Contract No. NDO 05/2024 Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas

Water Quality Baseline Monitoring Report

Civil Engineering and Development Department

Revision: 8

2025-08-12

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Agreement No. CE 81/2023 (EP)
Independent Environmental Checker for Environmental Monitoring and Audit Works in Construction Phase for the Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas – Investigation

Water Quality Baseline Monitoring Report
9 September 2025

BY Email

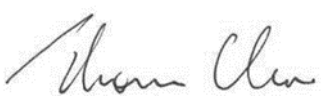
Dear Sir,

We refer to email of 19 August 2025 attaching the Water Quality Baseline Monitoring Report prepared by the Environmental Team (ET) of the captioned.

We would like to inform you that we have no adverse comment on the captioned submission. Therefore we write to verify the captioned submission in accordance with the EP Condition 3.3 of the EP-465/2013/A, EP-466/2013/A, EP-467/2013/A, EP-468/2013/A, EP-470/2013/A, EP-471/2013/A, EP-472/2013/A, EP-473/2013/A, EP-475/2013/A and EP-476/2013.

Should you have any queries, please contact the undersigned at 2828 5967.

Yours faithfully,
For and on behalf of the
Mott MacDonald Hong Kong Limited



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Executive Summary

Aurecon Hong Kong Limited (Aurecon) is commissioned by Civil Engineering and Development Department (CEDD) to provide Environmental Monitoring and Audit (EM&A) services for the works contracts in relation to Kwu Tung North and Fanling North New Development Areas ("KTN/FLN NDAs") Remaining Phase Developments (the Project) pursuant to the requirements of Environmental Team (ET) as specified in relevant Environmental Permit (EP), the EM&A Manual issued in the EIA stage, the updated EM&A Manual prepared for Contract No. NDO 14/2018 and/or the approved Environmental Impact Assessment (EIA) Report for the Project.

The EIA Report (AEIAR-175/2013) for North East New Territories New Development Areas ("NENT NDA") was approved with conditions under Environmental Impact Assessment Ordinance (EIAO) in 2013. The Environmental Permits for corresponding Designated Projects were also issued by Director of Environmental Protection (DEP) in November 2013. Subsequent to the findings of preliminary design and Planning and Engineering (P&E) Review for accommodating additional population in KTN and FLN NDAs, variations of Environmental Permit (VEP) were subsequently applied for ten EPs (i.e. EP-465/2013/A, EP-466/2013/A, EP-467/2013/A, EP-468/2013/A, EP-470/2013/A, EP-471/2013/A, EP-472/2013/A, EP-473/2013/A, EP-475/2013/A and EP-476/2013).

In accordance with the requirements specified in the EPs and the EM&A Manuals for the Project, a Baseline Monitoring Report (the Report) should be certified by the ET Leader, verified by the Independent Environmental Checker (IEC) and submitted to the DEP before commencement of construction of the Project.

The baseline monitoring works included air quality monitoring (AQM), construction noise monitoring (CNM) and water quality monitoring (WQM). This Report presents the results of baseline WQM (during the period between 15 November 2024 and 11 December 2024) at KTN-CS1&KTN-IS1 by which the Action Level (AL) and Limit Level (LL) for each monitoring parameter are determined with statistical analysis and review of the data retrieved during the baseline monitoring periods. The results of baseline water quality monitoring carried out at FLN-CS1 and FLN-IS1 (during the period between 3 August 2019 and 29 August 2019) by the Pre-construction ET (Fugro Technical Services Limited) is also summarised in this Report. The monitoring results of AQM, CNM and WQM at remaining monitoring stations will be documented in separately submitted baseline monitoring report(s).

1 Introduction

1.1 Background

1.1.1 The KTN/FLN NDAs development are implemented in two phases, comprising First Phase and Remaining Phase developments. The construction works for the First Phase development commenced in December 2019. The construction works for the Remaining Phase development (including site clearance and formation, roads, drainage, sewerage and water supply systems) will commence progressively from the first quarter of 2025. Remaining Phase Development of KTN/FLN NDA's (hereafter referred as the "Project").

