

Appendix A. Sampling Schedule

East of Sha Chau CMPs
Environmental Monitoring and Audit Sampling Schedule
(January 2021 - March 2026)

Parameter / Station Type	Station ID	Frequency	2021	2022	2023	2024	2025	2026																					
Pit Specific Sediment Chemistry *			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Active-Pit	ESC-NPAA	Monthly	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	2	2	2	2	2	2	2
	ESC-NPAB	Monthly	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	2	2	2	2	2	2	2
Pit-Edge	ESC-NEAA	Monthly	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	2	2	2	2	2	2	2
	ESC-NEAB	Monthly	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	2	2	2	2	2	2	2
Near-Pit	ESC-NNAA	Monthly	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	2	2	2	2	2	2	2
	ESC-NNAB	Monthly	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	2	2	2	2	2	2	2	2	2
Cumulative Impact Sediment Chemistry *			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near-field Stations	ESC-RNA	4 times per year		6				6		6				6		6				6		2				2			
	ESC-RNB1	4 times per year		6				6		6				6		6				6		2				2			
Mid-field Stations	ESC-RMA	4 times per year		6				6		6				6		6				6		2				2			
	ESC-RMB	4 times per year		6				6		6				6		6				6		2				2			
Capped Pit Stations	ESC-RCA1	4 times per year		6				6		6				6		6				6		2				2			
	ESC-RCB1	4 times per year		6				6		6				6		6				6		2				2			
Far-field Stations	ESC-RFA	4 times per year		6				6		6				6		6				6		2				2			
	ESC-RFB	4 times per year		6				6		6				6		6				6		2				2			
Ma Wan Station	MW1	4 times per year		6				6		6				6		6				6		2				2			
Sediment Toxicity Tests			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near-pit Stations	ESC-TDA	2 times per year		5						5						5 ^a						5					5		
	ESC-TDB1	2 times per year		5						5						5 ^a						5					5		
Reference Stations	ESC-TRA	2 times per year		5						5						5 ^a						5					5		
	ESC-TRB	2 times per year		5						5						5 ^a						5					5		
Ma Wan Station	MW1	2 times per year		5						5						5 ^a						5					5		
Tissue / Whole Body Sampling			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near-pit Stations	ESC-INA	2 times per year		+						+						+						+					+		
	ESC-INB	2 times per year		+						+						+						+					+		
Reference North	TNA	2 times per year		+						+						+						+					+		
	TNB	2 times per year		+						+						+						+					+		
Reference South	TSA	2 times per year		+						+						+						+					+		
	TSB	2 times per year		+						+						+						+					+		
Demersal Trawling			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Near-pit Stations	ESC-INA	4 times per year		5	5					5	5					5	5					5	5					5	5
	ESC-INB	4 times per year		5	5					5	5					5	5					5	5					5	5
Reference North	TNA	4 times per year		5	5					5	5					5	5					5	5					5	5
	TNB	4 times per year		5	5					5	5					5	5					5	5					5	5
Reference South	TSA	4 times per year		5	5					5	5					5	5					5	5					5	5
	TSB	4 times per year		5	5					5	5					5	5					5	5					5	5
Capping *			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Ebb Tide																													
Impact Station Downcurrent	ESC-IP1A	4 times per year *																											
	ESC-IP2A	4 times per year *																											
	ESC-IP3	4 times per year *																											
	ESC-IP4	4 times per year *																											
	ESC-IP5	4 times per year *																											
Intermediate Station Downcurrent	ESC-INE1A	4 times per year *																											
	ESC-INE2A	4 times per year *																											
	ESC-INE3A	4 times per year *																											
	ESC-INE4A	4 times per year *																											
	ESC-INE5A	4 times per year *																											
Reference Station Upcurrent	ESC-RFE1	4 times per year *																											
	ESC-RFE2	4 times per year *																											
	ESC-RFE3	4 times per year *																											
	ESC-RFE4	4 times per year *																											
	ESC-RFE5	4 times per year *																											
Ma Wan Station	MW1	4 times per year *																											
Flood Tide																													
Impact Station Downcurrent	ESC-IPF1	4 times per year *																											
	ESC-IPF2	4 times per year *																											
	ESC-IPF3	4 times per year *																											
Intermediate Station Downcurrent	ESC-INF1	4 times per year *																											
	ESC-INF2	4 times per year *																											
	ESC-INF3	4 times per year *																											
Reference Station Upcurrent	ESC-RFF1A	4 times per year *																											
	ESC-RFF2A	4 times per year *																											
	ESC-RFF3	4 times per year *																											
Ma Wan Station	MW1	4 times per year *																											
Routine Water Quality Monitoring *			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Ebb Tide																													
Impact Station Downcurrent	ESC-IP1A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-IP2A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-IP3	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-IP4	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-IP5	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
Intermediate Station Downcurrent	ESC-INE1A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-INE2A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-INE3A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-INE4A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-INE5A	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
Reference Station Upcurrent	ESC-RFE1	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-RFE2	Monthly*				4	4	4		4		4	4			4	4	4	4		2		2		2		2		2
	ESC-RFE3	Monthly*				4	4	4		4		4	4																

