1 Site inspections were carried out on a weekly basis to monitor the implementation of proper environmental pollution control and mitigation measures under the Contract. Site inspections were carried out at the Site Portions 1, 1A, 1B during the reporting period. Portions 1, 1A & 1B were the sites near SKC within the Site boundary.

9.2 Joint site inspection with IEC was carried out on a monthly basis.

9.3 Minor deficiencies were observed during weekly site inspection. Key observations during the site inspections are summarized below:

- Prevention actions for oil/chemical spillage were not carried out properly
- Chemical was not stored properly at designated storage place
- Non-road Mobile Machinery (NRMM) label was not displayed properly
- Dust control measures to exposed earth surface and stockpile of dusty material were not carried out properly
- Filling material was not stored properly at loading points
- Sediment was accumulated in the water channel
- Housekeeping was not maintained
- Stagnant water inside the drip tray of generator should be cleaned

9.4 The Contractor had rectified all of the observations identified during environmental site inspections in the reporting period.

9.5 According to the EIA Study Report, Environmental Permit, contract documents and Updated EM&A Manual, the mitigation measures detailed in the documents, except the silt curtain system, are implemented as much as practical during the reporting period. An updated Implementation Status of Environmental Mitigation Measures (EMIS) is provided in **Appendix B**.

10. CONCLUSION AND RECOMMENDATIONS

10.1 This 13th Quarterly Environmental Monitoring and Audit (EM&A) Report summarizes the EM&A works undertaken during the period from 1 July 2021 to 30 September 2021 in accordance with the Updated EM&A Manual and the requirement under EP-429/2012/A and FEP-01/429/2012/A.

10.2 Construction noise, water quality, construction waste, coral, marine mammal and White-Bellied Sea Eagle (WBSE) monitoring were carried out in the reporting period. No project-related exceedance of the Action and Limit Levels was recorded during the reporting period.

10.3 Weekly environmental site inspections were conducted during the reporting period. Environmental deficiencies were observed during site inspection and were rectified.

10.4 According to the environmental site inspections performed in the reporting period, the Contractor was reminded to pay attention on on-site housekeeping, the proper storage of the chemicals and construction waste, dust control measure for exposed earth surface and stockpile of dusty material and the proper NRMM labelling.

10.5 No environmental complaint was received in the reporting period.

10.6 No notification of summons or prosecution was received since commencement of the Contract.

10.7 The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Appendix A Master Programme

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
EP_SP_66_12-WP6A-M44	Programme for Design and Construction Works WP6A-M44	3468	3468	38.84%		2121		22-Nov-17 A	21-May-27	09-Jun-21	21-May-27	0	
EP_SP_66_12-WP6A-M44.01	Key Dates	3468	3468	52.25%		1656		22-Nov-17 A	21-May-27	30-Jan-23	21-May-27	0	
EP_SP_66_12-WP6A-M44.01.1	Contractual Key Dates	2794	2794	87.33%		354		22-Nov-17 A	16-Jul-25	27-Jul-24	16-Jul-25	0	
EP_SP_66_12-WP6A-M44.01.1.1	Design and Construction Phase	2738	2738	89.12%		298		22-Nov-17 A	21-May-25	27-Jul-24	21-May-25	0	
01-1000	Contract Award/Date of Acceptance of Tender	0	0	100%	100%	0	Mandatory Start	22-Nov-17 A					
01-1010	Date of Commencement of the Design and the Works	0	0	100%	100%	0	Mandatory Start	15-Dec-17 A					
01-1015(3)(M12)	Original Substantial Completion of the Works	0	0	0%	0%	0	Mandatory Finish		27-Jul-24*		27-Jul-24	0	
01-1020	Extended Substantial Completion of The Works	0	0	0%	0%	0			21-May-25		21-May-25	0	
EP_SP_66_12-WP6A-M44.01.1.3	Extension of Time Granted	298	298	0%		298		27-Jul-24	21-May-25	27-Jul-24	21-May-25	0	
01-1015-1(3)(M12)	Extension of time granted (Claim No.1 to No.53) *Claim No.9 excluded	298	298	0%	0%	298		27-Jul-24	21-May-25	27-Jul-24	21-May-25	0	
EP_SP_66_12-WP6A-M44.01.1.2	Operation Phase	56	56	0%		56		22-May-25	16-Jul-25	22-May-25	16-Jul-25	0	
01-1030	Commencement of Operation	0	0	0%	0%	0	Mandatory Start	22-May-25*		22-May-25		0	
01-1230	Issue Certificate of Completion of the Works (56 days after Substantial Completion)	0	0	0%	0%	0	Finish On or Before		16-Jul-25*		16-Jul-25	0	
EP_SP_66_12-WP6A-M44.01.2	Planned Completion Dates	1515	1515	0%		1515		28-Mar-23	21-May-27	20-Mar-23	21-May-27	0	
01-1030(5a)	Grid Connection Agreement (GCA)	0	0	0%	0%	0	Finish On		31-Oct-24*		30-Oct-24	0	
01-1040	Incoming Power Energization to IWMF Substation	0	0	0%	0%	0	Finish On		03-Nov-24*		30-Oct-24	-3	
01-1050	Export Power to Grid	0	0	0%	0%	0	Finish On or After		15-Dec-24*		27-Dec-24	12	
01-1060	Issuance of FS Certificate	0	0	0%	0%	0			18-Sep-24		16-Oct-24	28	
01-1070	Completion of Civil Provision for Transmission	0	0	0%	0%	0			28-Mar-23		20-Mar-23	-8	
01-1080	Commencement of C1.3.4.11 System Commissioning Test	0	0	0%	0%	0		18-Oct-24		17-Oct-24		-1	
01-1090	Completion of C1.3.4.11 System Commission Test	0	0	0%	0%	0			30-Dec-24		13-Dec-24	-17	
01-1100	Physical Completion of 90 Days Plant Commissioning Test Works	0	0	0%	0%	0	Finish On or Before		18-May-25*		27-Mar-25	-52	
01-1110(3)(M15)	Planned Substantial Completion of the Works	0	0	0%	0%	0			12-Jul-25		21-May-25	-52	
01-1110-1(5a)	Completion of 180 Days for Installation, T&C of CCTV System and Onshore Power System at Portion 2	0	0	0%	0%	0	Finish On or Before		17-Nov-25*		17-Nov-25	0	
01-1110-2(5a)	Replacement of Onshore Cranes within 2 yrs at Portion 2	0	0	0%	0%	0	Finish On or Before		21-May-27*		21-May-27	0	
EP_SP_66_12-WP6A-M44.01.3	Dates of Site Pocessions	2715	2715	65.89%		926		15-Dec-17 A	22-May-25	30-Jan-23	22-May-25	0	
01-1120	Possession of Portion 1	0	0	100%	100%	0			15-Dec-17 A				
01-1130	Possession of Portion 1A	0	0	100%	100%	0			15-Dec-17 A				
01-1140	Possession of Portion 1B	0	0	100%	100%	0			15-Dec-17 A				
01-1150	Possession of Portion 2	0	0	0%	0%	0	Start On or Before	22-May-25*		22-May-25		0	
01-1160	Possession of Portion 3	0	0	0%	0%	0	As Late As Possible		07-Nov-22		30-Jan-23	84	
01-1170	Possession of Portion 4	0	0	0%	0%	0	As Late As Possible		07-Nov-22		30-Jan-23	84	
01-1180	Possession of Portion 5	0	0	0%	0%	0	As Late As Possible		07-Nov-22		30-Jan-23	84	
01-1190	Possession of Portion 6	0	0	0%	0%	0	Start On or Before	23-Jul-24*		01-Jun-24		-52	
01-1200	Possession of Portion 7	0	0	100%	100%	0	Finish On or Before		05-Jan-18 A				
01-1210	Possession of Portion 7A	0	0	100%	100%	0	Finish On or Before		07-Dec-18 A				
01-1210(5a)	Possession of Portion 8	0	0	100%	100%	0	Start On	29-Apr-20 A					
EP_SP_66_12-WP6A-M44.02	Contract Preliminaries	150	150	0%		150		31-Jul-21	27-Dec-21	01-Aug-21	31-Dec-21	4	
EP_SP_66_12-WP6A-M44.02.3	Erection of Concrete Batching Plant on Artificial Island	0	0	0%		0		31-Jul-21	31-Jul-21	01-Aug-21	01-Aug-21	2	
02-1090	Commissioning of Concrete Batching Plant	0	0	0%	0%	0	Finish On or Before		31-Jul-21*		01-Aug-21	2	
EP_SP_66_12-WP6A-M44.02.4	Establishment of Public Relation Office	150	150	0%		150		31-Jul-21	27-Dec-21	04-Aug-21	31-Dec-21	4	
EP_SP_66_12-WP6A-M44.02.4.2	South Lantau (SLIO)	150	150	0%		150		31-Jul-21	27-Dec-21	04-Aug-21	31-Dec-21	4	

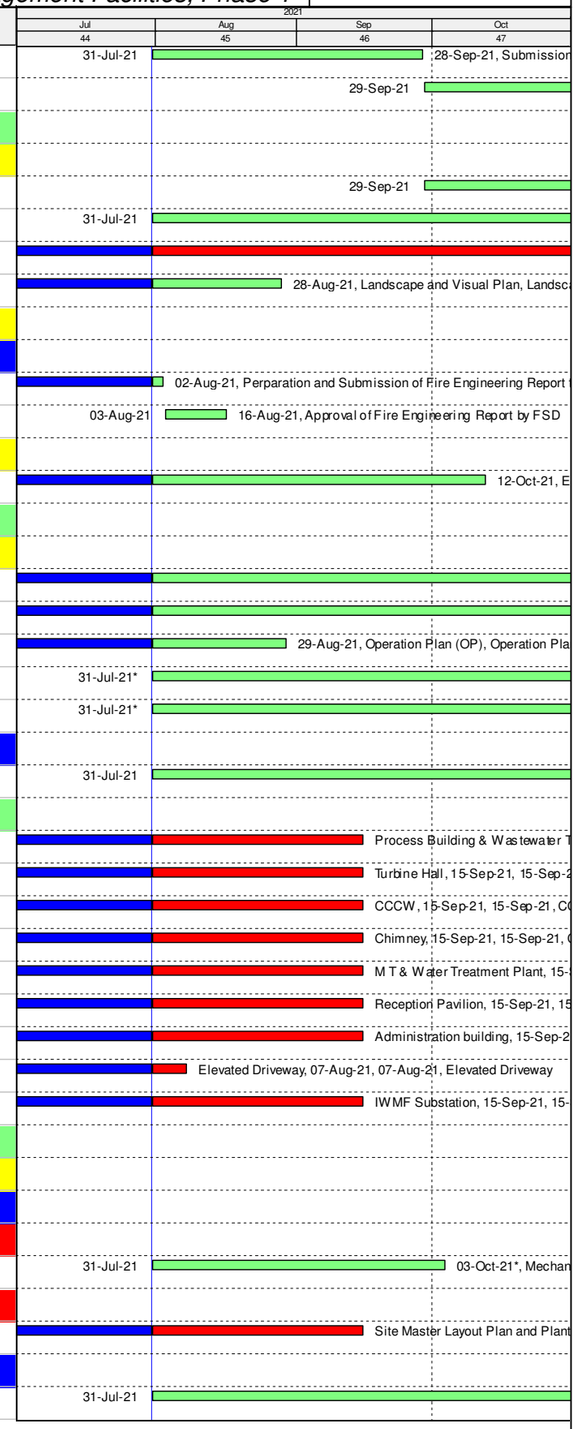
2021: Jul (44) | Aug (45) | Sep (46) | Oct (47)

◆ Commissioning of Concrete Batching Plant,

3-Month Rolling Programme (July 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

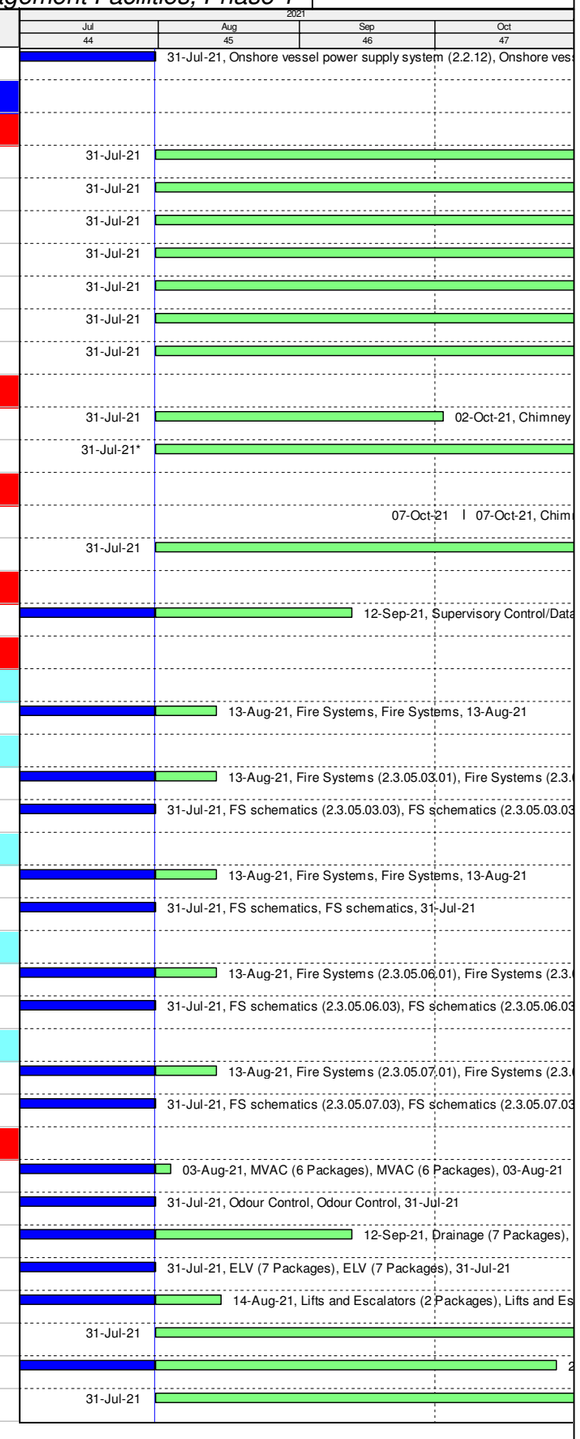
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
02-1070-1(6C)	Submission and approval for location, layout and details of IWMF Information Office(s)	60	60	0%	0%	60		31-Jul-21	28-Sep-21	04-Aug-21	02-Oct-21	4	
02-1120-1(6C)	Establishment of IWMF Information Office(s)	90	90	0%	0%	90	Finish On or Before	29-Sep-21	27-Dec-21*	03-Oct-21	31-Dec-21	4	
EP_SP_66_12-WP6A-M44.03 Licence/Permit Applications		2190	2338	36.48%		1391		27-Dec-18 A	21-May-25	31-Jul-21	21-May-25	0	
EP_SP_66_12-WP6A-M44.03.1 License/Permit for Construction		2120	2120	34.39%		1391		02-Aug-19 A	21-May-25	31-Jul-21	21-May-25	0	
03-1080	CNP for Percussive Piling Works	90	90	0%	0%	90	As Late As Possible	29-Sep-21	27-Dec-21	31-Oct-21	28-Jan-22	32	
03-1090	EPD APCO(SP) License for Concrete Batching Plant	120	120	0%	0%	120		31-Jul-21	27-Nov-21	27-Dec-21	25-Apr-22	149	
03-1360(2)	CNP for 24Hrs	2120	2120	34.39%	34.39%	1391	Finish On or Before	02-Aug-19 A	21-May-25*	31-Jul-21	21-May-25	0	
03-1370_1(M34)	Landscape and Visual Plan	180	478	83.89%	83.89%	29		08-May-20 A	28-Aug-21	02-Sep-21	30-Sep-21	33	
EP_SP_66_12-WP6A-M44.03.4 Fire Services Installations (FSI) Certificatie		550	860	96.91%		17		10-Apr-19 A	16-Aug-21	03-Feb-22	08-Oct-22	418	
EP_SP_66_12-WP6A-M44.03.4.3 Fire Engineering Report		550	860	96.91%		17		10-Apr-19 A	16-Aug-21	03-Feb-22	08-Oct-22	418	
05-3000	Perparation and Submission of Fire Engineering Report to FSD	550	846	99.45%	5%	3		10-Apr-19 A	02-Aug-21	03-Feb-22	05-Feb-22	187	
05-4450	Approval of Fire Engineering Report by FSD	14	14	0%	0%	14		03-Aug-21	16-Aug-21	25-Sep-22	08-Oct-22	418	
EP_SP_66_12-WP6A-M44.03.5 Air Pollution Control (Specified Processes) License		600	1021	87.67%		74		27-Dec-18 A	12-Oct-21	18-Aug-21	30-Oct-21	18	
03-1730(3)	Early Engagement With EPD SP Licensing Department for Information exchange	600	1021	87.67%	87.67%	74		27-Dec-18 A	12-Oct-21	18-Aug-21	30-Oct-21	18	
EP_SP_66_12-WP6A-M44.04 General Submissions		1501	1501	88.01%		180		18-Dec-17 A	26-Jan-22	21-Nov-21	16-Sep-23	598	
EP_SP_66_12-WP6A-M44.04.1 Contractor's Plans Submission and Approval		1501	1501	88.01%		180		18-Dec-17 A	26-Jan-22	21-Nov-21	16-Sep-23	598	
04-1100(1)	Technical Resources Plan (TRP)	240	1474	35.83%	30%	154		19-Dec-17 A	31-Dec-21	16-Apr-23	16-Sep-23	624	
04-1200(1)	Works Plan (WP)	90	1475	0%	30%	154		18-Dec-17 A	31-Dec-21	16-Apr-23	16-Sep-23	624	
04-1400(1)	Operation Plan (OP)	240	1351	87.5%	87.5%	30		18-Dec-17 A	29-Aug-21	16-Aug-23	14-Sep-23	746	
04-1450(1)	Asset Management Plan (AMP)	120	120	0%	0%	120	Start On or Before	31-Jul-21*	27-Nov-21	21-Nov-21	20-Mar-22	113	
04-1500(1)	Handback Plan (HP)	120	120	0%	0%	120	Start On or Before	31-Jul-21*	27-Nov-21	21-Nov-21	20-Mar-22	113	
EP_SP_66_12-WP6A-M44.04.1.1 Provisional Assessment (PA)		180	180	0%		180		31-Jul-21	26-Jan-22	10-Dec-21	07-Jun-22	132	
04-1500-1(1)	Preliminary Assessmant	180	180	0%	0%	180		31-Jul-21	26-Jan-22	10-Dec-21	07-Jun-22	132	
EP_SP_66_12-WP6A-M44.17 Submission & Approval of General Building Plan		135	197	65.19%		47		03-Mar-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1600(M42)	Process Building & Wastewater Treatment Plant	135	105	65.19%	65.19%	47		03-Jun-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1610(M42)	Turbine Hall	135	197	65.19%	65.19%	47		03-Mar-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1620(M42)	CCCW	135	197	65.19%	65.19%	47		03-Mar-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1630(M42)	Chimney	135	197	65.19%	65.19%	47		03-Mar-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1640(M42)	M T & Water Treatment Plant	135	105	65.19%	65.19%	47		03-Jun-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1650(M42)	Reception Pavilion	135	105	65.19%	65.19%	47		03-Jun-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1660(M42)	Administration building	135	105	65.19%	65.19%	47		03-Jun-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
04-1670(M42)	Elevated Driveway	135	158	94.07%	94.07%	8		03-Mar-21 A	07-Aug-21	31-Jul-21	07-Aug-21	0	
04-1680(M42)	IWMF Substation	135	197	65.19%	65.19%	47		03-Mar-21 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
EP_SP_66_12-WP6A-M44.05 Design Submissions		1624	1838	60.16%		647		27-Apr-18 A	08-May-23	15-Jun-21	21-May-27	1474	
EP_SP_66_12-WP6A-M44.05.01 AIP Design Package Submissions		1112	1326	87.86%		135		27-Apr-18 A	12-Dec-21	15-Jun-21	21-May-27	1986	
EP_SP_66_12-WP6A-M44.05.01.01 AIP Process and Layout Design (2.1)		105	1256	38.1%		65		27-Apr-18 A	03-Oct-21	31-Jul-21	07-Oct-21	4	
EP_SP_66_12-WP6A-M44.05.01.01.2 MSW treatment process design for mechanical treatment (2.1.02)		65	65	0%		65		31-Jul-21	03-Oct-21	04-Aug-21	07-Oct-21	4	
05-1090	Mechanical Treatment Plant	65	65	0%	0%	65	Finish On or After	31-Jul-21	03-Oct-21*	04-Aug-21	07-Oct-21	4	
EP_SP_66_12-WP6A-M44.05.01.01.6 Site Master Layout Plan and Plant Layout (2.1.06)		105	1238	55.24%		47		27-Apr-18 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
05-3020	Site Master Layout Plan and Plant Layout	105	1238	55.24%	5%	47		27-Apr-18 A	15-Sep-21	31-Jul-21	15-Sep-21	0	
EP_SP_66_12-WP6A-M44.05.01.02 AIP Ground Treatment, Reclamation, Seawall, Breakwater, Berth (2.2)		166	444	36.75%		105		26-Aug-20 A	12-Nov-21	02-Aug-21	14-Nov-21	2	
05-2970	Onshore crane Facility (2.2.11)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	02-Aug-21	14-Nov-21	2	Revised duration 135 to 105



3-Month Rolling Programme (July 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

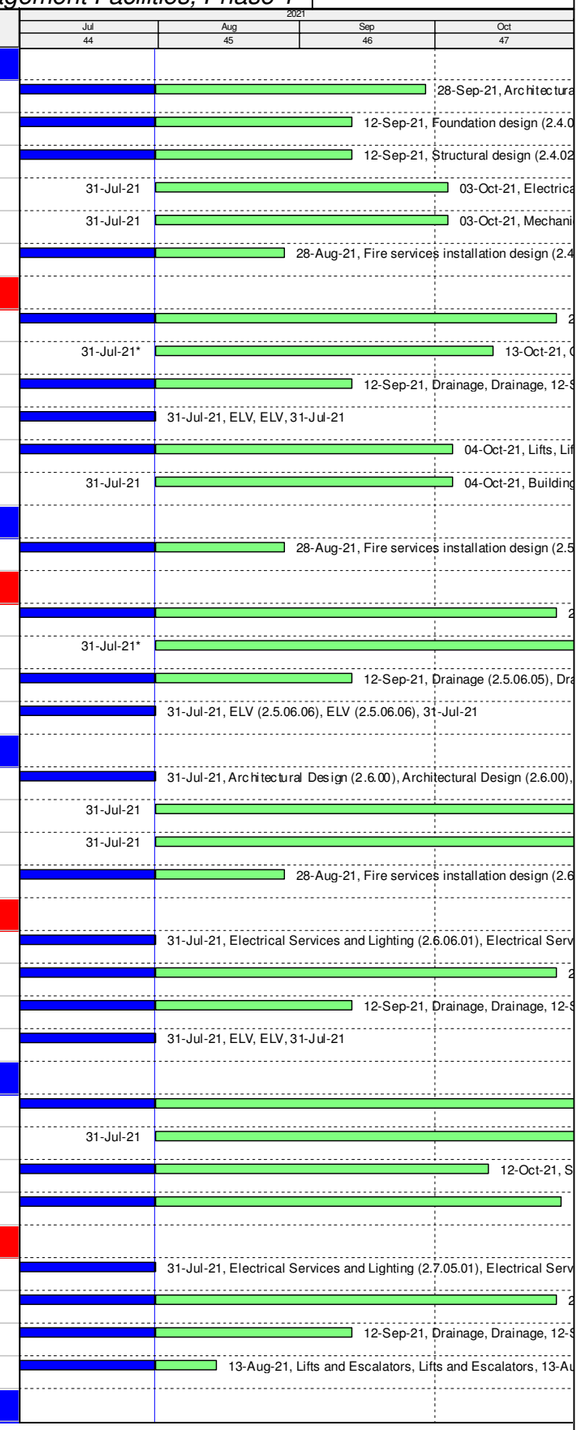
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-2980	Onshore vessel power supply system (2.2.12)	135	339	100%	65%	0		26-Aug-20 A	31-Jul-21	14-Nov-21	14-Nov-21	107	
EP_SP_66_12-WP6A-M44.05.01.03 AIP Incineration Plant Buildings (2.3)		1112	1251	87.86%		135		11-Jul-18 A	12-Dec-21	11-Aug-21	21-May-27	1986	
EP_SP_66_12-WP6A-M44.05.01.03.1 General Layout Drawings and Fire Saftey Strategy (2.3.00)		135	135	0%		135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1210	Process Building	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1220	ACC Equipment Yard	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1230	Turbin Hall Building	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1240	CCCW Building	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1260	Elevated Drive Way and Associated Structures	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1270	Reception Pavilion	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
05-1620	Chimney	135	135	0%	0%	135		31-Jul-21	12-Dec-21	27-May-22	08-Oct-22	300	
EP_SP_66_12-WP6A-M44.05.01.03.2 Foundation design (2.3.01)		135	135	0%		135		31-Jul-21	12-Dec-21	11-Aug-21	21-May-27	1986	
05-3070	Chimney	64	64	0%	5%	64		31-Jul-21	02-Oct-21	11-Aug-21	13-Oct-21	11	
05-3090	Reception Pavilion	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	07-Jan-27	21-May-27	1986	
EP_SP_66_12-WP6A-M44.05.01.03.3 Structural design (2.3.02)		105	105	0%		105		31-Jul-21	12-Nov-21	17-Oct-21	21-May-27	2016	
05-1330	Chimney	0	0	0%	45%	0		07-Oct-21	07-Oct-21	17-Oct-21	17-Oct-21	11	
05-1350	Reception Pavilion Structural Design	105	105	0%	0%	105		31-Jul-21	12-Nov-21	06-Feb-27	21-May-27	2016	
EP_SP_66_12-WP6A-M44.05.01.03.8 Operation Management System (2.3.03.04)		105	215	58.1%		44		10-Feb-21 A	12-Sep-21	19-Oct-21	01-Dec-21	80	
05-3180	Supervisory Control/Data Acquisition/Distributed Control (SCADA/DCS) System (12 Packages)	105	215	58.1%	25%	44	Start On or After	10-Feb-21 A	12-Sep-21	19-Oct-21	01-Dec-21	80	
EP_SP_66_12-WP6A-M44.05.01.03.6 Fire services installation design (2.3.05)		384	960	96.35%		14		28-Dec-18 A	13-Aug-21	23-Oct-21	05-Feb-22	176	
EP_SP_66_12-WP6A-M44.05.01.03.6.1 Process Building (2.3.05.01)		105	947	86.67%		14		10-Jan-19 A	13-Aug-21	23-Jan-22	05-Feb-22	176	
05-1510	Fire Systems	105	947	86.67%	5%	14		10-Jan-19 A	13-Aug-21	23-Jan-22	05-Feb-22	176	
EP_SP_66_12-WP6A-M44.05.01.03.6.3 Turbin Hall Building (2.3.05.03)		105	960	86.67%		14		28-Dec-18 A	13-Aug-21	23-Oct-21	05-Feb-22	176	
05-5400	Fire Systems (2.3.05.03.01)	105	960	86.67%	5%	14		28-Dec-18 A	13-Aug-21	23-Jan-22	05-Feb-22	176	
05-5420-1(M22)	FS schematics (2.3.05.03.03)	105	946	100%	5%	0		28-Dec-18 A	31-Jul-21	23-Oct-21	23-Oct-21	85	
EP_SP_66_12-WP6A-M44.05.01.03.6.5 Elevated Drive Way and Associated Structures (2.3.05.05)		180	607	92.22%		14		16-Dec-19 A	13-Aug-21	23-Oct-21	05-Feb-22	176	
05-5445(M22)	Fire Systems	180	607	92.22%	5%	14		16-Dec-19 A	13-Aug-21	23-Jan-22	05-Feb-22	176	
05-5450-1(M22)	FS schematics	180	593	100%	5%	0		16-Dec-19 A	31-Jul-21	23-Oct-21	23-Oct-21	85	
EP_SP_66_12-WP6A-M44.05.01.03.6.6 Reception Pavilion (2.3.05.06)		270	680	94.81%		14		04-Oct-19 A	13-Aug-21	23-Oct-21	05-Feb-22	176	
05-5460(M22)	Fire Systems (2.3.05.06.01)	270	680	94.81%	5%	14		04-Oct-19 A	13-Aug-21	23-Jan-22	05-Feb-22	176	
05-5470-1(M22)	FS schematics (2.3.05.06.03)	270	666	100%	5%	0		04-Oct-19 A	31-Jul-21	23-Oct-21	23-Oct-21	85	
EP_SP_66_12-WP6A-M44.05.01.03.6.7 Compressor & Closed Circuit (2.3.05.07)		140	703	90%		14		11-Sep-19 A	13-Aug-21	23-Oct-21	05-Feb-22	176	
05-5480-1(M22)	Fire Systems (2.3.05.07.01)	140	703	90%	5%	14		11-Sep-19 A	13-Aug-21	23-Jan-22	05-Feb-22	176	
05-5490-1(M22)	FS schematics (2.3.05.07.03)	140	689	100%	5%	0		11-Sep-19 A	31-Jul-21	23-Oct-21	23-Oct-21	85	
EP_SP_66_12-WP6A-M44.05.01.03.7 Building services design (excluding fire services installation design) (2.3.06)		1105	1251	87.78%		135		11-Jul-18 A	12-Dec-21	11-Sep-21	09-Aug-22	240	
05-1560	MVAC (6 Packages)	105	937	96.19%	96.19%	4	Start On or After	10-Jan-19 A	03-Aug-21	08-Jan-22	11-Jan-22	161	
05-1570	Odour Control	135	1116	100%	5%	0	Start On or After	11-Jul-18 A	31-Jul-21	27-Nov-21	27-Nov-21	120	
05-1590	Drainage (7 Packages)	135	972	67.41%	25%	44	Start On or After	15-Jan-19 A	12-Sep-21	09-Nov-21	22-Dec-21	101	
05-1600	ELV (7 Packages)	135	933	100%	65%	0	Start On or After	10-Jan-19 A	31-Jul-21	23-Sep-21	23-Sep-21	55	
05-1610	Lifts and Escalators (2 Packages)	135	594	88.89%	5%	15	Start On or After	30-Dec-19 A	14-Aug-21	07-Nov-21	21-Nov-21	99	
05-1770	Vehicle & Container Wash System	123	123	0%	0%	123		31-Jul-21	30-Nov-21	11-Sep-21	11-Jan-22	42	
05-1770-1(M20)	Water Cannon System	135	870	34.07%	45%	89		11-Jun-19 A	27-Oct-21	13-May-22	09-Aug-22	286	
05-1770-2 (5a)	Process CCTV System	135	135	0%	0%	135		31-Jul-21	12-Dec-21	28-Nov-21	11-Apr-22	120	



3-Month Rolling Programme (July 2021)

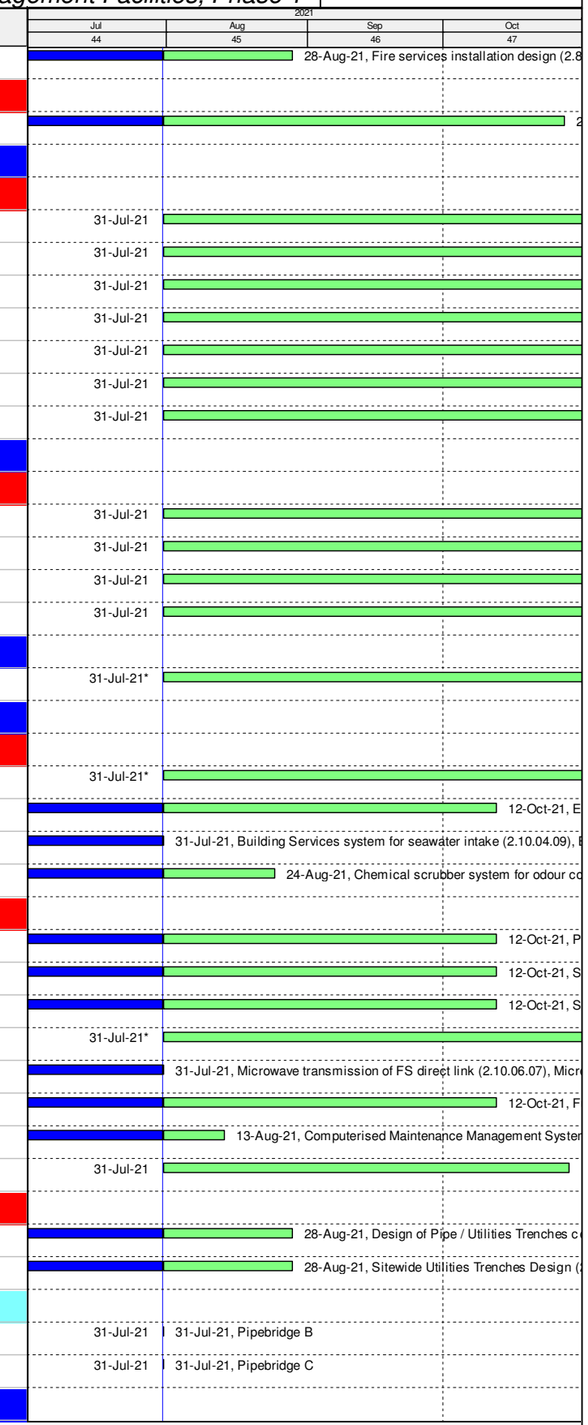
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
EP_SP_66_12-WP6A-M44.05.01.04 AIP Mechanical Treatment Plant Building (2.4)		947	1147	90.6%		89		07-Sep-18 A	27-Oct-21	04-Aug-21	13-Mar-22	137	
05-1640	Architectural Design (2.4.00)	105	1118	42.86%	5%	60		07-Sep-18 A	28-Sep-21	13-Jan-22	13-Mar-22	166	
05-1650	Foundation design (2.4.01)	135	799	67.41%	5%	44	Start On or After	07-Jul-19 A	12-Sep-21	23-Dec-21	04-Feb-22	145	
05-1660	Structural design (2.4.02)	457	846	90.37%	5%	44	Start On or After	21-May-19 A	12-Sep-21	23-Oct-21	05-Dec-21	84	
05-1670	Electrical and instrumentation works design (2.4.03)	65	65	0%	0%	65		31-Jul-21	03-Oct-21	28-Sep-21	01-Dec-21	59	
05-1680	Mechanical works design (2.4.04)	65	65	0%	0%	65		31-Jul-21	03-Oct-21	04-Aug-21	07-Oct-21	4	
05-1690	Fire services installation design (2.4.05) (3 Packages)	135	893	78.52%	5%	29		20-Mar-19 A	28-Aug-21	09-Nov-21	07-Dec-21	101	
EP_SP_66_12-WP6A-M44.05.01.04.7 Building services design (excluding fire services installation design) (2.4.06)		898	953	90.09%		89		20-Mar-19 A	27-Oct-21	14-Sep-21	20-Jan-22	85	
05-1710	MVAC	135	948	34.07%	5%	89	Start On or After	25-Mar-19 A	27-Oct-21	15-Oct-21	11-Jan-22	76	
05-1720	Odour Control	75	75	0%	0%	75	Start On or After	31-Jul-21*	13-Oct-21	14-Sep-21	27-Nov-21	45	
05-1740	Drainage	135	908	67.41%	5%	44	Start On or After	20-Mar-19 A	12-Sep-21	09-Nov-21	22-Dec-21	101	
05-1750	ELV	135	864	100%	5%	0	Start On or After	20-Mar-19 A	31-Jul-21	23-Sep-21	23-Sep-21	55	
05-1760	Lifts	135	645	51.11%	5%	66	Start On or After	30-Dec-19 A	04-Oct-21	16-Nov-21	20-Jan-22	108	
05-1760-1(M20)	Building Management System (BMS)	66	66	0%	0%	66		31-Jul-21	04-Oct-21	24-Sep-21	28-Nov-21	55	
EP_SP_66_12-WP6A-M44.05.01.05 AIP Wastewater Treatment Plant (2.5)		1017	1032	89.68%		105		16-Jan-19 A	12-Nov-21	14-Sep-21	11-Jan-22	60	
05-2790	Fire services installation design (2.5.05)	135	956	78.52%	5%	29		16-Jan-19 A	28-Aug-21	09-Nov-21	07-Dec-21	101	
EP_SP_66_12-WP6A-M44.05.01.05.7 Building services design (excluding fire services installation design) (2.5.06)		1017	1032	89.68%		105		16-Jan-19 A	12-Nov-21	14-Sep-21	11-Jan-22	60	
05-1840	MVAC (2.5.06.02)	135	1016	34.07%	25%	89	Start On or After	16-Jan-19 A	27-Oct-21	15-Oct-21	11-Jan-22	76	
05-1850	Odour Control (2.5.06.03)	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	14-Sep-21	27-Dec-21	45	
05-1870	Drainage (2.5.06.05)	135	971	67.41%	25%	44	Start On or After	16-Jan-19 A	12-Sep-21	09-Nov-21	22-Dec-21	101	
05-1880	ELV (2.5.06.06)	135	927	100%	25%	0	Start On or After	16-Jan-19 A	31-Jul-21	23-Sep-21	23-Sep-21	55	
EP_SP_66_12-WP6A-M44.05.01.06 AIP Water Treatment Plant Building (2.6)		1112	1193	87.86%		135		07-Sep-18 A	12-Dec-21	23-Sep-21	04-Feb-22	54	
05-1900	Architectural Design (2.6.00)	105	1058	100%	65%	0	Start On or After	07-Sep-18 A	31-Jul-21	04-Feb-22	04-Feb-22	189	
05-1910	Foundation design (2.6.01)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	23-Sep-21	04-Feb-22	54	
05-1920	Structural design (2.6.02)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	23-Oct-21	04-Feb-22	84	
05-1950	Fire services installation design (2.6.05) (3 Packages)	135	893	78.52%	5%	29		20-Mar-19 A	28-Aug-21	09-Nov-21	07-Dec-21	101	
EP_SP_66_12-WP6A-M44.05.01.06.7 Building services design (excluding fire services installation design) (2.6.06)		135	953	34.07%		89		20-Mar-19 A	27-Oct-21	23-Sep-21	11-Jan-22	76	
05-1960	Electrical Services and Lighting (2.6.06.01)	135	864	100%	5%	0	Start On or After	20-Mar-19 A	31-Jul-21	23-Sep-21	23-Sep-21	55	
05-1970	MVAC	135	948	34.07%	5%	89	Start On or After	25-Mar-19 A	27-Oct-21	15-Oct-21	11-Jan-22	76	
05-2000	Drainage	135	908	67.41%	5%	44	Start On or After	20-Mar-19 A	12-Sep-21	09-Nov-21	22-Dec-21	101	
05-2010	ELV	135	864	100%	5%	0	Start On or After	20-Mar-19 A	31-Jul-21	23-Sep-21	23-Sep-21	55	
EP_SP_66_12-WP6A-M44.05.01.07 AIP Administration Building (2.7)		1112	1228	87.86%		135		03-Aug-18 A	12-Dec-21	09-Sep-21	25-Aug-22	256	
05-2020	Architectural Design (2.7.00)	135	1212	11.85%	65%	119	Start On or After	03-Aug-18 A	26-Nov-21	14-Nov-21	12-Mar-22	106	
05-2030	Foundation design (2.7.01)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Apr-22	25-Aug-22	256	
05-2040	Structural design (2.7.02)	135	807	45.19%	65%	74	Start On or After	29-Jul-19 A	12-Oct-21	13-Apr-22	25-Jun-22	256	
05-2060	Fire services installation design (3 Packages) (2.7.04)	135	787	33.33%	5%	90	Start On or After	03-Sep-19 A	28-Oct-21	09-Sep-21	07-Dec-21	40	
EP_SP_66_12-WP6A-M44.05.01.07.6 Building services design (excluding fire services installation design) (2.7.05)		227	786	60.79%		89		03-Sep-19 A	27-Oct-21	23-Sep-21	11-Jan-22	76	
05-2070	Electrical Services and Lighting (2.7.05.01)	135	697	100%	5%	0	Start On or After	03-Sep-19 A	31-Jul-21	23-Sep-21	23-Sep-21	55	
05-2080	MVAC	135	786	34.07%	5%	89	Start On or After	03-Sep-19 A	27-Oct-21	15-Oct-21	11-Jan-22	76	
05-2110	Drainage	135	741	67.41%	5%	44	Start On or After	03-Sep-19 A	12-Sep-21	09-Nov-21	22-Dec-21	101	
05-2130	Lifts and Escalators	135	593	89.63%	5%	14		30-Dec-19 A	13-Aug-21	08-Nov-21	21-Nov-21	100	
EP_SP_66_12-WP6A-M44.05.01.08 AIP IWMF Substation (2.8)		139	1066	35.97%		89		27-Nov-18 A	27-Oct-21	10-Oct-21	06-Apr-22	161	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