1.1.2 The Project will be delivered under twelve (12) works contracts as below.

- Contract No. ND/2019/01: Kwu Tung North New Development Area, Phase 1: Site Formation and Infrastructure Works;
- Contract No. ND/2019/02: Kwu Tung North New Development Area, Phase 1: Roads and Drains between Kwu Tung North New Development Area and Shek Wu Hui;
- Contract No. ND/2019/04: Fanling North New Development Area, Phase 1: Fanling Bypass Eastern Section (Shek Wu San Tsuen North to Lung Yeuk Tau);
- Contract No. ND/2019/05: Fanling North New Development Area, Phase 1: Fanling Bypass Eastern Section (Shung Him Tong to Kau Lung Hang);
- Contract No. ND/2024/01: Site Formation and Infrastructure Works (South);
- Contract No. ND/2024/02: Site Formation and Infrastructure Works (North);
- Contract No. ND/2024/03: Improvement Works of Fanling Highway (Kwu Tung Portion) and Associated Works;
- Contract No. ND/2024/04: Improvement Works of Tai Tau Leng Roundabout and Po Shek Wu Road and Associated Works;
- Contract No. ND/2024/05: Improvement Works of Fanling Highway (Pak Shek Au Portion) and Associated Works;
- Contract No. ND/2024/06: Fresh Water and Flushing Water Service Reservoirs and Associated Works;
- Contract No. ND/2024/07: Site Formation and Infrastructure Works (East); and
- Contract No. ND/2024/08: Site Formation and Infrastructure Works (West).

1.1.3 The EIA Report (AEIAR-175/2013) for NENT NDA was approved with conditions under EIAO in 2013. The Environmental Permits for corresponding Designated Projects were also issued by DEP in November 2013. Subsequent to the findings of preliminary design and P&E Review for accommodating additional population in KTN and FLN NDAs, VEP were subsequently applied for ten EPs (i.e. EP-465/2013/A, EP-466/2013/A, EP-467/2013/A, EP-468/2013/A, EP-470/2013/A, EP-471/2013/A, EP-472/2013/A, EP-473/2013/A, EP-475/2013/A and EP-476/2013)

1.1.4 The site location plans of the works contracts are shown in **Figure 1.1** and **Figure 1.2**.

1.1.5 Aurecon was commissioned by CEDD to provide EM&A services for the works contracts in relation to the Project pursuant to the requirements as specified in relevant EP, the EM&A Manual issued in the EIA stage, the updated EM&A Manual prepared for Contract No. NDO 14/2018 and the approved EIA Report for the Project to discharge the duties of the ET for the Project, including the baseline monitoring works for various monitoring parameters (e.g. AQM, CNM, etc.).

1.1.6 In accordance with Condition 3.3 of the EPs (i.e. EP-465/2013/A, EP-466/2013/A, EP-467/2013/A, EP-468/2013/A, EP-470/2013/A, EP-471/2013/A, EP-472/2013/A, EP-473/2013/A, EP-475/2013/A and EP-476/2013) for the Project, the Baseline Monitoring Report certified by the ET Leader and verified by the IEC shall be submitted to the DEP at least two weeks before commencement of construction of the Project.

1.2 Purpose of this Report

1.2.1 The purpose of the Baseline Monitoring Report is to establish the baseline levels for water quality at KTN-CS1 and KTN-IS1 prior to the commencement of the works and to demonstrate the suitability of the proposed impact and control monitoring stations. These baseline levels will be used as the basis for compliance check during the impact monitoring in construction stage of the Project.

1.2.2 This Report presents the findings of the baseline water quality monitoring conducted between 15 November 2024 and 11 December 2024 at KTN-CS1 and KTN-IS1. The Report includes information on the monitoring methodology, parameters, locations, periods (e.g. date, time, frequency & duration), results, and other observations (e.g. influencing factors, etc.) for water quality monitoring during the baseline monitoring periods.