Appendix B. Water Quality Monitoring Results

Table B1: Action and Limit Levels of Water Quality for Dredging, Disposal and Capping Activities at ESC CMP V

Parameters	Action	Limit
Dissolved Oxygen (DO) in mg L ⁻¹ (Surface, Middle & Bottom) ⁽¹⁾	Surface and Middle Depth⁽²⁾ 5%-ile of baseline data for surface and middle layer = 3.76 and Significantly less than the reference station's mean DO (at the same tide of the same day)	Surface and Middle Depth⁽²⁾ 1%-ile of baseline data for surface and middle layer = 3.11 ⁽³⁾ and Significantly less than the reference station's mean DO (at the same tide of the same day)
	Bottom 5%-ile of baseline data for surface and middle layer = 2.96 and Significantly less than the reference station's mean DO (at the same tide of the same day)	Bottom The average of the impact station readings are < 2 and Significantly less than the reference station's mean DO (at the same tide of the same day)
Suspended Solids (SS) in mg L ⁻¹ (depth-averaged) ⁽⁵⁾	95%-ile of baseline data for depth-averaged = 37.88 and 120% of control station's SS at the same tide of the same day	99%-ile of baseline data for depth-averaged = 61.92 and 130% of control station's SS at the same tide of the same day
Turbidity in NTU (depth-averaged) ⁽⁴⁾⁽⁵⁾	95%-ile of baseline data = 28.14 and 120% of control station's Turbidity at the same tide of the same day	99%-ile of baseline data = 38.32 and 130% of control station's Turbidity at the same tide of the same day

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. Action and Limit Levels for DO for Surface and Middle layers were calculated from the combined pool of baseline surface layer data and baseline middle layer data.
3. Given the Action Level for DO for Surface and Middle layers has already been lower than 4 mg L⁻¹, it is proposed to set the Limit Level at 3.11 mg L⁻¹ which is the first percentile of the baseline data.
4. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
5. For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table B2: Water Column Profiling Results for ESC CMP Vb in March 2024

Station	Temp. (°C)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (%)	(mg L ⁻¹)	pH	Suspended Solids (mg L ⁻¹)
WCP 1 (Downstream)	19.22	32.35	1.51	98.36	7.50	8.19	2.5
WCP 2 (Upstream)	19.46	32.64	1.45	98.98	7.50	8.16	1.0
WQO (Dry Season)	N/A	29.37-35.90 [#]	N/A	N/A	>4	6.5-8.5	13.2

Notes:

1. [#] Not exceeding 10% of natural ambient level which is the result obtained from the Reference Station.
2. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
3. Cell shaded grey indicates value exceeding the WQO.