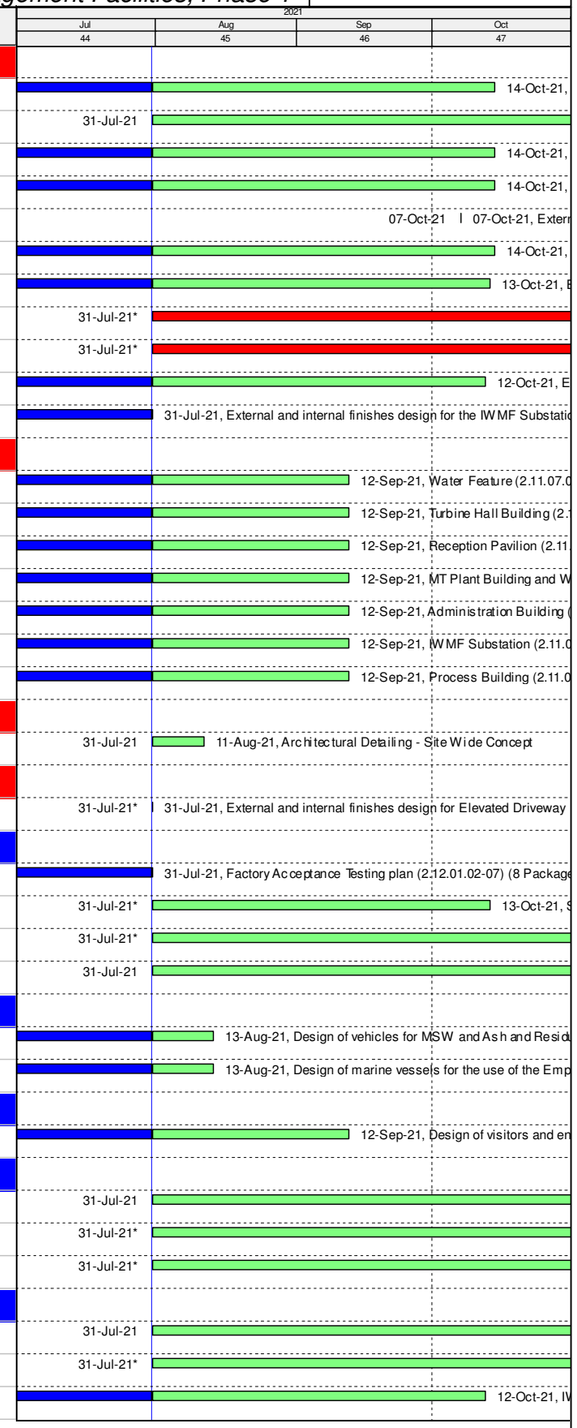
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-2190	Fire services installation design (2.8.05) (2 Packages)	135	1006	78.52%	5%	29	Start On or After	27-Nov-18 A	28-Aug-21	10-Oct-21	07-Nov-21	71	
EP_SP_66_12-WP6A-M44.05.01.08.7 Building services design (excluding fire services installation design) (2.8.06)		135	1066	34.07%		89		27-Nov-18 A	27-Oct-21	08-Jan-22	06-Apr-22	161	
05-2210	MVAC	135	1066	34.07%	5%	89	Start On or After	27-Nov-18 A	27-Oct-21	08-Jan-22	06-Apr-22	161	
EP_SP_66_12-WP6A-M44.05.01.1 AIP Chimney		135	135	0%		135		31-Jul-21	12-Dec-21	13-Sep-21	24-Feb-22	74	
EP_SP_66_12-WP6A-M44.05.01.1.1 Building services design (excluding fire services installation design)		135	135	0%		135		31-Jul-21	12-Dec-21	13-Sep-21	24-Feb-22	74	
05-5430(5a)	Electrical Services and Lighting	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Sep-21	25-Jan-22	44	
05-5440(5a)	MVAC	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-5450(5a)	Plumbing	105	105	0%	0%	105		31-Jul-21	12-Nov-21	13-Oct-21	25-Jan-22	74	
05-5460-1(5a)	Drainage	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Oct-21	24-Feb-22	74	
05-5470(5a)	ELV	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Sep-21	25-Jan-22	44	
05-5480-2(5a)	Lift	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Sep-21	25-Jan-22	44	
05-5490(5a)	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Sep-21	25-Jan-22	44	
EP_SP_66_12-WP6A-M44.05.01.2 AIP Weighbridge		135	135	0%		135		31-Jul-21	12-Dec-21	22-Dec-21	12-Jul-22	212	
EP_SP_66_12-WP6A-M44.05.01.2.1 Building services design (excluding fire services installation design)		135	135	0%		135		31-Jul-21	12-Dec-21	22-Dec-21	12-Jul-22	212	
05-5520-1(5a)	Plumbing	105	105	0%	0%	105		31-Jul-21	12-Nov-21	28-Feb-22	12-Jun-22	212	
05-5530-1(5a)	Drainage	135	135	0%	0%	135		31-Jul-21	12-Dec-21	28-Feb-22	12-Jul-22	212	
05-5540-1(5a)	ELV	105	105	0%	0%	105		31-Jul-21	12-Nov-21	28-Feb-22	12-Jun-22	212	
05-5550-1(5a)	Lift	105	105	0%	0%	105		31-Jul-21	12-Nov-21	22-Dec-21	05-Apr-22	144	
EP_SP_66_12-WP6A-M44.05.01.09 AIP Air Quality Monitoring Stations (2.9)		120	120	0%		120		31-Jul-21	27-Nov-21	23-Oct-21	19-Feb-22	84	
05-2250	Design of the Air Quality Monitoring Stations (2.9.01)	120	120	0%	0%	120	Start On or After	31-Jul-21*	27-Nov-21	23-Oct-21	19-Feb-22	84	
EP_SP_66_12-WP6A-M44.05.01.10 AIP Roads and Utilities (2.10)		899	1112	84.98%		135		27-Nov-18 A	12-Dec-21	05-Aug-21	02-Feb-23	417	
EP_SP_66_12-WP6A-M44.05.01.10.4 Water supply system design on the Artificial Island (2.10.04)		744	770	81.85%		135		04-Nov-19 A	12-Dec-21	03-Nov-21	28-Apr-22	137	
05-2360	Water Tanks (2.10.04.05)	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	15-Dec-21	28-Apr-22	137	
05-2370	External FS Systems (2.10.04.06)	135	709	45.19%	5%	74		04-Nov-19 A	12-Oct-21	14-Feb-22	28-Apr-22	198	
05-2370-2(M24)	Building Services system for seawater intake (2.10.04.09)	90	507	100%	5%	0		11-Mar-20 A	31-Jul-21	22-Nov-21	22-Nov-21	115	
05-2370-3(5a)	Chemical scrubber system for odour control (2.10.04.10)	90	218	72.22%	72.22%	25		19-Jan-21 A	24-Aug-21	03-Nov-21	27-Nov-21	95	
EP_SP_66_12-WP6A-M44.05.01.10.6 Design of telecommunication and other utilities (2.10.06)		899	1112	84.98%		135		27-Nov-18 A	12-Dec-21	05-Aug-21	02-Feb-23	417	
05-2380	Power Distribution System concept / schematics (2.10.06.01)	135	289	45.19%	5%	74	Start On or After	28-Dec-20 A	12-Oct-21	14-Nov-21	26-Jan-22	106	
05-2410	Site ELV Network System - Communications System concept / schematics (2.10.06.04)	135	583	45.19%	5%	74	Start On or After	09-Mar-20 A	12-Oct-21	14-Nov-21	26-Jan-22	106	
05-2420	Site ELV Network System - Security Systems concept / schematics (2.10.06.05)	135	583	45.19%	5%	74	Start On or After	09-Mar-20 A	12-Oct-21	14-Nov-21	26-Jan-22	106	
05-2430	Site ELV Network System - Navigation aids concept / schematics (2.10.06.06)	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	30-Aug-21	11-Jan-22	30	
05-2440	Microwave transmission of FS direct link (2.10.06.07)	135	977	100%	65%	0		27-Nov-18 A	31-Jul-21	27-Nov-21	27-Nov-21	120	
05-2450	Fuel Handling System concept / schematics (2.10.06.08)	135	628	45.19%	5%	74	Start On or After	24-Jan-20 A	12-Oct-21	31-Oct-22	12-Jan-23	457	
05-3190	Computerised Maintenance Management System (CMMS)	105	796	86.67%	65%	14	Start On or After	10-Jun-19 A	13-Aug-21	05-Aug-21	18-Aug-21	5	
05-3840-1(M22)	Automatic Traffic Control System (ATCS) (2.10.06.12)	90	90	0%	0%	90		31-Jul-21	28-Oct-21	05-Nov-22	02-Feb-23	462	
EP_SP_66_12-WP6A-M44.05.01.10.7 Utility ducts/Pipebridges design (2.10.25)		105	366	72.38%		29		28-Aug-20 A	28-Aug-21	22-Jan-22	10-Oct-22	408	
05-2460	Design of Pipe / Utilities Trenches concept (2.10.06.09.01)	105	366	72.38%	5%	29		28-Aug-20 A	28-Aug-21	12-Sep-22	10-Oct-22	408	
05-2470	Sitewide Utilities Trenches Design (2.10.06.09.02)	105	366	72.38%	5%	29		28-Aug-20 A	28-Aug-21	12-Sep-22	10-Oct-22	408	
EP_SP_66_12-WP6A-M44.05.01.10.7.2 Structure Plan for Pipe Bridge Network		0	0	0%		0		31-Jul-21	31-Jul-21	22-Jan-22	23-Mar-22	236	
05-6070	Pipebridge B	0	0	0%	5%	0		31-Jul-21	31-Jul-21	23-Mar-22	23-Mar-22	236	
05-6080	Pipebridge C	0	0	0%	5%	0		31-Jul-21	31-Jul-21	22-Jan-22	22-Jan-22	176	
EP_SP_66_12-WP6A-M44.05.01.11 AIP Architectural, Finishes and Landscaping Works (2.11)		427	611	71.19%		123		30-Mar-20 A	30-Nov-21	15-Jun-21	01-Mar-22	91	



3-Month Rolling Programme (July 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

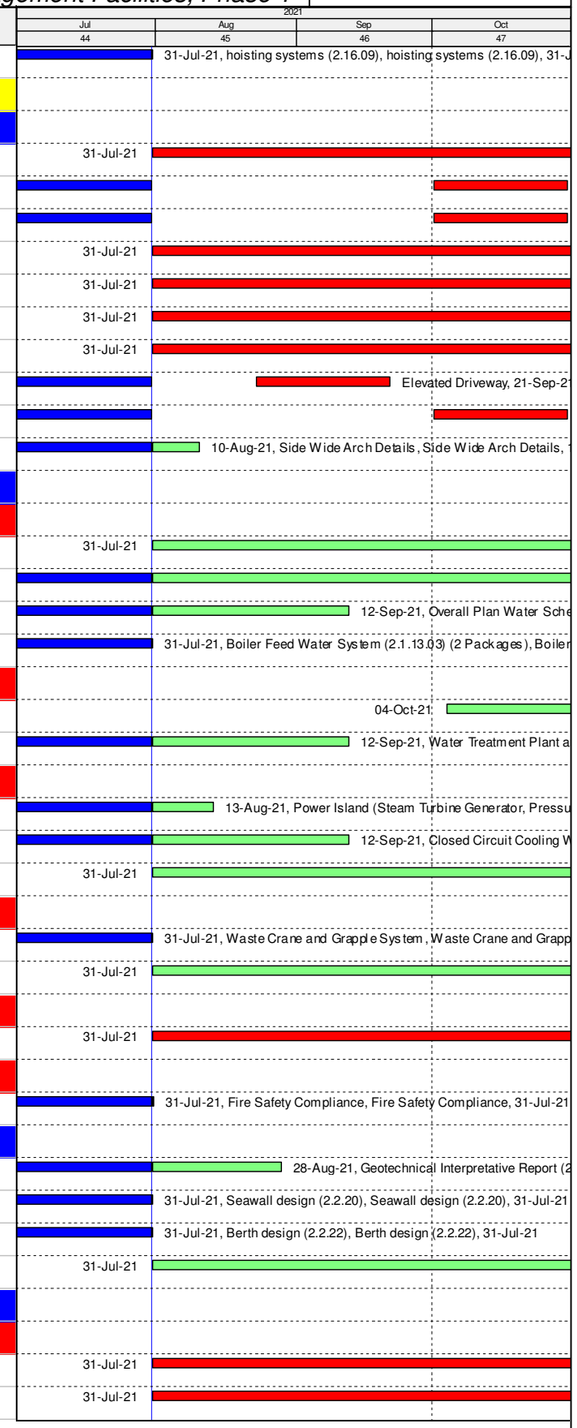
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
EP_SP_66_12-WP6A-M44.05.01.11.1	**External and internal finishes design for Incineration Plant Buildings**	396	611	68.94%		123		30-Mar-20 A	30-Nov-21	15-Jun-21	01-Mar-22	91	
05-2510	External and internal finishes design for Incineration Plant Building (2.11.01)	135	529	43.7%	5%	76	Start On or After	04-May-20 A	14-Oct-21	16-Dec-21	01-Mar-22	138	
05-2520	External and internal finishes design for ACC Equipment Yard	123	123	0%	0%	123		31-Jul-21	30-Nov-21	30-Oct-21	01-Mar-22	91	
05-2530	External and internal finishes design for Turbine Hall Building	135	529	43.7%	5%	76	Start On or After	04-May-20 A	14-Oct-21	03-Aug-21	17-Oct-21	3	
05-2540	External and internal finishes design for CCCW Building	135	529	43.7%	5%	76	Start On or After	04-May-20 A	14-Oct-21	03-Aug-21	17-Oct-21	3	
05-2550	External and internal finishes design for Chimney	0	0	0%	5%	0		07-Oct-21	07-Oct-21	17-Oct-21	17-Oct-21	11	
05-2560	External and internal finishes design for Reception Pavilion	135	564	43.7%	5%	76	Start On or After	30-Mar-20 A	14-Oct-21	03-Aug-21	17-Oct-21	3	
05-2570	External and internal finishes design for MT Plant Building (2.11.02)	136	535	44.85%	5%	75	Start On or After	27-Apr-20 A	13-Oct-21	02-Aug-21	15-Oct-21	2	
05-2580	External and internal finishes design for the Wastewater Treatment Plant (2.11.03)	123	123	0%	0%	123	Start On or After	31-Jul-21*	30-Nov-21	15-Jun-21	15-Oct-21	-46	
05-2590	External and internal finishes design for the Water Treatment Plant Building (2.11.04)	123	123	0%	0%	123	Start On or After	31-Jul-21*	30-Nov-21	15-Jun-21	15-Oct-21	-46	
05-2600	External and internal finishes design for the Administration Building (2.11.05)	135	534	45.19%	5%	74	Start On or After	27-Apr-20 A	12-Oct-21	03-Aug-21	15-Oct-21	3	
05-2610	External and internal finishes design for the IWMF Substation (2.11.06)	135	488	100%	5%	0	Start On or After	30-Mar-20 A	31-Jul-21	15-Oct-21	15-Oct-21	77	
EP_SP_66_12-WP6A-M44.05.01.11.7	**Landscape masterplan (2.11.07)**	180	493	75.56%		44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2620	Water Feature (2.11.07.01)	105	451	58.1%	5%	44	Start On or After	19-Jun-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2920_1(M34)	Turbine Hall Building (2.11.07.04)	105	493	58.1%	5%	44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2920_2(M34)	Reception Pavilion (2.11.07.06)	105	493	58.1%	5%	44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2920_3(M34)	MT Plant Building and Water Treatment Plant Building (2.11.07.07)	105	493	58.1%	5%	44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2920_4(M34)	Administration Building (2.11.07.08)	105	493	58.1%	5%	44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2920_5(M34)	IWMF Substation (2.11.07.09)	105	493	58.1%	5%	44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
05-2920_6(M34)	Process Building (2.11.07.10)	105	493	58.1%	5%	44		08-May-20 A	12-Sep-21	10-Sep-21	23-Oct-21	41	
EP_SP_66_12-WP6A-M44.05.01.11.8	**Architectural Detailing - Site Wide (2.11.29)**	12	12	0%		12		31-Jul-21	11-Aug-21	12-Sep-21	23-Sep-21	43	
05-2640	Architectural Detailing - Site Wide Concept	12	12	0%	5%	12		31-Jul-21	11-Aug-21	12-Sep-21	23-Sep-21	43	
EP_SP_66_12-WP6A-M44.05.01.11.9	**External and internal finishes design for Elavated Driveway**	0	0	0%		0		31-Jul-21	31-Jul-21	21-Sep-21	21-Sep-21	53	
05-5410	External and internal finishes design for Elevated Driveway	0	0	0%	0%	0	Start On or After	31-Jul-21*	31-Jul-21	21-Sep-21	21-Sep-21	53	
EP_SP_66_12-WP6A-M44.05.01.12	**AIP Testing and Commissioning (2.12)**	867	935	87.89%		105		23-Apr-19 A	12-Nov-21	19-May-22	17-Oct-23	704	
05-2650-1(5)	Factory Acceptance Testing plan (2.12.01.02-07) (8 Packages)	60	830	100%	5%	0		23-Apr-19 A	31-Jul-21	14-Jun-22	14-Jun-22	319	
05-2660	Site Acceptance Testing plan (2.12.02)	75	75	0%	0%	75	Start On or After	31-Jul-21*	13-Oct-21	07-Feb-23	22-Apr-23	556	
05-2670	System commissioning plan (2.12.03)	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	05-Jul-23	17-Oct-23	704	
05-2680	Plant commissioning plan (2.12.04)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	19-May-22	31-Aug-22	292	
EP_SP_66_12-WP6A-M44.05.01.13	**AIP Transportation Facilities for the Operation (2.13)**	136	411	89.71%		14		29-Jun-20 A	13-Aug-21	23-Jan-23	15-Apr-23	610	
05-2690	Design of vehicles for MSW and Ash and Residues delivery (2.13.01)	105	411	86.67%	5%	14		29-Jun-20 A	13-Aug-21	23-Jan-23	05-Feb-23	541	
05-2700	Design of marine vessels for the use of the Employer and visitors (2.13.02)	105	340	86.67%	5%	14		08-Sep-20 A	13-Aug-21	02-Apr-23	15-Apr-23	610	
EP_SP_66_12-WP6A-M44.05.01.14	**AIP Miscellaneous Works (2.14)**	105	434	58.1%		44		06-Jul-20 A	12-Sep-21	23-Sep-22	05-Nov-22	419	
05-2720	Design of visitors and environmental education facilities (2.14.02)	105	434	58.1%	5%	44		06-Jul-20 A	12-Sep-21	23-Sep-22	05-Nov-22	419	
EP_SP_66_12-WP6A-M44.05.01.15	**AIP Miscellaneous Detailing (2.15)**	135	135	0%		135		31-Jul-21	12-Dec-21	16-Sep-21	05-Sep-22	267	
05-2730	Covered walkway at passenger berth (2.15.02)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	16-Sep-21	29-Dec-21	47	
05-2740	Gatehouses (2.15.03)	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	24-Apr-22	05-Sep-22	267	
05-2750	Weighbridge office (2.15.04)	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	29-Apr-22	11-Aug-22	272	
EP_SP_66_12-WP6A-M44.05.01.16	**AIP Auxiliary Plant Systems (2.16)**	408	579	66.91%		135		13-May-20 A	12-Dec-21	06-Jan-22	25-Aug-22	256	
05-2770	Vehicle Fuel Filling Station (2.16.02)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	13-Apr-22	25-Aug-22	256	
05-2780	Stores systems (2.16.03)	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	06-Jan-22	20-May-22	159	
05-2780-1(5a)	IWMF Laboratory (2.16.04)	135	518	45.19%	5%	74		13-May-20 A	12-Oct-21	27-Apr-22	09-Jul-22	270	



3-Month Rolling Programme (July 2021)

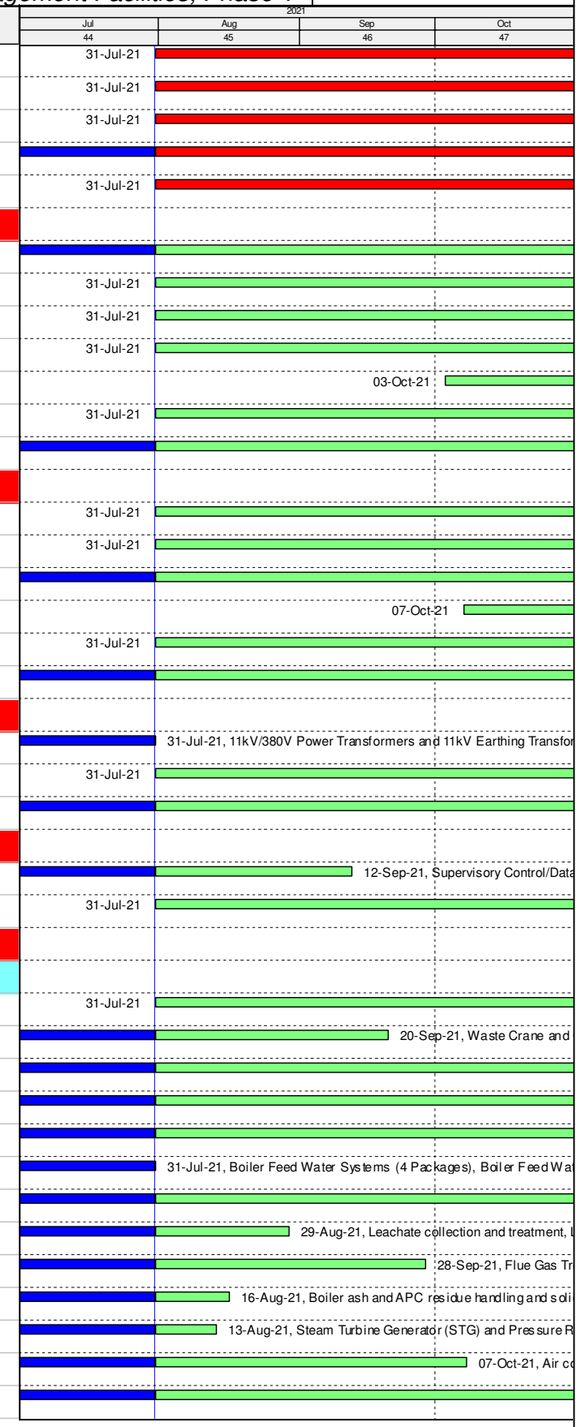
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-2780-2(5a)	hoisting systems (2.16.09)	135	318	100%	5%	0		16-Sep-20 A	31-Jul-21	12-Feb-22	12-Feb-22	197	
EP_SP_66_12-WP6A-M44.05.02 DDA Design Package Submissions		1570	1667	58.79%		647		15-Oct-18 A	08-May-23	12-Jul-21	13-Dec-24	585	
EP_SP_66_12-WP6A-M44.05.02.3 DDA General Building Plan		180	304	41.67%		105		13-Jan-21 A	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-6000-1(M42)	Process Building & Wastewater Treatment Plant	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-6010-1(M42)	Turbine Hall	105	185	71.43%	5%	30		29-Apr-21 A	30-Oct-21	01-Oct-21	30-Oct-21	0	
05-6020-2(M42)	CCCW	105	186	71.43%	5%	30		28-Apr-21 A	30-Oct-21	01-Oct-21	30-Oct-21	0	
05-6030-2(M42)	Chimney	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-6040-2(M42)	M T & Water Treatment Plant	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-6050-2(M42)	Reception Pavilion	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-6060-2(M42)	Administration building	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-6070-1(M42)	Elevated Driveway	105	135	71.43%	5%	30		10-May-21 A	21-Sep-21	23-Aug-21	21-Sep-21	0	
05-6080-1(M42)	IWMF Substation	105	291	71.43%	5%	30		13-Jan-21 A	30-Oct-21	01-Oct-21	30-Oct-21	0	
05-6090(M42)	Side Wide Arch Details	105	105	89.52%	5%	11		28-Apr-21 A	10-Aug-21	13-Sep-21	23-Sep-21	44	
EP_SP_66_12-WP6A-M44.05.02.01 DDA Process and Layout Design (2.1)		504	1013	66.27%		170		10-Apr-19 A	16-Jan-22	18-Jul-21	25-Jul-22	190	
EP_SP_66_12-WP6A-M44.05.02.01.1 MSW treatment process design for incineration (2.1.13)		378	467	72.22%		105		03-Aug-20 A	12-Nov-21	23-Aug-21	22-Mar-22	130	
05-5120	Leachate Collection and Treatment (2.1.13.05) (2 Packages)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	08-Dec-21	22-Mar-22	130	
05-5130	Waste Water Treatment System (2.1.13.06) (2 Packages)	105	296	0.95%	0%	104		20-Jan-21 A	11-Nov-21	23-Aug-21	04-Dec-21	23	
05-5140	Overall Plan Water Scheme (2.1.13.07)	105	236	58.1%	5%	44		20-Jan-21 A	12-Sep-21	23-Aug-21	05-Oct-21	23	
05-5150	Boiler Feed Water System (2.1.13.03) (2 Packages)	105	362	100%	45%	0	Start On or After	03-Aug-20 A	31-Jul-21	04-Nov-21	04-Nov-21	97	
EP_SP_66_12-WP6A-M44.05.02.01.2 MSW treatment process design for mechanical treatment (2.1.14)		351	394	51.57%		170		19-Dec-20 A	16-Jan-22	07-Aug-21	25-Jul-22	190	
05-3500	Mechanical Treatment Plant	105	105	0%	0%	105		04-Oct-21	16-Jan-22	12-Apr-22	25-Jul-22	190	
05-3510	Water Treatment Plant and Boiler Water Treatment (Demin Unit) Plant	105	268	58.1%	5%	44		19-Dec-20 A	12-Sep-21	07-Aug-21	19-Sep-21	7	
EP_SP_66_12-WP6A-M44.05.02.01.3 Waste heat recovery and Power generation system (2.1.15)		439	572	76.08%		105		20-Apr-20 A	12-Nov-21	17-Oct-21	20-Feb-22	100	
05-5220	Power Island (Steam Turbine Generator, Pressure Reducing and Desuperheating Station, Air Cooled Condenser)	105	446	86.67%	5%	14		25-May-20 A	13-Aug-21	17-Oct-21	30-Oct-21	78	
05-5230	Closed Circuit Cooling Water System	105	511	58.1%	5%	44		20-Apr-20 A	12-Sep-21	08-Jan-22	20-Feb-22	161	
05-5240	Compressed Air Plants	105	105	0%	0%	105		31-Jul-21	12-Nov-21	08-Nov-21	20-Feb-22	100	
EP_SP_66_12-WP6A-M44.05.02.01.5 Logistic arrangement design for MSW and Ash and Residues (2.1.17)		439	495	76.08%		105		06-Jul-20 A	12-Nov-21	16-Oct-21	28-Jan-22	77	
05-4400	Waste Crane and Grapple System	105	390	100%	5%	0		06-Jul-20 A	31-Jul-21	28-Jan-22	28-Jan-22	182	
05-4410	Mechanical Shredder	105	105	0%	0%	105		31-Jul-21	12-Nov-21	16-Oct-21	28-Jan-22	77	
EP_SP_66_12-WP6A-M44.05.02.01.6 Site Master Layout Plan and Plant Layout (2.1.18)		105	105	0%		105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3520	Site Master Layout Plan and Plant Layout	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
EP_SP_66_12-WP6A-M44.05.02.01.7 Statutory Fire Compliance (2.1.26)		60	844	98.33%		1		10-Apr-19 A	31-Jul-21	05-Feb-22	05-Feb-22	189	
05-4420	Fire Safety Compliance	60	844	98.33%	5%	1		10-Apr-19 A	31-Jul-21	05-Feb-22	05-Feb-22	189	
EP_SP_66_12-WP6A-M44.05.02.02 DDA Ground Treatment, Reclamation, Seawall, Breakwater, Berth (2.2)		1058	1155	87.24%		135		15-Oct-18 A	12-Dec-21	27-Aug-21	28-Apr-22	137	
05-3430-2(M37)	Geotechnical Interpretative Report (2.2.02.02)	105	1049	72.38%	65%	29		15-Oct-18 A	28-Aug-21	19-Sep-21	17-Oct-21	50	
05-3450	Seawall design (2.2.20)	60	992	100%	65%	0		12-Nov-18 A	31-Jul-21	27-Aug-21	27-Aug-21	28	
05-3470	Berth design (2.2.22)	60	1003	100%	65%	0		01-Nov-18 A	31-Jul-21	28-Apr-22	28-Apr-22	272	
05-3490	Onshore vessel power supply system (2.2.24)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	15-Nov-21	29-Mar-22	107	
EP_SP_66_12-WP6A-M44.05.02.03 DDA Incineration Plant Buildings (2.3)		1156	1109	81.83%		210		13-Feb-19 A	25-Feb-22	12-Jul-21	23-Mar-24	757	
EP_SP_66_12-WP6A-M44.05.02.03.1 General Layout Drawings and Fire Saftey Strategy (2.3.25)		105	148	0%		105		18-Jun-21 A	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3290	Process Building	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3300	ACC Equipment Yard	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	



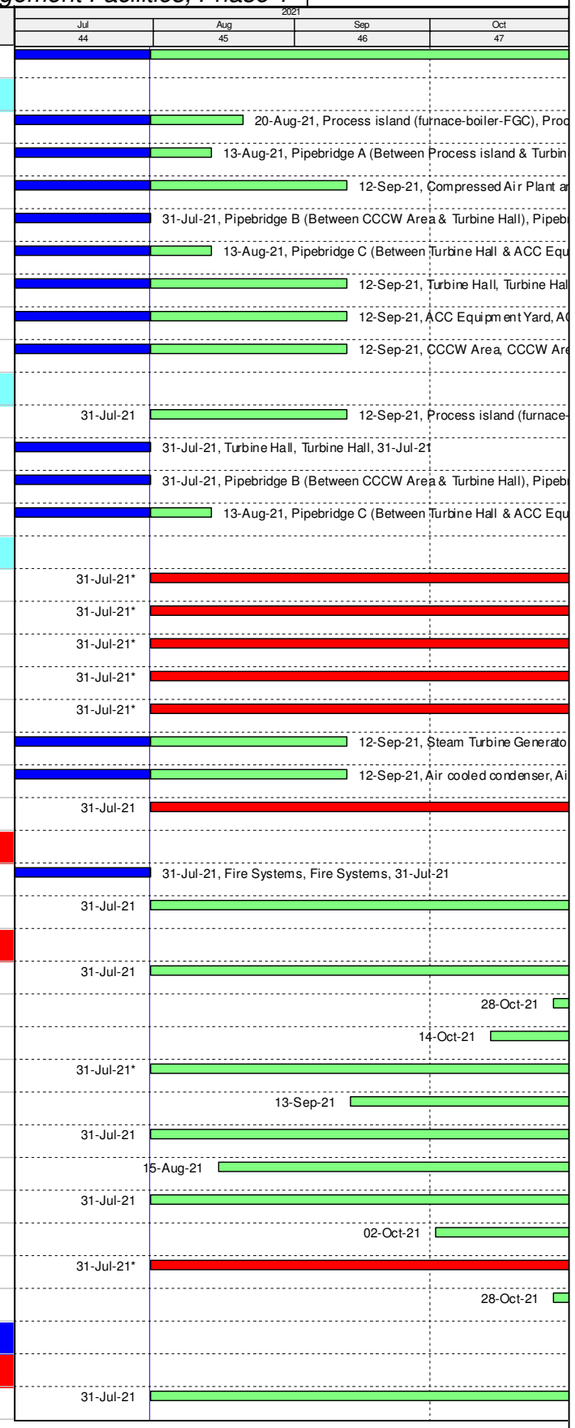
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-3310	Turbine Hall Building	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3320	CCCW Building	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3330	Chimney	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3340	Elevated Drive Way and Associated Structures	105	148	0%	5%	105		18-Jun-21 A	12-Nov-21	18-Jul-21	30-Oct-21	-13	
05-3350	Reception Pavilion	105	105	0%	0%	105		31-Jul-21	12-Nov-21	18-Jul-21	30-Oct-21	-13	
EP_SP_66_12-WP6A-M44.05.02.03.2 Foundation design (2.3.13)		272	242	26.84%		199		18-Jun-21 A	14-Feb-22	27-Sep-21	03-Feb-23	354	
05-3220	Process Building Waste Bunker, Tipping Hall, Basin Area and Workshop	137	180	0%	5%	137		18-Jun-21 A	14-Dec-21	27-Sep-21	10-Feb-22	58	
05-3230	ACC Equipment Yard	137	137	0%	0%	137		31-Jul-21	14-Dec-21	05-Jan-22	21-May-22	158	
05-3240	Turbin Hall Building	135	135	0%	0%	135		31-Jul-21	12-Dec-21	07-Dec-21	20-Apr-22	129	
05-3250	Compressor and CCCW Building	137	137	0%	0%	137		31-Jul-21	14-Dec-21	07-Nov-21	23-Mar-22	99	
05-3260	Chimney	135	135	0%	0%	135		03-Oct-21	14-Feb-22	27-Dec-21	10-May-22	85	
05-3270	Elevated Drive Way and Associated Structures	137	137	0%	0%	137		31-Jul-21	14-Dec-21	27-Feb-22	13-Jul-22	211	
05-3280	Reception Pavilion	137	180	0%	5%	137		18-Jun-21 A	14-Dec-21	20-Sep-22	03-Feb-23	416	
EP_SP_66_12-WP6A-M44.05.02.03.3 Structural design (2.3.14)		203	246	0%		203		18-Jun-21 A	18-Feb-22	15-Oct-21	19-Apr-23	425	
05-5330	Process Building	189	189	0%	0%	189		31-Jul-21	04-Feb-22	27-Dec-21	03-Jul-22	149	
05-5350	Turbin Hall Building (2.3.14.03)	189	189	0%	0%	189		31-Jul-21	04-Feb-22	05-Apr-22	10-Oct-22	248	
05-5360	Compressor and CCCW Building	189	232	0%	5%	189		18-Jun-21 A	04-Feb-22	15-Oct-21	21-Apr-22	76	
05-5370	Chimney	135	135	0%	0%	135		07-Oct-21	18-Feb-22	26-Jan-22	09-Jun-22	111	
05-5380	Elevated Drive Way and associated structures	189	189	0%	0%	189		31-Jul-21	04-Feb-22	06-Jan-22	13-Jul-22	159	
05-5390	Reception Pavilion Structural Design	23	171	0%	5%	128	Start On or After	18-Jun-21 A	05-Dec-21	13-Dec-22	19-Apr-23	500	
EP_SP_66_12-WP6A-M44.05.02.03.4 Electrical and instrumentation works design (2.3.15)		363	432	66.94%		120		22-Sep-20 A	27-Nov-21	05-Sep-21	29-Jul-22	244	
05-3360	11kV/380V Power Transformers and 11kV Earthing Transformer	105	312	100%	5%	0		22-Sep-20 A	31-Jul-21	29-Jul-22	29-Jul-22	364	
05-3370	E&IC Package 1 (Process Island)	120	120	0%	0%	120		31-Jul-21	27-Nov-21	05-Sep-21	02-Jan-22	36	
05-3380	E&IC Package 2 (Power Island)	165	324	36.97%	5%	104		23-Dec-20 A	11-Nov-21	22-Sep-21	03-Jan-22	53	
EP_SP_66_12-WP6A-M44.05.02.03.8 Operation Management System (2.3.15.04)		439	523	76.08%		105		08-Jun-20 A	12-Nov-21	19-Aug-21	01-Dec-21	19	
05-3390	Supervisory Control/Data Acquisition/Distributed Control (SCADA/DCS) System (12 Packages)	105	462	58.1%	5%	44		08-Jun-20 A	12-Sep-21	19-Oct-21	01-Dec-21	80	
05-3420	Automatic License Plate and Container Recoginition System (ALPCRS)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	19-Aug-21	01-Dec-21	19	
EP_SP_66_12-WP6A-M44.05.02.03.5 Mechanical works design (2.3.16)		1093	1108	80.88%		209		13-Feb-19 A	24-Feb-22	12-Jul-21	23-Mar-24	758	
EP_SP_66_12-WP6A-M44.05.02.03.5.1 Plant and Equipment		1093	1108	80.88%		209		13-Feb-19 A	24-Feb-22	03-Aug-21	23-Mar-24	758	
05-3580	Weighbridge Systems	209	209	0%	0%	209		31-Jul-21	24-Feb-22	03-Aug-21	27-Feb-22	3	
05-3590	Waste Crane and Grapple System	105	356	50.48%	5%	52		30-Sep-20 A	20-Sep-21	08-Dec-21	28-Jan-22	130	
05-3600	Mechanical Shredder	105	452	0%	5%	157		09-Oct-20 A	03-Jan-22	25-Aug-21	28-Jan-22	25	
05-3610	Incineration System (9 Packages)	105	1096	0%	5%	197		13-Feb-19 A	12-Feb-22	31-Oct-21	15-May-22	92	
05-3620	Heat Recovery Boiler (8 Packages)	105	1003	0%	5%	197		17-May-19 A	12-Feb-22	30-Oct-21	14-May-22	91	
05-3630	Boiler Feed Water Systems (4 Packages)	105	746	100%	5%	0		16-Jul-19 A	31-Jul-21	27-Dec-21	27-Dec-21	150	
05-3640	Ash cranes	30	298	0%	65%	126		09-Feb-21 A	03-Dec-21	25-Sep-21	28-Jan-22	56	
05-3650	Leachate collection and treatment	105	334	71.43%	5%	30	Start On or After	30-Sep-20 A	29-Aug-21	23-Feb-24	23-Mar-24	937	
05-3790	Flue Gas Treatment System (12 Packages)	105	715	42.86%	25%	60		15-Oct-19 A	28-Sep-21	01-Sep-21	30-Oct-21	32	
05-3800	Boiler ash and APC residue handling and solidification	105	434	83.81%	25%	17	Start On or After	09-Jun-20 A	16-Aug-21	27-Nov-23	13-Dec-23	849	
05-3810	Steam Turbine Generator (STG) and Pressure Reducing and Desuperheating Station (PRDS)	105	380	86.67%	5%	14		30-Jul-20 A	13-Aug-21	17-Oct-21	30-Oct-21	78	
05-3820	Air cooled condenser	105	435	34.29%	5%	69		30-Jul-20 A	07-Oct-21	12-Feb-22	21-Apr-22	196	
05-3825(3)	Closed Circuit Cooling Water System	105	478	0%	5%	112		30-Jul-20 A	19-Nov-21	30-Jan-22	21-May-22	183	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