1.2.3 The result summary of baseline water quality monitoring carried out between 3 August 2019 and 29 August 2019 at FLN-CS1 and FLN-IS1 by the Pre-construction ET (Fugro Technical Services Limited) [1](hereafter referred as the "Pre-construction Baseline WQM Report") is also presented in this Report. The relevant sections extracted from the Pre-construction Baseline WQM Report for FLN-CS1 and FLN-IS1 are attached in **Appendix 1.1**, the report can be retrieved from the Project Webpage of KTN/FLN NDAs First Phase development.

1.2.4 The adoption of baseline water quality monitoring data at FLN-CS1 and FLN-IS1 from Pre-construction Baseline WQM Report along with the decision to carry out a new set of baseline monitoring at KTN-CS1 and KTN-IS1, is justified for the following reasons:

- The locations FLN-CS1 and FLN-IS1 are currently situated within works areas for Contract Nos. ND/2019/05 and ND/2019/04 for the First Phase Development of the Project with construction activities being undertaken. The current site conditions imply that a new sets of baseline WQM data at those stations are not practically feasible in accordance with Section 4.5.3 of the Updated EM&A Manual.

- The locations KTN-CS1 and KTN-IS1 are situated near the works areas for Contract Nos. ND/2024/01 and ND/2024/02 for the Remaining Development of the Project. Considering that the baseline water quality monitoring conducted by the Pre-construction ET was performed four years ago and no construction activity had occurred nearby since then, obtaining a new sets of baseline water quality monitoring data is feasible to reflect the current baseline conditions.

[1] Furgo (2020) Baseline Water Quality Monitoring Report (KTN & FLN NDA) Part 1, Contract No.NDO 14/2018 – Advance and First Stage Works of Kwu Tung North and Fanling North New Development Area (Source: https://www.ktnfln-ndas-firstphase.hk/image/catalog/EP_Environmental_Permit/Baseline_Water_Monitoring_Report.pdf)

1.3 Structure of the Report

- Section 1 – Introduction
- Section 2 – Water Quality Monitoring
- Section 3 – Conclusion

2 Water Quality Monitoring

2.1 Monitoring Requirement

2.1.1 In accordance with the EM&A Manual issued in the EIA stage and the updated EM&A Manual prepared for Contract No. NDO 14/2018, baseline monitoring was conducted three days per week at the designated monitoring stations in Kwu Tung area and Fanling area for four consecutive weeks prior to the commencement of construction works of the Project and there were no construction activities in the vicinity of the stations during the baseline monitoring.

2.2 Monitoring Locations, Parameters and Frequency

2.2.1 According to the EM&A Manuals, baseline monitoring shall be carried out at designated water quality monitoring locations, FLN-CS1, FLN-IS1, KTN-CS1 and KTN-IS1 under this Project. The water quality monitoring locations for baseline and impact monitoring are listed in **Table 2.1** below and shown in **Figure 2.1** and **Figure 2.2**.

Table 2.1 Water Quality Monitoring Stations of KTN and FLN NDA

Project Area	Station	Description	Easting	Northing	Baseline Monitoring	Impact Monitoring	Locations
KTN NDA	KTN-CS1	Control Station	828167	841858	Yes	During construction of channel	Centreline of river, upstream of the channel
	KTN-IS1	Impact Station	828036	842282	Yes	During construction of channel	Centreline of river, downstream of the channel
FLN NDA	FLN-CS1	Control Station	833130	839622	Yes	During construction of channel	Centreline of river, upstream of the channel
	FLN -IS1	Impact Station	833310	840355	Yes	During construction of channel	Centreline of river, downstream of the channel

2.2.2 The monitoring parameters, frequency and duration of baseline water quality monitoring are summarized in **Table 2.2**. Other relevant data, including monitoring position, time, water depth, weather conditions and any special phenomena or work underway at the construction site were also recorded.

Table 2.2 Water Quality Monitoring Parameters, Frequency and Duration

Parameter	Frequency	Duration
Dissolved oxygen (DO), temperature, turbidity, pH, stream water depth and suspended solids (SS), Unionised Ammonia, Ammonia Nitrogen (1), Nitrate Nitrogen, Orthophosphate	3 days in a week	At least 4 weeks prior to the commencement of construction

Note:
(1) Ammonia Nitrogen is the analysis parameter required for the calculation of Unionised Ammonia.