Table B3: In-situ Monitoring Results for Routine Water Quality Monitoring of ESC CMPs in March 2024

Station	Temp. (°C)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (%)	(mg L ⁻¹)	pH
RFE (Reference)	19.81	32.25	2.11	96.14	7.25	8.19
IPE (Impact)	19.89	32.26	1.85	96.25	7.25	8.18
INE (Intermediate)	20.00	32.66	1.40	94.52	7.09	8.14
Ma Wan	20.13	33.42	0.94	92.06	6.86	8.10
WQO (Dry Season)	N/A	29.02-35.47 [#]	N/A	N/A	>4	6.5-8.5

Notes:

1. [#] Not exceeding 10% of natural ambient level which is the result obtained from the Reference Station.
2. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
3. Cell shaded grey indicates value exceeding the WQO.

Table B4: Laboratory Results for Dissolved Metals and Metalloid in Routine Water Quality Monitoring of ESC CMPs in March 2024

Station	As (µg/L)	Cd (µg/L)	Cr (µg/L)	Cu (µg/L)	Pb (µg/L)	Hg (µg/L)	Ni (µg/L)	Ag (µg/L)	Zn (µg/L)
RFE	1.66	0.02	0.14	0.62	ND	0.001	0.61	ND	0.50
IPE	1.51	0.03	0.15	0.41	ND	0.001	0.58	ND	0.53
INE	1.51	0.02	0.15	0.38	ND	0.001	0.55	ND	0.54
Ma Wan	1.53	0.01	0.13	0.91	0.03	0.001	0.39	ND	0.96

Note:

1. "ND" indicates the concentrations of metals and metalloids are not detected.

Table B5: Laboratory Results for Nutrients and Suspended Solid in Routine Water Quality Monitoring of ESC CMPs in March 2024

Station	NH ₃ (mg/L)	TIN (mg/L)	BOD ₅ (mg/L)	SS (mg/L)
RFE	0.08	0.32	0.45	3.1
IPE	0.08	0.32	0.65	2.8
INE	0.10	0.31	0.63	2.2
Ma Wan	0.15	0.29	<LOR	3.0

WQO of TIN: 0.5 mg/L

Dry Season WQO of SS: 13.2 mg/L

Notes:

1. "<LOR" indicates the concentrations of contaminants are below the limit of reporting.
2. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
3. Cell shaded grey indicates value exceeding the WQO.

Appendix C. Graphical Presentations

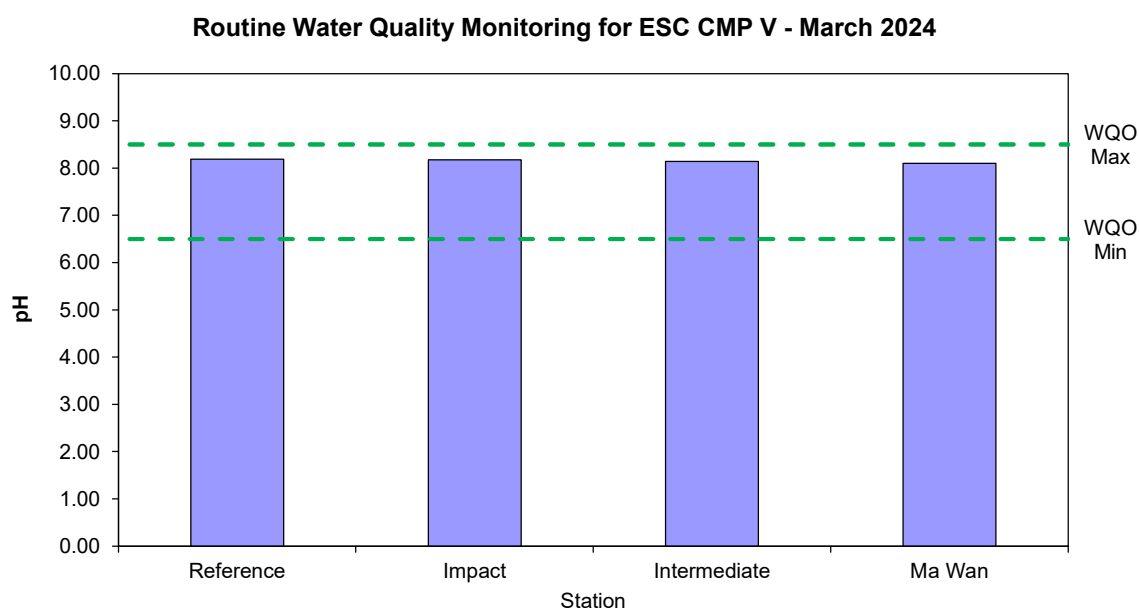


Figure 1: Level of pH recorded during Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