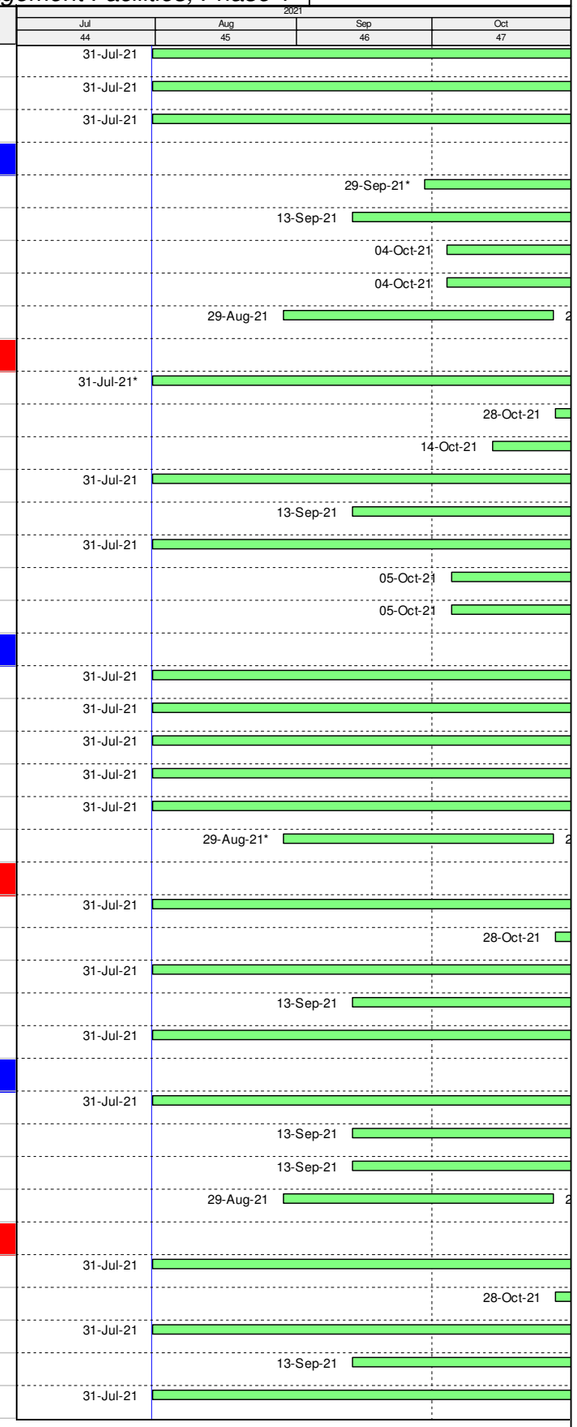
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-3830	Compressed Air Plants	105	1078	0%	5%	179		13-Feb-19 A	25-Jan-22	24-Nov-22	21-May-23	481	
EP_SP_66_12-WP6A-M44.05.02.03.5.2 Process Pipeworks (Incl. Ductworks) and Valves		562	851	92.17%		44		16-May-19 A	12-Sep-21	11-Sep-21	14-Oct-23	762	
05-3840	Process island (furnace-boiler-FGC)	105	828	80%	5%	21		16-May-19 A	20-Aug-21	31-Oct-21	20-Nov-21	92	
05-4350	Pipebridge A (Between Process island & Turbine Hall)	105	351	86.67%	5%	14		28-Aug-20 A	13-Aug-21	17-Oct-21	30-Oct-21	78	
05-4360	Compressed Air Plant area	105	381	58.1%	5%	44		28-Aug-20 A	12-Sep-21	11-Sep-21	24-Oct-21	42	
05-4370	Pipebridge B (Between CCCW Area & Turbine Hall)	105	337	100%	5%	0		28-Aug-20 A	31-Jul-21	16-Jul-23	16-Jul-23	716	
05-4380	Pipebridge C (Between Turbine Hall & ACC Equipment Yard)	105	351	86.67%	5%	14		28-Aug-20 A	13-Aug-21	01-Oct-23	14-Oct-23	792	
05-4950	Turbine Hall	105	381	58.1%	5%	44		28-Aug-20 A	12-Sep-21	21-Dec-21	02-Feb-22	143	
05-4960	ACC Equipment Yard	105	381	58.1%	5%	44		28-Aug-20 A	12-Sep-21	11-Sep-21	24-Oct-21	42	
05-4970	CCCW Area	105	381	58.1%	5%	44		28-Aug-20 A	12-Sep-21	11-Sep-21	24-Oct-21	42	
EP_SP_66_12-WP6A-M44.05.02.03.5.3 Process steel structure support (For eqipment, piping & duct, cable tray e		378	410	88.36%		44		30-Jul-20 A	12-Sep-21	05-Sep-21	14-Oct-23	762	
05-3530-1(M42)	Process island (furnace-boiler-FGC) (Prefab 2)	44	44	0%	0%	44		31-Jul-21	12-Sep-21	05-Sep-21	18-Oct-21	36	
05-3550	Turbine Hall	105	366	100%	5%	0		30-Jul-20 A	31-Jul-21	10-Oct-22	10-Oct-22	437	
05-3560	Pipebridge B (Between CCCW Area & Turbine Hall)	105	337	100%	5%	0		28-Aug-20 A	31-Jul-21	16-Jul-23	16-Jul-23	716	
05-3570	Pipebridge C (Between Turbine Hall & ACC Equipment Yard)	105	351	86.67%	5%	14		28-Aug-20 A	13-Aug-21	01-Oct-23	14-Oct-23	792	
EP_SP_66_12-WP6A-M44.05.02.03.5.4 Equipment and piping insulation		197	313	46.7%		105		04-Jan-21 A	12-Nov-21	12-Jul-21	24-Oct-21	-19	
05-4500	Incineration System	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	12-Jul-21	24-Oct-21	-19	
05-4510	Heat Recovery Boiler	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	12-Jul-21	24-Oct-21	-19	
05-4520	Boiler Feed Water Systems	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	12-Jul-21	24-Oct-21	-19	
05-4530	Flue Gas Treatment System	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	12-Jul-21	24-Oct-21	-19	
05-4540	Boiler ash and APC residue handling and solidification	105	105	0%	0%	105	Start On or After	31-Jul-21*	12-Nov-21	12-Jul-21	24-Oct-21	-19	
05-4550	Steam Turbine Generator (STG) and Pressure Reducing and Desuperheating Station (PRDS)	105	252	58.1%	45%	44		04-Jan-21 A	12-Sep-21	11-Sep-21	24-Oct-21	42	
05-4560	Air cooled condenser	105	252	58.1%	45%	44		04-Jan-21 A	12-Sep-21	11-Sep-21	24-Oct-21	42	
05-4570	Closed Circuit Cooling Water System	105	105	0%	0%	105		31-Jul-21	12-Nov-21	12-Jul-21	24-Oct-21	-19	
EP_SP_66_12-WP6A-M44.05.02.03.6 Fire services installation design (2.3.17)		258	948	59.3%		105		10-Apr-19 A	12-Nov-21	24-Oct-21	05-Feb-22	85	
05-3660	Fire Systems	90	843	100%	5%	0		10-Apr-19 A	31-Jul-21	05-Feb-22	05-Feb-22	190	
05-3680	FS schematics	105	105	0%	0%	105		31-Jul-21	12-Nov-21	24-Oct-21	05-Feb-22	85	
EP_SP_66_12-WP6A-M44.05.02.03.7 Building services design (excluding fire services installation design) (2.3.18)		210	210	0%		210		31-Jul-21	25-Feb-22	15-Jul-21	08-Oct-22	225	
05-3690	Electrical Services and Lighting (7 Packages)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-3700	MVAC	90	90	0%	0%	90		28-Oct-21	25-Jan-22	12-Jan-22	11-Apr-22	76	
05-3710	Odour Control	135	135	0%	0%	135		14-Oct-21	25-Feb-22	28-Nov-21	11-Apr-22	45	
05-3720	Plumbing (7 Packages)	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-3730	Drainage (7 Packages)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	23-Dec-21	06-Apr-22	101	
05-3740	ELV (7 Packages)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-3750	Lifts and Escalators	135	135	0%	0%	135		15-Aug-21	27-Dec-21	22-Nov-21	05-Apr-22	99	
05-3770	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	23-Aug-21	04-Jan-22	23	
05-3780	Vehicle & Container Wash System	105	105	0%	0%	105		02-Oct-21	14-Jan-22	13-Nov-21	25-Feb-22	42	
05-3780-1(5a)	Process CCTV System	135	135	0%	0%	135	Start On	31-Jul-21*	12-Dec-21	15-Jul-21	26-Nov-21	-16	
05-3780-2(M20)	Water Cannon System	60	60	0%	0%	60		28-Oct-21	26-Dec-21	10-Aug-22	08-Oct-22	286	
EP_SP_66_12-WP6A-M44.05.02.9 DDA Air Cool Condensers Equipment (2.3.06)		135	135	0%		135		31-Jul-21	12-Dec-21	21-Aug-21	03-Oct-22	295	
EP_SP_66_12-WP6A-M44.05.02.9.7 Building services design (excluding fire services installation design) (2.3.06)		135	135	0%		135		31-Jul-21	12-Dec-21	21-Aug-21	03-Oct-22	295	
05-5510	Electrical Services and Lighting	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	



3-Month Rolling Programme (July 2021)

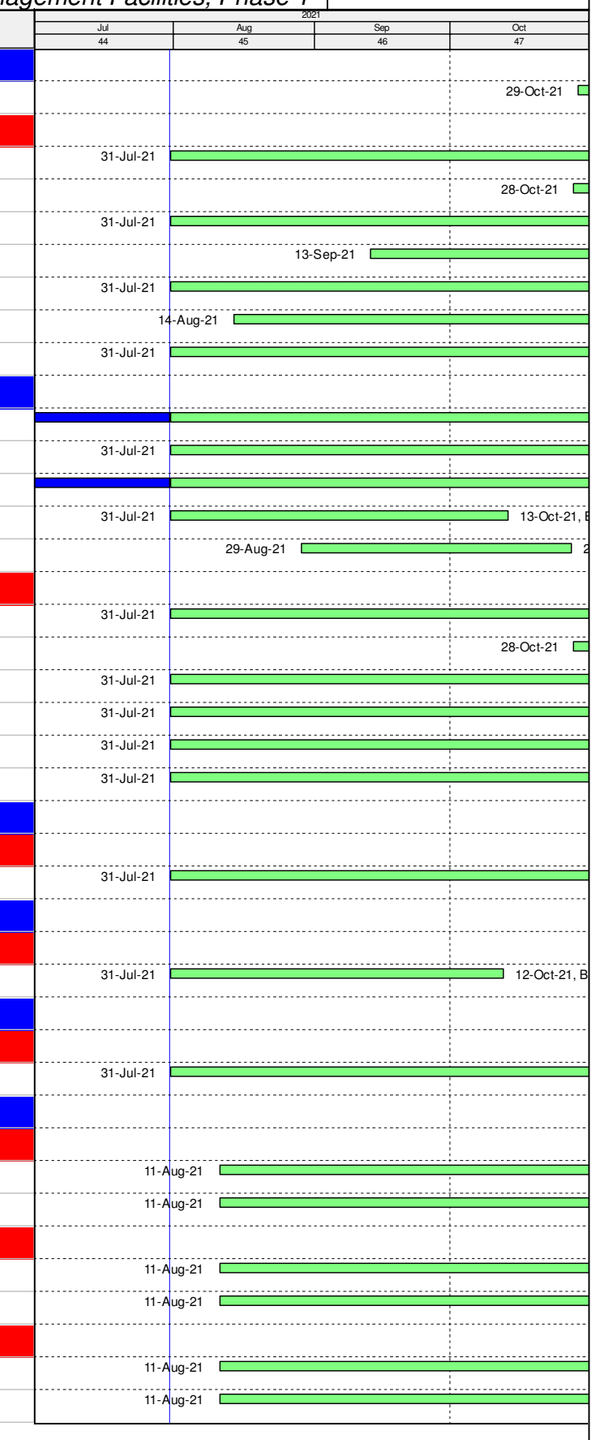
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-5520	Plumbing	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-5530	ELV	135	135	0%	0%	135		31-Jul-21	12-Dec-21	21-Aug-21	02-Jan-22	21	
05-5540	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	22-May-22	03-Oct-22	295	
EP_SP_66_12-WP6A-M44.05.02.04	DDA Mechanical Treatment Plant Building (2.4)	301	301	0%		301		31-Jul-21	27-May-22	24-Sep-21	25-Jul-22	59	
05-5160	Architectural Design (2.4.25)	105	105	0%	0%	105	Start On or After	29-Sep-21*	11-Jan-22	14-Mar-22	26-Jun-22	166	
05-5170	Foundation design (2.4.13)	135	135	0%	0%	135		13-Sep-21	25-Jan-22	05-Feb-22	19-Jun-22	145	
05-5190	Electrical and instrumentation works design (2.4.15)	236	236	0%	0%	236		04-Oct-21	27-May-22	02-Dec-21	25-Jul-22	59	
05-5200	Mechanical works design (2.4.16)	201	201	0%	0%	201		04-Oct-21	22-Apr-22	08-Oct-21	26-Apr-22	4	
05-5210	Fire services installation design (2.4.17)	60	60	0%	0%	60		29-Aug-21	27-Oct-21	08-Dec-21	05-Feb-22	101	
EP_SP_66_12-WP6A-M44.05.02.04.7	Building services design (excluding fire services installation design) (2.4.18)	210	210	0%		210		31-Jul-21	25-Feb-22	24-Sep-21	12-Apr-22	46	
05-3850	LV and Emergency Power Distribution Design	135	135	0%	0%	135	Start On or After	31-Jul-21*	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-3860	MVAC	90	90	0%	0%	90		28-Oct-21	25-Jan-22	12-Jan-22	11-Apr-22	76	
05-3870	Odour Control	135	135	0%	0%	135		14-Oct-21	25-Feb-22	28-Nov-21	11-Apr-22	45	
05-3880	Plumbing	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-3890	Drainage	105	105	0%	0%	105		13-Sep-21	26-Dec-21	23-Dec-21	06-Apr-22	101	
05-3900	Lighting and small power	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-3910	Lifts and Escalators	75	75	0%	0%	75		05-Oct-21	18-Dec-21	21-Jan-22	05-Apr-22	108	
05-3910-1	Building Management System (BMS)	135	135	0%	0%	135		05-Oct-21	16-Feb-22	29-Nov-21	12-Apr-22	55	
EP_SP_66_12-WP6A-M44.05.02.05	DDA Wastewater Treatment Plant (2.5)	223	223	0%		223		31-Jul-21	10-Mar-22	04-Aug-21	09-Aug-22	152	
05-3920	Architectural Design (2.5.25)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	17-Sep-21	29-Jan-22	48	
05-3930	Foundation design (2.5.13)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	17-Sep-21	29-Jan-22	48	
05-3940	Structural design (2.5.14)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	17-Sep-21	29-Jan-22	48	
05-3950	Electrical and instrumentation works design (2.5.15)	223	223	0%	0%	223		31-Jul-21	10-Mar-22	30-Dec-21	09-Aug-22	152	
05-3960	Mechanical works design (2.5.16) (2 Packages)	203	203	0%	0%	203		31-Jul-21	18-Feb-22	04-Aug-21	22-Feb-22	4	
05-3970	Fire services installation design (2.5.17) (2 Packages)	60	60	0%	0%	60	Start On or After	29-Aug-21*	27-Oct-21	08-Dec-21	05-Feb-22	101	
EP_SP_66_12-WP6A-M44.05.02.05.7	Building services design (excluding fire services installation design) (2.5.18)	179	179	0%		179		31-Jul-21	25-Jan-22	24-Sep-21	11-Apr-22	76	
05-3980	LV and Emergency Power Distribution Design for IWMF Waste Water Treatment Plant	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-3990	MVAC	90	90	0%	0%	90		28-Oct-21	25-Jan-22	12-Jan-22	11-Apr-22	76	
05-4010	Plumbing	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-4020	Drainage	105	105	0%	0%	105		13-Sep-21	26-Dec-21	23-Dec-21	06-Apr-22	101	
05-4030	ELV	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
EP_SP_66_12-WP6A-M44.05.02.06	DDA Water Treatment Plant Building (2.6)	368	368	0%		368		31-Jul-21	02-Aug-22	20-Sep-21	09-Aug-22	7	
05-4050	Architectural Design (2.6.25)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	05-Feb-22	19-Jun-22	189	
05-4080	Electrical and instrumentation works design (2.6.15)	324	324	0%	0%	324		13-Sep-21	02-Aug-22	20-Sep-21	09-Aug-22	7	
05-4090	Mechanical works design (2.6.16)	256	256	0%	0%	256		13-Sep-21	26-May-22	27-Nov-21	09-Aug-22	75	
05-4100	Fire services installation design (2.6.17)	60	60	0%	0%	60		29-Aug-21	27-Oct-21	08-Dec-21	05-Feb-22	101	
EP_SP_66_12-WP6A-M44.05.02.06.7	Building services design (excluding fire services installation design) (2.6.18)	179	179	0%		179		31-Jul-21	25-Jan-22	24-Sep-21	11-Apr-22	76	
05-4110	Electrical Services and Lighting	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-4120	MVAC	90	90	0%	0%	90		28-Oct-21	25-Jan-22	12-Jan-22	11-Apr-22	76	
05-4140	Plumbing	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-4150	Drainage	105	105	0%	0%	105		13-Sep-21	26-Dec-21	23-Dec-21	06-Apr-22	101	
05-4160	ELV	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	



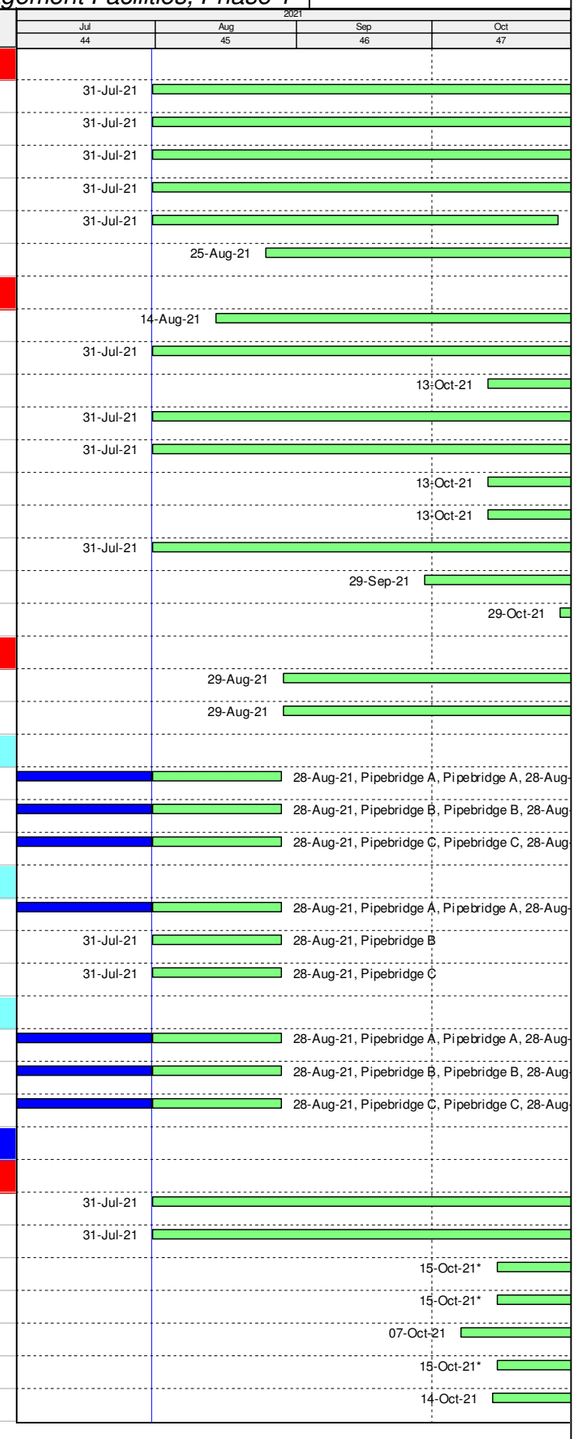
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
EP_SP_66_12-WP6A-M44.05.02.07 DDA Administration Building (2.7)		179	179	0%		179		31-Jul-21	25-Jan-22	24-Sep-21	27-Dec-22	336	
05-4210	Fire services installation design (2.7.14)	60	60	0%	0%	60		29-Oct-21	27-Dec-21	08-Dec-21	05-Feb-22	40	
EP_SP_66_12-WP6A-M44.05.02.07.6 Building services design (excluding fire services installation design) (2.7.15)		179	179	0%		179		31-Jul-21	25-Jan-22	24-Sep-21	27-Dec-22	336	
05-4220	Electrical Services and Lighting	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-4230	MVAC	90	90	0%	0%	90		28-Oct-21	25-Jan-22	12-Jan-22	11-Apr-22	76	
05-4250	Plumbing	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-4260	Drainage	105	105	0%	0%	105		13-Sep-21	26-Dec-21	23-Dec-21	06-Apr-22	101	
05-4270	ELV	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-4280	Lifts and Escalators	135	135	0%	0%	135		14-Aug-21	26-Dec-21	22-Nov-21	05-Apr-22	100	
05-4280-1	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	15-Aug-22	27-Dec-22	380	
EP_SP_66_12-WP6A-M44.05.02.08 DDA IWMF Substation (2.8)		347	807	17.29%		287		27-Feb-20 A	13-May-22	14-Aug-21	27-Sep-22	137	
05-4290	Architectural Design (2.8.25)	105	148	0%	5%	105	Start On or After	18-Jun-21 A	12-Nov-21	17-Mar-22	29-Jun-22	229	
05-4300	Foundation design (2.8.13)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	18-Feb-22	02-Jul-22	202	
05-4310	Structural design (2.8.14)	195	807	0%	65%	287		27-Feb-20 A	13-May-22	15-Dec-21	27-Sep-22	137	
05-4320	Electrical and instrumentation works design (2.8.15)	75	75	0%	0%	75		31-Jul-21	13-Oct-21	14-Aug-21	27-Oct-21	14	
05-4340	Fire services installation design (2.8.17)	60	60	0%	0%	60		29-Aug-21	27-Oct-21	08-Nov-21	06-Jan-22	71	
EP_SP_66_12-WP6A-M44.05.02.08.7 Building services design (excluding fire services installation design) (2.8.18)		179	179	0%		179		31-Jul-21	25-Jan-22	24-Sep-21	05-Jul-22	161	
05-4990	Electrical Services and Lighting	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-5000	MVAC	90	90	0%	0%	90		28-Oct-21	25-Jan-22	07-Apr-22	05-Jul-22	161	
05-5010	Plumbing	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-5020	Drainage	105	105	0%	0%	105		31-Jul-21	12-Nov-21	22-Jan-22	06-May-22	175	
05-5030	ELV	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Sep-21	05-Feb-22	55	
05-5030-1	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	17-Nov-21	31-Mar-22	109	
EP_SP_66_12-WP6A-M44.05.02.4 DDA Elevated Drive Way and Associated Structures Foundation		135	135	0%		135		31-Jul-21	12-Dec-21	20-Mar-22	01-Aug-22	232	
EP_SP_66_12-WP6A-M44.05.02.4.1 Building services design (excluding fire services installation design)		135	135	0%		135		31-Jul-21	12-Dec-21	20-Mar-22	01-Aug-22	232	
05-5560	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	20-Mar-22	01-Aug-22	232	
EP_SP_66_12-WP6A-M44.05.02.5 DDA Reception Pavilion		74	74	0%		74		31-Jul-21	12-Oct-21	09-Aug-22	21-Oct-22	374	
EP_SP_66_12-WP6A-M44.05.02.5.1 Building services design (excluding fire services installation design)		74	74	0%		74		31-Jul-21	12-Oct-21	09-Aug-22	21-Oct-22	374	
05-2130-1	Building Management System (BMS)	74	74	0%	0%	74		31-Jul-21	12-Oct-21	09-Aug-22	21-Oct-22	374	
EP_SP_66_12-WP6A-M44.05.02.6 DDA CCCW Building		135	135	0%		135		31-Jul-21	12-Dec-21	25-Jul-22	06-Dec-22	359	
EP_SP_66_12-WP6A-M44.05.02.6.1 Building services design (excluding fire services installation design)		135	135	0%		135		31-Jul-21	12-Dec-21	25-Jul-22	06-Dec-22	359	
05-2130-2	Building Management System (BMS)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	25-Jul-22	06-Dec-22	359	
EP_SP_66_12-WP6A-M44.05.02.10 DDA Roads and Utilities (2.10)		286	562	21.33%		225		28-Aug-20 A	12-Mar-22	19-Aug-21	21-Aug-23	527	
EP_SP_66_12-WP6A-M44.05.02.10.1 Permanent road works layout on the Artificial Island (2.10.13)		135	135	0%		135		11-Aug-21	23-Dec-21	24-Sep-21	05-Feb-22	44	
05-4470	Roads and hardstandings layout	135	135	0%	0%	135		11-Aug-21	23-Dec-21	24-Sep-21	05-Feb-22	44	
05-4480	Road signage and markings	135	135	0%	0%	135		11-Aug-21	23-Dec-21	24-Sep-21	05-Feb-22	44	
EP_SP_66_12-WP6A-M44.05.02.10.2 Sewerage design on the Artificial Island (2.10.14)		135	135	0%		135		11-Aug-21	23-Dec-21	23-Nov-21	22-Feb-23	426	
05-4430	Foul Sewerage	135	135	0%	0%	135		11-Aug-21	23-Dec-21	23-Nov-21	06-Apr-22	104	
05-4440	Contaminated Sewerage	135	135	0%	0%	135		11-Aug-21	23-Dec-21	11-Oct-22	22-Feb-23	426	
EP_SP_66_12-WP6A-M44.05.02.10.3 Drainage system design on the Artificial Island (2.10.15)		105	105	0%		105		11-Aug-21	23-Nov-21	23-Dec-21	28-Apr-22	156	
05-5310	Surface water Drainage System	105	105	0%	0%	105		11-Aug-21	23-Nov-21	23-Dec-21	06-Apr-22	134	
05-5320	First Flush Drainage System concept	105	105	0%	0%	105		11-Aug-21	23-Nov-21	14-Jan-22	28-Apr-22	156	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

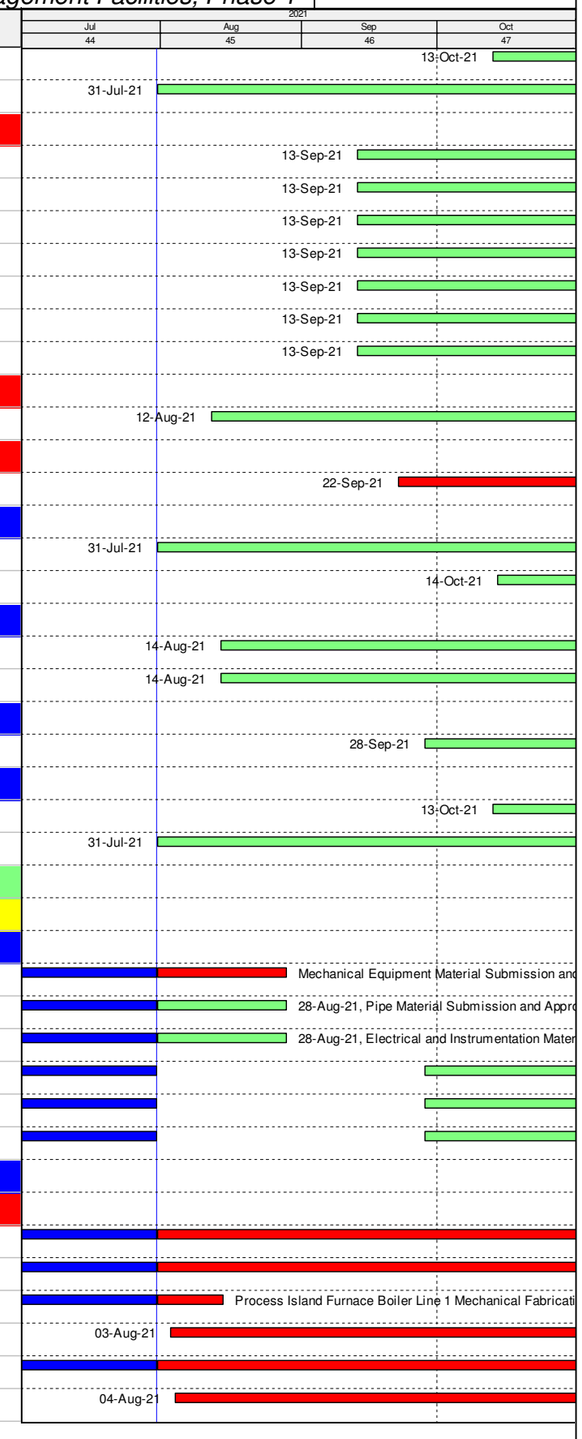
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
EP_SP_66_12-WP6A-M44.05.02.10.4	**Water supply system design on the Artificial Island (2.10.16)**	160	160	0%		160		31-Jul-21	06-Jan-22	09-Oct-21	05-Sep-22	242	
05-5250	Potable Water Distribution System	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Apr-22	05-Sep-22	267	
05-5260	Recycled Water System	135	135	0%	0%	135		31-Jul-21	12-Dec-21	24-Apr-22	05-Sep-22	267	
05-5270	Irrigation System	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-5280	Rainwater harvesting System	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Oct-21	20-Feb-22	70	
05-5300-2(M24)	Building Services system for seawater intake (2.10.16.09)	90	90	0%	0%	90		31-Jul-21	28-Oct-21	23-Nov-21	20-Feb-22	115	
05-5300-3(5a)	Chemical scrubber system for odour control (2.10.16.10)	135	135	0%	0%	135		25-Aug-21	06-Jan-22	28-Nov-21	11-Apr-22	95	
EP_SP_66_12-WP6A-M44.05.02.10.6	**Design of telecommunication and other utilities (2.10.18)**	225	225	0%		225		31-Jul-21	12-Mar-22	19-Aug-21	21-Aug-23	527	
05-3400 (M21)	Computerised Maintenance Management System (CMMS)	105	105	0%	0%	105		14-Aug-21	26-Nov-21	19-Aug-21	01-Dec-21	5	
05-3410 (M21)	Information and Document Management System (IDMS)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	19-Aug-21	01-Dec-21	19	
05-4580	Power Distribution System concept / schematics	75	75	0%	0%	75		13-Oct-21	26-Dec-21	27-Jan-22	11-Apr-22	106	
05-4590	Site Lighting Concept / Schematics	135	135	0%	0%	135		31-Jul-21	12-Dec-21	09-Apr-23	21-Aug-23	617	
05-4600	Lightning Protection System concept / schematics	135	135	0%	0%	135		31-Jul-21	12-Dec-21	21-Aug-21	02-Jan-22	21	
05-4610	Site ELV Network System - Communications System concept / schematics	75	75	0%	0%	75		13-Oct-21	26-Dec-21	27-Jan-22	11-Apr-22	106	
05-4620	Site ELV Network System - Security Systems concept / schematics	75	75	0%	0%	75		13-Oct-21	26-Dec-21	27-Jan-22	11-Apr-22	106	
05-4640	Microwave transmission of FS direct link	135	135	0%	0%	135		31-Jul-21	12-Dec-21	28-Nov-21	11-Apr-22	120	
05-4650	Fuel Handling System concept / schematics	135	135	0%	0%	135		29-Sep-21	10-Feb-22	30-Dec-22	13-May-23	457	
05-5400-1(M22)	Automatic Traffic Control System (ATCS)	135	135	0%	0%	135		29-Oct-21	12-Mar-22	03-Feb-23	17-Jun-23	462	
EP_SP_66_12-WP6A-M44.05.02.10.7	**Utility ducts/Pipebridges design (2.10.26)**	270	501	39.26%		164		28-Aug-20 A	10-Jan-22	25-Dec-21	22-Feb-23	408	
05-5040	Design of Pipe / Utilities Trenches concept	135	135	0%	0%	135		29-Aug-21	10-Jan-22	11-Oct-22	22-Feb-23	408	
05-5050	Sitewide Utilities Trenches Design	135	135	0%	0%	135		29-Aug-21	10-Jan-22	11-Oct-22	22-Feb-23	408	
EP_SP_66_12-WP6A-M44.05.02.10.7.3	**Layout Plan for Pipe Bridge Network**	135	366	78.52%		29		28-Aug-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7000	Pipebridge A	135	324	78.52%	5%	29		09-Oct-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7010	Pipebridge B	135	366	78.52%	5%	29		28-Aug-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7020	Pipebridge C	135	366	78.52%	5%	29		28-Aug-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
EP_SP_66_12-WP6A-M44.05.02.10.7.1	**Foundaion Plan for Pipe Bridge Network**	135	324	78.52%		29		09-Oct-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7030	Pipebridge A	135	324	78.52%	5%	29		09-Oct-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7040	Pipebridge B	29	29	0%	5%	29		31-Jul-21	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7050	Pipebridge C	29	29	0%	5%	29		31-Jul-21	28-Aug-21	25-Dec-21	22-Jan-22	147	
EP_SP_66_12-WP6A-M44.05.02.10.7.2	**Structure Plan for Pipe Bridge Network**	135	366	78.52%		29		28-Aug-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7060	Pipebridge A	135	324	78.52%	5%	29		09-Oct-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7070	Pipebridge B	135	366	78.52%	5%	29		28-Aug-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
05-7080	Pipebridge C	135	366	78.52%	5%	29		28-Aug-20 A	28-Aug-21	25-Dec-21	22-Jan-22	147	
EP_SP_66_12-WP6A-M44.05.02.11	**DDA Architectural, Finishes and Landscaping Works (2.11)**	212	212	0%		212		31-Jul-21	27-Feb-22	22-Sep-21	01-Mar-22	2	
EP_SP_66_12-WP6A-M44.05.02.11.1	**External and internal finishes design for Incineration Plant Buildings**	212	212	0%		212		31-Jul-21	27-Feb-22	16-Oct-21	01-Mar-22	2	
05-4670	External and internal finishes design for Incineration Plant Building (2.11.15)	135	135	0%	0%	135		31-Jul-21	12-Dec-21	18-Oct-21	01-Mar-22	79	
05-4680	External and internal finishes design for ACC Equipment Yard	135	135	0%	0%	135		31-Jul-21	12-Dec-21	18-Oct-21	01-Mar-22	79	
05-4690	External and internal finishes design for Turbine Hall Building	135	135	0%	0%	135	Start On or After	15-Oct-21*	26-Feb-22	18-Oct-21	01-Mar-22	3	
05-4700	External and internal finishes design for CCCW Building	135	135	0%	0%	135	Start On or After	15-Oct-21*	26-Feb-22	18-Oct-21	01-Mar-22	3	
05-4710	External and internal finishes design for Chimney	135	135	0%	0%	135		07-Oct-21	18-Feb-22	18-Oct-21	01-Mar-22	11	
05-4720	External and internal finishes design for Reception Pavilion	135	135	0%	0%	135	Start On or After	15-Oct-21*	26-Feb-22	18-Oct-21	01-Mar-22	3	
05-4730	External and internal finishes design for MT Plant Building (2.11.16)	137	137	0%	0%	137		14-Oct-21	27-Feb-22	16-Oct-21	01-Mar-22	2	



3-Month Rolling Programme (July 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

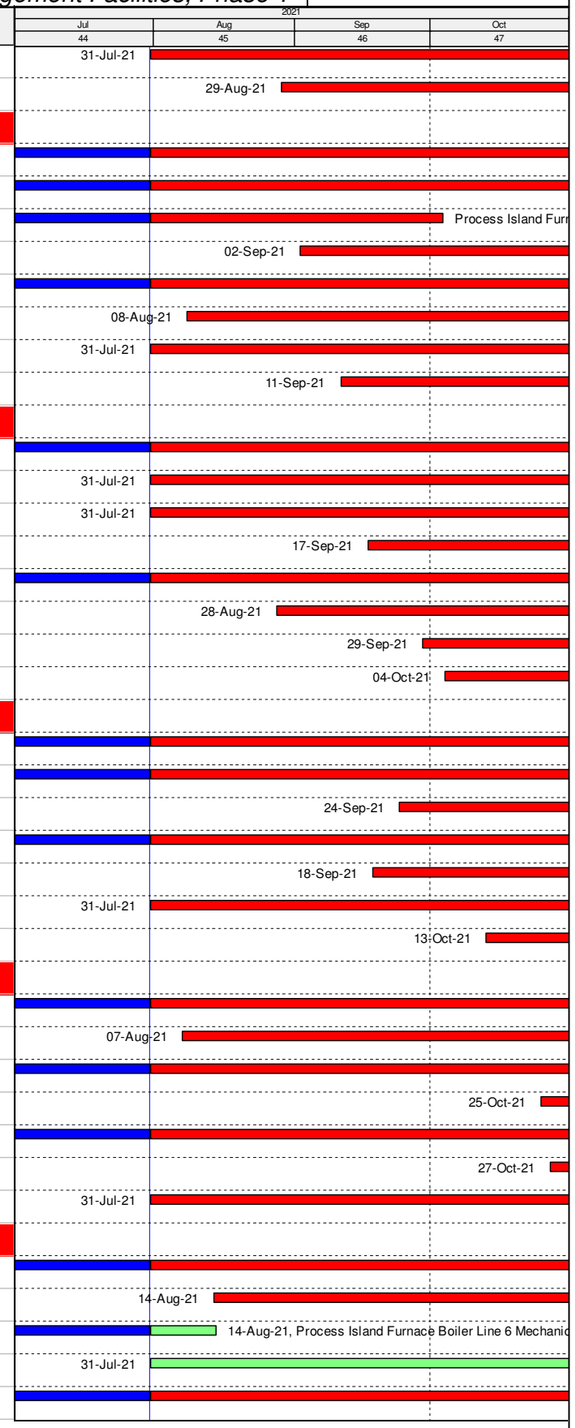
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
05-4760	External and internal finishes design for the Administration Building (2.11.19)	137	137	0%	0%	137		13-Oct-21	26-Feb-22	16-Oct-21	01-Mar-22	3	
05-4770	External and internal finishes design for the IWMF Substation (2.11.20)	137	137	0%	0%	137		31-Jul-21	14-Dec-21	16-Oct-21	01-Mar-22	77	
EP_SP_66_12-WP6A-M44.05.02.11.7 Landscape masterplan (2.11.21)		105	105	0%		105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780	Water Feature	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780-1(6C)	Turbine Hall Building (2.11.07.04)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780-2(6C)	Reception Pavilion (2.11.07.06)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780-3(6C)	MT Plant Building and Water Treatment Plant Building (2.11.07.07)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780-4(6C)	Administration Building (2.11.07.08)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780-5(6C)	IWMF Substation (2.11.07.09)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
05-4780-6(6C)	Process Building (2.11.07.10)	105	105	0%	0%	105		13-Sep-21	26-Dec-21	24-Oct-21	05-Feb-22	41	
EP_SP_66_12-WP6A-M44.05.02.11.8 Architectural Detailing - Site Wide (2.11.30)		135	135	0%		135		12-Aug-21	24-Dec-21	24-Sep-21	05-Feb-22	43	
05-4800	Architectural Detailing - Site Wide Concept	135	135	0%	0%	135		12-Aug-21	24-Dec-21	24-Sep-21	05-Feb-22	43	
EP_SP_66_12-WP6A-M44.05.02.11.9 External and internal finishes design for Elevated Driveway		137	137	0%		137		22-Sep-21	05-Feb-22	22-Sep-21	05-Feb-22	0	
05-5420	External and internal finishes design for Elevated Driveway	137	137	0%	0%	137		22-Sep-21	05-Feb-22	22-Sep-21	05-Feb-22	0	
EP_SP_66_12-WP6A-M44.05.02.12 DDA Testing and Commissioning (2.12)		180	180	0%		180		31-Jul-21	26-Jan-22	15-Jun-22	05-Aug-23	556	
05-4810-1(5a)	Factory Acceptance Testing plan (2.12.09.02-07) (8 Packages)	105	105	0%	0%	105		31-Jul-21	12-Nov-21	15-Jun-22	27-Sep-22	319	
05-4820	Site Acceptance Testing plan (2.12.10)	105	105	0%	0%	105		14-Oct-21	26-Jan-22	23-Apr-23	05-Aug-23	556	
EP_SP_66_12-WP6A-M44.05.02.13 DDA Transportation Facilities for the Operation (2.13)		608	608	0%		608		14-Aug-21	13-Apr-23	06-Feb-23	13-Dec-24	610	
05-4850	Design of vehicles for MSW and Ash and Residues delivery (2.13.05)	493	493	0%	0%	493		14-Aug-21	19-Dec-22	06-Feb-23	12-Jun-24	541	
05-4860	Design of marine vessels for the use of the Employer and visitors (2.13.06)	608	608	0%	0%	608		14-Aug-21	13-Apr-23	16-Apr-23	13-Dec-24	610	
EP_SP_66_12-WP6A-M44.05.02.14 DDA Miscellaneous Works (2.14)		588	588	0%		588		28-Sep-21	08-May-23	21-Nov-22	30-Jun-24	419	
05-4880	Design of visitors and environmental education facilities (2.14.06)	588	588	0%	0%	588		28-Sep-21	08-May-23	21-Nov-22	30-Jun-24	419	
EP_SP_66_12-WP6A-M44.05.02.16 DDA Auxiliary Plant Systems (2.16)		266	266	0%		266		31-Jul-21	22-Apr-22	13-Feb-22	21-Nov-22	213	
05-4940-1(5a)	IWMF Laboratory (2.16.08)	135	135	0%	0%	135		13-Oct-21	24-Feb-22	10-Jul-22	21-Nov-22	270	
05-4940-2(5a)	hoisting systems (2.16.10)	266	266	0%	0%	266		31-Jul-21	22-Apr-22	13-Feb-22	05-Nov-22	197	
EP_SP_66_12-WP6A-M44.06 Procurement of Major Equipment		1454	1709	60.8%		570		18-Jun-18 A	20-Feb-23	09-Jun-21	07-Mar-23	15	
EP_SP_66_12-WP6A-M44.06.1 Off-site Fabrication of Incineration Modules		1380	1615	64.71%		487		29-Jun-18 A	29-Nov-22	09-Jun-21	30-Nov-22	1	
EP_SP_66_12-WP6A-M44.06.1.25 Material Procurement		911	1247	86.94%		119		29-Jun-18 A	26-Nov-21	31-Jul-21	28-Jun-22	214	
06-1000-1(1)	Mechanical Equipment Material Submission and Approval	180	1147	83.89%	58%	29	Finish On or Before	09-Jul-18 A	28-Aug-21*	31-Jul-21	28-Aug-21	0	
06-1000-2(1)	Pipe Material Submission and Approval	180	670	83.89%	58%	29		29-Oct-19 A	28-Aug-21	02-Mar-22	30-Mar-22	214	
06-1000-3(1)	Electrical and Instrumentation Material Submission and Approval	180	670	83.89%	58%	29		29-Oct-19 A	28-Aug-21	02-Mar-22	30-Mar-22	214	
06-1010-1(1)	Mechanical Equipment Procurement (incl. FAT)	90	1247	33.33%	33.33%	60		29-Jun-18 A	26-Nov-21	30-Apr-22	28-Jun-22	214	
06-1010-2(1)	Pipe Material Procurement (incl. FAT)	90	760	33.33%	33.33%	60		29-Oct-19 A	26-Nov-21	30-Apr-22	28-Jun-22	214	
06-1010-3(1)	Electircal and Instrumentation Material Procurement (Incl. FAT)	90	760	33.33%	33.33%	60		29-Oct-19 A	26-Nov-21	30-Apr-22	28-Jun-22	214	
EP_SP_66_12-WP6A-M44.06.1.26 Fabrication of Module (TPU)		640	803	23.91%		487		18-Sep-20 A	29-Nov-22	09-Jun-21	12-Nov-22	-17	
EP_SP_66_12-WP6A-M44.06.1.26.1 Process Island Furnace Boiler line 1		522	685	29.31%		369		18-Sep-20 A	03-Aug-22	09-Jun-21	12-Jun-22	-52	
06-2010(6)	Process Island Furnace Boiler Line 1 Structure Cutting, Painting & Fabrication	370	430	69.19%	69.19%	114		18-Sep-20 A	21-Nov-21	09-Jun-21	30-Sep-21	-52	
06-2020(6)	Process Island Furnace Boiler Line 1 Structure Erection	476	553	25.21%	25.21%	356		15-Jan-21 A	21-Jul-22	09-Jun-21	30-May-22	-52	
06-2030(6)	Process Island Furnace Boiler Line 1 Mechanical Fabrication	300	331	95%	95%	15		18-Sep-20 A	14-Aug-21	09-Jun-21	23-Jun-21	-52	
06-2030-1(6)	Process Island Furnace Boiler Line 1 Mechanical Erection	331	331	0%	0%	331		03-Aug-21	29-Jun-22	12-Jun-21	08-May-22	-52	
06-2040(6)	Process Island Furnace Boiler Line 1 Piping Fabrication	350	350	48.86%	48.86%	179		10-Feb-21 A	25-Jan-22	09-Jun-21	04-Dec-21	-52	
06-2040-1(6)	Process Island Furnace Boiler Line 1 Piping Installation	350	350	0%	0%	350		04-Aug-21	19-Jul-22	13-Jun-21	28-May-22	-52	