2.2.3 The range of measured water depths were 0.08 m - 1.10 m at KTN-CS1 and 0.39 m - 0.4 m at KTN-IS1 respectively. Due to a shallow water depth with low flow rates in rivers, all the monitoring conducted during baseline monitoring were sampled at mid-depth level.

2.2.4 According to the Pre-construction Baseline WQM Report, the maximum measured water depths were 0.90 m - 1.20 m at FLN-CS1 and 0.90 m - 1.20 m at FLN-IS1 respectively.

2.2.5 Duplicate water samples were collected at each sampling depth for laboratory measurement of SS, Unionised Ammonia, Ammonia Nitrogen, Nitrate Nitrogen and Orthophosphate. Samples were stored in high density polythene bottles, packed in ice (cooled to 4 °C without being frozen), and delivered to the laboratory on the same day of collection for analysis

2.3 Monitoring Equipment

2.3.1 The measurement of DO, temperature, turbidity, pH and stream water depth were undertaken *in-situ*. *In-situ* monitoring instruments in compliance with the specifications listed under Section 4.8 of the Updated EM&A Manual issued in the EIA stage were adopted to undertake the water quality monitoring for the Project. Water quality monitoring equipment (including a multi-functional water quality meter for measuring DO, temperature, turbidity and pH) with the following specifications was supplied and maintained by the ET.

Dissolved Oxygen and Temperature Measuring Equipment

2.3.2 The instrument (YSI ProDSS multi-parameters) was portable, weatherproof DO measuring instrument with cable and sensor, and use a DC power source. It was capable of measuring:

- DO level in the range of 0 – 20 mg/L and 0 – 200% saturation; and
- Temperature of 0 – 45 °C.

2.3.3 The equipment had membrane electrode with automatic temperature compensation complete with a cable.

Turbidity Measurement Instrument

2.3.4 The instrument (YSI ProDSS multi-parameters) was a portable, weatherproof turbidity-measuring instrument using a DC power source. It had photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU

pH Measurement Instrument

2.3.5 The instrument (YSI ProDSS multi-parameters) consisted of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It was readable to 0.1 pH in a range of 0 to 14. Standard buffer solutions of at least pH 7 and pH 10 were used for calibration of the instrument before and after use.

Water Sampler

2.3.6 A water sampler was required for SS monitoring. It comprised a transparent PVC cylinder, with a capacity of 2.2 litres, which can be effectively sealed with latex cups at both ends. The sampler had a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

2.3.7 For sampling location at KTN-CS1 with shallow water depth, plastic bucket had been used during the baseline monitoring.

Water Depth Detector

2.3.8 Water depth ruler was used to measure water depth due to shallow water (less than 1 m depth) at monitoring stations within Kwu Tung area.

Sample Containers and Storage

2.3.9 Water samples for SS were stored in high density polythene bottles with no preservative added. For testing Unionised Ammonia, Ammonia Nitrogen, Nitrate Nitrogen and Orthophosphate, water samples were stored in high density polythene bottles preserved with sulphuric acid. Water samples were packed in ice (cooled to 4°C without being frozen) and delivered to the laboratory within 24 hours of collected and be analysed as soon as possible after collection. Sufficient volume of samples was collected to achieve the detection limit stated in **Table 2.4**.

Calibration of *In-situ* Instruments

2.3.10 The pH meter, DO meter and turbidimeter were checked and calibrated before use. The pH meter, DO meter and turbidimeter were checked, calibrated and certified by a laboratory accredited under HOKLAS scheme, and subsequently re-calibrated at three monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter were carried out before measurement at each monitoring location.

2.3.11 **Table 2.3** summarises the equipment used in the baseline water quality monitoring at KTN-CS1 and KTN-IS1. The calibration certificates are attached in **Appendix 2.1**.