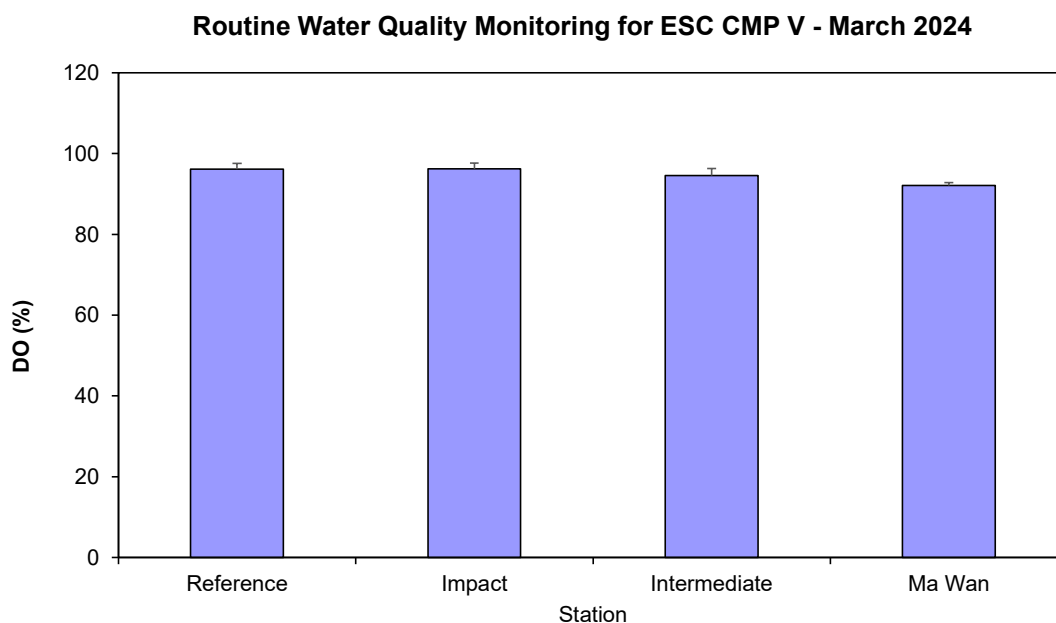


Figure 2: Level of Dissolved Oxygen (DO) (% saturation; mean + SD¹) recorded during Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

¹ The mean and standard deviation (SD) for in-situ data are the mean and SD for water columns within the area.