3-Month Rolling Programme (July 2021)

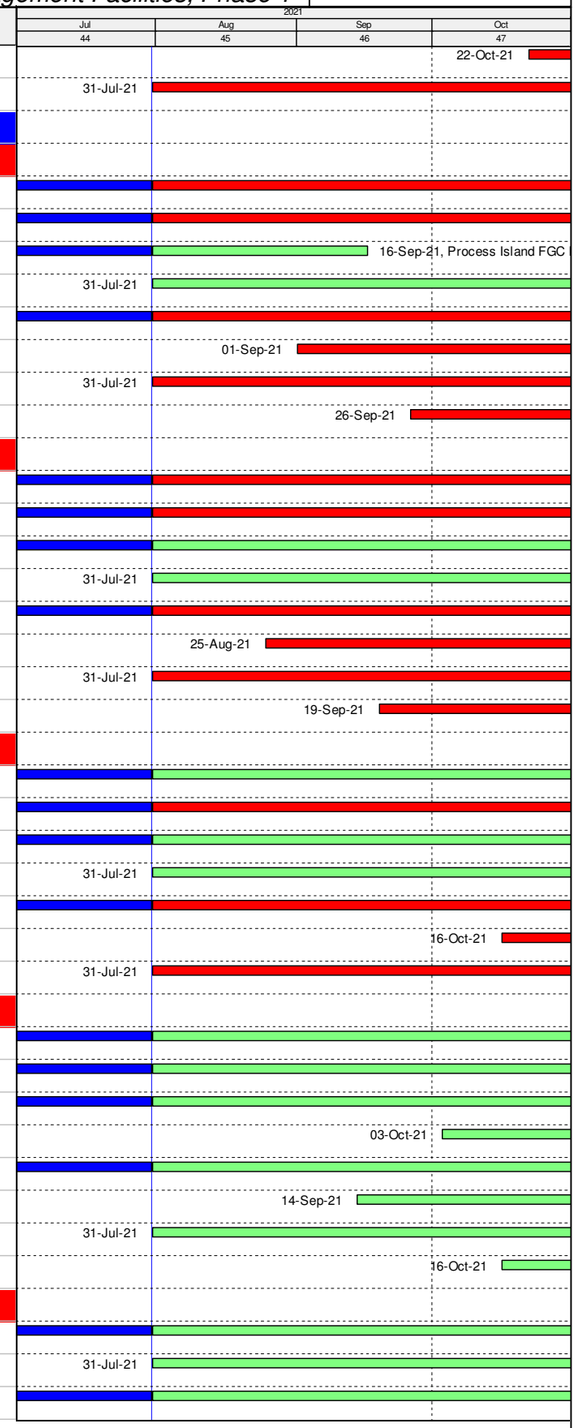
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
06-2050(6)	Process Island Furnace Boiler Line 1 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	09-Jun-21	14-May-22	-52	
06-2050-1(6)	Process Island Furnace Boiler Line 1 Electircal & Instrumentation installation	340	340	0%	0%	340		29-Aug-21	03-Aug-22	08-Jul-21	12-Jun-22	-52	
EP_SP_66_12-WP6A-M44.06.1.26.2 Process Island Furnace Boiler line 2		529	732	21.36%		416		18-Sep-20 A	19-Sep-22	14-Jun-21	03-Aug-22	-47	
06-2100(6)	Process Island Furnace Boiler Line 2 Structure Cutting, Painting & Fabrication	370	500	38.92%	38.92%	226		30-Oct-20 A	13-Mar-22	14-Jun-21	25-Jan-22	-47	
06-2110(6)	Process Island Furnace Boiler Line 2 Structure Erection	437	494	4.81%	4.81%	416		14-May-21 A	19-Sep-22	14-Jun-21	03-Aug-22	-47	
06-2120(6)	Process Island Furnace Boiler Line 2 Mechanical Fabrication	270	381	75.93%	75.93%	65		18-Sep-20 A	03-Oct-21	14-Jun-21	17-Aug-21	-47	
06-2120-1(6)	Process Island Furnace Boiler Line 2 Mechanical Erection	305	305	0%	0%	305		02-Sep-21	03-Jul-22	17-Jul-21	17-May-22	-47	
06-2130(6)	Process Island Furnace Boiler Line 2 Piping Fabrication	350	381	32.29%	32.29%	237		09-Mar-21 A	24-Mar-22	14-Jun-21	05-Feb-22	-47	
06-2130-1(6)	Process Island Furnace Boiler Line 2 Piping Installation	350	350	0%	0%	350		08-Aug-21	23-Jul-22	22-Jun-21	06-Jun-22	-47	
06-2140(6)	Process Island Furnace Boiler Line 2 Electircal & Instrumentation Fabrication	331	331	0%	0%	331		31-Jul-21	26-Jun-22	14-Jun-21	10-May-22	-47	
06-2140-1(6)	Process Island Furnace Boiler Line 2 Electircal & Instrumentation installation	331	331	0%	0%	331		11-Sep-21	07-Aug-22	26-Jul-21	21-Jun-22	-47	
EP_SP_66_12-WP6A-M44.06.1.26.3 Process Island Furnace Boiler line 3		582	678	26.29%		429		24-Nov-20 A	02-Oct-22	08-Jul-21	09-Sep-22	-23	
06-2190(6)	Process Island Furnace Boiler Line 3 Structure Cutting, Painting & Fabrication	264	498	5.68%	5.68%	249		24-Nov-20 A	05-Apr-22	08-Jul-21	13-Mar-22	-23	
06-2200-1(6)	Process Island Furnace Boiler Line 3 Structure Erection	429	429	0%	0%	429		31-Jul-21	02-Oct-22	08-Jul-21	09-Sep-22	-23	
06-2210-1(6)	Process Island Furnace Boiler Line 3 Mechanical Fabrication	270	270	0%	0%	270		31-Jul-21	26-Apr-22	08-Jul-21	03-Apr-22	-23	
06-2215-1(6)	Process Island Furnace Boiler Line 3 Mechanical Erection	300	300	0%	0%	300		17-Sep-21	13-Jul-22	25-Aug-21	20-Jun-22	-23	
06-2220-1(6)	Process Island Furnace Boiler Line 3 Piping Fabrication	350	350	41.14%	41.14%	206		09-Mar-21 A	21-Feb-22	08-Jul-21	29-Jan-22	-23	
06-2225-1(6)	Process Island Furnace Boiler Line 3 Piping Installation	350	350	0%	0%	350		28-Aug-21	12-Aug-22	05-Aug-21	20-Jul-22	-23	
06-2230-1(6)	Process Island Furnace Boiler Line 3 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		29-Sep-21	03-Sep-22	06-Sep-21	11-Aug-22	-23	
06-2235-1(6)	Process Island Furnace Boiler Line 3 Electircal & Instrumentation installation	340	340	0%	0%	340		04-Oct-21	08-Sep-22	11-Sep-21	16-Aug-22	-23	
EP_SP_66_12-WP6A-M44.06.1.26.4 Process Island Furnace Boiler line 4		638	651	34.48%		418		10-Dec-20 A	21-Sep-22	06-Jul-21	27-Aug-22	-25	
06-2280(6)	Process Island Furnace Boiler Line 4 Structure Cutting, Painting & Fabrication	370	471	35.68%	35.68%	238		10-Dec-20 A	25-Mar-22	06-Jul-21	28-Feb-22	-25	
06-2290-1(6)	Process Island Furnace Boiler Line 4 Structure Erection	485	518	13.81%	13.81%	418		22-Apr-21 A	21-Sep-22	06-Jul-21	27-Aug-22	-25	
06-2305-1(6)	Process Island Furnace Boiler Line 4 Mechanical Erection	314	314	0%	0%	314		24-Sep-21	03-Aug-22	30-Aug-21	09-Jul-22	-25	
06-2310-1(6)	Process Island Furnace Boiler Line 4 Piping Fabrication	350	381	32.29%	32.29%	237		09-Mar-21 A	24-Mar-22	06-Jul-21	27-Feb-22	-25	
06-2315-1(6)	Process Island Furnace Boiler Line 4 Piping Installation	350	350	0%	0%	350		18-Sep-21	02-Sep-22	24-Aug-21	08-Aug-22	-25	
06-2320-1(6)	Process Island Furnace Boiler Line 4 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	06-Jul-21	10-Jun-22	-25	
06-2325-1(6)	Process Island Furnace Boiler Line 4 Electircal & Instrumentation installation	340	340	0%	0%	340		13-Oct-21	17-Sep-22	18-Sep-21	23-Aug-22	-25	
EP_SP_66_12-WP6A-M44.06.1.26.5 Process Island Furnace Boiler line 5		640	803	23.91%		487		18-Sep-20 A	29-Nov-22	14-Jul-21	12-Nov-22	-17	
06-2370(6)	Process Island Furnace Boiler Line 5 Structure Cutting, Painting & Fabrication	370	512	16.76%	16.76%	308		08-Jan-21 A	03-Jun-22	14-Jul-21	17-May-22	-17	
06-2380(6)	Process Island Furnace Boiler Line 5 Structure Erection	480	480	0%	0%	480		07-Aug-21	29-Nov-22	21-Jul-21	12-Nov-22	-17	
06-2390(6)	Process Island Furnace Boiler Line 5 Mechanical Fabrication	270	586	0%	0%	270		18-Sep-20 A	26-Apr-22	14-Jul-21	09-Apr-22	-17	
06-2390-1(6)	Process Island Furnace Boiler Line 5 Mechanical Erection	322	322	0%	0%	322		25-Oct-21	11-Sep-22	08-Oct-21	25-Aug-22	-17	
06-2400-1(6)	Process Island Furnace Boiler Line 5 Piping Fabrication	350	381	28.29%	28.29%	251		23-Mar-21 A	07-Apr-22	14-Jul-21	21-Mar-22	-17	
06-2405-1(6)	Process Island Furnace Boiler Line 5 Piping Installation	350	350	0%	0%	350		27-Oct-21	11-Oct-22	10-Oct-21	24-Sep-22	-17	
06-2410-1(6)	Process Island Furnace Boiler Line 5 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	14-Jul-21	18-Jun-22	-17	
EP_SP_66_12-WP6A-M44.06.1.26.6 Process Island Furnace Boiler line 6		596	759	25.67%		443		18-Sep-20 A	16-Oct-22	26-Jul-21	11-Oct-22	-5	
06-2460(6)	Process Island Furnace Boiler Line 6 Structure Cutting, Painting & Fabrication	370	449	26.76%	26.76%	271		03-Feb-21 A	27-Apr-22	26-Jul-21	22-Apr-22	-5	
06-2470(6)	Process Island Furnace Boiler Line 6 Structure Erection	429	429	0%	0%	429		14-Aug-21	16-Oct-22	09-Aug-21	11-Oct-22	-5	
06-2480(6)	Process Island Furnace Boiler Line 6 Mechanical Fabrication	270	331	94.44%	94.44%	15		18-Sep-20 A	14-Aug-21	17-Oct-21	31-Oct-21	78	
06-2480-1(6)	Process Island Furnace Boiler Line 6 Mechanical Erection	320	320	0%	0%	320		31-Jul-21	15-Jun-22	17-Oct-21	01-Sep-22	78	
06-2490(6)	Process Island Furnace Boiler Line 6 Piping Fabrication	350	381	28.29%	28.29%	251		23-Mar-21 A	07-Apr-22	31-Jul-21	07-Apr-22	0	



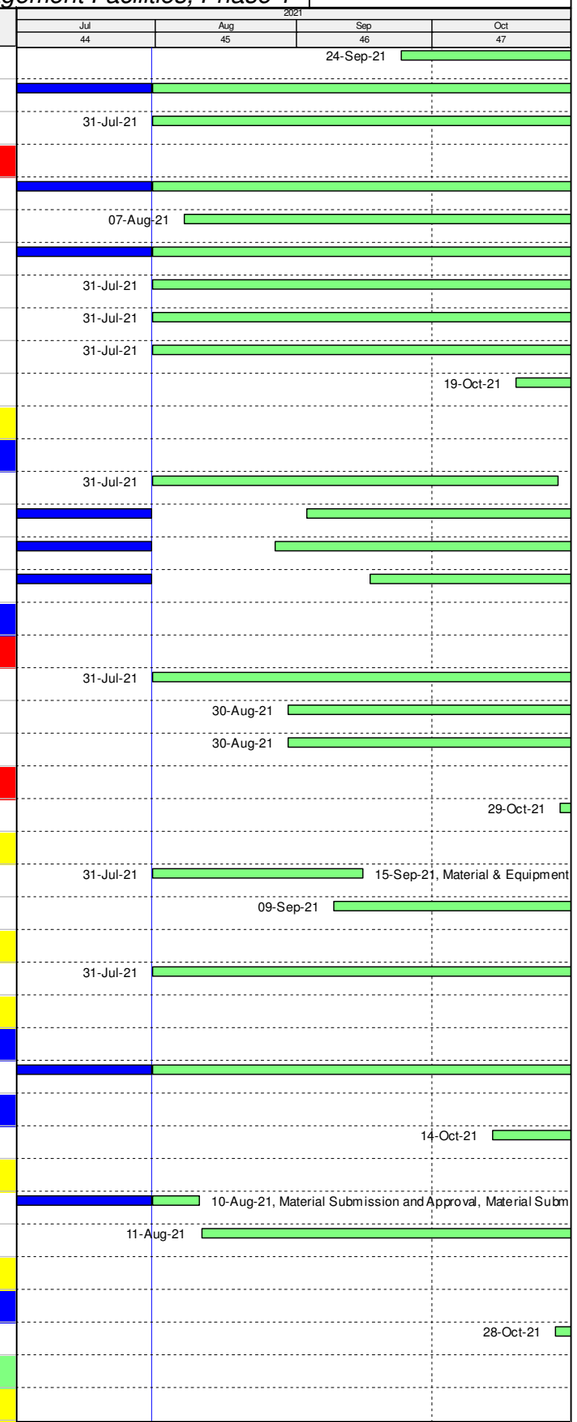
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
06-2490-1(6)	Process Island Furnace Boiler Line 6 Piping Installation	350	350	0%	0%	350		22-Oct-21	06-Oct-22	22-Oct-21	06-Oct-22	0	
06-2500(6)	Process Island Furnace Boiler Line 6 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	31-Jul-21	05-Jul-22	0	
EP_SP_66_12-WP6A-M44.06.1.7 Fabrication of Module (FGC)		649	700	27.89%		468		11-Dec-20 A	10-Nov-22	10-Jun-21	30-Nov-22	20	
EP_SP_66_12-WP6A-M44.06.1.7.1 Process Island FGC line 1		649	665	31.74%		443		21-Dec-20 A	16-Oct-22	10-Jun-21	26-Aug-22	-51	
06-2000(6)	Process Island FGC Line 1 Structure Cutting, Painting & Fabrication	274	401	11.31%	11.31%	243		23-Feb-21 A	30-Mar-22	10-Jun-21	07-Feb-22	-51	
06-2550(6)	Process Island FGC Line 1 Structure Erection	474	564	6.54%	6.54%	443		01-Apr-21 A	16-Oct-22	10-Jun-21	26-Aug-22	-51	
06-2560(6)	Process Island FGC Line 1 Mechanical Fabrication	270	270	82.22%	82.22%	48		21-Dec-20 A	16-Sep-21	13-Jan-22	01-Mar-22	166	
06-2560-1(6)	Process Island FGC Line 1 Mechanical Erection	270	270	0%	0%	270		31-Jul-21	26-Apr-22	21-Oct-21	17-Jul-22	82	
06-2570(6)	Process Island FGC Line 1 Piping Fabrication	350	350	18%	18%	287		29-May-21 A	13-May-22	10-Jun-21	23-Mar-22	-51	
06-2570-1(6)	Process Island FGC Line 1 Piping Installation	350	350	0%	0%	350		01-Sep-21	16-Aug-22	12-Jul-21	26-Jun-22	-51	
06-2580(6)	Process Island FGC Line 1 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	10-Jun-21	15-May-22	-51	
06-2580-1(6)	Process Island FGC Line 1 Electircal & Instrumentation installation	340	340	0%	0%	340		26-Sep-21	31-Aug-22	06-Aug-21	11-Jul-22	-51	
EP_SP_66_12-WP6A-M44.06.1.7.2 Process Island FGC line 2		594	628	29.12%		421		05-Jan-21 A	24-Sep-22	03-Jul-21	27-Aug-22	-28	
06-2630(6)	Process Island FGC Line 2 Structure Cutting, Painting & Fabrication	345	369	40.87%	40.87%	204		16-Feb-21 A	19-Feb-22	03-Jul-21	22-Jan-22	-28	
06-2640(6)	Process Island FGC Line 2 Structure Erection	441	542	4.54%	4.54%	421		01-Apr-21 A	24-Sep-22	03-Jul-21	27-Aug-22	-28	
06-2650(6)	Process Island FGC Line 2 Mechanical Fabrication	270	301	65.19%	65.19%	94		05-Jan-21 A	01-Nov-21	21-Nov-21	22-Feb-22	113	
06-2650-1(6)	Process Island FGC Line 2 Mechanical Erection	300	300	0%	0%	300		31-Jul-21	26-May-22	14-Sep-21	10-Jul-22	45	
06-2660(6)	Process Island FGC Line 2 Piping Fabrication	350	381	7.71%	7.71%	323		03-Jun-21 A	18-Jun-22	03-Jul-21	21-May-22	-28	
06-2660-1(6)	Process Island FGC Line 2 Piping Installation	350	350	0%	0%	350		25-Aug-21	09-Aug-22	28-Jul-21	12-Jul-22	-28	
06-2670(6)	Process Island FGC Line 2 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	03-Jul-21	07-Jun-22	-28	
06-2670-1(6)	Process Island FGC Line 2 Electircal & Instrumentation installation	340	340	0%	0%	340		19-Sep-21	24-Aug-22	22-Aug-21	27-Jul-22	-28	
EP_SP_66_12-WP6A-M44.06.1.7.3 Process Island FGC line 3		647	700	27.67%		468		11-Dec-20 A	10-Nov-22	03-Jul-21	13-Oct-22	-28	
06-2720(6)	Process Island FGC Line 3 Structure Cutting, Painting & Fabrication	345	436	40.87%	40.87%	204		11-Dec-20 A	19-Feb-22	16-Aug-21	07-Mar-22	16	
06-2730(6)	Process Island FGC Line 3 Structure Erection	494	552	5.26%	5.26%	468		08-May-21 A	10-Nov-22	03-Jul-21	13-Oct-22	-28	
06-2740(6)	Process Island FGC Line 3 Mechanical Fabrication	270	301	65.19%	65.19%	94		05-Jan-21 A	01-Nov-21	13-Dec-21	16-Mar-22	135	
06-2740-1(6)	Process Island FGC Line 3 Mechanical Erection	351	351	0%	0%	351		31-Jul-21	16-Jul-22	15-Sep-21	31-Aug-22	46	
06-2750(6)	Process Island FGC Line 3 Piping Fabrication	350	381	7.71%	7.71%	323		03-Jun-21 A	18-Jun-22	03-Jul-21	21-May-22	-28	
06-2750-1(6)	Process Island FGC Line 3 Piping Installation	350	350	0%	0%	350		16-Oct-21	30-Sep-22	18-Sep-21	02-Sep-22	-28	
06-2760(6)	Process Island FGC Line 3 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	13-Jul-21	17-Jun-22	-18	
EP_SP_66_12-WP6A-M44.06.1.7.4 Process Island FGC line 4		647	624	35.55%		417		05-Jan-21 A	20-Sep-22	06-Aug-21	26-Sep-22	6	
06-2810(6)	Process Island FGC Line 4 Structure Cutting, Painting & Fabrication	345	376	22.03%	22.03%	269		15-Apr-21 A	25-Apr-22	06-Aug-21	01-May-22	6	
06-2820(6)	Process Island FGC Line 4 Structure Erection	494	492	17%	17%	410		10-May-21 A	13-Sep-22	06-Aug-21	19-Sep-22	6	
06-2830(6)	Process Island FGC Line 4 Mechanical Fabrication	270	477	0%	0%	270		05-Jan-21 A	26-Apr-22	20-Sep-21	16-Jun-22	51	
06-2830-1(6)	Process Island FGC Line 4 Mechanical Erection	275	275	0%	0%	275		03-Oct-21	04-Jul-22	07-Dec-21	07-Sep-22	65	
06-2840(6)	Process Island FGC Line 4 Piping Fabrication	350	402	0%	0%	350		09-Jun-21 A	15-Jul-22	06-Aug-21	21-Jul-22	6	
06-2840-1(6)	Process Island FGC Line 4 Piping Installation	350	350	0%	0%	350		14-Sep-21	29-Aug-22	20-Sep-21	04-Sep-22	6	
06-2850(6)	Process Island FGC Line 4 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	06-Aug-21	11-Jul-22	6	
06-2850-1(6)	Process Island FGC Line 4 Electircal & Instrumentation installation	340	340	0%	0%	340		16-Oct-21	20-Sep-22	22-Oct-21	26-Sep-22	6	
EP_SP_66_12-WP6A-M44.06.1.7.5 Process Island FGC line 5		455	662	0%		455		05-Jan-21 A	28-Oct-22	11-Aug-21	08-Nov-22	11	
06-2900(6)	Process Island FGC Line 5 Structure Cutting, Painting & Fabrication	345	391	13.04%	13.04%	300		01-May-21 A	26-May-22	13-Jan-22	08-Nov-22	166	
06-2910(6)	Process Island FGC Line 5 Structure Erection	455	455	0%	0%	455		31-Jul-21	28-Oct-22	11-Aug-21	08-Nov-22	11	
06-2920(6)	Process Island FGC Line 5 Mechanical Fabrication	270	301	65.19%	65.19%	94		05-Jan-21 A	01-Nov-21	09-Oct-21	10-Jan-22	70	



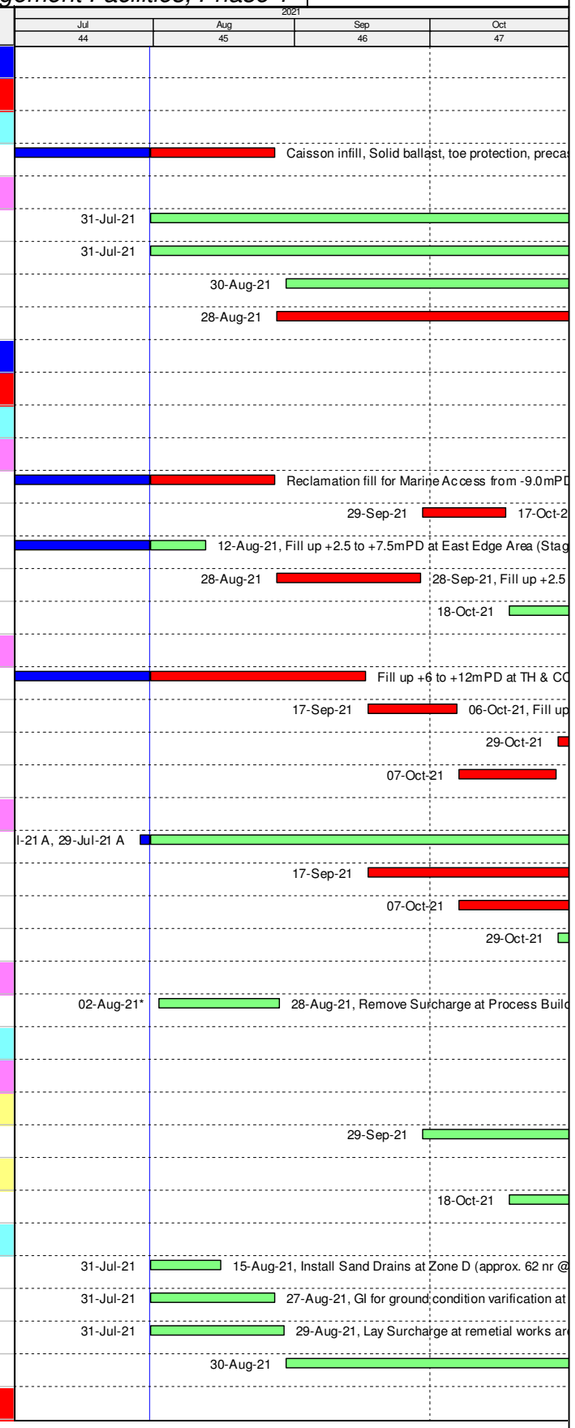
Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
06-2920-1(6)	Process Island FGC Line 5 Mechanical Erection	270	270	0%	0%	270		24-Sep-21	20-Jun-22	03-Dec-21	29-Aug-22	70	
06-2930(6)	Process Island FGC Line 5 Piping Fabrication	350	393	0%	0%	350		18-Jun-21 A	15-Jul-22	11-Aug-21	26-Jul-22	11	
06-2940(6)	Process Island FGC Line 5 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	28-Aug-21	02-Aug-22	28	
EP_SP_66_12-WP6A-M44.06.1.7.6 Process Island FGC line 6		464	671	0%		464		05-Jan-21 A	06-Nov-22	09-Aug-21	30-Nov-22	24	
06-2990(6)	Process Island FGC Line 6 Structure Cutting, Painting & Fabrication	345	400	9.28%	9.28%	313		05-May-21 A	08-Jun-22	09-Aug-21	17-Jun-22	9	
06-3000(6)	Process Island FGC Line 6 Structure Erection	457	457	0%	0%	457		07-Aug-21	06-Nov-22	16-Aug-21	15-Nov-22	9	
06-3010(6)	Process Island FGC Line 6 Mechanical Fabrication	270	301	65.19%	65.19%	94		05-Jan-21 A	01-Nov-21	09-Aug-21	10-Nov-21	9	
06-3010-1(6)	Process Island FGC Line 6 Mechanical Erection	327	327	0%	0%	327		31-Jul-21	22-Jun-22	14-Oct-21	05-Sep-22	75	
06-3020(6)	Process Island FGC Line 6 Piping Fabrication	350	350	0%	0%	350		31-Jul-21	15-Jul-22	09-Aug-21	24-Jul-22	9	
06-3030(6)	Process Island FGC Line 6 Electircal & Instrumentation Fabrication	340	340	0%	0%	340		31-Jul-21	05-Jul-22	07-Oct-21	11-Sep-22	68	
06-3030-1(6)	Process Island FGC Line 6 Electircal & Instrumentation installation	340	340	0%	0%	340		19-Oct-21	23-Sep-22	26-Dec-21	30-Nov-22	68	
EP_SP_66_12-WP6A-M44.06.2 Off-site Fabrication of Turbine Modules		904	1709	36.95%		570		18-Jun-18 A	20-Feb-23	07-Aug-21	27-Feb-23	7	
EP_SP_66_12-WP6A-M44.06.2.1 Material Procurement		546	1393	53.48%		254		18-Jun-18 A	10-Apr-22	05-Nov-21	02-Jun-22	53	
06-1050-2(1)	Pipe Material Submission and Approval	90	90	0%	0%	90		31-Jul-21	28-Oct-21	05-Nov-21	02-Feb-22	97	
06-1060-1(1)	Mechanical Equipment Procurement (Incl. FAT)	380	1289	69.47%	69.47%	116		18-Jun-18 A	27-Dec-21	07-Feb-22	02-Jun-22	157	
06-1060-2(1)	Pipe Material Procurement (Incl. FAT)	180	639	31.67%	31.67%	123		29-Mar-20 A	27-Dec-21	02-Dec-21	03-Apr-22	97	
06-1060-3(1)	Electrical and Instrumentation Material Procurement (Incl. FAT)	365	743	43.56%	43.56%	206		29-Mar-20 A	10-Apr-22	09-Nov-21	02-Jun-22	53	
EP_SP_66_12-WP6A-M44.06.2.2 Fabrication of Module (Power Island)		570	570	0%		570		31-Jul-21	20-Feb-23	07-Aug-21	27-Feb-23	7	
EP_SP_66_12-WP6A-M44.06.2.2.1 Turbine Module 1		480	480	0%		480		31-Jul-21	22-Nov-22	07-Aug-21	31-Dec-22	39	
06-4000(6)	Turbine Module 1 - Structure Cutting, Painting, Pre-assembly & Erection	480	480	0%	0%	480		31-Jul-21	22-Nov-22	07-Aug-21	29-Nov-22	7	
06-4010(6)	Turbine Module 1 - Steam Turbine 1 Fabrication	450	450	0%	0%	450		30-Aug-21	22-Nov-22	08-Oct-21	31-Dec-22	39	
06-4020(6)	Turbine Module 1 - Generator & Equipment Installation	450	450	0%	0%	450		30-Aug-21	22-Nov-22	08-Oct-21	31-Dec-22	39	
EP_SP_66_12-WP6A-M44.06.2.2.2 Turbine Module 2		480	480	0%		480		29-Oct-21	20-Feb-23	05-Nov-21	27-Feb-23	7	
06-4200(6)	Turbine Module 2 - Structure Cutting, Painting, Pre-assembly & Erection	480	480	0%	0%	480		29-Oct-21	20-Feb-23	05-Nov-21	27-Feb-23	7	
EP_SP_66_12-WP6A-M44.06.3 Procurement for ACC Units		440	440	0%		440		31-Jul-21	13-Oct-22	19-Sep-21	02-Dec-22	50	
06-1110	Material & Equipment Procurement	47	47	0%	0%	47		31-Jul-21	15-Sep-21	19-Sep-21	04-Nov-21	50	
06-1120	Off-site Fabrication of ACC Units	400	400	0%	0%	400		09-Sep-21	13-Oct-22	29-Oct-21	02-Dec-22	50	
EP_SP_66_12-WP6A-M44.06.5 Procurement for WWTP Equipment		180	180	0%		180		31-Jul-21	26-Jan-22	17-Aug-21	12-Feb-22	17	
06-1190-3(1)	Electircal and Instrumentation Material Submission and Approval	180	180	0%	0%	180		31-Jul-21	26-Jan-22	17-Aug-21	12-Feb-22	17	
EP_SP_66_12-WP6A-M44.06.7 Procurement for HV Transformers and Associated Equipment		550	1020	49.64%		277		19-Jul-19 A	03-May-22	28-Oct-21	27-Sep-22	147	
EP_SP_66_12-WP6A-M44.06.7.1 Procurement of Transformers & EDG		550	1020	49.64%		277		19-Jul-19 A	03-May-22	25-Dec-21	27-Sep-22	147	
06-1280(1)	Procurement of Transfromers	550	1020	49.64%	49.64%	277		19-Jul-19 A	03-May-22	25-Dec-21	27-Sep-22	147	
EP_SP_66_12-WP6A-M44.06.7.2 Procurement of Switchboard/Pannels and Cables		90	90	0%		90		14-Oct-21	11-Jan-22	28-Oct-21	25-Jan-22	14	
06-2090(1)	Material Submission and Approval	90	90	0%	0%	90		14-Oct-21	11-Jan-22	28-Oct-21	25-Jan-22	14	
EP_SP_66_12-WP6A-M44.06.10 Procruement and Off-site Fabrication of Pipe Bridges (Incl. Pipings)		272	456	56.25%		119		28-Aug-20 A	26-Nov-21	26-Sep-21	22-Jan-22	57	
06-1390(1)	Material Submission and Approval	90	348	87.78%	87.78%	11		28-Aug-20 A	10-Aug-21	26-Sep-21	06-Oct-21	57	
06-1400	Material & Equipment Procurement	108	108	0%	0%	108		11-Aug-21	26-Nov-21	07-Oct-21	22-Jan-22	57	
EP_SP_66_12-WP6A-M44.06.13 Procurement for Fire Services System		425	425	0%		425		28-Oct-21	26-Dec-22	07-Jan-22	07-Mar-23	71	
EP_SP_66_12-WP6A-M44.06.13.1 IWMF Substation		425	425	0%		425		28-Oct-21	26-Dec-22	07-Jan-22	07-Mar-23	71	
06-1810(6)	Material Submission & Equipment Procurement (For IWMF Substation)	425	425	0%	0%	425		28-Oct-21	26-Dec-22	07-Jan-22	07-Mar-23	71	
EP_SP_66_12-WP6A-M44.08 Maritime Works		879	911	69.28%		270		29-Oct-19 A	26-Apr-22	23-Jul-21	05-Sep-22	132	
EP_SP_66_12-WP6A-M44.08.1 Marine Construction		879	911	69.28%		270		29-Oct-19 A	26-Apr-22	23-Jul-21	05-Sep-22	132	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