2.3.12 The calibration certificates and the summary of the monitoring equipment used in the baseline water quality monitoring at FLN-CS1 and FLN-IS1 by the Pre-construction ET (Fugro Technical Services Limited) are attached in **Appendix 1.1**.

Table 2.3 *In-situ* Water Quality Monitoring Equipment deployed for Baseline Water Quality Monitoring at KTN-CS1 and KTN-IS1

Baseline Monitoring	Equipment	Model	Quantity	Serial No.	Parameter	Range	Accuracy	Resolution
Baseline Water Quality Monitoring at KTN-CS1 and KTN-IS1	Water Sampler	Wildco 2.2L Water Sampler with messenger / plastic bucket	2	N/A	N/A	N/A	N/A	N/A
	Multi-functional Water Quality Meter	YSI ProDSS (multi-parameters)	2	15M101091 and 22C106561	Dissolved Oxygen (DO)	0 to 500%	• 0 to 200%: ±1% of reading • 200 to 500%: ±8% of reading	0.1% or 1% air saturation (user selectable)
						0 to 50 mg/L	• 0 to 20 mg/L: ±0.1 mg/L or 1% of reading, whichever is greater • 20 to 50 mg/L: ±8% of reading	0.1 or 0.01 mg/L (user selectable)
					Temperature	-5 to 50 °C	±0.2 °C	0.1 °C
					pH	0 to 14 pH units	±0.2 pH units	0.01 units
					Turbidity	0 to 4000 NTU	• 0 to 999 NTU: 0.3 NTU or ±2% of reading, whichever is greater • 1000 to 4000 NTU: ±5% of reading	0.01 NTU
					Salinity	0 to 70 ppt	• ±1.0% of reading or ±0.1 ppt, whichever is greater	0.01 ppt
	Water Depth Ruler	鼎峯 0708	2	N/A	Water depth	0 – 7 m (Used for water depth less than 1 m)	±0.01 m	0.01 m
	Positioning Equipment	Garmin (GPSmap 78s)	1	1WL223754	Positioning	N/A	GPS: ±1m	1 m

2.4 Monitoring Methodology

2.4.1 The monitoring methodology for baseline water quality monitoring at FLN-CS1 and FLN-IS1 conducted by the Pre-construction ET is presented in **Appendix 1.1** while the monitoring methodology for baseline water quality monitoring at KTN-CS1 and KTN-IS1 is presented from **Section 2.4.2** to **Section 2.4.6**.

2.4.1 Water samples were collected at an appropriate water depth using a sealable transparent PVC cylinder at KTN-CS1 and KTN-IS1 with deeper water. For sampling location at KTN-CS1 with shallow water depth, a plastic bucket was used as an alternative. Usually, water was then transferred to the sample bottles until they were filled to the top with no remaining air space before the lid was securely screwed on.

2.4.2 Multi-functional water quality meters were checked, calibrated and certified by Quality Pro Test-Consult Limited (HOKLAS reg no. 259) before use, and would be subsequently re-calibrated at 3-monthly intervals throughout all stages of the water quality monitoring. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before measurement at each monitoring location. For the on-site calibration of field equipment, the BS 127:1993, Guide to Field and On-Site Test Methods for the Analysis of Water should be observed.

2.4.3 Water samples for suspended solids measurement were collected in high density polythene bottles, packed in ice (chilled to 4 °C without being frozen), and delivered to the laboratory as soon as possible after collection.

2.4.4 Water sampling equipment deployed during the monitoring programme was decontaminated by manual washing and rinsed with clean distilled water after each sampling location.

2.4.5 All sampling bottles were labelled with the sample ID (including the indication of sampling station), laboratory number and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible after the sampling. All samples were stored in a cool box and kept at less than 4 °C without being frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory. The laboratory determination works started within 24 hours after collection of water samples.