Routine Water Quality Monitoring for ESC CMP V - March 2024

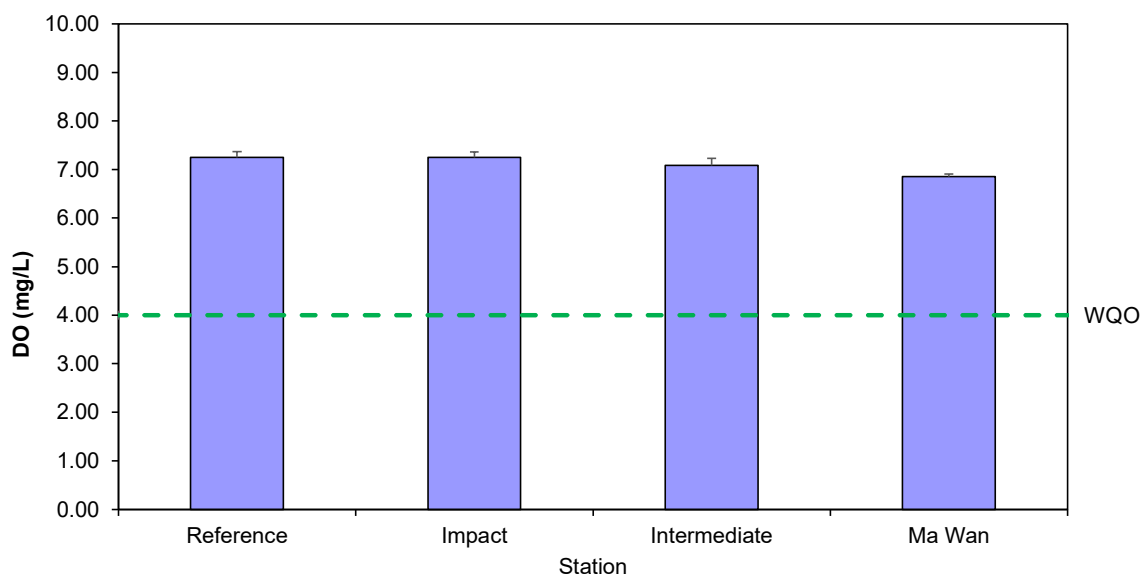


Figure 3: Concentration of Dissolved Oxygen (DO) (mg/L; mean + SD¹) recorded during Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

Routine Water Quality Monitoring for ESC CMP V - March 2024

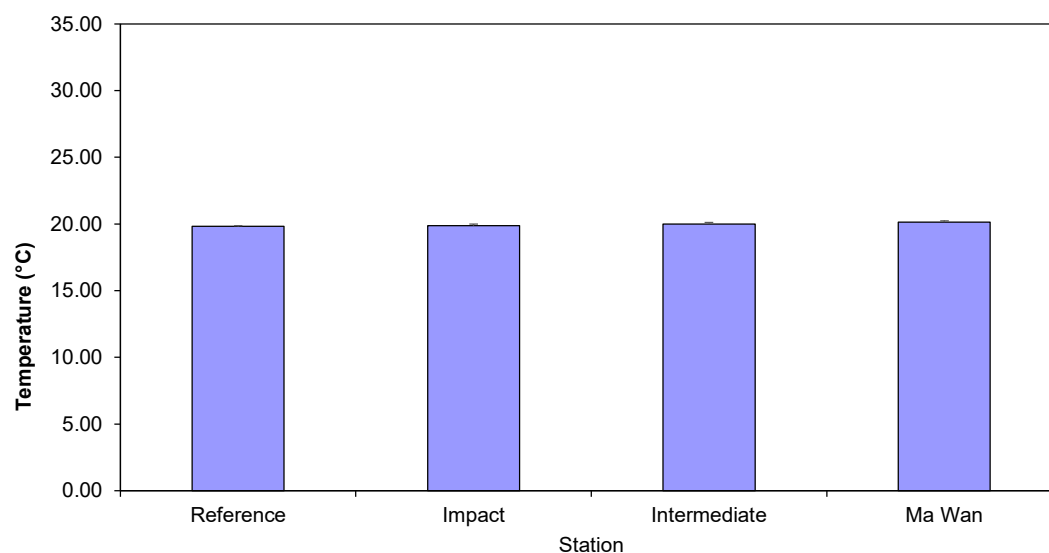


Figure 4: Level of Temperature (°C; mean + SD¹) recorded during Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

¹ The mean and standard deviation (SD) for in-situ data are the mean and SD for water columns within the area.