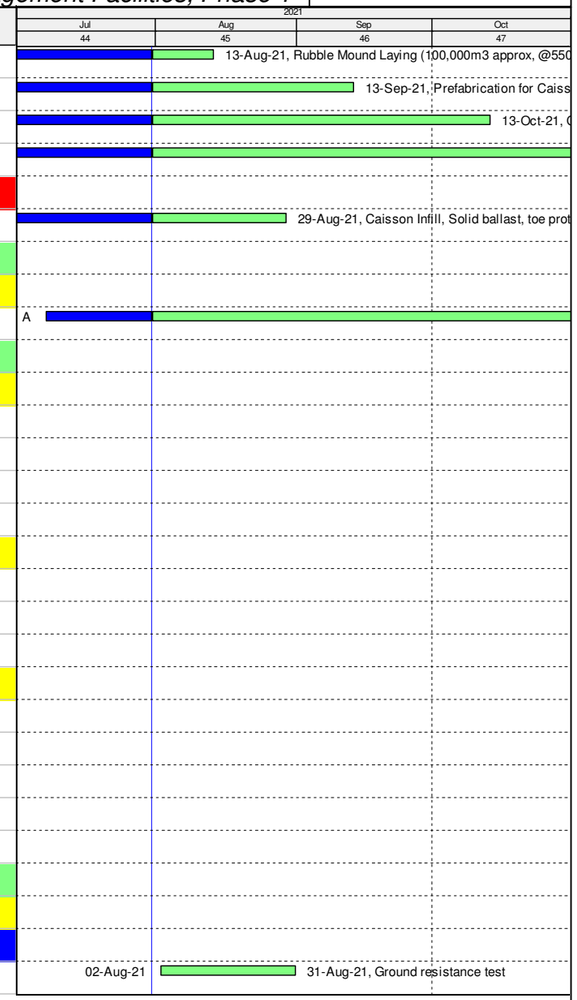
Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
EP_SP_66_12-WP6A-M44.08.1.1	**Phase I - Construction of Perimeter Seawalls**	859	891	70.9%		250		29-Oct-19 A	06-Apr-22	31-Jul-21	28-May-22	52	
EP_SP_66_12-WP6A-M44.08.1.1.1	**Seawall and Berth at DCM Area**	859	891	70.9%		250		29-Oct-19 A	06-Apr-22	31-Jul-21	28-May-22	52	
EP_SP_66_12-WP6A-M44.08.1.1.1.5	**Seawall Structural Works**	859	891	70.9%		250		29-Oct-19 A	06-Apr-22	31-Jul-21	28-May-22	52	
08-1115(3)	Caisson infill, Solid ballast, toe protection, precast concrete blocks ..etc Laying	250	669	88.8%	88.8%	28		29-Oct-19 A	27-Aug-21	31-Jul-21	27-Aug-21	0	
EP_SP_66_12-WP6A-M44.08.1.1.1.5.1	**Remain Works**	250	250	0%		250		31-Jul-21	06-Apr-22	18-Aug-21	28-May-22	52	
08-1105-08(6)	Prefabrication of Precast Beam and Slab for Seawall A	140	140	0%	0%	140		31-Jul-21	17-Dec-21	18-Aug-21	04-Jan-22	18	
08-1105-09(6)	Prefabrication of Precast Beam & Slab for Seawall B	140	140	0%	0%	140		31-Jul-21	17-Dec-21	18-Aug-21	04-Jan-22	18	
08-1120	Construction of Seawall and Wave Wall Extension from +3mPD to Deck Level for Seawall A	220	220	0%	0%	220		30-Aug-21	06-Apr-22	21-Oct-21	28-May-22	52	
08-1120-1(6)	Construction of Seawall and Wave Wall Extension from +3mPD to Deck Level for Seawall B	220	220	0%	0%	220		28-Aug-21	04-Apr-22	28-Aug-21	04-Apr-22	0	
EP_SP_66_12-WP6A-M44.08.1.2	**Phase II - Reclamation, Breakwater and Berth Construction**	541	677	50.07%		270		19-Jun-20 A	26-Apr-22	23-Jul-21	05-Sep-22	132	
EP_SP_66_12-WP6A-M44.08.1.2.1	**Reclamation**	270	358	0%		270		04-May-21 A	26-Apr-22	23-Jul-21	13-Jun-22	48	
EP_SP_66_12-WP6A-M44.08.1.2.1.6	**Reclamation Works**	270	358	0%		270		04-May-21 A	26-Apr-22	23-Jul-21	09-Jun-22	44	
EP_SP_66_12-WP6A-M44.08.1.2.1.6.1	**Reclamation Fill**	179	166	42.46%		103		29-May-21 A	10-Nov-21	31-Jul-21	16-Nov-21	6	
08-1200-3 (M35)	Reclamation fill for Marine Access from -9.0mPD to +2.5mPD (~300,000m3 @ 4000m3/d)	75	90	62.67%	62.67%	28		30-May-21 A	27-Aug-21	31-Jul-21	27-Aug-21	0	
08-1220(6)	Reclamation fill for Marine Access from +2.5 to Formation Level (75,000m3 @4000m3/d)	19	19	0%	0%	19		29-Sep-21	17-Oct-21	29-Sep-21	17-Oct-21	0	
08-3030(6)	Fill up +2.5 to +7.5mPD at East Edge Area (Stage 3-2) (127,250m3 @ 4000m3/d)	32	75	62%	62%	12		29-May-21 A	12-Aug-21	08-Oct-21	20-Oct-21	70	
08-3040(6)	Fill up +2.5 to +7.5mPD at West Edge Area (Stage 3-3) (127,250m3 @ 4000m3/d)	32	32	0%	0%	32		28-Aug-21	28-Sep-21	28-Aug-21	28-Sep-21	0	
08-3070(6)	Fill up +2.5 to +7.5mPD at South Edge Area (Stage 5-1) (95,000m3 @ 4000m3/d)	24	24	0%	0%	24		18-Oct-21	10-Nov-21	24-Oct-21	16-Nov-21	6	
EP_SP_66_12-WP6A-M44.08.1.2.1.6.3	**Surcharge Filling**	116	204	0%		116		04-May-21 A	23-Nov-21	23-Jul-21	15-Nov-21	-8	
08-3020(6)	Fill up +6 to +12mPD at TH & CCCW Building (Stage 3) (95,000m3 @ 2500m3/d)	48	136	0%	0%	48		04-May-21 A	16-Sep-21	23-Jul-21	08-Sep-21	-8	
08-3020-1(6)	Fill up +6 to +12mPD at ACC Building & Substation (Stage 4) (51,000m3 @ 2500m3/d)	20	20	0%	0%	20		17-Sep-21	06-Oct-21	09-Sep-21	28-Sep-21	-8	
08-3050(6)	Fill up +7.5 to +11&13mPD at East Edge Area (Stage 6) (66,000m3 @ 2500m3/d)	26	26	0%	0%	26		29-Oct-21	23-Nov-21	21-Oct-21	15-Nov-21	-8	
08-3060(6)	Fill up +7.5 to +11&12mPD at West Edge Area (Stage 5) (55,000m3 @ 2500m3/d)	22	22	0%	0%	22		07-Oct-21	28-Oct-21	29-Sep-21	20-Oct-21	-8	
EP_SP_66_12-WP6A-M44.08.1.2.1.6.4	**Surcharge Period**	270	272	0%		270		29-Jul-21 A	26-Apr-22	09-Sep-21	09-Jun-22	44	
08-3100(6)	Loading @ +11&12mPD at Process Building (West) (Stage 2)	180	180	1.11%	1.11%	178		29-Jul-21 A	24-Jan-22	16-Sep-21	12-Mar-22	47	
08-3110(6)	Loading @ +12mPD at TH & CCCW Building (Stage 3)	180	180	0%	0%	180		17-Sep-21	15-Mar-22	09-Sep-21	07-Mar-22	-8	
08-3110-1(6)	Loading @ +12mPD at ACC Building & Substation (Stage 4)	180	180	0%	0%	180		07-Oct-21	04-Apr-22	29-Sep-21	27-Mar-22	-8	
08-3120-1(6)	Loading @ +11&12mPD at West Edge Area (Stage 5)	180	180	0%	0%	180		29-Oct-21	26-Apr-22	12-Dec-21	09-Jun-22	44	
EP_SP_66_12-WP6A-M44.08.1.2.1.6.7	**Surcharge Removal**	27	27	0%		27		02-Aug-21	28-Aug-21	26-Dec-21	21-Jan-22	146	
08-3170(6)	Remove Surcharge at Process Building (East) (Stage 1) (109,000m3 @ 4000m3/d)	27	27	0%	0%	27	Start On or After	02-Aug-21*	28-Aug-21	26-Dec-21	21-Jan-22	146	
EP_SP_66_12-WP6A-M44.08.1.2.1.1	**Instrumentation**	88	88	0%		88		29-Sep-21	25-Dec-21	22-Nov-21	17-Feb-22	54	
EP_SP_66_12-WP6A-M44.08.1.2.1.1.1	**Instruments above +2.5mPD**	88	88	0%		88		29-Sep-21	25-Dec-21	22-Nov-21	17-Feb-22	54	
EP_SP_66_12-WP6A-M44.08.1.2.1.1.1.7	**IWMF Substation (East)**	88	88	0%		88		29-Sep-21	25-Dec-21	22-Nov-21	17-Feb-22	54	
08-2060 (M42)	Drilling and installation of Instrumentation (11nrs.)	88	88	0%	0%	88		29-Sep-21	25-Dec-21	22-Nov-21	17-Feb-22	54	
EP_SP_66_12-WP6A-M44.08.1.2.1.1.1.8	**IWMF Substation (South)**	64	64	0%		64		18-Oct-21	20-Dec-21	16-Dec-21	17-Feb-22	59	
08-2070 (M42)	Drilling and installation of Instrumentation (8nrs.)	64	64	0%	0%	64		18-Oct-21	20-Dec-21	16-Dec-21	17-Feb-22	59	
EP_SP_66_12-WP6A-M44.08.1.2.1.2	**PVD Remedial Works**	210	210	0%		210		31-Jul-21	25-Feb-22	16-Nov-21	13-Jun-22	108	
08-1390 (M34)15	Install Sand Drains at Zone D (approx. 62 nr @ 4nr/day/2 set of equipment)	16	16	0%	0%	16		31-Jul-21	15-Aug-21	30-Nov-21	15-Dec-21	122	
08-1390 (M34)20	GI for ground condition varification at other Zone for PVD (10 nr approx @0.5 nr/day) Inc Report	28	28	0%	0%	28		31-Jul-21	27-Aug-21	18-Nov-21	15-Dec-21	110	
08-1390 (M34)30	Lay Surcharge at remetial works area	30	30	0%	0%	30		31-Jul-21	29-Aug-21	16-Nov-21	15-Dec-21	108	
08-1390 (M34)40	Surcharge Period at remedial area	180	180	0%	0%	180		30-Aug-21	25-Feb-22	16-Dec-21	13-Jun-22	108	
EP_SP_66_12-WP6A-M44.08.1.2.2	**Breakwater**	379	526	68.58%		119		19-Jun-20 A	26-Nov-21	25-Mar-22	05-Sep-22	283	



3-Month Rolling Programme (July 2021)

Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Activity ID	Activity Name	Original Duration	At Completion Duration	Duration % Complete	Activity % Complete	Remaining Duration	Primary Constraint	Current Start	Current Finish	Late Start	Late Finish	Total Float	M44 Remarks
08-1280	Rubble Mound Laying (100,000m3 approx, @550m3/d)	188	342	92.55%	92.55%	14		06-Sep-20 A	13-Aug-21	25-Apr-22	08-May-22	268	
08-1285(1)	Prefabrication for Caission	180	452	75%	75%	45		19-Jun-20 A	13-Sep-21	25-Mar-22	08-May-22	237	
08-1290	Caisson Laying (Total 29nrs, @2 nrs/week)	150	294	50%	50%	75		24-Dec-20 A	13-Oct-21	25-Mar-22	07-Jun-22	237	
08-1295(3)	Caisson Infill, Solid ballast, toe protection, precast concrete blocks ..etc Laying	200	337	40.5%	40.5%	119		25-Dec-20 A	26-Nov-21	10-May-22	05-Sep-22	283	
EP_SP_66_12-WP6A-M44.08.1.2.3 Seawall and Berth at Marine Access		30	164	0%		30		19-Mar-21 A	29-Aug-21	21-Sep-21	20-Oct-21	52	
08-1320(5A)	Caisson Infill, Solid ballast, toe protection, precast concrete blocks ..etc Laying	30	164	0%	0%	30		19-Mar-21 A	29-Aug-21	21-Sep-21	20-Oct-21	52	
EP_SP_66_12-WP6A-M44.09 Foundation Works		14	143	0%		120		08-Jul-21 A	27-Nov-21	01-Sep-21	29-Dec-21	32	
EP_SP_66_12-WP6A-M44.09.0 Site Investigation and Preliminary Pile		14	143	0%		120		08-Jul-21 A	27-Nov-21	01-Sep-21	29-Dec-21	32	
09-1000	Ground Investigation	14	143	0%	0%	120		08-Jul-21 A	27-Nov-21	01-Sep-21	29-Dec-21	32	
EP_SP_66_12-WP6A-M44.15 Works By CLP		585	585	0%		585		28-Mar-23	03-Nov-24	20-Mar-23	14-Dec-24	41	
EP_SP_66_12-WP6A-M44.15.1 Installation of Transmission System		120	120	0%		120		28-Mar-23	26-Jul-23	20-Mar-23	02-Jul-24	342	
15-0800	450 days Prior to Commencement of System Commissioning Test	0	0	0%	0%	0		30-Apr-23		21-Mar-23		-40	
15-0900	Completion of Civil Provision for Transmission	0	0	0%	0%	0			28-Mar-23		20-Mar-23	-8	
15-1000	Construction of Transmission System	90	90	0%	0%	90		29-Mar-23	26-Jun-23	05-Mar-24	02-Jun-24	342	
15-1002	Cable Testing	30	30	0%	0%	30		27-Jun-23	26-Jul-23	03-Jun-24	02-Jul-24	342	
EP_SP_66_12-WP6A-M44.15.2 Remaining Installation Works by CLP		150	150	0%		150		03-Nov-23	31-Mar-24	03-Nov-23	30-Sep-24	183	
15-1005	Handover of CLP Equipment Room for Telecom / Digitals / Security / Metering equipment Installation and testing	60	60	0%	0%	60	Start On	03-Nov-23*	01-Jan-24	03-Nov-23	01-Jan-24	0	
15-1010	132kV cable termination at IWMF 132kV switchgear (2 panels) and associated HVAC circuits	30	30	0%	0%	30		02-Jan-24	31-Jan-24	03-Jul-24	01-Aug-24	183	
15-1010-1(6)	Overall testing and commissioning of 2 x CHS-IWMF circuits	60	60	0%	0%	60		01-Feb-24	31-Mar-24	02-Aug-24	30-Sep-24	183	
EP_SP_66_12-WP6A-M44.15.3 Metering & Energization		216	216	0%		216		01-Apr-24	03-Nov-24	01-Oct-24	14-Dec-24	41	
15-1020	Incoming Power System Final Inspection and Metering works	30	30	0%	0%	30		01-Apr-24	30-Apr-24	01-Oct-24	30-Oct-24	183	
15-1030	Energization of Incoming Power Supply Main System	0	0	0%	0%	0	Start On or After	03-Nov-24*		30-Oct-24		-3	
15-1040	Energization of Incoming Power Supply Sub System	0	0	0%	0%	0	Start On or After	03-Nov-24*		14-Dec-24		41	
15-1050	Export Power System Final Inspection and Metering works	30	30	0%	0%	30		01-Apr-24	30-Apr-24	01-Oct-24	30-Oct-24	183	
15-1060	Connection to Grid	0	0	0%	0%	0			30-Apr-24		30-Oct-24	183	
EP_SP_66_12-WP6A-M44.16 Testing & Commissioning		30	30	0%		30		02-Aug-21	31-Aug-21	29-Jun-22	28-Jul-22	331	
EP_SP_66_12-WP6A-M44.16.22 SAT & System Commissioning Tests		30	30	0%		30		02-Aug-21	31-Aug-21	29-Jun-22	28-Jul-22	331	
EP_SP_66_12-WP6A-M44.16.22.20 Civil and Builder Works Completion Inspections		30	30	0%		30		02-Aug-21	31-Aug-21	29-Jun-22	28-Jul-22	331	
16-1900-1(6)	Ground resistance test	30	30	0%	0%	30		02-Aug-21	31-Aug-21	29-Jun-22	28-Jul-22	331	



Remaining Work
Actual Work
Critical Remaining Work
Milestone
Actual Milestone
Critical Milestone

Appendix B Summary of Implementation Status of Environmental Mitigation

Appendix B

Table B.1 Implementation Schedule for Air Quality Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S3b.8.1	Air Pollution Control (Construction Dust) Regulation & Good Site Practices • Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering shall be applied to aggregate fines. • Open stockpiles shall be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading	Work site / During the construction period	Contractor		✓			Air Pollution Control (Construction Dust) Regulation	Implemented. N/A for dust control measures for transportation outside site boundary.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Imposition of speed controls for vehicles on unpaved site roads. Ten kilometers per hour is the recommended limit. • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs • Instigation of an environmental monitoring and auditing program to monitor the construction process in order to enforce controls and modify method of work if dusty conditions arise.								
S3b.6.3	<u>Odour Removal by Deodorizers</u> • Deodorizers with 95% odour removal efficiency would be installed for the air ventilated from the mechanical treatment plant before discharge to the atmosphere	Waste reception halls, the waste storage area, the mechanical treatment plant / During design & operation phase	IWMF Operator	✓		✓		EIAO-TM	N/A
S3b.8.2	<u>Air Pollution Control and Stack Monitoring</u>	IWMF stack emissions / During	IWMF Operator	✓		✓		EIAO-TM, Supporting Document for	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Air pollution control and stack monitoring system will be installed for the IWMF to ensure that the emissions from the IWMF stack will meet the proposed target emission limits. • Voluntary Enhancement Measures in Flue Gas Cleaning and Emission Monitoring: 1. Two-stage bag filter system with reagent recirculation; 2. In addition to SCR, provide SNCR for removal of NO_x; tighten emission limit for half-hourly and daily NO_x to 160 mg/m^3 and 80 mg/m_3 respectively; 3. Well-mixed feed waste: to minimize the fluctuation of pollutant loading on the flue gas treatment system; 4. Two more AQMSs would be set up at South Lantau and Shek Kwu Chau respectively; 5. Limit levels will be set under the IWMF DBO contract to require that waste feed shall cease if any of the air pollutant has exceeded 95% of the emission concentration limit as stipulated in the Special Process license; and 6. Each incineration chamber shall be fitted with auxiliary burners to ensure complete burn out of the combustion gases.	design & operation phase						Application for Variation of Environmental Permit (EP-429/2012)	

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
-	Treated Fly Ash and Air Pollution Control Residues: • During testing and commissioning, the Contractor shall sample and test every container of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit. If a test result confirms that any one of the samples does not conform to the limits and the criteria, the Contractor shall be required to sample and test every container of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria for the next six months. • During the first six months of operation, if the requirements in (a) could be fully conformed with, the Contractor shall sample and test every shipload of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit. The Contractor shall take two samples from each shipload for testing and the Contractor shall not dispose of any of that shipload of treated fly ash and air	IWMF stack emissions / During design & operation phase	IWMF Operator	✓		✓		Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	pollution control residues until the test results confirm that the two samples conform to the limits and the criteria. If a test result confirms that any one of the two samples does not conform to the limits and the criteria, the Contractor shall be required to sample and test every shipload of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria for the next six months. The Contractor shall make due allowance in the Design and the Operation for the time to sample and test treated fly ash and air pollution control residues before disposal. • Provided that there is no non-conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit throughout a continuous sixmonth period in the Operation Period, the testing frequency shall be reduced to monthly interval.Two samples from one shipload of treated fly ash and air pollution control residues shall be collected and tested for conformance to the Incineration Residue Pollution Control Limits and leachability criteria. The Contractor shall not dispose of any of the treated fly ash and air pollution								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	control residues in the shipload which the samples are taken until the test results confirm that the samples conform to the limits and the criteria. If the test result confirm that any one of the samples does not conform to the limits and the criteria, the Contractor shall be required to sample and test every shipload of treated fly ash and air pollution control residues for conformance to the Incineration Residue Pollution Control Limits and leachability criteria shown in Table 2 of the Environmental Permit for the next six months.								
-	<u>Bottom Ash:</u> • During testing and commissioning, the Contractor shall sample and test every container of bottom ash for conformance to the leachability criteria shown in Table 2 of the Environmental Permit. If a test result confirms that any one of the samples does not conform to the criteria, the Contractor shall be required to sample and test every container of bottom ash for conformance to the leachability criteria for the next six months. • During the first six months of operation, if the requirements in (d) could be fully conformed with, the Contractor shall sample and test one shipload of bottom ash each month for	IWMF stack emissions / During design & operation phase	IWMF Operator	✓		✓		Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	conformance to the leachability criteria shown in Table 2 of the Environmental Permit. The Contractor shall take two samples from the shipload for testing and the Contractor shall not dispose of any of that shipload of bottom ash until the test results confirm that the two samples conform to the criteria. If a test result confirms that any one of the two samples does not conform to the criteria, the Contractor shall be required to sample and test each shipload of bottom ash for conformance to the leachability criteria for the next six months. The Contractor shall make due allowance in the Design and the Operation for the time to sample and test bottom ash before disposal. • Provided that there is no non-conformance to the leachability criteria shown in Table 2 of the Environmental Permit throughout a continuous six month period in the Operation Period, the Contractor shall be allowed to take two samples from any one shipload of bottom ash once every six months for conformance to the leachability criteria. The Contractor shall not dispose of any of the bottom ash in the shipload which the samples are taken until the test								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	results confirm that the samples conform to the criteria. If the test result confirm that any one of the samples does not conform to the criteria, the Contractor shall be required to sample and test one shipload of bottom ash each month for conformance to the leachability criteria shown in Table 2 of the Environmental Permit for the next six months as stipulated above.								

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.2 Implementation Schedule for Noise Impact Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S4b.8	Good site practices to limit noise emissions at source and use of quiet plant and working methods, whenever practicable.	Work Sites / Construction Period	EPD and its contractors		✓			EIAO-TM	Implemented
S4b.6 & S4b.8	All the ventilation fans installed in the below will be provided with silencers or acoustics treatment. (i) Stack of the incinerator (ii) Ventilation systems within the IWMF Enclosure and discharge silencer or other acoustic treatment equipment should be installed in the air-cooled chillers Other than provision of silencer or other acoustic treatment equipment for the stack of the incinerator and ventilation system, the detailed design should incorporate the following good practice in order to minimize the nuisance on the neighboring NSRs. (i) The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; and (ii) Louver or other acoustic treatment equipment could also be applied to the exhaust of the ventilation system.	Within IWMF area / Construction Period	EPD and its contractors	✓		✓		EIAO-TM	N/A

-	<u>Voluntary Enhancement Measure</u> • Provision of air-conditioner and double glazed windows to nearby NSR at Shek Kwu Chau (i.e. SARDA) as precautionary measures.	IWMF site	Design team, contractor, IWMF operator	✓	✓			Supporting Document for Application for Variation of Environmental Permit (EP-429/2012)	Implemented

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.3 Implementation Schedule for Water Quality Measures for the Artificial Island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S5b.8.1.1	<u>Drainage and Construction Site Runoff</u> The site practices outlined in ProPECC PN 1/94 "Construction Site Drainage" should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. These practices include the following items: • At the start of site establishment, perimeter cut-off drains to direct off-site water around the site should be constructed with internal drainage works and erosion and sedimentation control facilities implemented Channels (both temporary and permanent drainage pipes and culverts), earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. The design of the temporary on-site drainage system will be undertaken by the contractor prior to the commencement of construction. • Boundaries of earthworks should be surrounded by dykes or embankments for flood protection, as necessary. • Sand/silt removal facilities such as sand/silt traps and sediment basins should be provided to remove sand/silt particles from runoff to meet the requirements of the TM-DSS. The design of efficient silt removal facilities	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	Deficiency of Mitigation Measures but rectified by the Contractor. Covering exposed slope/soil surfaces with tarpaulin and Compacting earthwork final surfaces were implemented. N/A for others.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	should be based on the guidelines in Appendix A1 of ProPECC PN 1/94, which states that the retention time for silt/sand traps should be 5 minutes under maximum flow conditions. The detailed design of the sand/silt traps shall be undertaken by the contractor prior to the commencement of construction. • Water pumped out from foundation piles must be discharged into silt removal facilities. • Measures should be taken to minimize the ingress of site runoff and drainage into excavations. Drainage water pumped out from excavations should be discharged into storm drains via silt removal facilities. • During rainstorms, exposed slope/soil surfaces should be covered by a tarpaulin or other means, as far as practicable. Other measures that need to be implemented before, during and after rainstorms are summarized in ProPECC PN 1/94. • Exposed soil areas should be minimized to reduce potential for increased siltation and contamination of runoff. • Earthwork final surfaces should be well compacted and subsequent permanent work or surface protection should be immediately performed.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.								
S5b.8.1.2	<u>General Construction Activities</u> Construction solid waste should be collected, handled and disposed of properly to avoid entering to the nearby watercourses and public drainage system. Rubbish and litter from construction sites should also be collected to prevent spreading of rubbish and litter from the site area. It is recommended to clean the construction sites on a regular basis.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	Implemented.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S5b.8.1.3	There is a need to apply to EPD for a discharge license for discharge of effluent from the construction site under the WPCO. The discharge quality must meet the requirements specified in the discharge license. All the run-off and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. The beneficial uses of the treated effluent for other on-site activities such as dust suppression and general cleaning etc., can minimize water consumption and reduce the effluent discharge volume. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the relevant WPCO license which is under the ambit of regional office of EPD.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	Discharge License was issued on 22/08/2019.
S5b.8.1.4	Accidental Spillage Contractor must register as a chemical waste producer if chemical wastes would be produced from construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Implemented.
S5b.8.1.5	Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas which	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Implemented.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	appropriately equipped to control these discharges.								
S5b.8.1.6	Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Deficiency of Mitigation Measures but rectified by the Contractor.
S5b.8.1.7	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labelled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO; WDO	Implemented.
S5b.8.1.8	<u>Sewage Effluent</u> Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to	Work site / During the construction period	Contractor		✓			EIAO-TM; ProPECC PN 1/94; WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	handle sewage from the workforce. A licensed contractor would be responsible. for appropriate disposal and maintenance of these facilities.								
S5b.8.1.9	<u>Reclamation and Construction of Breakwaters</u> • The proposed dredging and reclamation should be commenced in phases. The breakwaters and seawalls should be constructed and the reclamation should be started within the enclosed breakwaters after the completion of the breakwater. Silt curtain should be applied around caissons / blockwork during the filling of the cell to prevent the loss of fine in the filling material. • The maximum production rate for dredging for the anti-scouring protection layer shall not exceed the permitted maximum daily dredging rate and carried out within its respective distance from the nearest non-translocatable coral community by the dredging contractor as specified in S.2.18 of the Further Environmental Permit (no.:FEP-01/429/2012/A). It is recommended to employ closed grab with small capacity of 2 m^3 to control the dredging rate. • Any gap that may need to be provided for marine access will be located at the middle of the North Western seawall, away from the identified coral communities and will be shielded by silt curtains systems to control sediment plume dispersion. • The silt curtain system at marine access opening should be closed as soon as the	Work site / During the marine construction period	Contractor		✓			EIAO-TM; WPCO, Supporting Document for Application for Variation of Environmental Permit (EP-429/2012) Further Environmental Permit No. FEP-01/429/2012/A	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	barges passes through the marine access opening in order to minimize the period of curtain opening. Filling should only be carried out behind the silt curtain when the silt curtain is completely closed. • To enhance the effectiveness of the silt curtain at the marine access, the northern breakwater would be built before the commencement of the reclamation to reduce the current velocity towards the marine access opening. • The silt curtain system at marine access opening should be regularly checked and maintained to ensure proper functioning. • Where public fill is proposed for filling below +2.5mPD, the fine content in the public fill will be controlled to 25% which is in line with the CEDD's General Specification; • The filling for reclamation should be carried out behind the seawall. The filling material should only consist of public fill, rock and sand. The filling composition and filling rates at each filling area should follow those delineated in Table 1 of the FEP-01/429/2012/. The filling above high watermark is not restricted; • No dredging should be carried out within 16m to the nearest non-translocatable coral community; • Daily site audit including full-time on-site monitoring by the ET is recommended during the dredging for anti-scouring protection layer								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	for checking the compliance with the permitted no. of grab; • Closed grab dredger should be used to minimize the loss of sediment during the raising of the loaded grabs through the water column; • Frame-type silt curtains should be deployed around the dredging operations; • Floating-type silt curtains should be used to surround the circular cell during the sheetpiling work; • The descent speed of grabs should be controlled to minimize the seabed impact speed; • Barges should be loaded carefully to avoid splashing of material; • All barges used for the transport of dredged materials should be fitted with tight bottom seals in order to prevent leakage of material during loading and transport; • All barges should 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. • No DCM works should be carried out within 100m to the nearest non-translocatable coral colony / colonies.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Silt curtains should be employed to enclose DCM field trial and any full scale DCM work to minimize the potential impacts on water aspect. • A sand blanket is to be placed on top of the marine deposit using tremie pipes prior to the DCM ground treatment to avoid seabed sediment disturbance.								
S5b.8.2.3	Operational Phase Discharges A pipeline drainage system will serve the development area collecting surface runoff from paved areas, roof, etc. Sustainable drainage principle would be adopted in the drainage system design to minimize peak surface runoff, maximize permeable surface and maximize beneficial use of rainwater.	Within IWMF site / During the operational phase	IWMF Operator	✓		✓		WPCO	N/A
S5b.8.2.4	Oil interceptors should be provided in the drainage system of any potentially contaminated areas (such as truck parking area and maintenance workshop) and regularly cleaned to prevent the release of oil products into the storm water drainage system in case of accidental spillages. Accidental spillage should be cleaned up as soon as practicable and all waste oils and fuels should be collected and handled in compliance with the Waste Disposal Ordinance.	Within IWMF site / During the operational phase	IWMF Operator	✓		✓		WPCO; WDO	N/A
S5b.8.2.5	Refuse Entrapment Collection and removal of floating refuse should be performed at regular intervals for keeping the water within the Project site	Within the Project site / During the operational phase	IWMF Operator			✓		WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	boundary and the neighboring water free from rubbish.								
S5b.8.2.6	Transportation of bottom ash, fly ash and APC residues to WENT Landfill for disposal Covered container should be used in the shipping of the incineration waste to limit the contact between the incineration waste and the marine water. A comprehensive emergency response plan for any accidental spillage should be submitted by the operation contractor to the EPD for agreement before the operation of the facilities. Salvage and cleanup action to recover the spilled incineration waste containers following the spillage should be carried out according to the emergency response plan to mitigate the environmental impact in case of spillage.	Transportation of Incineration Ash / During the operational phase	IWMF Operator			✓			N/A

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.4 Implementation Schedule for Waste Management Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.1.2	<u>Good Site Practices</u> Adverse environmental impacts in relation to waste management are not expected, provided that good site practices are strictly followed. Recommendations for good site practices during the construction activities would include: • Obtain relevant waste disposal permits from appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and subsidiary Regulations and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Provide staff training for proper waste management and chemical handling procedures; • Provide sufficient waste disposal points and regular waste collection; • Provide appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; and • Carry out regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Separate chemical wastes for special handling and disposed of to licensed facility for treatment; and • Employ licensed waste collector to collect waste.	Work Site/ During Construction Period	Contractor		✓			WDO; LDO; ETWB TCW No. 19/2005; EIAO-TM	Deficiency of Mitigation Measures but rectified by the Contractor.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.1.3	<u>Waste Reduction Measures</u> Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Design foundation works that could minimize the amount of excavated material to be generated. • Provide training to workers on the importance of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; • Sort out demolition debris and excavated materials from demolition works to recover reusable/recyclable portions (i.e. soil, broken concrete, metal etc.); • Segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage the collection of aluminum cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force; • Proper storage and site practices to minimize the potential for damage or contamination of construction materials; and	Work Site/ During Design & Construction Period	Contractor	✓	✓				Implemented. N/A for foundation and demolition items

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Plan and stock construction materials carefully to minimize amount of waste to be generated and to avoid unnecessary generation of waste.								
6b.5.1.7	<u>Dredged Sediment – Application of Dumping Permit</u> The project proponent should agree in advance with MFC of CEDD on the site allocation. The project proponent or contractor for the dredging works shall then apply for the site allocations of marine sediment disposal based on the prior agreement with MFC/CEDD. The project proponent or contractor should also be responsible for the application of all necessary permits from relevant authorities, including the dumping permit as required under DASO from EPD, for the disposal of dredged sediment prior to the commencement of the dredging works.	Seawall and Reclamation site / Construction Period	EPD and its contractor	✓	✓			DASO ETWB TCW 34/2002	Implemented
6b.5.1.8	<u>Dredged Sediment – Sediment Quality Report</u> The project proponent or contractor will need to satisfy the appropriate authorities that the quality of the marine sediment to be dredged has been identified according to the requirements of ETWB TCW 34/2002. This should be completed well before the dredging works and would include at least the submission of a formal Sediment Quality Report under Tier I of ETWB TCW No. 34/2002 to DEP for approval. Subject to advice from DEP, it is possible that further marine SI in accordance with ETWB TCW 34/2002 might be necessary for the	Seawall and Reclamation site / Construction Period	EPD and its contractor	✓				DASO ETWB TCW 34/2002	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	application of dumping permit under DASO. In such case, a sediment sampling and testing proposal shall be submitted to and approved by DEP before the additional marine SI works.								
6b.5.1.9	Dredged Sediment – Sediment Transportation The barge transporting the sediments to the designated disposal sites should be equipped with tight fitting seals to prevent leakage and should not be filled to a level that would cause overflow of materials or laden water during loading or transportation. In addition, monitoring of the barge loading shall be conducted to ensure that loss of material does not take place during transportation. Transport barges or vessels shall be equipped with automatic self-monitoring devices as specified by the DEP.	Seawall and Reclamation site / Construction Period	EPD and its contractor		✓			DASO ETWB TCW 34/2002	Implemented
6b.5.1.10	Construction and Demolition Materials In order to minimize the impact resulting from collection and transportation of C&D materials for off-site disposal, the excavated material arising from site formation and foundation works should be reused on-site as backfilling material and for landscaping works as far as practicable. Other mitigation requirements are listed below: • A Waste Management Plan (WMP), which becomes part of the Environmental Management Plan (EMP), should be prepared in accordance with ETWB TCW No.19/2005;	Work Site/ During Design & Construction Period	Contractor	✓	✓			ETWB TCW No. 19/2005	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• A recording system for the amount of wastes generated, recycled and disposed (including the disposal sites) should be adopted for easy tracking; and • In order to monitor the disposal of C&D materials at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be adopted (refer to *ETWB TCW No. 31/2004*).								
6b.5.1.11 – 6b.5.1.12	The Contactor should prepare and implement an EMP in accordance with ETWB TCW No.19/2005, which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from construction activities. Such a management plan should incorporate site specific factors, such as the designation of areas for segregation and temporary storage of reusable and recyclable materials. The EMP should be submitted to the Engineer for approval. The Contractor should implement waste management practices in the EMP throughout the construction stage of the Project. The EMP should be reviewed regularly and updated by the Contractor, preferably on a monthly basis. All surplus C&D materials arising from or in connection with construction works should become the property of the Contractor when it is removed unless otherwise stated. The Contractor would be responsible for devising a	Work Site/ During Design & Construction Period	Contractor	✓	✓			ETWB TCW No. 19/2005	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	system to work for on-site sorting of C&D materials and promptly removing all sorted and process materials arising from the construction activities to minimize temporary stockpiling on-site. The system should be included in the EMP identifying the source of generation, estimated quantity, arrangement for on-site sorting, collection, temporary storage areas and frequency of collection by recycling Contractors or frequency of removal off-site.								
6b.5.1.13	Chemical Wastes Should chemical wastes be produced at the construction site, the Contractor would be required to register with EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste (such as explosive, flammable, oxidizing, irritant, toxic, harmful, or corrosive). The Contractor should employ a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre at Tsing Yi, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work Site/ During Construction Period	Contractor		✓			Waste Disposal (Chemical Waste) (General) Regulation	Deficiency of Mitigation Measures but rectified by the Contractor.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.1.14	<u>General Refuse</u> General refuse should be stored in enclosed bins or compaction units separate from C&D materials. A licensed waste collector should be employed by the Contractor to remove general refuse from the site, separately from C&D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	Work Site/ During Construction Period	Contractor		✓			Public Health and Municipal Services Ordinance	Deficiency of Mitigation Measures but rectified by the Contractor.
6b.5.1.16 – 6b.5.1.33	<u>Biogas Generation</u> The Contractor shall review the data and analysis results, and the data from further Site Investigation, if any. Subject to the review findings, the following gas protection measures may be considered if necessary: - gas monitoring after reclamation; - passive ventilation; - gas impermeable membrane; - ventilation with "at risk" rooms; - protection of utilities or below ground services; - precautions during construction works; - precautions prior to entry of belowground services	Reclamation site (if dredging at the reclamation site is not required) / Design & Construction Period	Designer and/or contractor	✓	✓			EPD/TR8/97	N/A
6b.5.2.1	<u>Good Site Practices</u>	IWMF Site/During	IWMF Operator			✓		Waste Disposal Ordinance (Cap.354);	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	It is recommended that the following good operational practices should be adopted to minimise waste management impacts: • Obtain the necessary waste disposal permits from the appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and Waste Disposal (Chemical Waste) (General) Regulation; • Nomination of an approved person to be responsible for good site practice, arrangements for collection and effective disposal to an appropriate facility of all wastes generated at the site; • Use of a waste haulier licensed to collect specific category of waste; • A trip-ticket system should be included as one of the contractual requirements and implemented by the Environmental Team to monitor the disposal of solid wastes at landfills, and to control fly tipping. Reference should be made to ETWB TCW No. 31/2004. • Training of site personnel in proper waste management and chemical waste handling procedures; • Separation of chemical wastes for special handling and appropriate treatment at a licensed facility; • Routine cleaning and maintenance programme for drainage systems, sumps and oil interceptors;	Operation Period						Waste Disposal (Chemical Waste) (General) Regulation; ETWB TCW No. 1/2004	

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Provision of sufficient waste disposal points and regular collection for disposal; • Adoption of appropriate measures to minimize windblown litter and dust during transportation of waste, such as covering trucks or transporting wastes in enclosed containers; and • Implementation of a recording system for the amount of wastes generated, and disposed of (including recycled the disposal sites).								
6b.5.2.2	<u>Waste Reduction Measures</u> Good management and control can prevent the generation of significant amounts of waste. It is recommended that the following good operational practices should be adopted to ensure waste reduction: • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage collection of aluminum cans, plastic bottles and packaging material (e.g. carton boxes) and office paper by individual collectors. Separate labelled bins should be provided to help segregate this waste from other general refuse generated by the work force; and • Any unused chemicals or those with remaining functional capacity should be reused as far as practicable.	IWMF Site/ During Operation Period	IWMF Operator			✓			Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.5.2.3	<u>Storage, Handling, Treatment, Collection and Disposal of Incineration By-Products</u> The following measures are recommended for the storage, handling and collection of the incineration by-products: • Ash should be stored in storage silos; • Ash should be handled and conveyed in closed systems fully segregated from the ambient environment; • Ash should be wetted with water to control fugitive dust, where necessary; • All fly ash and APC residues should be treated, e.g. by cement solidification or chemical stabilization, for compliance with the proposed Incineration Residue Pollution Control Limits and leachability criteria prior to disposal; • The ash should be transported in covered trucks or containers to the designated landfill site. The Contractor should provide EPD with chemical analysis results of the bottom ash, and treated fly ash and APC residues to confirm that the ash/residue can comply with the proposed Incineration Residue Pollution Control Limits before disposal.	IWMF Site/ During Operation Period	IWMF Operator			✓		Incineration Residue Pollution Control Limits	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
6b.6.3.1	<u>Fuel Oil Tank Construction and Test</u> • The fuel tank to be installed should be of specified durability. • Double skin tanks are preferred. • Underground fuel storage tank should be placed within a concrete pit. • The concrete pit shall be accessible to allow regular tank integrity tests to be carried out at regular intervals. • Tank integrity tests should be conducted by an independent qualified surveyor or structural engineer. • Any potential problems identified in the test should be rectified as soon as possible.	Fuel Oil Storage Tank/ During Design, Construction and Operation Periods	IWMF Contractor	✓	✓	✓			N/A
6b.6.3.1	<u>Fuel Oil Pipeline Construction and Test</u> • Installation of aboveground fuel oil pipelines is preferable; if underground pipelines are unavoidable, concrete lined trenches should be constructed to contain the pipelines. • Double skin pipelines are preferred. • Distance between the fuel oil refuelling points and the fuel oil storage tank shall be minimized.	Fuel Oil Pipelines/ During Design, Construction and Operation Periods	IWMF Contractor	✓	✓	✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Integrity tests for the pipelines should be conducted by an independent qualified surveyor or structural engineer at regular intervals. • Any potential problems identified in the test should be rectified as soon as possible.								
6b.6.3.1	<u>Fuel Oil Leakage Detection</u> • Installation of leak detection device at storage tank and pipelines. • Installation and use of pressure gauges (e.g. at the two ends of a filling line) in fuel filling, which allows unexpected pressure drop or difference and sign of leakage to be detected.	Fuel Oil Storage Tank and Pipelines/ During Design, Construction and Operation Periods	IWMF Contractor	✓	✓	✓			N/A
6b.6.3.1	<u>Fuel Oil Storage Tank Refuelling</u> • Storage tank refuelling (from road tanker) should only be conducted by authorized staff of the oil company using the company's standard procedures.	Fuel Oil Refuelling Point/ During Operation Period	IWMF Operator			✓			N/A
6b.6.3.1	<u>Fuel Oil Spillage Response</u> An Oil Spill Response Plan should be prepared by the operator to document the appropriate response procedures for oil spillage incidents in detail. General procedures to be taken in case of fuel oil spillage are presented below. • Training	IWMF Site/ During Operation Period	IWMF Operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- Training on oil spill response actions should be given to relevant staff. The training shall cover the followings: ➢Tools & resources to combat oil spillage and fire, e.g. locations of oil spill handling equipment and fire fighting equipment; ➢General methods to deal with oil spillage and fire incidents; ➢Procedures for emergency drills in the event of oil spills and fire; and ➢Regular drills shall be carried out. • Communication -Establish communication channel with the Fire Services Department (FSD) and EPD to report any oil spillage incident so that necessary assistance from relevant department can be quickly sought. • Response Procedures -Any fuel oil spillage within the IWMF site should be immediately reported to the Plant Manager with necessary details including location, source, possible cause and extent of the spillage. -Plant Manager should immediately attend to the spillage and initiate any appropriate action to confine and clean up the spillage. The response								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	procedures shall include the following: ➢Identify and isolate the source of spillage as soon as possible. ➢Contain the oil spillage and avoid infiltration into soil/ groundwater and discharge to storm water channels. ➢Remove the oil spillage. ➢Clean up the contaminated area. ➢If the oil spillage occurs during storage tank refuelling, the refueling operation should immediately be stopped. ➢Recovered contaminated fuel oil and the associated material to remove the spilled oil should be considered as chemical waste. The handling and disposal procedures for chemical wastes are discussed in the following paragraphs.								
6b.6.3.2	<u>Chemicals and Chemical Wastes Handling & Storage</u> • Chemicals and chemical wastes should only be stored in suitable containers in purpose-built areas. • The storage of chemical wastes should comply with the requirements of the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. • The storage areas for chemicals and chemical wastes shall have an	Chemicals and Chemical Wastes Storage Area / During Operation Period	IWMF Operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	impermeable floor or surface. The impermeable floor/ surface shall possess the following properties: - Not liable to chemically react with the materials and their containers to be stored. - Able to withstand normal loading and physical damage caused by container handling - The integrity and condition of the impermeable floor or surface should be inspected at regular intervals to ensure that it is satisfactorily maintained ➢ For liquid chemicals and chemical wastes storage, the storage area should be bunded to contain at least 110% of the storage capacity of the largest containers or 20% of the total quantity of the chemicals/chemical wastes stored, whichever is the greater. ➢ Storage containers shall be checked at regular intervals for their structural integrity and to ensure that the caps or fill points are tightly closed. ➢ Chemical handling shall be conducted by trained workers under supervision.								
6b.6.3.2	<u>Chemicals and Chemical Wastes Spillage Response</u>	IWMF Site/ During	IWMF Operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	A Chemicals and/ or Chemical Wastes Spillage Response Plan shall be prepared by the operator to document in detail the appropriate response procedures for chemicals or chemical wastes spillage incidents. General procedures to be undertaken in case of chemicals/ chemical waste spillages are presented below. • Training - Training on spill response actions should be given to relevant staff. The training shall cover the followings: ➢ Tools & resources to handle spillage, e.g. locations of spill handling equipment; ➢ General methods to deal with spillage; and ➢ Procedures for emergency drills in the event of spills. • Communication - Establish communication channel with FSD and EPD to report the spillage incident so that necessary assistance from relevant department can be quickly sought. • Response Procedures	Operation Period							

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- Any spillage within the IWMF site should be reported to the Plant Manager. - Plant Manager shall attend to the spillage and initiate any appropriate actions needed to confine and clean up the spillage. The response procedures shall include the followings: ➢ Identify and isolate the source of spillage as soon as possible; ➢ Contain the spillage and avoid infiltration into soil/ groundwater and discharge to storm water channels (in case the spillage occurs at locations out of the designated storage areas); ➢ Remove the spillage; the removal method/ procedures documented in the Material Safety Data Sheet (MSDS) of the chemicals spilled should be observed; ➢ Clean up the contaminated area (in case the spillage occurs at locations out of the designated storage areas); and								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	➢ The waste arising from the cleanup operation should be considered as chemical wastes.								
6b.6.3.3	<u>Preventive Measures for Incineration By-products Handling</u> The recommended measures listed below can minimize the potential contamination to the surrounding environment due to the incineration by-products: • Ash should be stored in storage silos; • Ash should be handled and conveyed in closed systems fully segregated from the ambient environment; • Ash should be wetted with water to control fugitive dust, where necessary; • All fly ash and APC residues should be treated, e.g. by cement solidification or chemical stabilization, for compliance with the proposed Incineration Residue Pollution Control Limits and leachability criteria prior to disposal; • The ash should be transported in covered trucks or containers to the designated landfill site.	Storage, Handling & Collection of Incineration Ash at IWMF/ During Operation Period	IWMF Operator			✓			N/A
6b.6.3.4 - 6b.6.3.6	<u>Incident Record</u>	IWMF Site/ During	IWMF Operator			✓		Guidance Manual for Use of Risk-based Remediation	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	After any spillage, an incident report should be prepared by the Plant Manager. The incident report should contain details of the incident including the cause of the incident, the material spilled and estimated spillage amount, and also the response actions undertaken. The incident record should be kept carefully and able to be retrieved when necessary. The incident report should provide sufficient details for the evaluation of any environmental impacts due to the spillage and assessment of the effectiveness of measures taken. In case any spillage or accidents results in significant land contamination, EPD should be informed immediately and the IWMF operator should be responsible for the cleanup of the affected area. The responses procedures described in **Section 6b.6.3.1** and **Section 6b.6.3.2** of EIA report should be followed accordingly together with the land contamination assessment and remediation guidelines stipulated in the *Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management and the Guidance Note for Contaminated Land and Remediation.*	Operation Period						Goals for Contaminated Land Management and the Guidance Note for Contaminated Land and Remediation.	