2.5 Laboratory Measurement / Analysis

2.5.1 Analyses of SS, Unionised Ammonia, Ammonia Nitrogen, Nitrate Nitrogen and Orthophosphate were carried out by HOKLAS accredited laboratory (ALS Technichem (HK) Pty Limited). At least two replicate samples from each independent sampling event were collected for the SS, Unionised Ammonia, Ammonia Nitrogen, Nitrate Nitrogen and Orthophosphate measurement. Sufficient water samples (about 1,000 mL) were collected at the monitoring stations for carrying out the laboratory determination of SS, Unionised Ammonia, Ammonia Nitrogen, Nitrate Nitrogen and Orthophosphate concentration. The analytical methods are presented in **Table 2.4**.

2.5.2 The analytical methods of laboratory testing for baseline water quality monitoring at FLN-CS1 and FLN-IS1 conducted by the Pre-construction ET is presented in **Appendix 1.1**.

Table 2.4 Analytical Methods Applied to Water Quality Samples

Baseline Monitoring	Parameters	Analytical Method (1)	Limits of Reporting
Baseline Wate Quality Monitoring at KTN-CS1 and KTN-IS1	Suspended Solids	APHA 2540D	2 mg/L
	Unionised Ammonia	By Calculation	0.001 mg/L
	Ammonia Nitrogen	APHA 4500-NH_3 G	0.01 mg/L
	Nitrate Nitrogen	APHA 4500-NO_3: I	0.01 mg/L
	Orthophosphate	APHA 4500-P: B & F	0.01 mg/L

Note:
(1) APHA: American Public Health Association Standard Methods for the Examination of Water and Wastewater.

2.6 QA/QC Requirements

Decontamination Procedures

2.6.1 Water sampling equipment used during the course of the monitoring process was decontaminated by manual washing and rinsed with distilled water after each sampling event. All of the disposable components/ accessories were discarded after sampling.

Sampling Management and Supervision

2.6.2 All sampling bottles were labelled with the sample ID numbers (including the sampling station), and sampling date. Water samples were dispatched to the testing laboratory for analysis as soon as possible. All the collected samples were stored in a cool box to keep the temperature less than 4 ℃ but without frozen. All water samples were handled under chain of custody protocols and relinquished to the laboratory representatives at locations specified by the laboratory.

Quality Control Measures for Sample Testing

2.6.3 Quality control of laboratory analysis of water samples was performed by ALS for every batch of 20 samples:

- A minimum of 1 laboratory method blank was analyzed;
- A minimum of 1 sample duplicate was analyzed; and
- A minimum of 1 sample matrix spike was analyzed.

2.7 Baseline Monitoring Result

2.7.1 Baseline water quality monitoring at KTN-CS1 and KTN-IS1 was conducted between 15 November 2024 and 11 December 2024. The detailed monitoring schedule is shown in **Appendix 2.2**. The baseline water quality monitoring results are summarized in **Table 2.5**. Details of the monitoring results and data presentations of the water quality at KTN-CS1 and KTN-IS1 are shown in **Appendix 2.3**. The laboratory testing reports and quality control summary table are shown in **Appendix 2.4** and **Appendix 2.5** respectively.

2.7.2 The result summary of baseline water quality monitoring carried out between 3 August 2019 and 29 August 2019 at FLN-CS1 and FLN-IS1 by the Pre-construction ET (Fugro Technical Services Limited) is also presented in **Table 2.5**. Details of the monitoring results and data presentations of the water quality at FLN-CS1 and FLN-IS1 conducted by the Pre-construction ET are shown in **Appendix 1.1**.