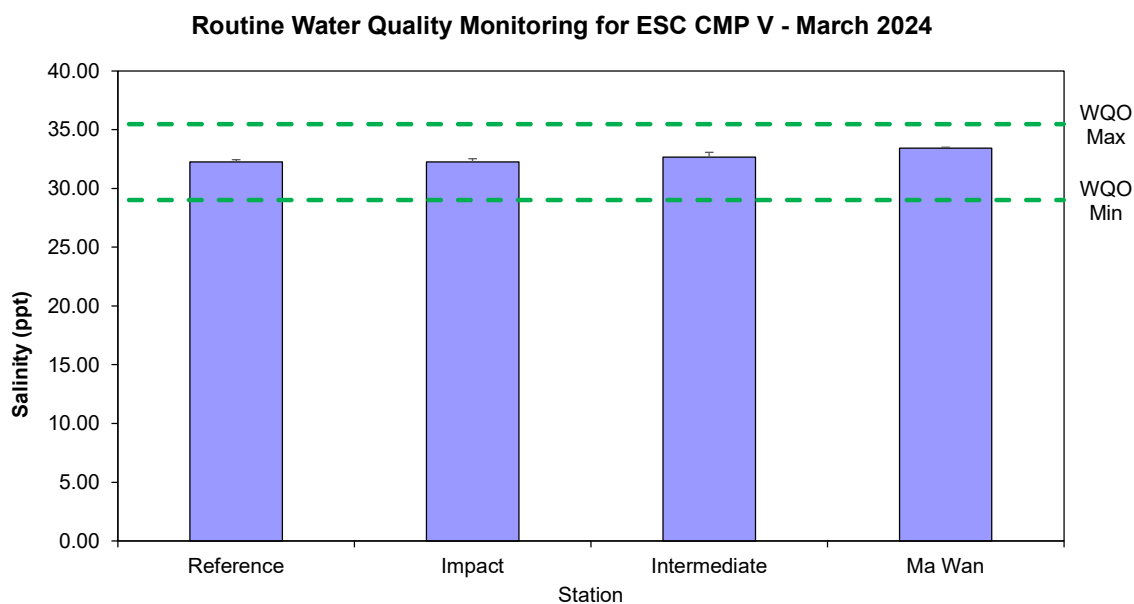


Figure 5: Level of Salinity (ppt; mean + SD¹) recorded during Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

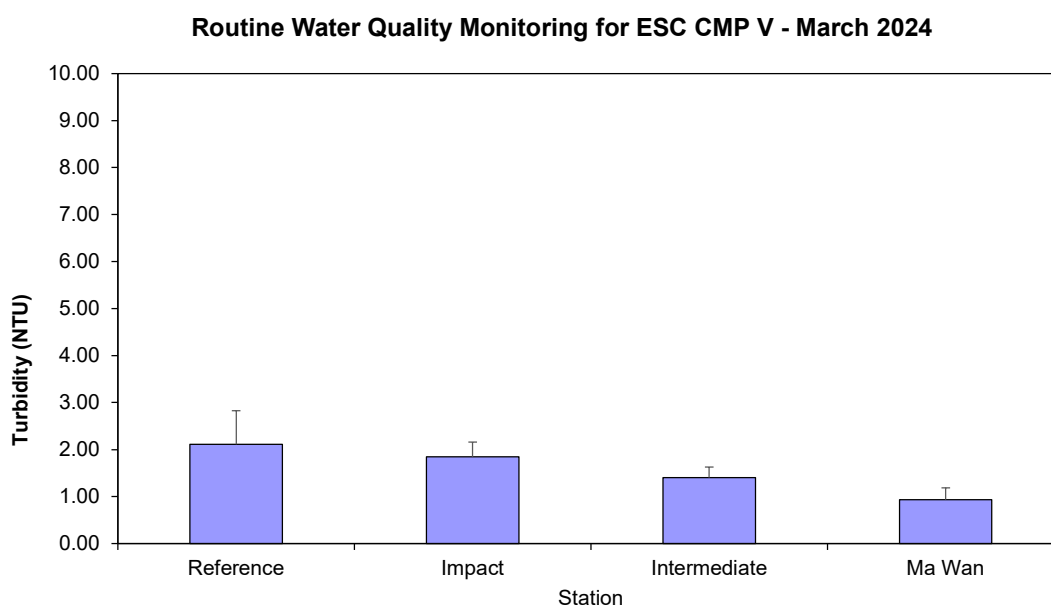


Figure 6: Level of Turbidity (NTU; mean + SD¹) recorded during Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

¹ The mean and standard deviation (SD) for in-situ data are the mean and SD for water columns within the area.