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.5 Implementation Schedule for Ecological Quality Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
7b.8.2.1	<u>Measures to avoid direct loss of intertidal habitat</u> • The site boundary has been proposed to avoid direct contact with the intertidal natural rocky shore of Shek Kwu Chau. It avoids direct loss of intertidal communities and the existing natural rocky shore habitat, where Reef Egret and White-bellied Sea Eagle have been recorded within and in the vicinity of this habitat.	IWMF site	Design team	✓				EIAO-TM	N/A
7b.8.2.2	<u>Measures to minimise loss of coastal subtidal habitat</u> • Extensive coral colonies were recorded at the coastal hard bottom habitat at Shek Kwu Chau. To avoid and minimise the extensive direct impact on the coral colonies, the proposed reclamation area has been moved further offshore to minimise loss of subtial habitat near shore.	IWMF site	Design team	✓				EIAO-TM	N/A
7b.8.2.3	<u>Zero Discharge Scheme</u> • The design scheme of the Project has avoided discharge of wastewater into the marine environment. A zero discharge scheme would be adopted during the operation of the Project. An on-site wastewater treatment plant would be provided to treat the wastewater generated from the IWMF (mainly human sewage). The treated effluent would be re-used in the incineration	IWMF site	Design team, IWMF operator	✓		✓		WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	plant and mechanical treatment plant, or for onsite washdown and landscape.								
7b.8.2.4	<u>Measures to avoid loss of plant species of conservation importance</u> • Landing portal construction works would not cause direct lost to the recorded individual of protected plant species, • *Aquilaria sinensis*, at the coastal shrubland habitat at Cheung Sha. As a precautionary measure, the plant should be tagged with eye-catching tape and fenced off prior to works, in order to avoid any damage by workers.	Cheung Sha landing portal	Design team, Contractor	✓	✓		✓	EIAO-TM	N/A
7b.8.3.1-7b.8.3.15	<u>Measures to minimise water quality impact</u> • Measures for water quality as recommended in **Section 5b** of the EIA Report should be implemented.	Work site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM; ProPECC PN 1/94; WPCO	Implemented
7b.8.3.16 - 7b.8.3.30	<u>Measures to minimise disturbance on Finless Porpoise</u> *Minimisation of Habitat Loss for Finless Porpoise* • Substantial revision has been made on the layout plan and form of the breakwater, in order to minimise the potential loss of important habitat for Finless Porpoise. The revision has greatly reduced the size of the embayment area, as well as the Project footprint. As a result, the size of habitat loss for Finless Porpoise has	IWMF site, work site, marine traffic route	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM, Supporting Document for Application for Variation of the Environmental Permit (EP-429/2012)	Implemented for avoidance of construction works that may produce underwater acoustic disturbance, Vessel Travel Route implementation, training of staff; N/A for others

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	reduced from the original ~50 ha, down to ~31 ha. *Avoidance of peak season for finless porpoise occurrence* • To minimise potential acoustic disturbance from construction activities on Finless Porpoise, construction works that may produce underwater acoustic disturbance should be scheduled outside the months with peak Finless Porpoise occurrence (December to May), including: - sheet piling works for construction of cofferdam surrounding the reclamation area (Phase 1); - sheet piling works for construction of the shorter section of breakwater (Phase 1); - sheet piling works for construction of the remaining section of breakwater (Phase 3) and - bored piling works for berth area (Phase 3) Such works should be restricted within June to November. This approach would not only avoid the peak season for Finless Porpoise occurrence, the magnitude of impacts arise from acoustic disturbance would also be minimised.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Since the DCM ground treatment and the installation of precast seawalls and breakwaters should generate no underwater acoustic disturbance to Finless Porpoise, no specific mitigation measures are required. *Opt for quieter construction methods and plants* • Considering the sensitivity of marine mammals to underwater acoustic disturbance, instead of the previously proposed conventional breakwater and reclamation peripheral structure, which requires noisy piling works, the current circular cells structure for breakwater and reclamation peripheral structure is proposed. A quieter sheet piling method using vibratory hammer or hydraulic impact hammer, should be adopted for the installation of circular cells for cellular cofferdam and northern breakwater during Phase 1, and southern breakwater Phase 3; • Non-percussive bore piling method would be adopted for the installation of tubular piles for the berth construction during Phase 3. *Monitored exclusion zones* • During the installation/re-installation/relocation process of floating type silt curtains, in order to avoid the accidental								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	entrance and entrapment of marine mammals within the silt curtains, a monitored exclusion zone of 250 m radius from silt curtain should be implemented. The exclusion zone should be closely monitored by an experienced marine mammal observer at least 30 minutes before the start of installation/re-installation/relocation process. If a marine mammal is noted within the exclusion zone, all marine works should stop immediately and remain idle for 30 minutes, or until the exclusion zone is free from marine mammals. • The experienced marine mammal observer should be well trained to detect marine mammals. Binoculars should be used to search the exclusion zone from an elevated platform with unobstructed visibility. The observer should also be independent from the project proponent and has the power to call-off construction activities. • In addition, as marine mammals cannot be effectively monitored within the proposed monitored exclusion zone at night, or during adverse weather conditions (i.e. Beaufort 5 or above, visibility of 300 meters or below), marine works should be avoided under weather conditions with low visibility.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	Marine mammal watching plan • Upon the completion of the installation/re-installation/relocation of floating type silt curtain, all marine works would be conducted within a fully enclosed environment within the silt curtain, hence exclusion zone monitoring would no longer be required. Subsequently, a marine mammal watching plan should be implemented. The plan should include regular inspection of silt curtains, and visual inspection of the waters surrounded by the curtains. Special attention should be paid to Phase 2 (reclamation) where the floating type still curtain would be opened occasionally for vessel access, leaving a temporary 50 m opening. An action plan should be devised to cope with any unpredicted incidents such as the case when marine mammals are found within the waters surrounded by the silt curtains. *Small openings at silt curtains* • The openings for vessel access at the silt curtains should be as small as possible to minimise the risk of accidental entrance. *Adoption of regular travel route*								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• During construction and operation, captains of all vessels should adopt regular travel route, in order to minimize the chance of vessel collision with marine mammals, which may otherwise result in damage to health or mortality. The regular travel route should avoid areas with high sighting density of Finless Porpoise as much as possible. *Vessel speed limit* • The frequent vessel traffic in the vicinity of works area may increase the chance of mammal mammals being killed or seriously injured by vessel collision. A speed limit of ten knots should be strictly enforced within areas with high density of Finless Porpoise. • Passive acoustic monitoring and land-based theodolite monitoring surveys should be adopted to verify the predicted impacts and effectiveness of the proposed mitigation measures. *Training of Staff* • Staff, including captains of vessels, should be aware of the guidelines for safe vessel operations in the presence of cetaceans during construction and								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	operation phases. Adequate trainings should be provided								
7b.8.3.31 - 7b.8.3.34	<u>Measures to minimise impact on corals</u> *Coral translocation* • Coral communities within and in proximity to the proposed dredging sites would be disturbed by the Project due to the dredging operations. In order to minimise direct loss of coral communities, translocation of corals that are attached to movable rocks with diameter less than 50 cm are recommended. In order to avoid disturbance to corals during the spawning period, the spawning season of corals (June to August) should be avoided; and that translocation should be carried out during the winter season (November-March). • The REA survey results suggest that the 198 directly affected coral colonies were attached to movable rocks (less than 50 cm in diameter). It is technically feasible to translocate them to avoid direct loss. • Prior to coral translocation, a more detailed baseline survey, including a coral mapping survey, is recommended to further confirm the exact number and location of	IWMF site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented, tagged coral found missing after hitting by typhoons Re-tagging of 10 coral colonies at indirect impact site and control site were conducted in November and December 2018 respectively.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	coral colonies within the potentially affected area. A more detailed coral translocation plan, including selection of suitable recipient site, plan for coral translocation, and event / action plan for coral monitoring should be submitted upon approval of this Project, prior to commencement of construction works. Advice from relevant governmental departments (i.e. AFCD) and professionals would be sought after, in order to identify a desirable location for the relocation of coral communities. Post-translocation monitoring on the translocated corals should also be considered. *Coral monitoring programme* • A coral monitoring programme is recommended to assess any adverse and unacceptable impacts to the coral communities at the coasts of Shek Kwu Chau during construction of the Project. *Phasing of Works* • To minimize environmental impacts, the proposed phasing of construction works has been carefully designed to reduce the amount of concurrent works, hence minimize SS elevation and the associated impacts on corals.								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
7b.8.3.35 - 7b.8.3.41	<u>Specific measures to minimize disturbance on breeding White-bellied Sea Eagle</u> *Avoidance of noisy works during the breeding season of White-bellied Sea Eagle* • To minimize potential noise disturbance from construction activities on WBSE, noisy construction works should be scheduled outside their breeding season (December to May) to minimise potential degradation in breeding ground quality and breeding activities, including: - sheet piling works for construction of cofferdam surrounding the reclamation area (Phase 1); - sheet piling works for construction of the shorter section of breakwater (Phase 1); - sheet piling works for construction of the remaining section of breakwater (Phase 3); and - bored piling works for berth area (Phase 3). *Opt for quieter construction methods and plants* • To minimise potential construction noise disturbance on WBSE, quieter construction methods and plants should be adopted. The recommended noise mitigation measures in	IWMF site, marine traffic route	Design Team, Contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	the **Noise** chapter (**Section 4b.8** of the EIA Report) should be implemented to minimise potential noise disturbance to acceptable levels. *Restriction on vessel access near the nest of White-bellied Sea Eagle* • During construction and operation, in order to minimize disturbance on the existing WBSE nest, a pre-defined practical route to restrict vessel access near the nest should be adopted to keep vessels and boats as far away from the nest as possible. *White-bellied Sea Eagle monitoring programme* • A WBSE monitoring programme is recommended to assess any adverse and unacceptable impacts to the breeding activities of WBSE during construction and operation of the Project. Monitoring surveys for WBSE would include pre-construction phase (twice per month for duration of three months during their breeding season -between December and May, immediately before the commencement of works), construction phase, and operation phase (two years after the completion of construction works).								

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• Surveys should be conducted twice per month during their breeding season (from December to May); and once per month outside breeding season (June to November). More details on monitoring for WBSE are presented in the EM&A Manual. *Education of staff* • Staff, including captains of all vessels during construction and operation phases, should be aware of the ecological importance of WBSE. Awareness should be raised among staff to minimise any intentional or unintentional disturbance to the nest. *Minimisation of Glare Disturbance* • To minimise glare disturbance on WBSE, which may cause disorientation of birds by interfering with their magnetic compass, and disruption in behavioural patterns such as reproduction, fat storage and foraging pattern, any un-necessary outdoor lighting should be avoided, and in-ward and down-ward pointing of lights should be adopted.								
-	<u>Construction of Seawall/Breakwaters</u> • To widen the open channel between the Artificial Island and Shek Kwu Chau.	IWMF site	Design team, contractor, IWMF operator	✓	✓			Supporting Document for Application for Variation of Environmental	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	• To design the precast concrete seawall with environmental friendly features.							Permit (EP-429/2012)	
7b.8.3.42	<u>Opt for Quieter Construction Methods and Plants</u> • Quieter construction methods and plants should be used to minimise disturbance to the nearby terrestrial habitat and the associated wildlife.	Work site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented
7b.8.3.43	<u>Measures to minimize impacts from artificial lighting</u> • Unnecessary lighting should be avoided, and shielding of lights should be provided to minimize disturbance from light pollution on fauna groups.	IWMF site	Design team, contractor, IWMF operator	✓	✓	✓		EIAO-TM	Implemented
7b.8.3.44 - 7b.8.3.45	<u>Measures to minimize accidental spillage</u> • Regular maintenance of vessels, vehicles and equipment that may cause leakage and spillage should only be undertaken within pre-designated areas, which are appropriately equipped to control the associated discharges. • Oils, fuels and chemicals should be contained in suitable containers, and only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby	Work site	Contractor, IWMF operator		✓	✓	✓	EIAO-TM	Deficiency of Mitigation Measures but rectified by the Contractor.

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.								
7b.8.3.46	<u>Measures to minimise sewage effluent</u> • Temporary sanitary facilities, such as portable chemical toilets, should be employed on-site where necessary to handle sewage from the workforce.	Work site	Contractor		✓			EIAO-TM	N/A
7b.8.3.47	<u>Measures to minimise drainage and construction runoff</u> • Potential ecological impacts resulted from potential degradation of water quality due to unmitigated surface runoff could be minimised via the detailed mitigation measures in **Section 5b.8** of the EIA Report. The following presents some of the mitigation measures: - On-site drainage system with implemented sedimentation control facilities. - Channels, earth bunds or sand bag barriers should be provided on site to direct storm water to silt removal facilities. - Provision of embankment at boundaries of earthworks for flood protection. - Water pumped out from foundation piles must be discharged into silt removal facilities.	Work site	Contractor		✓		✓	EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- During rainstorms, exposed slope/soil surfaces should be covered by tarpaulin or other means, as far as practicable. - Exposed soil surface should be minimized to reduce siltation and runoff. - Earthwork final surfaces should be well compacted. Subsequent permanent surface protection should be immediately performed. - Open stockpiles of construction materials, and construction wastes on-site should be covered with tarpaulin or similar fabric during rainstorms.								
7b.8.3.48	<u>Measures to minimise impacts from general construction activities</u> • To avoid the entering of construction solid waste into the nearby habitats, construction solid waste should be collected, handled and disposed of properly to avoid entering to the nearby habitats. It is recommended to clean the construction sites on a regular basis.	Work site	Contractor		✓			EIAO-TM	Implemented
7b.8.3.49	<u>Pest Control</u> Good waste management practices should be adopted at the IWMF in order to minimise the risk of introduction of pest to the island: - Transportation of wastes in enclosed containers	IWMF site	IWMF operator			✓			N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	- Waste storage area should be well maintained and cleaned - Waste should only be disposed of at designated areas - Timely removal of the newly arrived waste - Removal of items that are capable of retaining water - Rapid clean up of any waste spillages - Maintenance of a tidy and clean site environment - Regular application of pest control - Education of staff the importance of site cleanliness								
7b.8.3.50	<u>Control of Marine Habitat Quality during Operation Phase</u> • Depending on the seabed condition of the approach channel for marine vessels during operation phase of the IWMF, maintenance dredging may be required to ensure safe access. In order to avoid degradation in water quality due to elevation in SS and dispersion of sediment plume due to dredging works, it is recommended that any future maintenance dredging works should not be carried out within 100 m from the shore, similar to that of the dredging for anti-scouring protection layer during construction phase. All maintenance dredging works should be carried out with the implementation of silt curtain to control the dispersion of SS. The	IWMF site	IWMF operator			✓		EIAO-TM; WPCO	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	production rate should comply with the permit dredging rate and number of grab per hour.								
7b.8.4.1 – 7b.8.4.8	<u>Compensation of loss of important habitat of Finless Porpoise</u> *Designation of Marine Park* • The Project Proponent has made a firm commitment to seek to designate a marine park of approximately 700 ha in the waters between Soko Islands and Shek Kwu Chau, in accordance with the statutory process stipulated in the Marine Parks Ordinance, as a compensation measure for the habitat loss arising from the construction of the IWMF at the artificial island near SKC. • The Project Proponent shall seek to complete the designation by 2018 to tie in with the operation of the IWMF at the artificial island near SKC. • A further study should be carried out to review relevant previous studies and collate available information on the ecological characters of the proposed area for marine park designation; and review available survey data for Finless Porpoise, water quality, fisheries, marine traffic and planned development projects in the vicinity. Based on the findings, ecological profiles of	Waters between Shek Kwu Chau and Soko Islands	Project Proponent	✓		✓		EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	the proposed area for marine park designation should be established, and the extent and location of the proposed marine park be determined. The adequacy of enhancement measures should also be reviewed. • In addition, a management plan for the proposed marine park should be proposed, covering information on the responsible departments for operation and management (O&M) of the marine park, as well as the O&M duties of each of the departments involved. Consultation with relevant government departments and stakeholders should be conducted under the study. The study should be submitted to Director of Environmental Protection (DEP) for approval before the commencement of construction works. • The Project Proponent should provide assistance to AFCD during the process of the marine park designation. .								
7b.8.5.1 – 7b.8.5.4	<u>Additional Enhancement or Precautionary Measures</u> *Deployment of Artificial Reefs* • Deployment of artificial reefs (ARs) is an enhancement measure for the marine habitats. ARs are proposed to be deployed within the proposed marine park under	Within the proposed marine park under this study	Project Proponent	✓		✓		EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
	this Project. The exact location, dimension and type of ARs to be deployed are to be further investigated along with the further study of the proposed marine park under this Project. The proposed ARs would be deployed at the same time as the complete designation of marine park. *Release of Fish Fry at Artificial Reefs and Marine Park* • Release of fish fry at the proposed ARs, as well as the proposed marine park under this study, should enhance the fish resources in the nearby waters, and subsequently food sources for Finless Porpoise. The proposed ARs with various micro-habitats would have the potential to provide shelter and nursery ground for the released fish fry. The frequency and quantity of fry to be released should be agreed by AFCD.								

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.6 Implementation Schedule for Fisheries Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
8b.8.1.2	Measure to minimize loss of and disturbance on fisheries resources • Alteration to the phasing of works, construction method, and layout plan of the IWMF at the artificial island near SKC has been made. The total fishing ground to be permanently lost due to the project has been significantly reduced from ~50 ha to ~31 ha. By adopting the current circular cells instead of the conventional seawall construction method, SS elevation would be greatly reduced, minimizing adverse impact on the health of fisheries resources.	IWMF site	Design team, contractor	✓	✓		✓	EIAO-TM	N/A
8b.8.1.3	Measure to minimize impingement and entrainment • Provision of a screen at the water intake point for desalination plant would be essential to minimize the risk of impingement and entrainment of fisheries resources (including fish, larvae and egg) through the intake point.	IWMF site	Design team, contractor, IWMF operator	✓	✓	✓		EIAO-TM	N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
8b.8.1.4-8b.8.1.6	<u>Measures to control water quality</u> • No wastewater effluent, anti-fouling agent, heavy metals and other contaminants would be released during operation phase of the Project. • Mitigation measures recommended in the water quality impact assessment during construction and operation would serve to protect fisheries resources from indirect impacts resulted from the Project	Work site, IWMF site	Design team, contractor, IWMF operator	✓	✓	✓	✓	EIAO-TM	Implemented
8b.8.1.7 – 8b.8.1.8	<u>Additional Enhancement / Precautionary Measures</u> • Artificial Reefs (ARs) are proposed to be deployed within the proposed marine park under this Project as an enhancement measure for the marine habitats. This enhancement feature would bring positive impacts to the previously identified important spawning and nursery ground for fisheries resources. *Release of Fish Fry at Artificial Reefs* • Release of fish fry has been proposed under this Project. The proposed deployment of ARs within the proposed marine park would provide shelter and nursery ground for the released fish fry. The frequency and quantity of fry to be released should be agreed by AFCD.	Within the proposed marine park in the waters between Soko Islands and Shek Kwu Chau	Project Proponent	✓		✓		EIAO-TM	N/A

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Table B.7 Implementation Schedule for Landscape and Visual Measures for the IWMF at the artificial island near SKC

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MLVC- 01	Grass-hydroseeded bare soil surface and stock pile area	Work site / During construction phase	Contractor		✓				N/A
S10b.10 MLVC-02	<u>Landscape Design</u> 1) Early planting using fast grow trees and tall shrubs at strategic locations within site as buffer to block view corridors to the site from the VSRs, and to locally screen haul roads, excavation works and site preparation works. 2) Use of tree species of dense tree crown to serve as visual barrier. 3) Hard and soft landscape treatment (e.g. trees and shrubs) of open areas within development to provide a background for the outdoor containers from open view, shade and shelter, and a green appearance from surrounding viewpoints. 4) Planting strip along the periphery of the project site. 5) Selected tree species suitable for the coastal condition.	Work site / During design & construction phases	Contractor	✓	✓				N/A

EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MLVC-03	<u>Adoption of Natural Features of the Existing Shoreline</u> 1) Use of boulders in different sizes and with the similar textures of the existing rocky shores for the construction of breakwater and artificial shoreline in order to blend into the existing natural shoreline. 2) Use of cellular cofferdam together with the natural boulders to form a curvature shoreline for the reclamation area to echo with the natural shoreline of SKC.	Work site / During construction phase	Contractor		✓				N/A
S10b.10 MLVC-04	<u>Greening Design (Rooftop & Vertical Greening)</u> 1) Implementation of rooftop and vertical greening (vertical building envelope) along the periphery of each building block to increase the amenity value of the work, moderate temperature extremes and enhance building energy performance. The greening appearance of the building shall enhance its visual harmony with the natural surroundings as well as reduce the apparent visual mass of the structure. 2) Sufficient space between concrete enclosure and stack to minimize heat transfer. 3) Introduction of landscape decks at the stack to further enhance the overall natural and green concept unique for this site.	Work site / During design & construction phases	Contractor	✓	✓				N/A

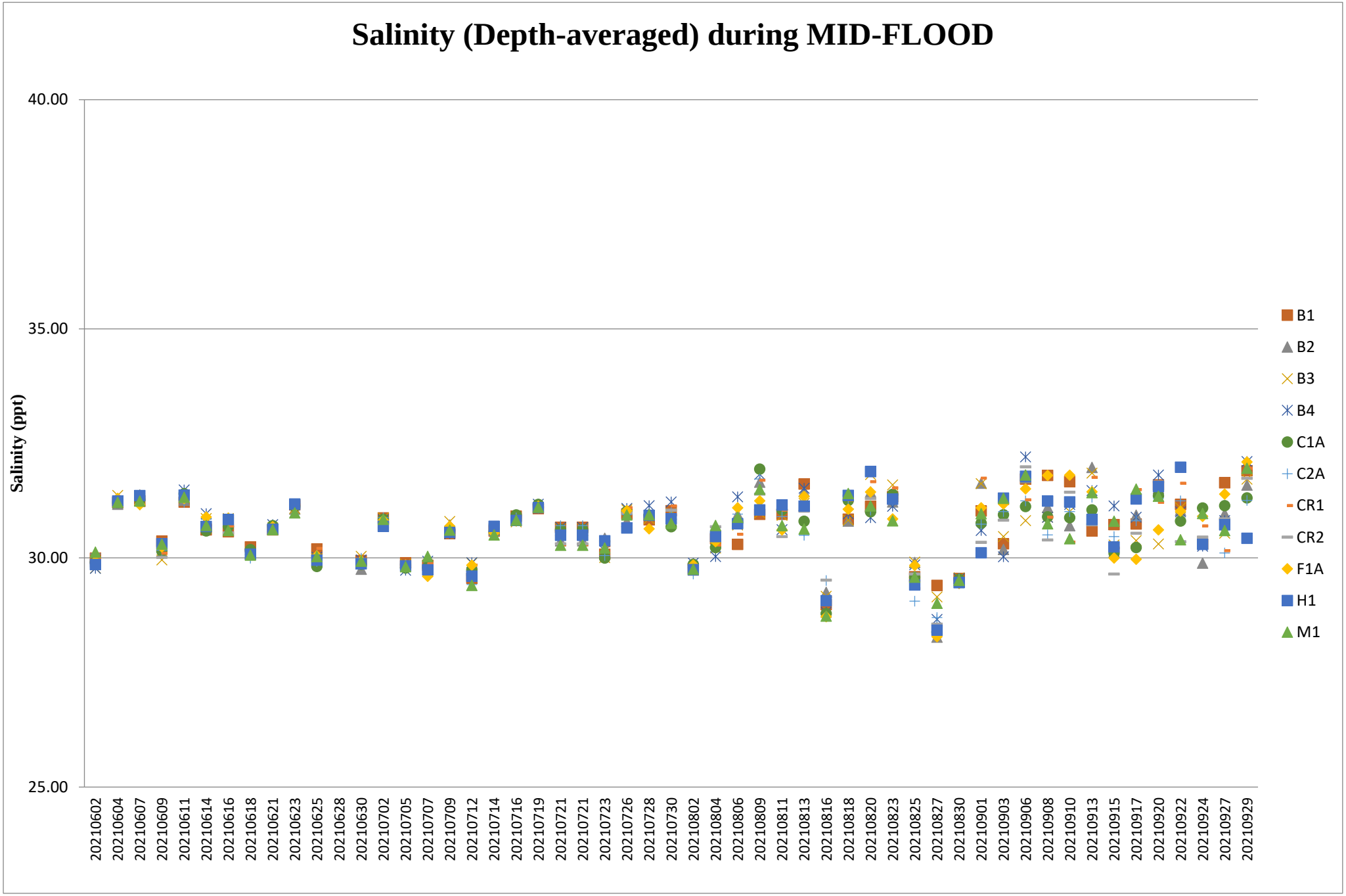
EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MVC-01	<u>Visual Mitigation and Aesthetic Design</u> 1) Use of natural materials with recessive color to minimize the bulkiness of the building. 2) Adoption of innovative aesthetic design to the chimney to minimize or visually mitigate the massing of the chimney so as to reduce its visual impact to the surroundings. 3) Color of the chimney in a gradual changing manner to match with the color of the sky. 4) Provision of observation deck for public enjoyment at the top of the chimney to diminish the feeling of chimney. 5) Provision of sky gardens between the two stacks to allow additional greening for enhancing the aesthetic quality. Maintenance access (elevator and staircase) from the ground floor to the sky gardens will be provided to allow maintenance of the sky gardens. 6) Integration of the visitor's walkway with different material façade design of incinerator plant to enhance the aesthetic quality.	Structures in IWMF / During design & constructio n phases	Contractor	✓	✓				N/A
S10b.10 MVC-02	Control of the security floodlight for construction areas at night to avoid excessive glare to the surrounding receiver.	Work site / During construction phase	Contractor		✓				Implemented

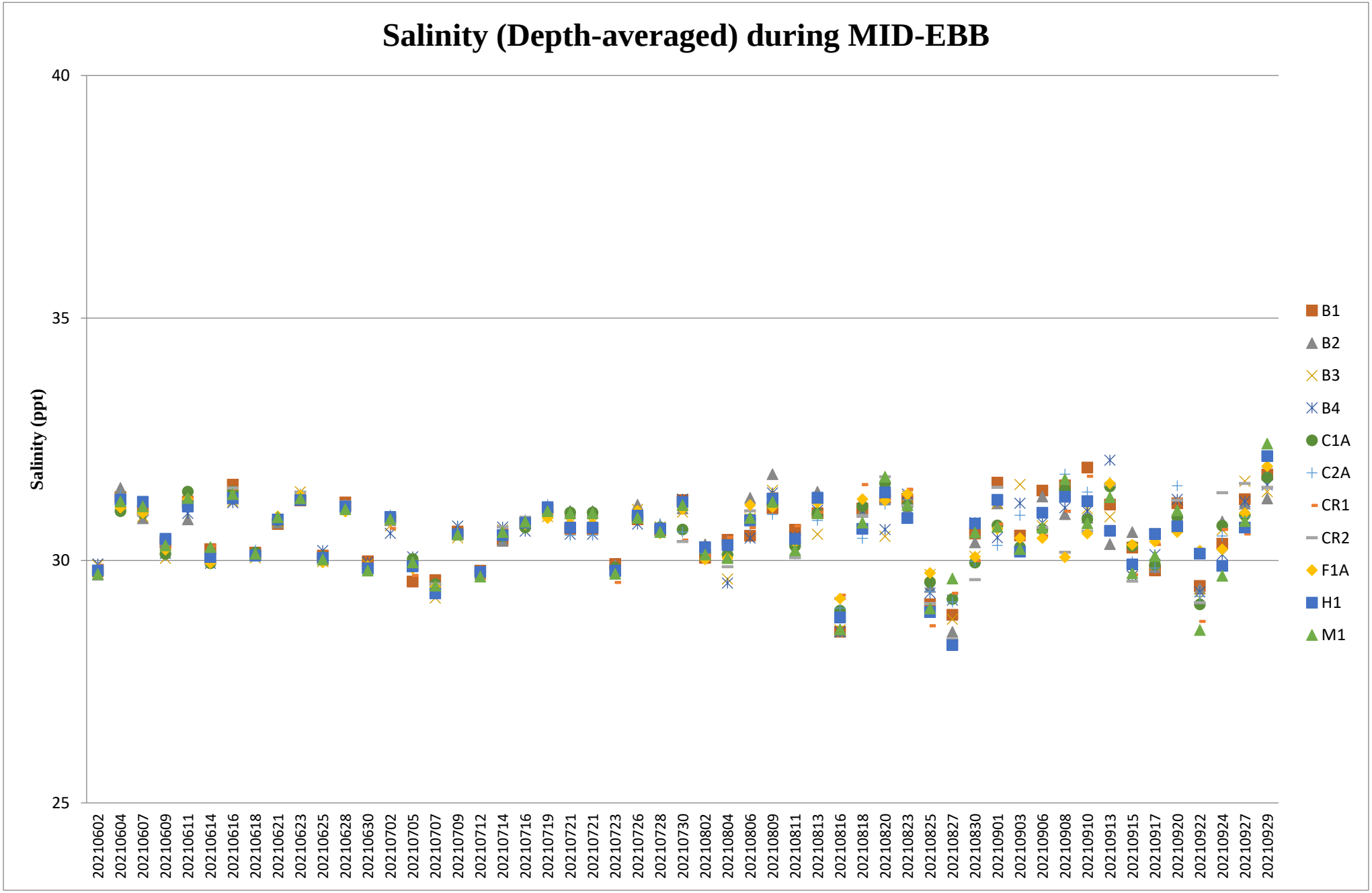
EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MVC-03	Optimization of the construction sequence and construction programme to minimize the duration of impact.	Work site / During design & construction phases	Contractor	✓	✓				Implemented
S10b.10 MVC-04	Storage of the backfilling materials for site formation & construction materials / wastes on site at a maximum height of 2m, covered with an impermeable material of visually un-obtrusive material (in earth tone).	Work site / During construction phase	Contractor		✓				N/A
S10b.10 MVC-05	Reduction of the number of construction traffic at the site to practical minimum.	Work site / During construction phase	Contractor		✓				Implemented
S10b.10 MLVO-01	<u>Planting Maintenance</u> Provision of proper planting maintenance and replacement of defective plant species on the new planting areas to enhance aesthetic and landscape quality.	Project site / During Operation phase	Contractor			✓			N/A
S10b.10 MVO-01	<u>Environmental Education Centre</u> Development of an Environmental Education Center, in which regular exhibitions and lectures to promote environmental awareness and waste reduction concept would be provided, as a part of the IWMF for the general public to alleviate negative public perceptions of the development.	Project site / During Operation phase	Contractor			✓			N/A
S10b.10 MVO-02	<u>Control of Light</u> Control the numbers of lights and their intensity to a level that is good enough to meet the safety requirements at night but not excessive.	Project site / During Operation phase	Contractor			✓			N/A

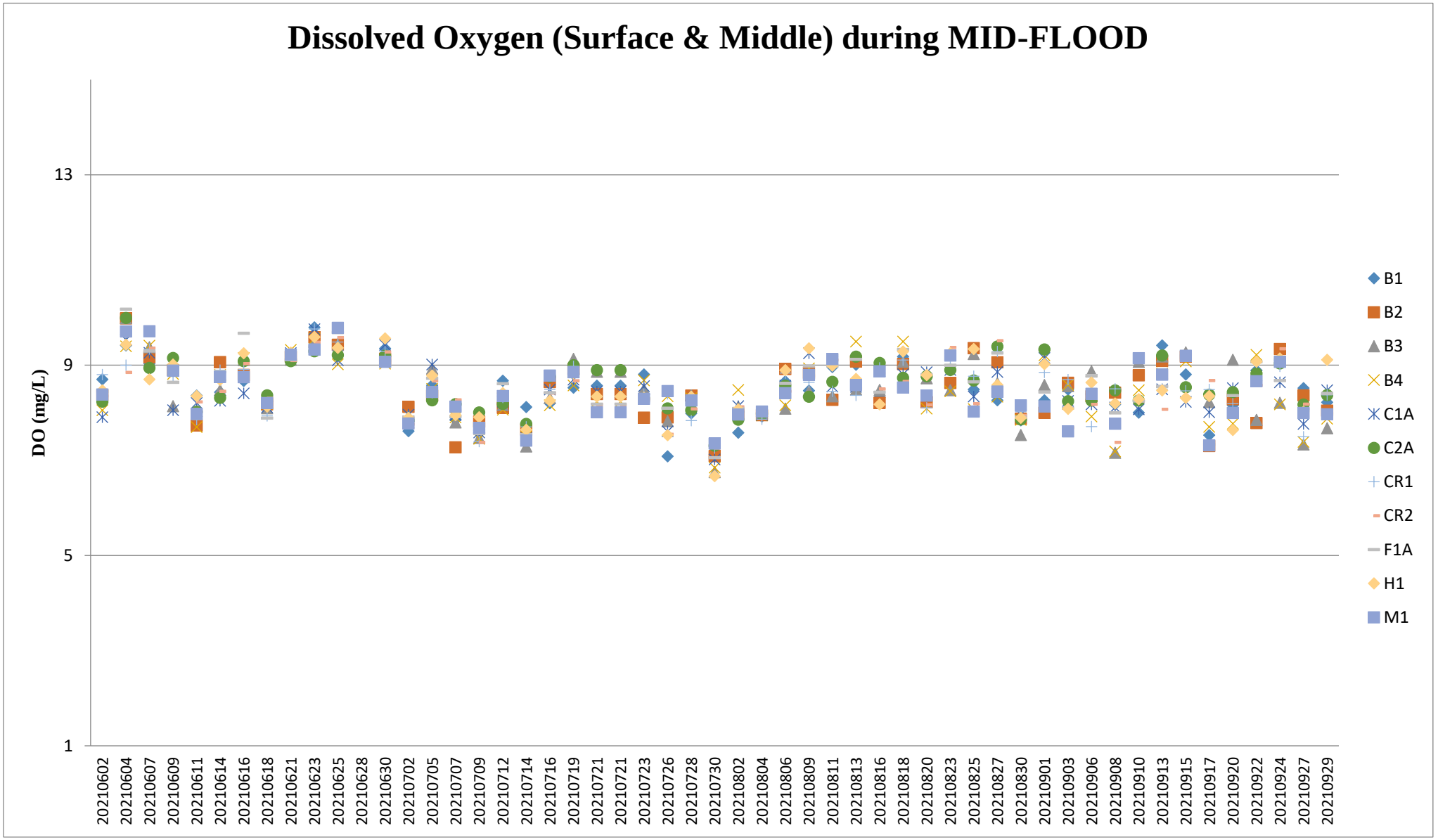
EIA Ref	Environmental Protection Measures / Mitigation Measures	Location / Timing	Implementation Agent	Implementation Stages*				Relevant Legislation and Guidelines	Implementation Status and Remarks
				Des	C	O	Dec		
S10b.10 MVO-03	<u>Control of Operation Time</u> Minimization of the frequency of waste transportation to practical minimum (e.g. limit the reception of MSW from 8 am to 8 pm)	Project site / During Operation phase	Contractor			✓			N/A