Routine Water Quality Monitoring for ESC CMP V March 2024

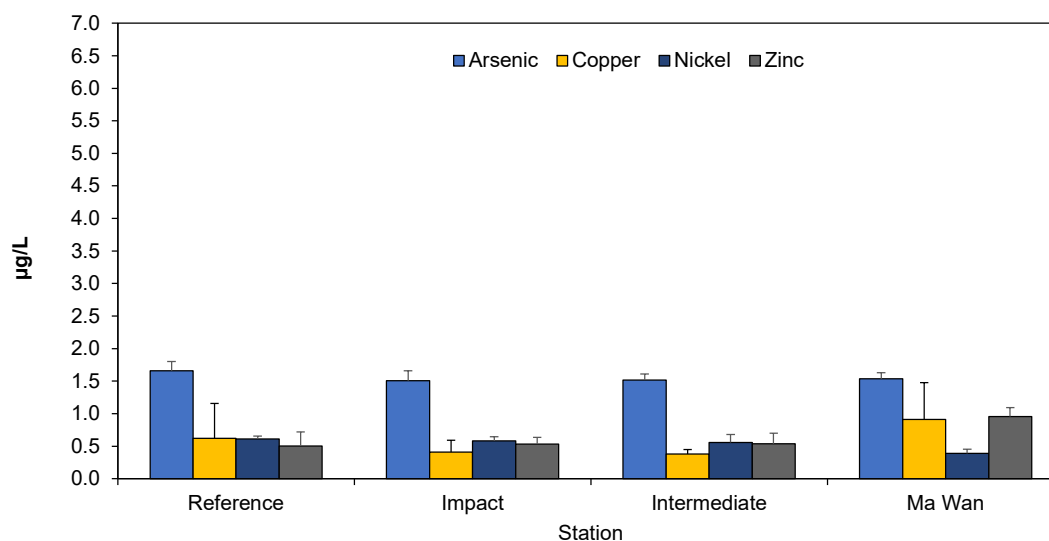


Figure 7: Concentration of Arsenic, Copper, Nickel, and Zinc (µg/L; mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

Routine Water Quality Monitoring for ESC CMP V March 2024

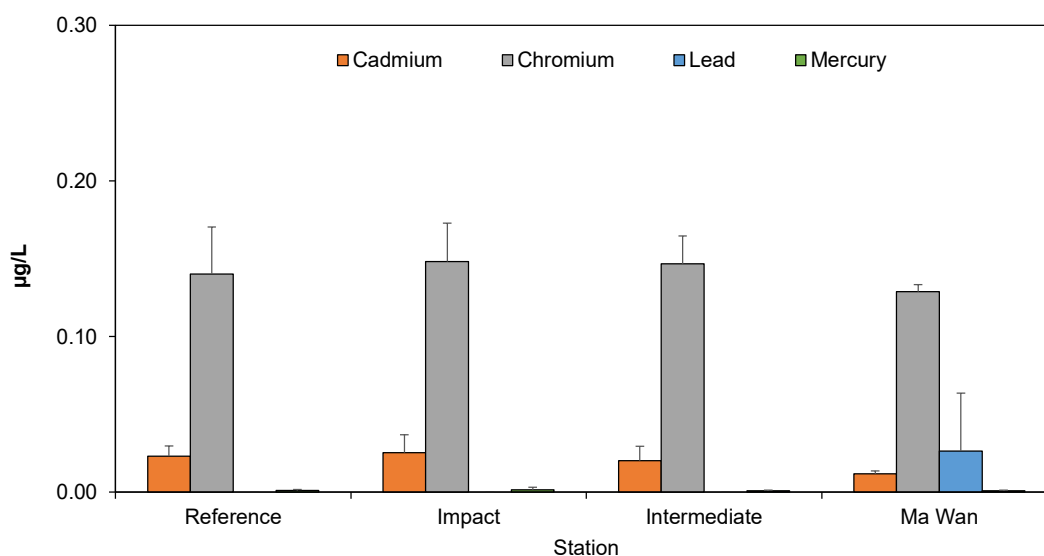


Figure 8: Concentration of Cadmium, Chromium, Lead and Mercury, (µg/L; mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

Routine Water Quality Monitoring for Nutrients - March 2024

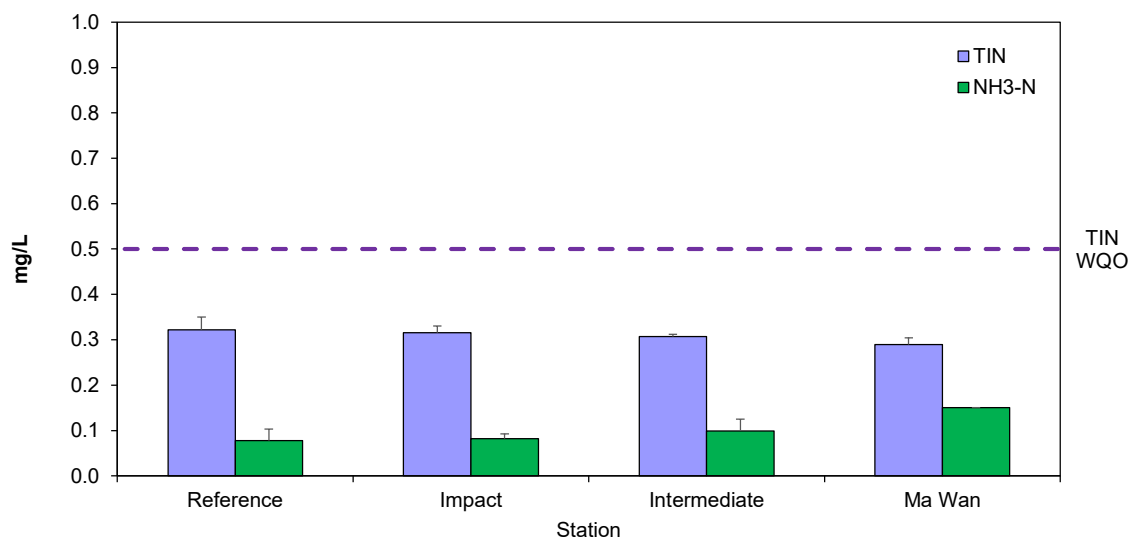


Figure 9: Concentration of Total Inorganic Nitrogen (TIN) and Ammonia Nitrogen (NH3-N) (mg/L; mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024

Routine Water Quality Monitoring for Biochemical Oxygen Demand (BOD5) - March 2024

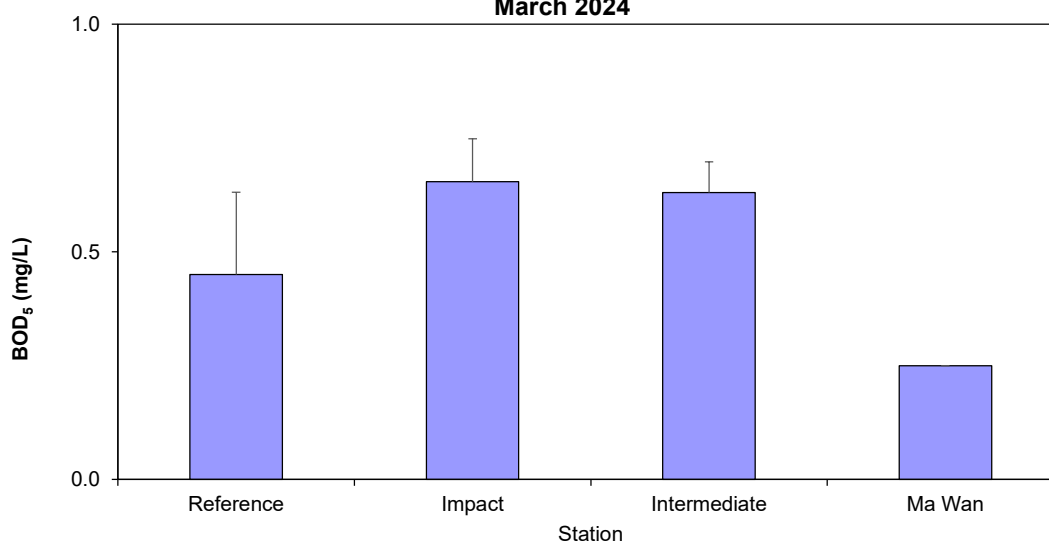


Figure 10: Level of Biochemical Oxygen Demand (BOD5) (mg/L; mean + SD) in water samples collected from Routine Water Quality Monitoring for disposal operations at ESC CMP V in March 2024