* Des - Design, C - Construction, O – Operation, and Dec - Decommissioning

Appendix C Water Quality Monitoring Data Trending

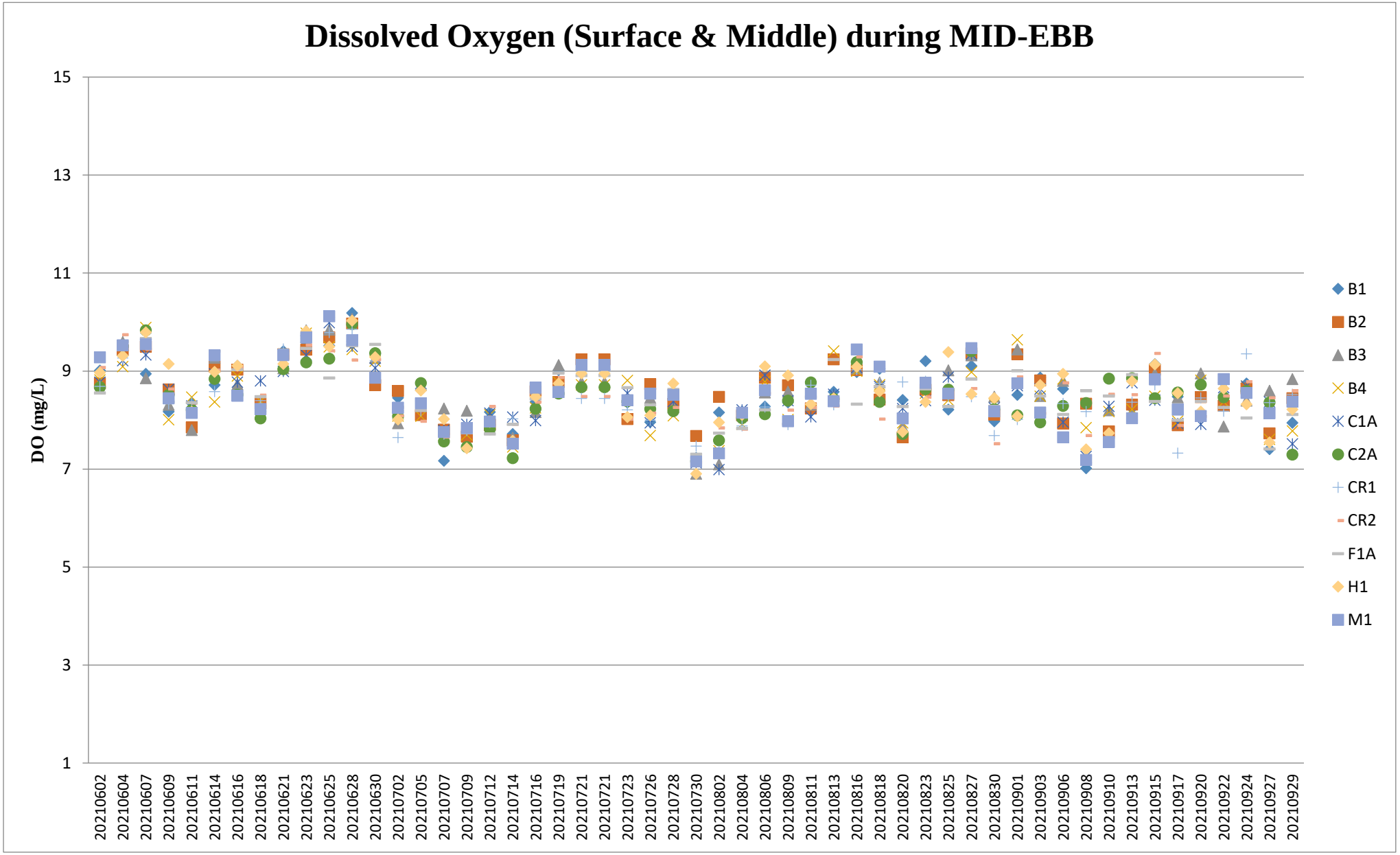

Salinity (Depth-averaged) during MID-FLOOD
Salinity (ppt)
40.00
35.00
30.00
25.00
20210602
20210604
20210607
20210609
20210611
20210614
20210616
20210618
20210621
20210623
20210625
20210628
20210630
20210702
20210705
20210707
20210709
20210712
20210714
20210716
20210719
20210721
20210721
20210723
20210726
20210728
20210730
20210802
20210804
20210806
20210809
20210811
20210813
20210816
20210818
20210820
20210823
20210825
20210827
20210830
20210901
20210903
20210906
20210908
20210910
20210913
20210915
20210917
20210920
20210922
20210924
20210927
20210929
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1


Salinity (Depth-averaged) during MID-EBB
Salinity (ppt)
40
35
30
25
20210602
20210604
20210607
20210609
20210611
20210614
20210616
20210618
20210621
20210623
20210625
20210628
20210630
20210702
20210705
20210707
20210709
20210712
20210714
20210716
20210719
20210721
20210721
20210723
20210726
20210728
20210730
20210802
20210804
20210806
20210809
20210811
20210813
20210816
20210818
20210820
20210823
20210825
20210827
20210830
20210901
20210903
20210906
20210908
20210910
20210913
20210915
20210917
20210920
20210922
20210924
20210927
20210929
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1



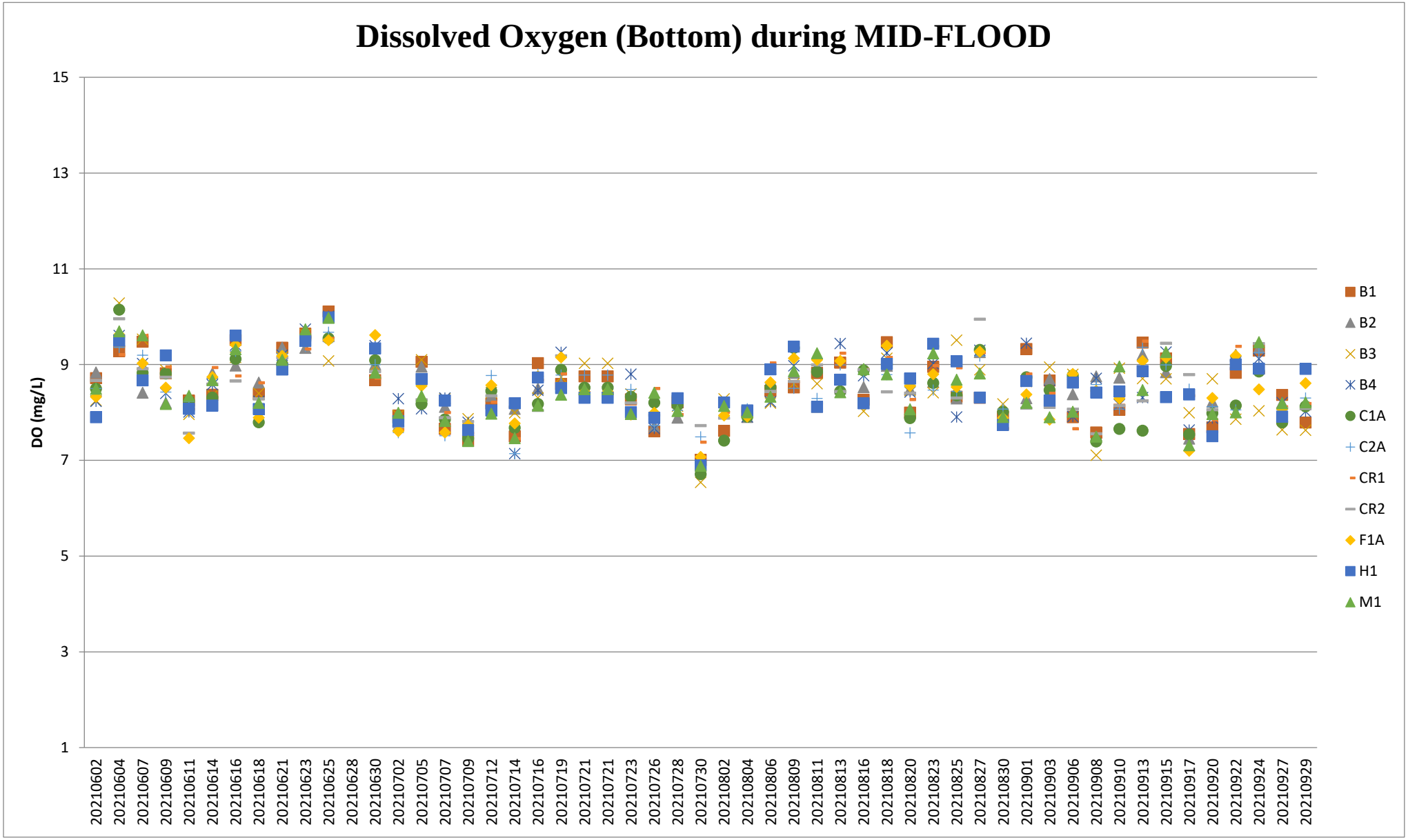
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.



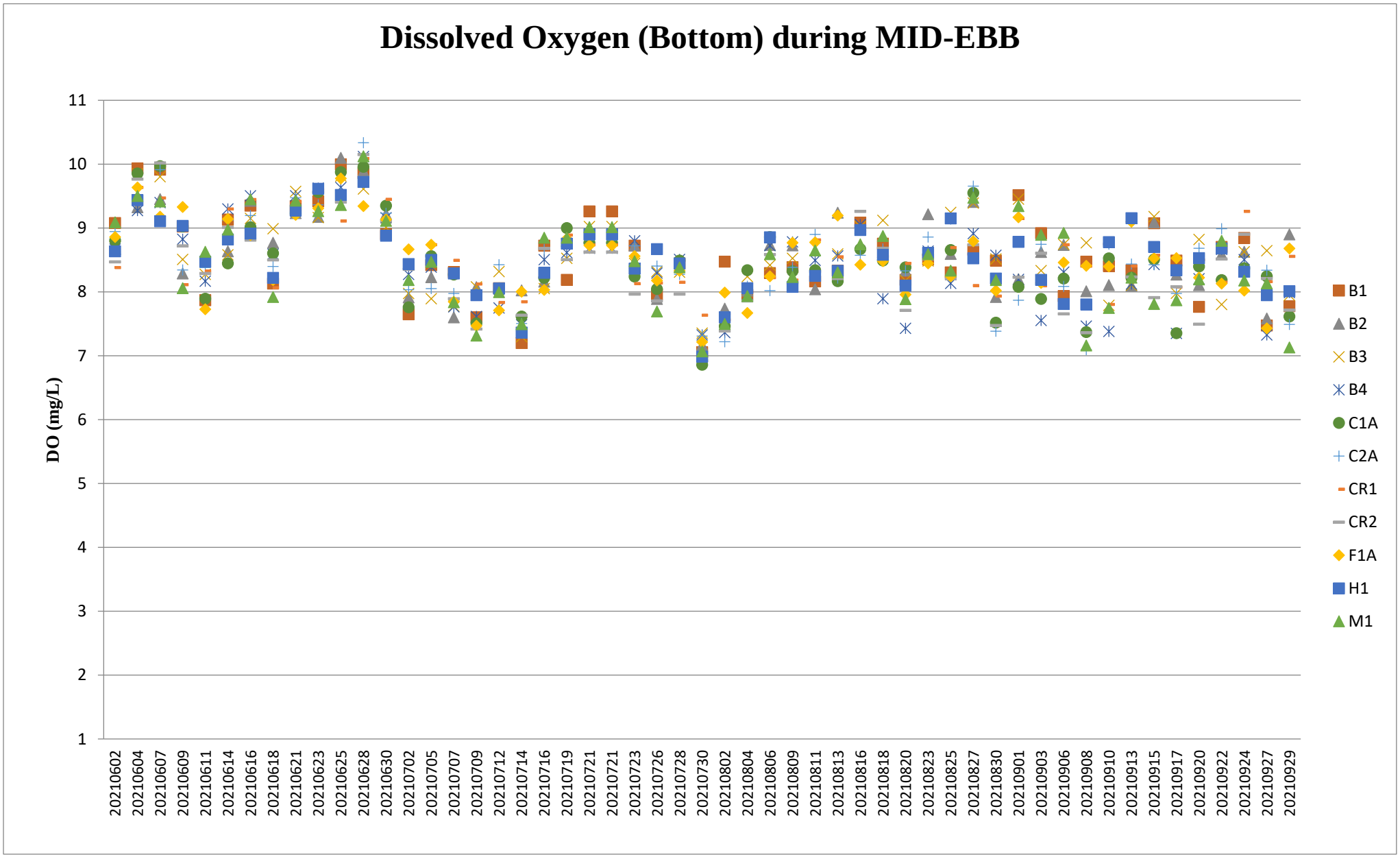
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.



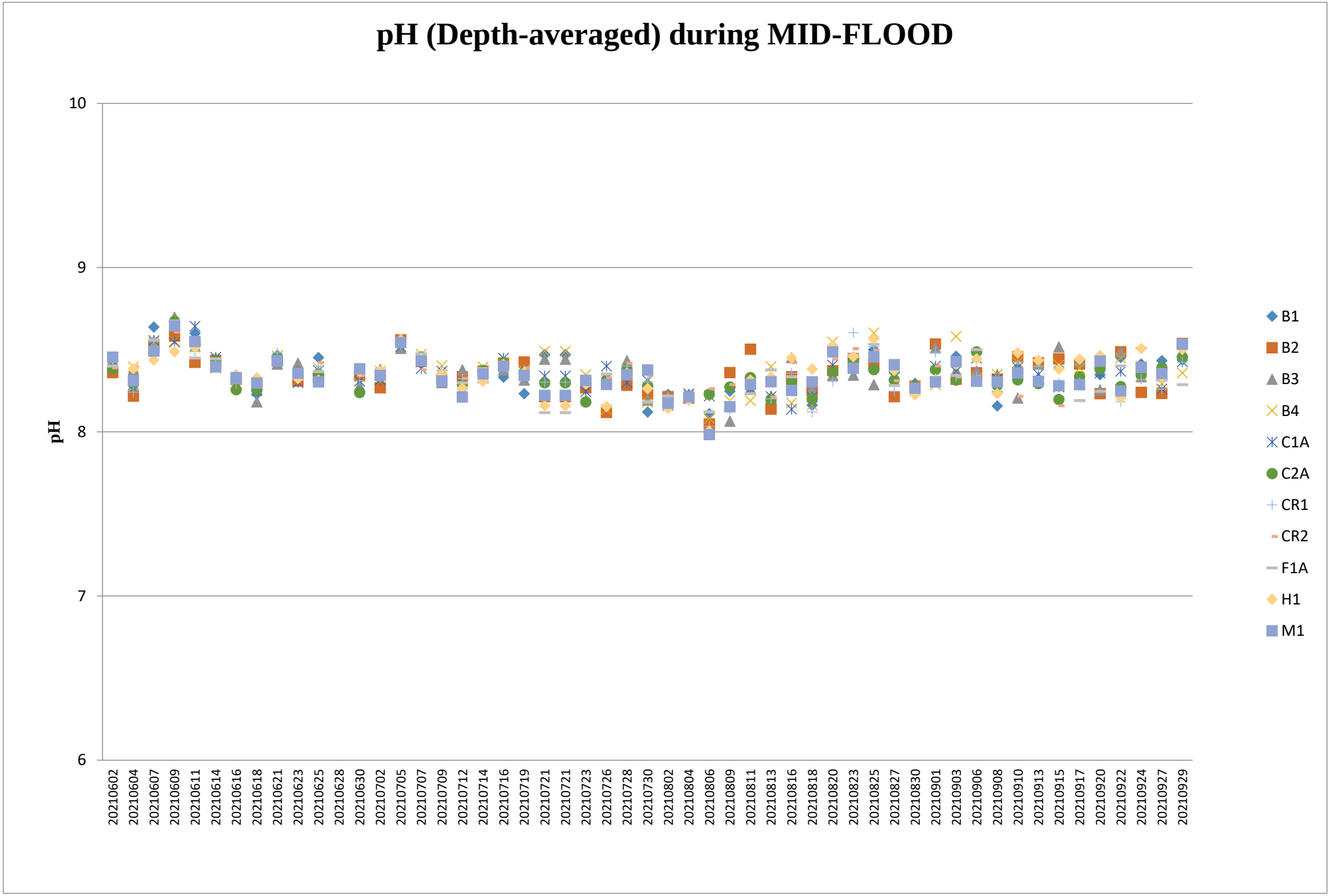
Note:

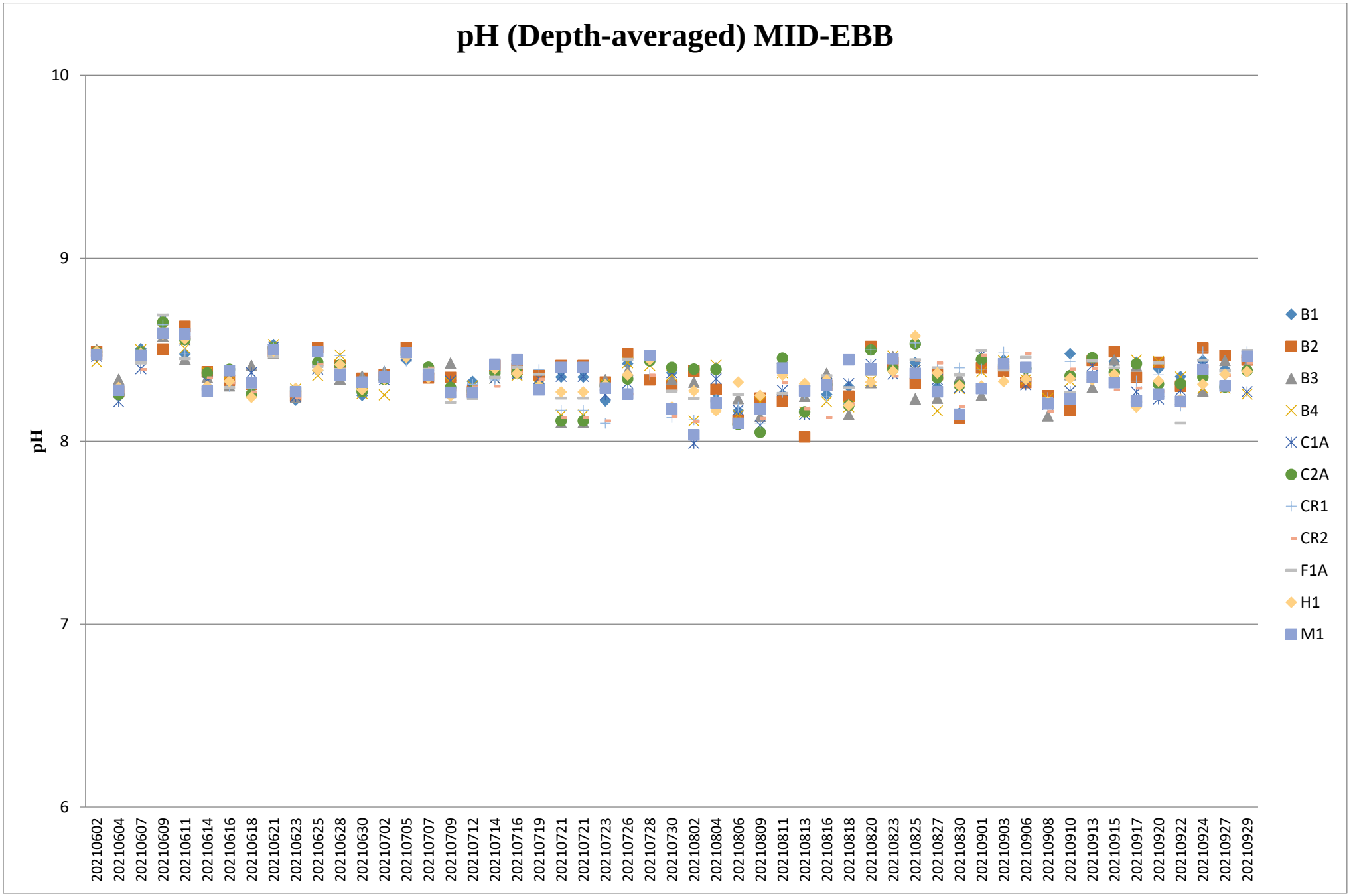
1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.

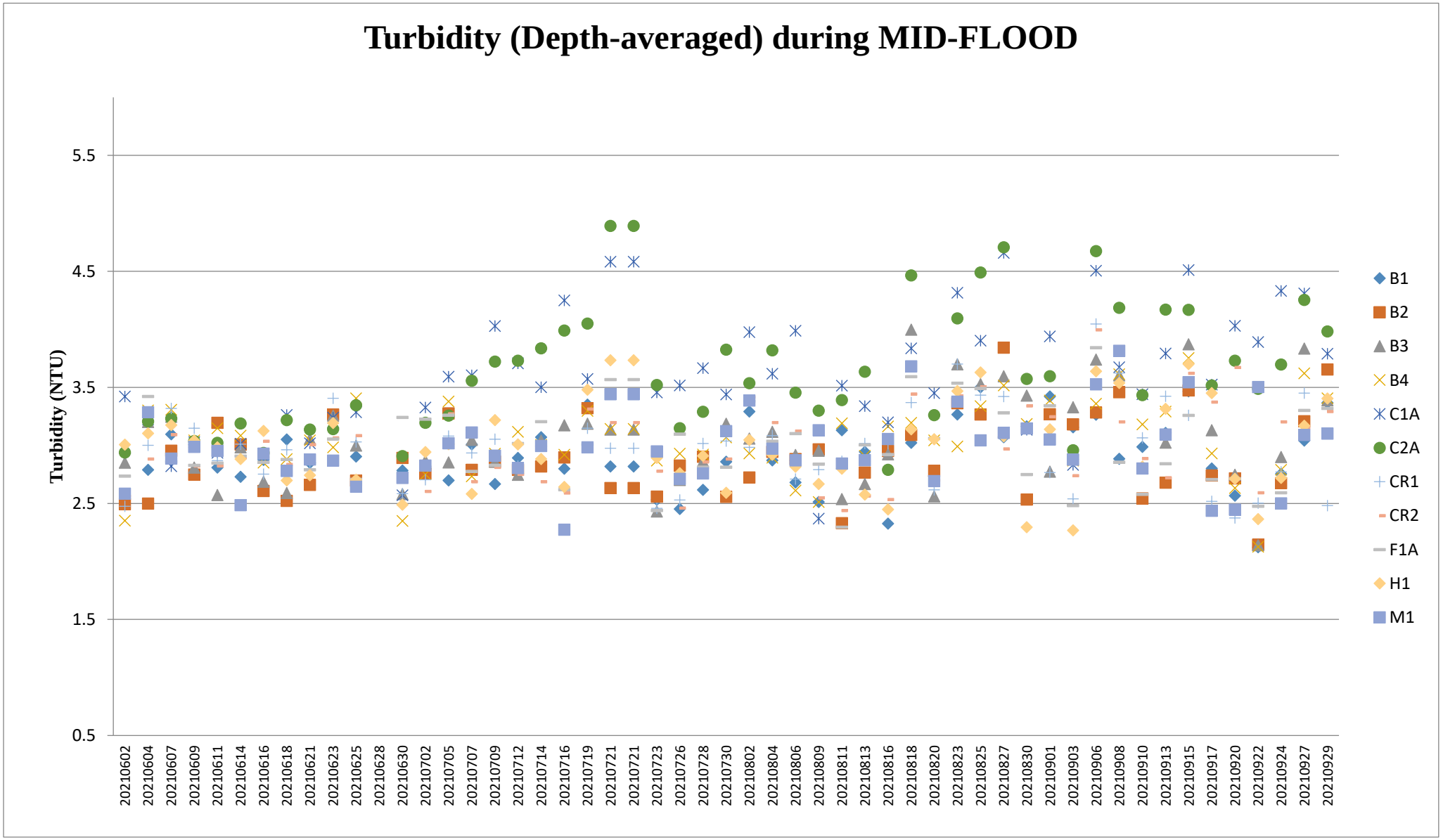


Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.

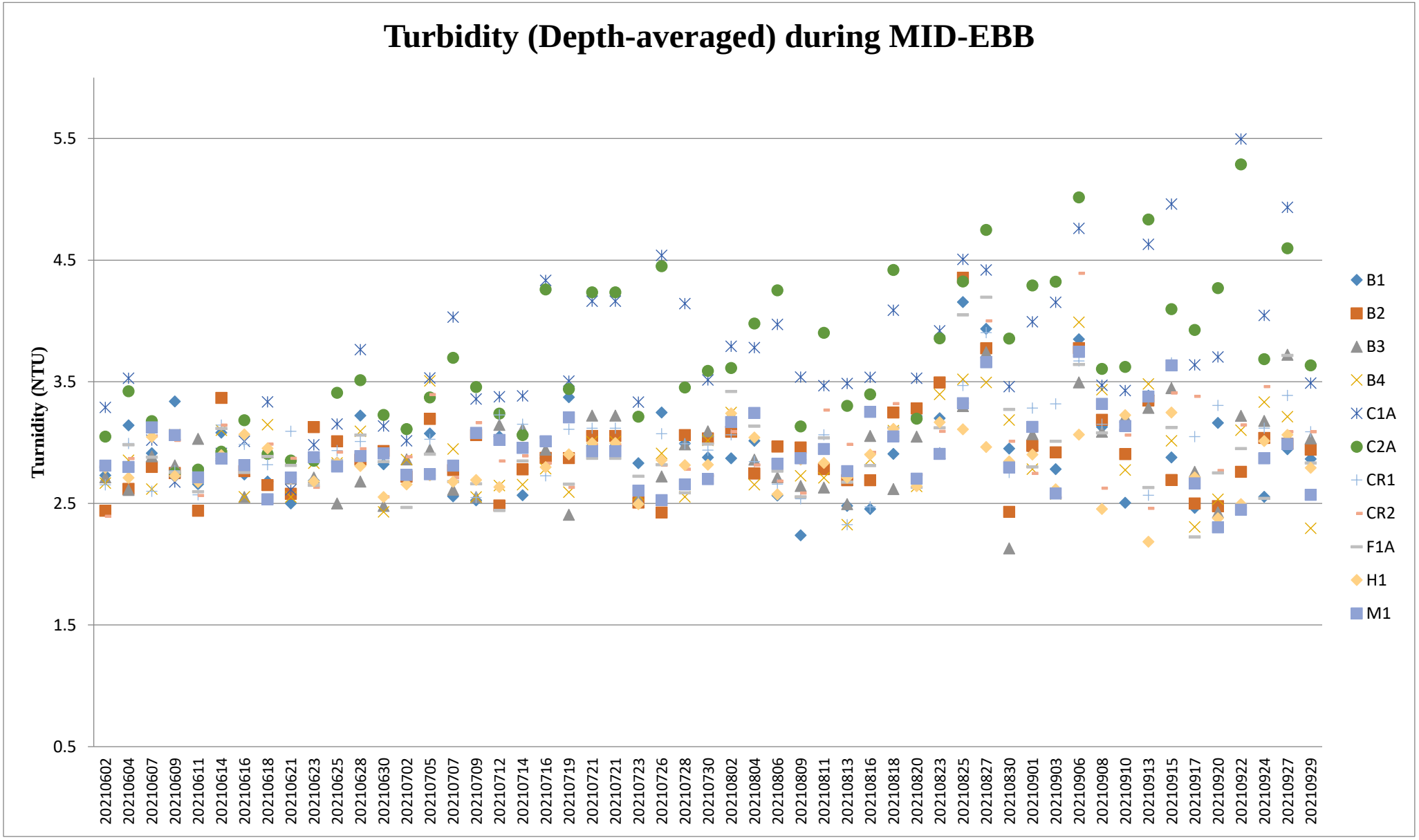

pH (Depth-averaged) during MID-FLOOD
pH
10
9
8
7
6
20210602
20210604
20210607
20210609
20210611
20210614
20210616
20210618
20210621
20210623
20210625
20210628
20210630
20210702
20210705
20210707
20210709
20210712
20210714
20210716
20210719
20210721
20210721
20210723
20210726
20210728
20210730
20210802
20210804
20210806
20210809
20210811
20210813
20210816
20210818
20210820
20210823
20210825
20210827
20210830
20210901
20210903
20210906
20210908
20210910
20210913
20210915
20210917
20210920
20210922
20210924
20210927
20210929
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1


pH (Depth-averaged) MID-EBB
pH
10
9
8
7
6
20210602
20210604
20210607
20210609
20210611
20210614
20210616
20210618
20210621
20210623
20210625
20210628
20210630
20210702
20210705
20210707
20210709
20210712
20210714
20210716
20210719
20210721
20210721
20210723
20210726
20210728
20210730
20210802
20210804
20210806
20210809
20210811
20210813
20210816
20210818
20210820
20210823
20210825
20210827
20210830
20210901
20210903
20210906
20210908
20210910
20210913
20210915
20210917
20210920
20210922
20210924
20210927
20210929
B1
B2
B3
B4
C1A
C2A
CR1
CR2
F1A
H1
M1



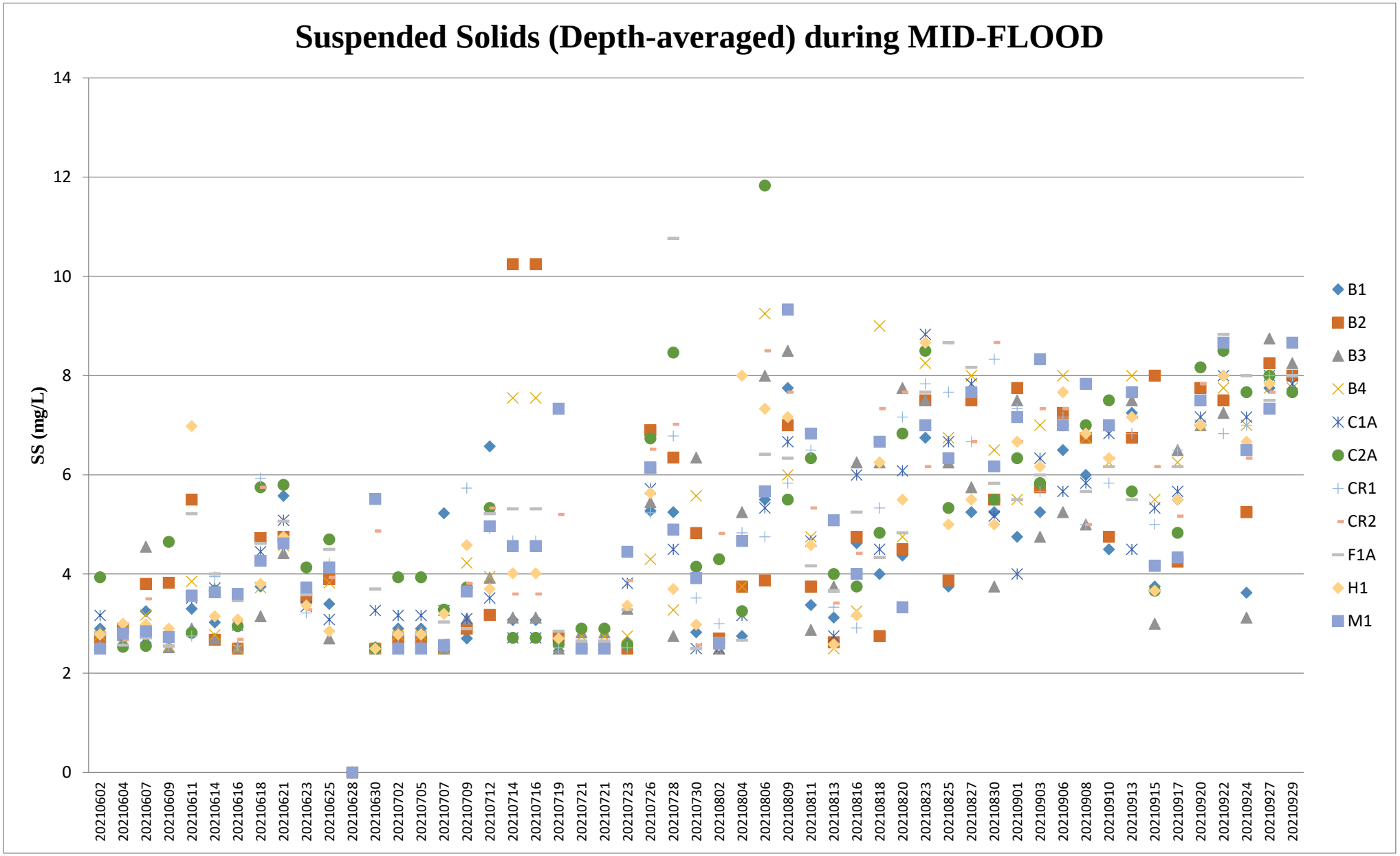
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.



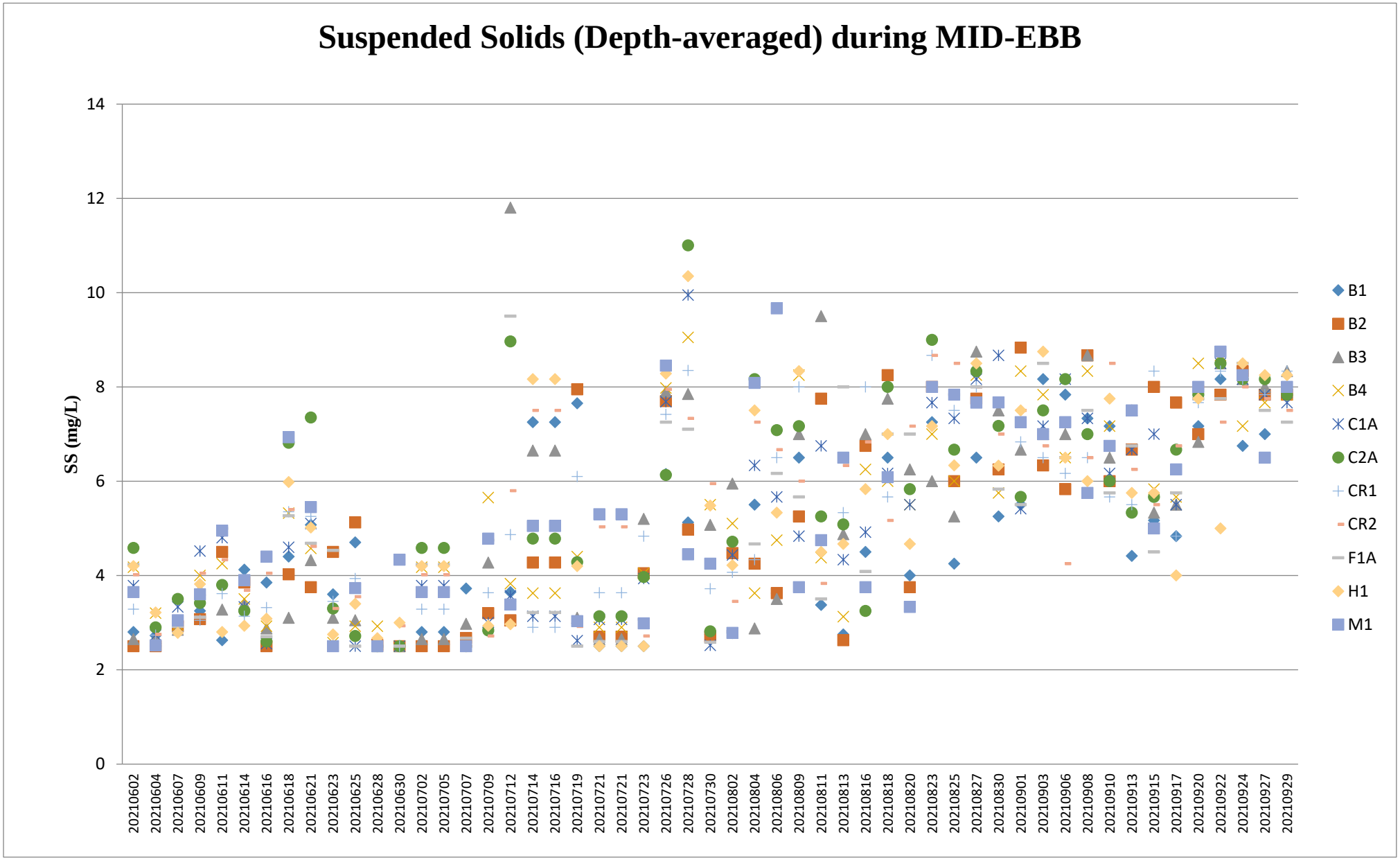
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.



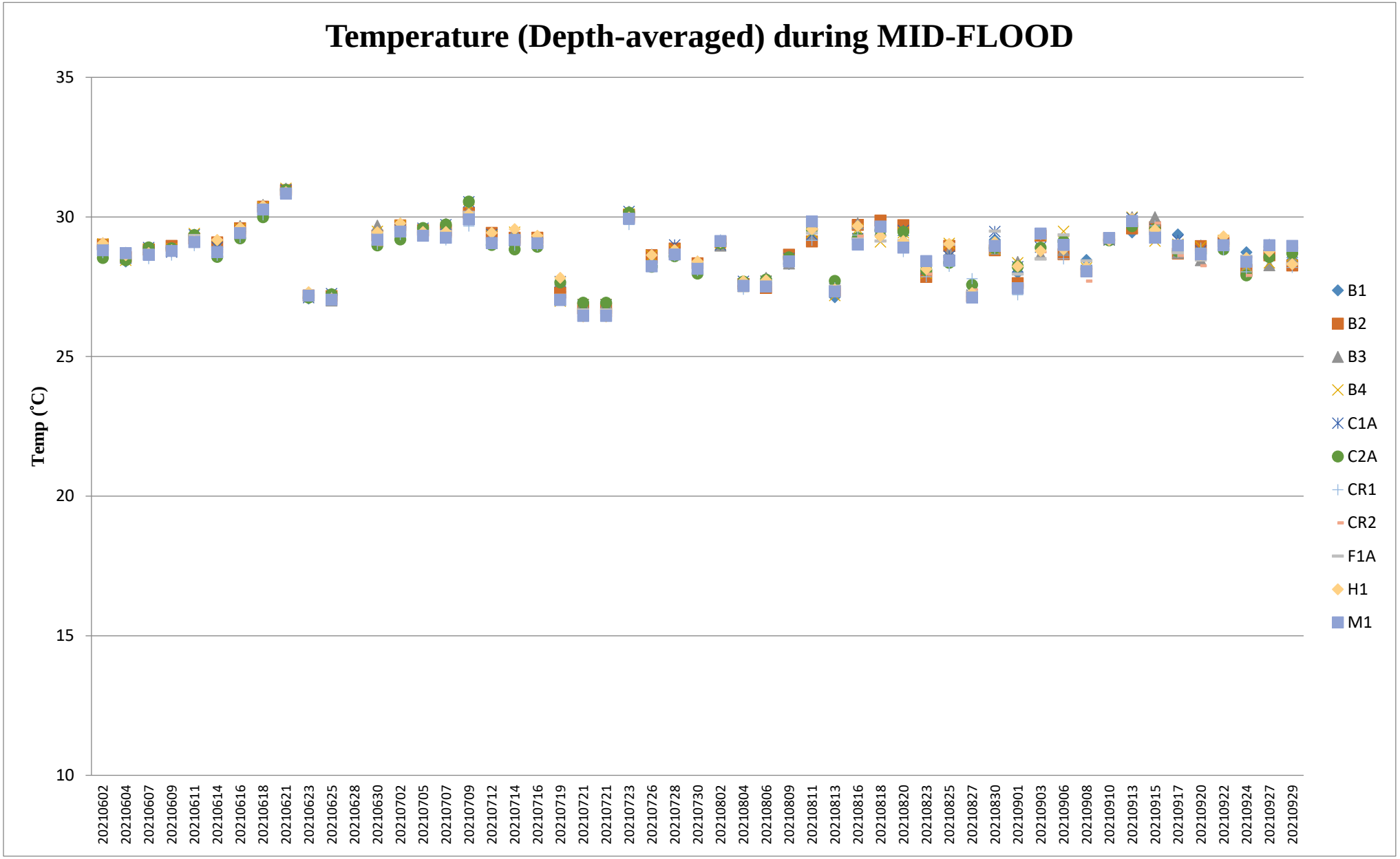
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.



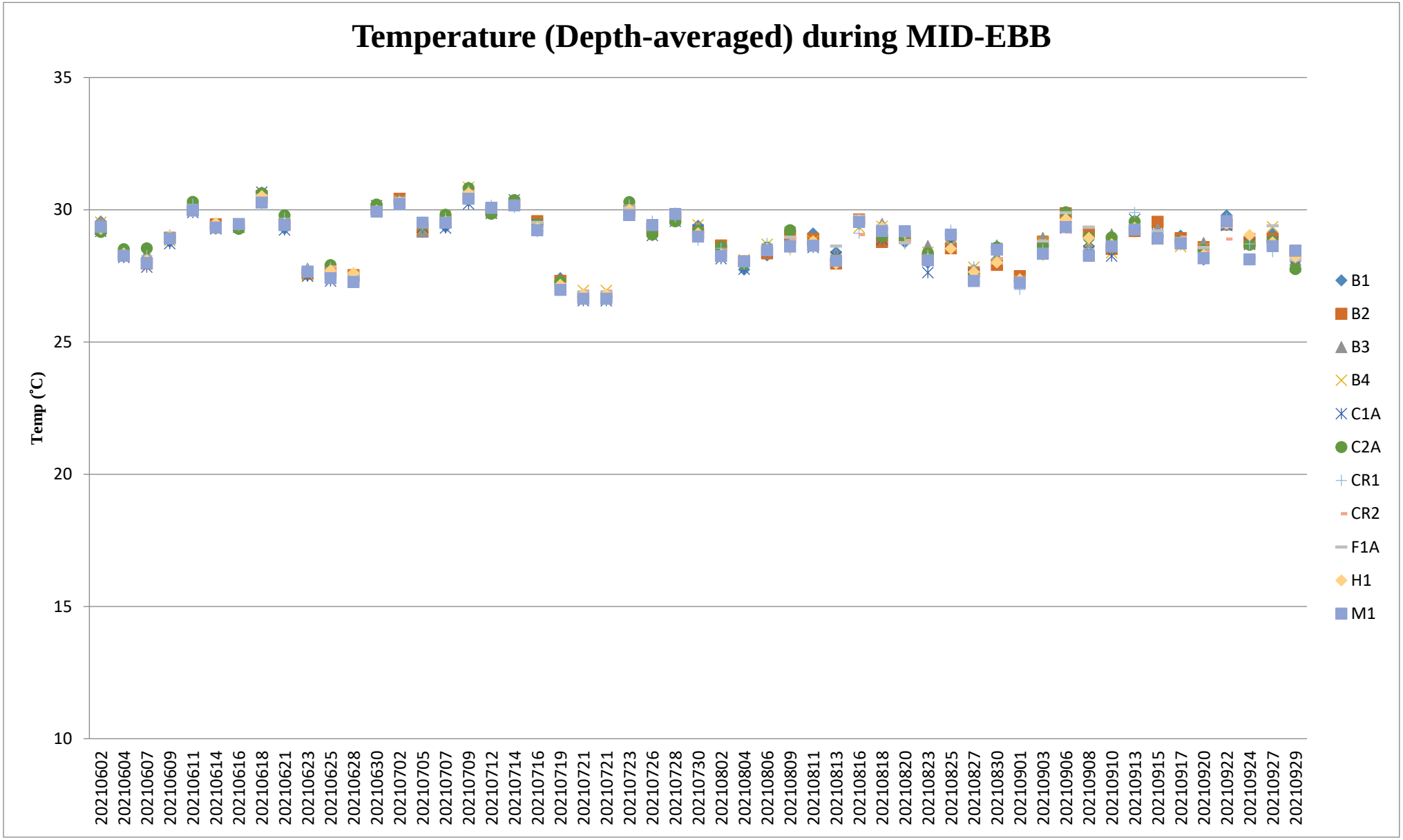
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.



Note:

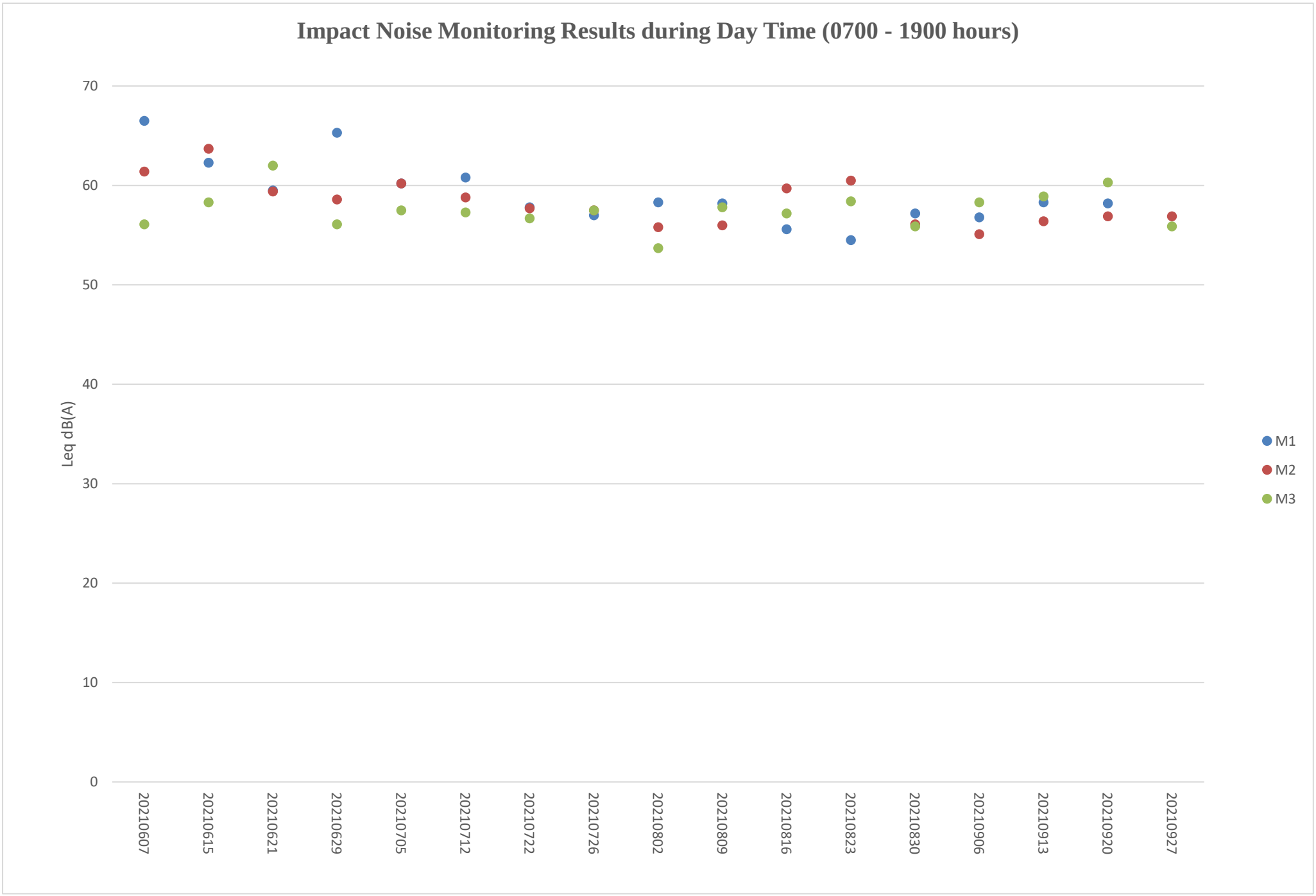
1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.

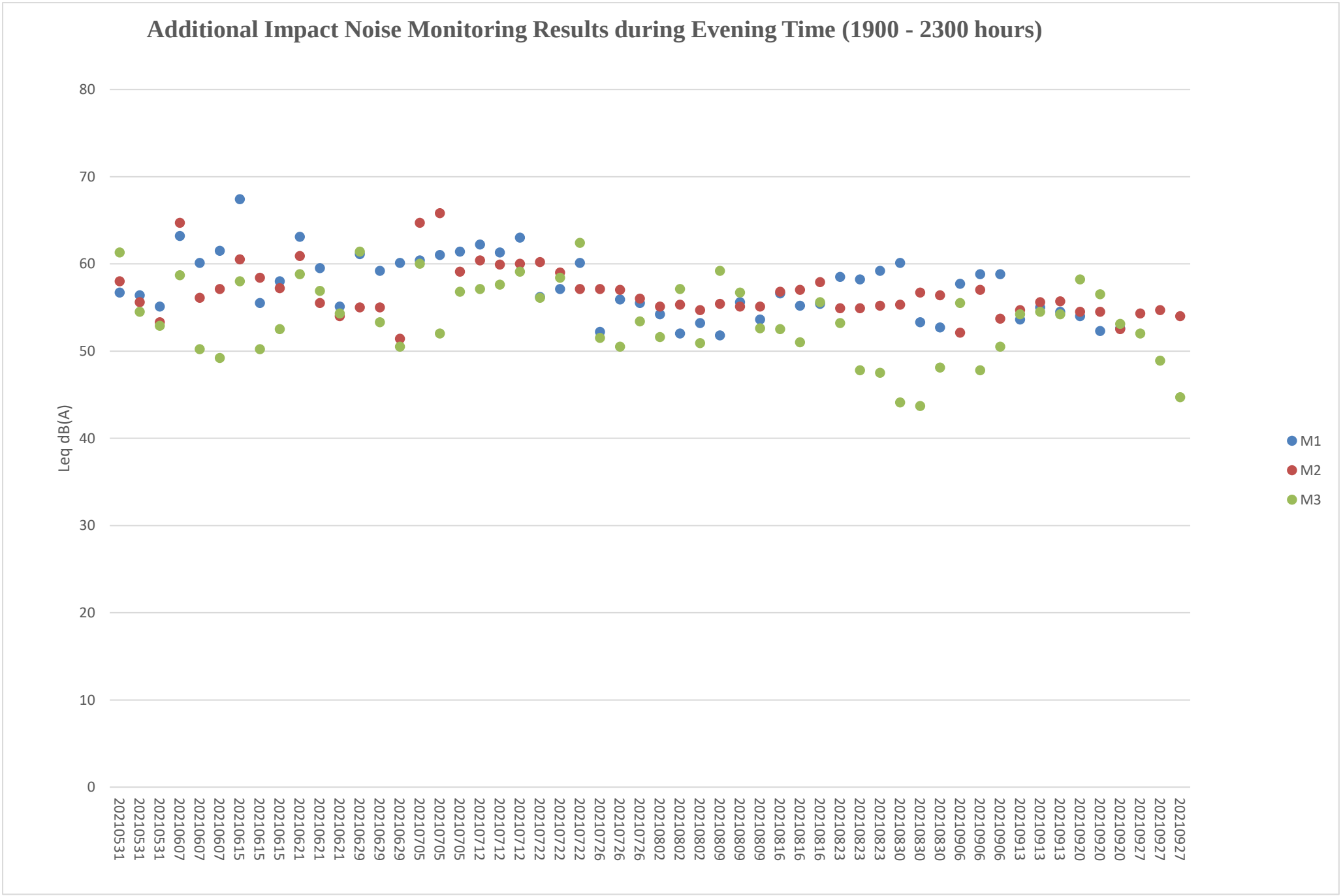


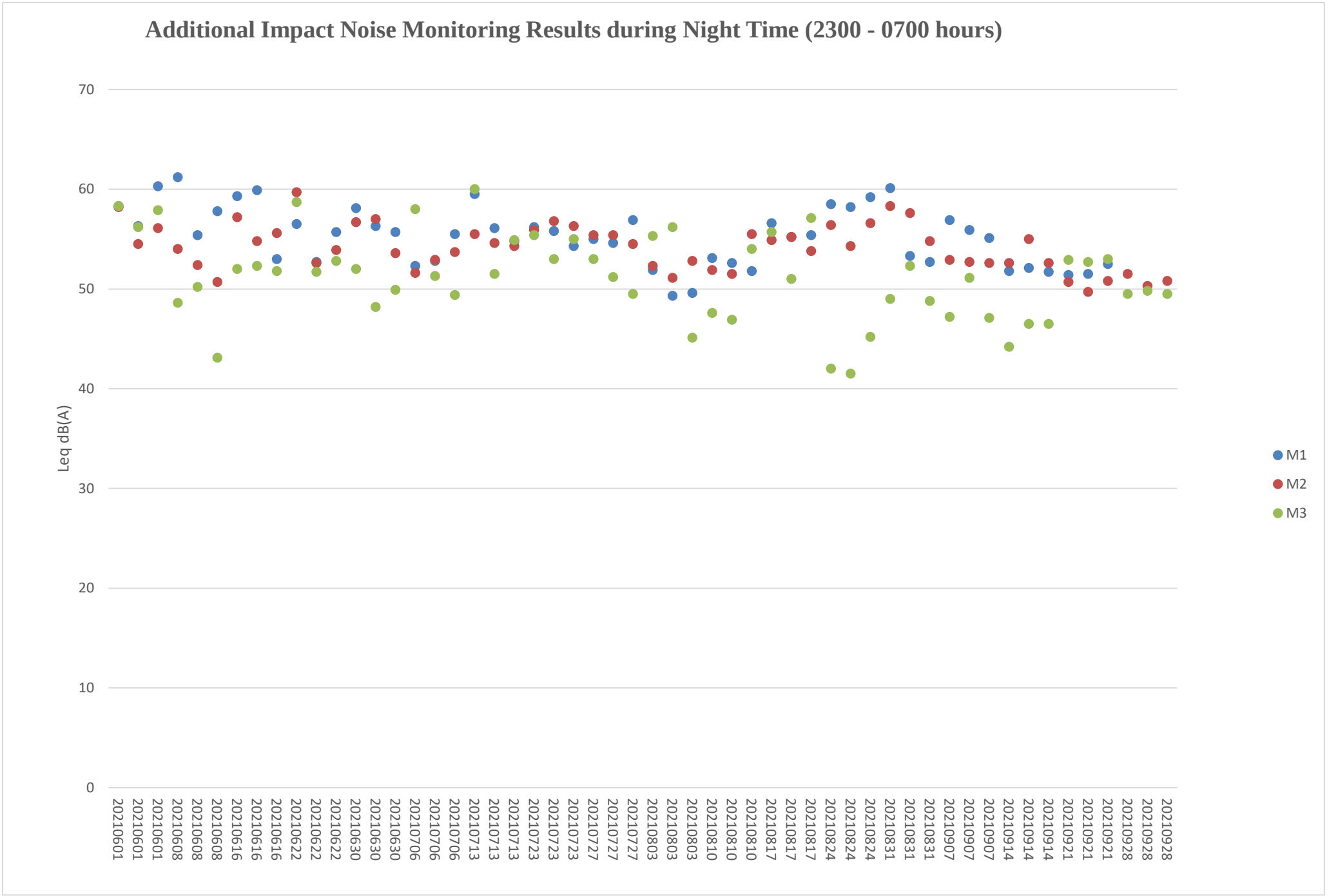
Note:

1. The Action and Limit Level of dissolved oxygen can be referred to **Table 2.3** of the quarterly EM&A report.

Appendix D Noise Monitoring Data Trending


Impact Noise Monitoring Results during Day Time (0700 - 1900 hours)
Leq dB(A)
70
60
50
40
30
20
10
0
20210607
20210615
20210621
20210629
20210705
20210712
20210722
20210726
20210802
20210809
20210816
20210823
20210830
20210906
20210913
20210920
20210927
M1
M2
M3


Additional Impact Noise Monitoring Results during Evening Time (1900 - 2300 hours)
Leq dB(A)
80
70
60
50
40
30
20
10
0
M1
M2
M3
20210531
20210531
20210531
20210607
20210607
20210607
20210615
20210615
20210615
20210621
20210621
20210621
20210629
20210629
20210629
20210705
20210705
20210705
20210712
20210712
20210712
20210722
20210722
20210722
20210726
20210726
20210726
20210802
20210802
20210802
20210809
20210809
20210809
20210816
20210816
20210816
20210823
20210823
20210823
20210830
20210830
20210830
20210906
20210906
20210906
20210913
20210913
20210913
20210920
20210920
20210920
20210927
20210927
20210927


Additional Impact Noise Monitoring Results during Night Time (2300 - 0700 hours)
Leq dB(A)
70
60
50
40
30
20
10
0
M1
M2
M3
20210601
20210601
20210601
20210608
20210608
20210608
20210616
20210616
20210616
20210622
20210622
20210622
20210630
20210630
20210630
20210706
20210706
20210706
20210713
20210713
20210713
20210723
20210723
20210723
20210727
20210727
20210727
20210803
20210803
20210803
20210810
20210810
20210810
20210817
20210817
20210817
20210824
20210824
20210824
20210831
20210831
20210831
20210907
20210907
20210907
20210914
20210914
20210914
20210921
20210921
20210921
20210928
20210928
20210928

Appendix E Waste Flow Table

吉寶西格斯 - 振華聯營公司

Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2018 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apr	0	0	0	0	0	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jun	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sub-total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Jul	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Aug	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0065
Sep	0	0	0	0	0	2.9619	0	0	0	0	0	0	0	0
Oct	0	0	0	0	0	3.0771	0	0	0	0	0	0	0	0.0130
Nov	0	0	0	0	0	6.7871	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	59.0709	0	0	0	0	0	0.2000	0.8700	0
Total	0	0	0	0	0	71.8970	0	0	0	0	0	0.2000	0.8700	0.0195

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

吉寶西格斯 - 振華聯營公司
Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2019 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	82.6139	0	0	0	0	0	0	0	0.0065
Feb	0	0	0	0	0	46.7821	0	0	0	0	0	0	0	0
Mar	0	0	0	0	0	97.1000	0	0.7552	0	0.2560	0	0	0	0
Apr	0	0	0	0	0	58.0413	0	0	0	0	0	0	0	0
May	0	0	0	0	0	14.5625	0	1.4648	0	0	0	0	0	0.0065
Jun	0	0	0	0	0	0	0	6.8421	0	0	0	0	0	0
Sub-total	0	0	0	0	0	299.0998	0	9.0621	0	0.2560	0	0	0	0.0130
Jul	0	0	0	0	0	0	0	0.4289	0	0	0	0	8.4000	0.0130
Aug	0	0	0	0	0	2.5775	0	10.5600	0	0	0	0	0	0
Sep	0	0	0	0	0	6.1081	0	8.4704	0	0.3530	0	0	0	0.0065
Oct	0	0	0	0	0	9.8875	0	7.1900	0	0	0	0	0	0
Nov	0	0	0	0	0	38.3088	0	19.3105	0	0	0	0	0	0.0195
Dec	0	0	0	0	0	54.3469	0	26.9807	0	0	0	0	0	0.0910
Total	0	0	0	0	0	410.3286	0	82.0026	0	0.6090	0	0	8.4000	0.1430

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

吉寶西格斯 - 振華聯營公司
Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2020 (year)

Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	37.1550	0	25.0812	0	0	0	0	0	0.0065
Feb	0	0	0	0	0	27.7910	0	18.8300	0	0	0	0	0	0.0065
Mar	0	0	0	0	0	22.5669	0	26.1586	0	0	0	0	7.2000	0.0065
Apr	0	0	0	0	0	12.7800	0	10.1825	0	0	0	0	0	0.0195
May	0	0	0	0	0	16.1138	0	24.3740	0	0.4220	0	0	0	0.0195
Jun	0	0	0	0	0	31.5177	0	28.3030	0	0	0	0	0	0.0065
Sub-total	0	0	0	0	0	147.9244	0	132.9293	0	0.4220	0	0	7.2000	0.0650
Jul	0	0	0	0	0	34.7856	17.0606	35.1800	0	0	0	0	0	0.0195
Aug	0	0	0	0	0	27.1375	65.5667	27.9335	0	0	0	0	0	0
Sep	0	0	0	0	0	11.9813	110.1328	43.5435	0	0	0	0	0	0.0195
Oct	0	0	0	0	0	2.8213	131.6600	22.5415	0	0	0	0	0	0.0130
Nov	0	0	0	0	0	0	162.1811	44.6475	0	0.4090	0	0	0.4000	0.0130
Dec	0	0	0	0	0	0	174.9800	57.8380	0	0	0	0	0	0.0130
Total	0	0	0	0	0	224.6501	661.5812	364.6133	0	0.8310	0	0	7.6000	0.1430

Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

吉寶西格斯 - 振華聯營公司
Keppel Seghers - Zhen Hua Joint Venture

Monthly Summary Waste Flow Table for 2021 (year)

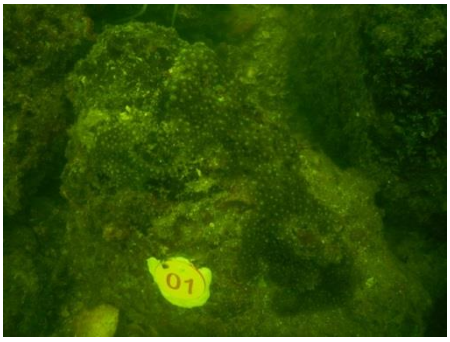
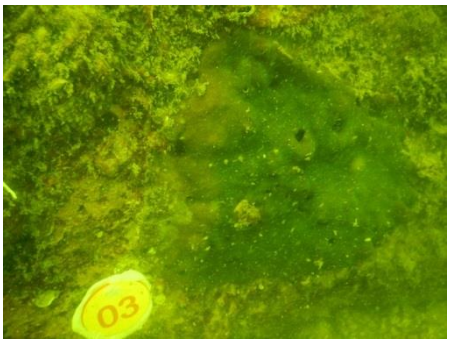
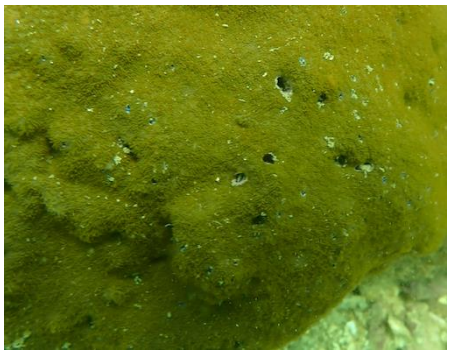
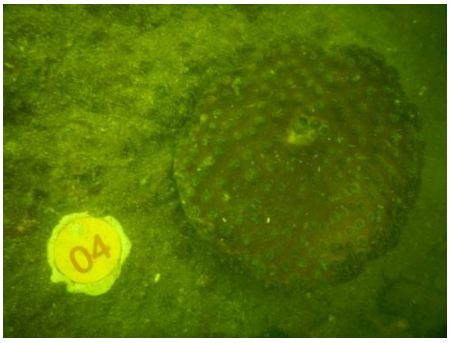
Project : Integrated Waste Management Facilities, Phase 1 Contract No.: EP/SP/66/12

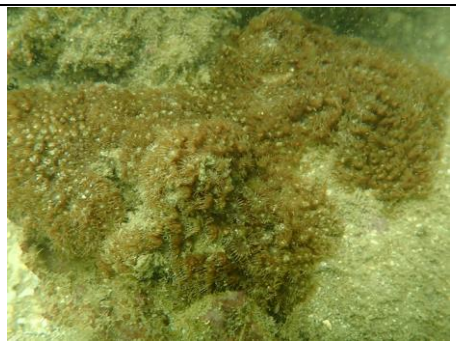
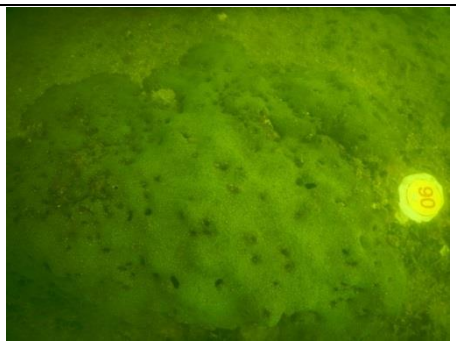
Month	Actual Quantities of Inert C&D Materials Generated Monthly								Actual Quantities of C&D Wastes Generated Monthly					
	Total Quantity Generated	Hard Rock and Large Broken Concrete (see Note 1)	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill Sand	Imported Fill Public fill	Imported Fill Rock	Metals	Paper/ cardboard packaging	Plastics (see Note 2)	Chemical Waste		Others, e.g. general refuse (see Note 3)
	(in ,000m^3)	(in ,000m^3)	(in ,000m^3)	(in ,000m^3	(in ,000m^3)	(in ,000m^3)			(in ,000 kg)	(in ,000kg)	(in ,000kg)	(in ,000kg)	(in ,000L)	(in ,000 m^3)
Jan	0	0	0	0	0	0	198.1311	36.4775	0	0	0	0	0	0.0065
Feb	0	0	0	0	0	0	143.9511	20.9960	0	0	0	0	0	0.6305
Mar	0	0	0	0	0	0	103.1833	23.4510	0	0	0	0	0	0.0130
Apr	0	0	0	0	0	0	161.2956	27.2810	0	0	0	0	0	0.0130
May	0	0	0	0	0	0	193.3300	20.5265	0	0	0	0	0	0.0715
Jun	0	0	0	0	0	0	141.5728	23.7825	0	0.2440	0	0	0	0.0455
Sub-total	0	0	0	0	0	0	941.4639	152.5145	0	0.2440	0	0	0	0.7800
Jul	0	0	0	0	0	0	105.1083	30.6065	0	0	0	0	0	0.0195
Aug	0	0	0	0	0	0	11.1822	7.5180	0	0	0	0	0	0.0130
Sep	0	0	0	0	0	0	0	5.7575	0	0	0	0	0.6000	0.0390
Oct														
Nov														
Dec														
Total	0	0	0	0	0	0	1057.7544	196.3965	0	0.2440	0	0	0.6000	0.8515

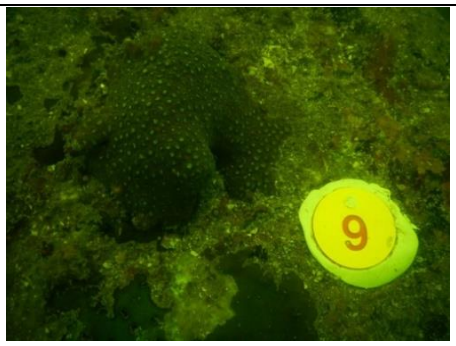
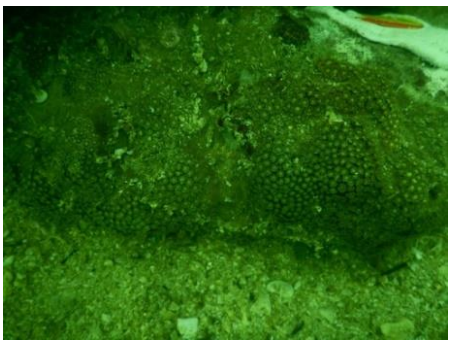
Notes:
(1) Broken concrete for recycling into aggregates.
(2) Plastics refer to plastic bottles/ containers, plastic sheets/ foam from packaging materials.
(3) Use the conversion factor : 1 full load of dumping truck being equivalent to 6.5m^3 by volume.

Appendix F Photo Records for Coral Monitoring

Photo Plate for Tagged and Re-tagged Corals at Control Site during the 11th Quarterly Coral Monitoring during Construction Phase on 21 September 2021

Tag #	Baseline (26 June 2018 & 3 December 2018)	21 September 2021
#1	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*
#2R	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*
#3	 *Psammocora superficialis*	 *Psammocora superficialis*
#4	 *Turbinaria peltata*	 *Turbinaria peltata*

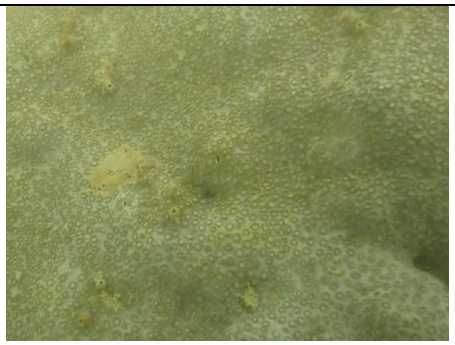
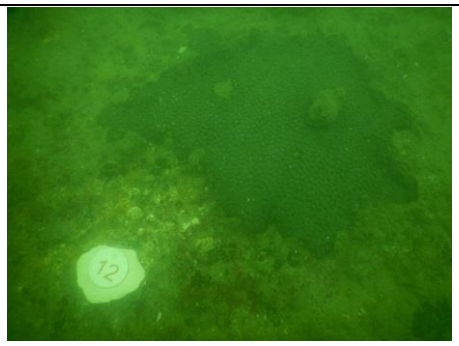
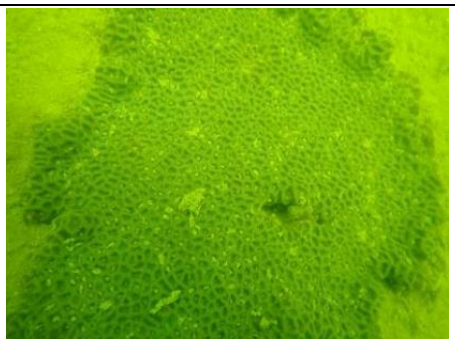
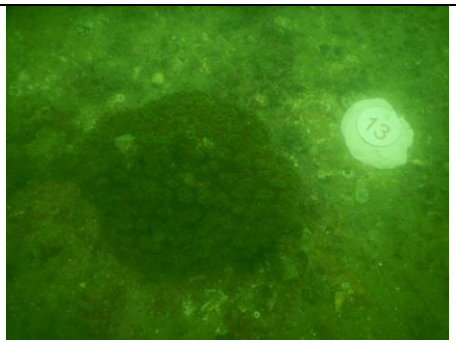
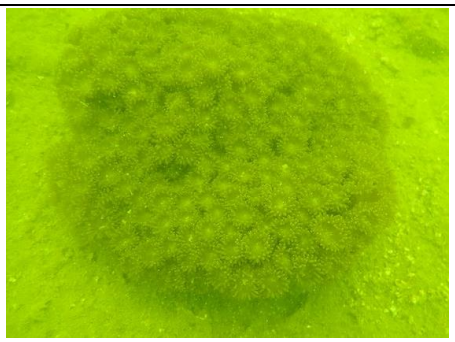
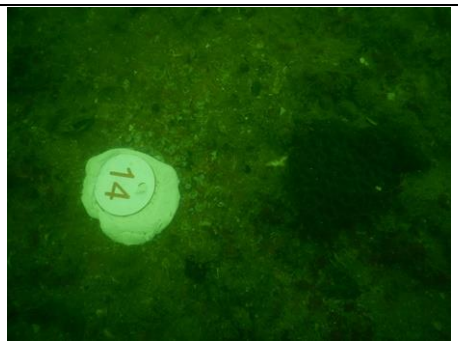
Tag #	Baseline (26 June 2018 & 3 December 2018)	21 September 2021
#5R	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*
#6	 *Cyphastrea serailia*	 *Cyphastrea serailia*
#7R	 *Coscinaraea* sp.	 Coscinaraea sp.
#8	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*

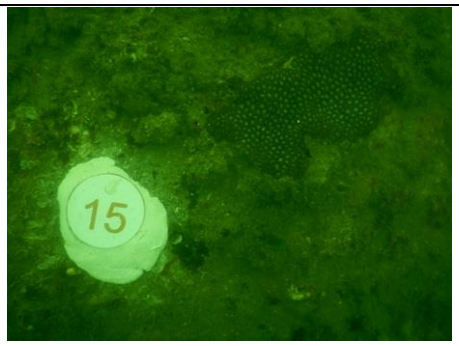
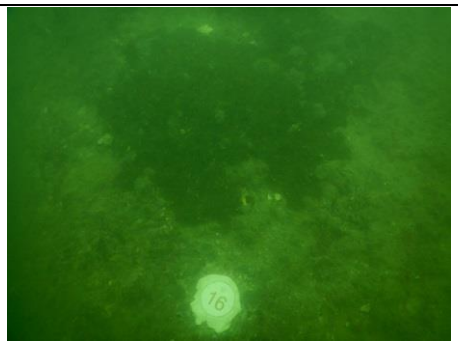
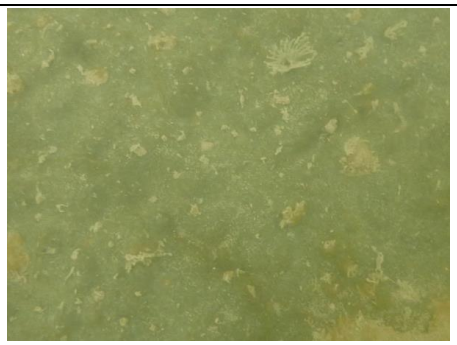
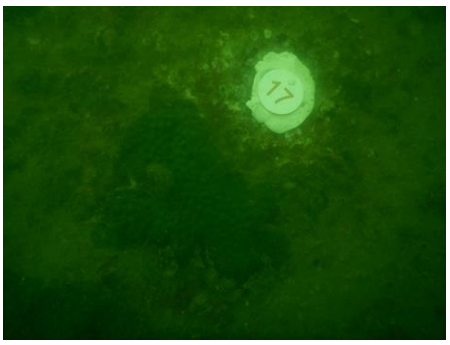
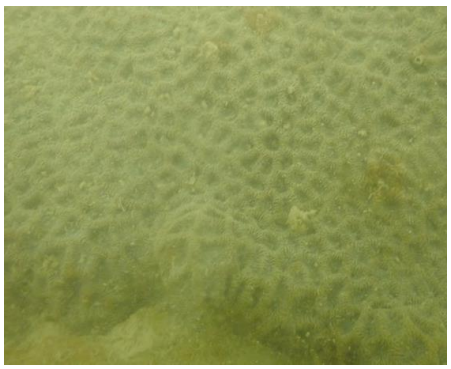
Tag #	Baseline (26 June 2018 & 3 December 2018)	21 September 2021
#9	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*
#10R	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*

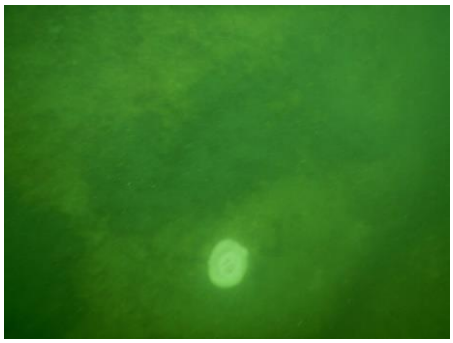
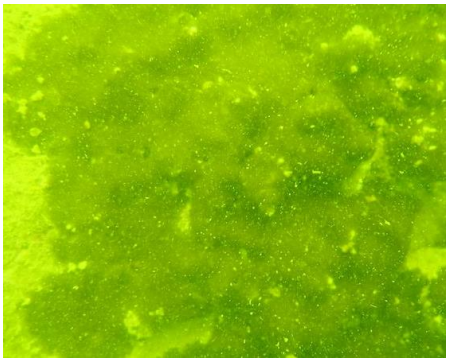
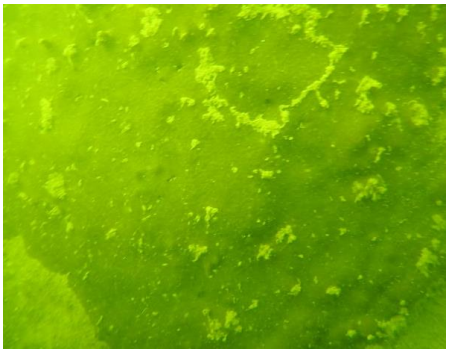
Notes:

i. The re-tagged corals were marked as ##**R**.

Photo Plate for Re-tagged Corals at Indirect Impact during the 11th Quarterly Coral Monitoring during Construction Phase on 21 September 2021

Tag #	Baseline (23 November 2018)	21 September 2021
#11R	 *Cyphastrea serailia*	 *Cyphastrea serailia*
#12R	 *Favites chinensis*	 *Favites chinensis*
#13R	 *Turbinaria peltata*	 *Turbinaria peltata*
#14R	 *Favites chinensis*	 *Favites chinensis*

Tag #	Baseline (23 November 2018)	21 September 2021
#15R	 *Goniopora stutchburyi*	 *Goniopora stutchburyi*
#16R	 *Psammocora superficialis*	 *Psammocora superficialis*
#17R	 *Favites chinensis*	 *Favites chinensis*
#18R	 *Psammocora superficialis*	 *Psammocora superficialis*

Tag #	Baseline (23 November 2018)	21 September 2021
#19R	 *Psammocora superficialis*	 *Psammocora superficialis*
#20R	 *Psammocora superficialis*	 *Psammocora superficialis*

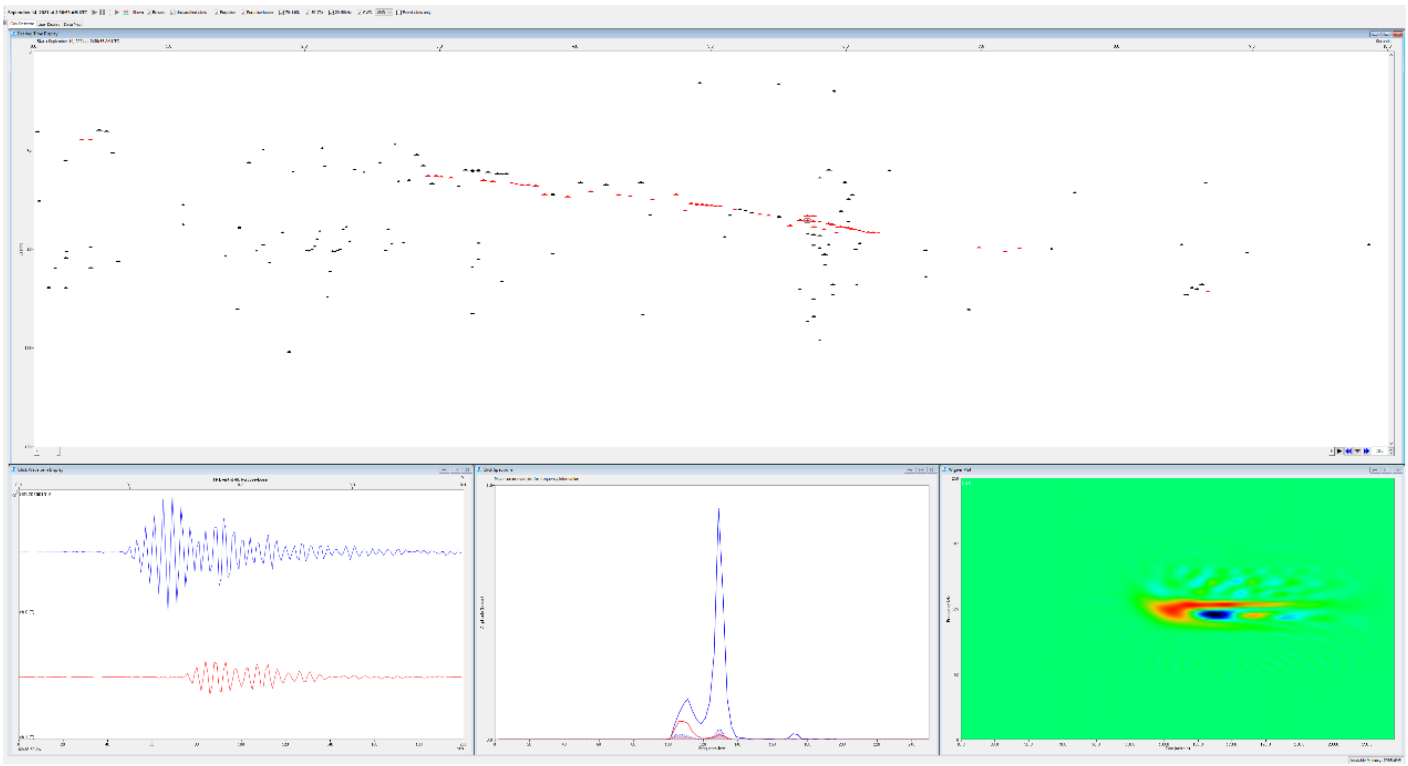
Notes:

i. The re-tagged corals were marked as ##**R**.

Appendix G Sound Spectrogram Records for Marine Mammal Monitoring

Sound spectrogram records of Vessel-based Line-Transect Survey Effort

Screen grab of sound spectrogram for sighting recorded during September 2021 Vessel-based Line-transect Survey



Appendix H Photo Records for White-bellied Sea Eagle Monitoring

Photo Plate for 37th Monthly WBSE monitoring

Adult WBSE Recorded in Shek Kwu Chau on 22 July 2021

Photo Plate for 38th Monthly WBSE monitoring

Adult WBSE Recorded in Shek Kwu Chau on 26 Augsut 2021

Photo Plate for 39th Monthly WBSE monitoring

Adult WBSE Recorded in Shek Kwu Chau on 21 September 2021

Appendix I Complaint Log

Statistical Summary of Environmental Complaints

Reporting Period	Environmental Complaint Statistics		
	Frequency	Cumulative	Complaint Nature
1 July 2021 – 31 July 2021	0	0	N/A
1 Aug 2021 – 31 Aug 2021	0	0	N/A
1 Sep 2021 – 30 Sep 2021	0	0	N/A

Statistical Summary of Environmental Summons

Reporting Period	Environmental Summons Statistics		
	Frequency	Cumulative	Details
1 July 2021 – 31 July 2021	0	0	N/A
1 Aug 2021 – 31 Aug 2021	0	0	N/A
1 Sep 2021 – 30 Sep 2021	0	0	N/A

Statistical Summary of Environmental Prosecution

Reporting Period	Environmental Prosecution Statistics		
	Frequency	Cumulative	Details
1 July 2021 – 31 July 2021	0	0	N/A
1 Aug 2021 – 31 Aug 2021	0	0	N/A
1 Sep 2021 – 30 Sep 2021	0	0	N/A