Table 2.5 Baseline Monitoring Result

Locations		Parameters								
		Temperature (°C)	pH	DO (mg/L)	Turbidity (NTU)	SS (mg/L)	Unionized Ammonia (mg/L)(1)	Ammonia Nitrogen (mg/L)	Orthophosphate (mg/L)(2)	Nitrate Nitrogen (mg/L)
KTN-CS1	Average	21.2	7.59	8.04	306.17	293	0.001	0.07	0.03	0.67
	Minimum	18.6	7.32	6.89	16.23	17	<0.001	0.02	<0.01	0.31
	Maximum	24.2	8.13	8.80	2009.96	1815	0.004	0.16	0.08	1.04
KTN-IS1	Average	20.7	7.39	7.95	31.02	34	0.001	0.08	0.07	0.70
	Minimum	17.7	7.05	6.21	6.29	6	<0.001	0.05	0.06	0.48
	Maximum	24.2	7.65	8.84	78.29	146	0.001	0.23	0.09	1.34
FLN-CS1(3)	Average	29.6	7.74	8.49	15.25	12	0.0059	0.25	0.11	0.56
	Minimum	26.8	7.12	7.79	6.01	3	0.0012	0.18	0.06	0.05
	Maximum	31.1	8.64	9.30	15.25	60	0.0161	0.34	0.22	2.60
FLN-IS1(3)	Average	29.3	7.61	8.65	18.64	12	0.0054	0.27	0.14	0.41
	Minimum	25.9	6.87	7.83	6.10	3	0.0011	0.18	0.08	0.05
	Maximum	31.1	7.92	9.82	95.92	70	0.0107	0.40	0.53	0.61

Note:

(1) For the Unionized Ammonia concentrations below the reporting limit stipulated in **Table 2.4**, the Unionized Ammonia concentration is taken as 0.001 mg/L for the calculation of depth-averaged value.

(2) For the Orthophosphate concentrations below the reporting limit stipulated in **Table 2.4**, the Orthophosphate concentration is taken as 0.1 mg/L for the calculation of depth-averaged value.

(3) Monitoring results extracted from the baseline water quality monitoring report prepared by the First Phase Pre-construction ET, the relevant sections of the report are attached in **Appendix 1.1**.

2.7.3 During the baseline water quality monitoring at KTN-CS1 and KTN-IS1, fluctuations of DO, SS and Nitrate Nitrogen levels were recorded. Some fluctuations might be associated with the adverse weathers during the baseline monitoring period:

- Relatively high SS concentration with an average of 146 mg/L was recorded at KTN-IS1 on 15 November 2024 during the heavy rainfall after typhoon TORAJI while relatively low concentration of DO with an average of 6.21 mg/L was recorded at KTN-IS1 on the same day; and

- High level of Nitrate Nitrogen with an average of 1.34 mg/L was recorded at KTN-IS1 on 15 November 2024 during the heavy rainfall after typhoon TORAJI.

2.7.4 The abovementioned data recorded at KTN-IS1 during baseline monitoring period are considered as outliers which are excluded in the formulation of the Action and Limit Levels. Outliers were determined using a 95% of confidence level. The depth-averaged data falls beyond the range of lower limit and upper limit under 95% of confidence level is considered as outlier.

2.7.5 The criteria of action and limit levels for water quality monitoring are defined in **Table 2.6**.

Table 2.6 Action and Limit Levels for Water Quality

Parameters	Action Level	Limit Level
DO in mg/L (depth average)	< 5%-ile of baseline data	< 4 mg/L or < 1%-ile of baseline data
SS in mg/L (depth average)	> 95%-ile of baseline data or 120% of upstream control station	20 mg/L or > 99%-ile of baseline data or 130% of upstream control station
Turbidity in NTU (depth average)	> 95%-ile of baseline data or 120% of upstream control station	> 99%-ile of baseline data or 130% of upstream control station
Unionized Ammonia in mg/L (depth average)	> 95%-ile of baseline data or 120% of upstream control station	0.021 mg/L or > 99%-ile of baseline data or 130% of upstream control station
Nitrate Nitrogen in mg/L (depth average)	> 95%-ile of baseline data or 120% of upstream control station	> 99%-ile of baseline data or 130% of upstream control station
Orthophosphate in mg/L (depth average)	> 95%-ile of baseline data or 120% of upstream control station	> 99%-ile of baseline data or 130% of upstream control station

Notes:

(1) "Depth average" is calculated by taking the arithmetic mean of all three depths. However, due to a shallow water depth with low flow rates in rivers, all the monitoring would be located at mid-depth level.

(2) For DO, non-compliance of the water quality limit occurs when monitoring result is lower than the limit.

(3) For SS, turbidity, Unionized Ammonia, Nitrate Nitrogen and Orthophosphate, non-compliance of the water quality limit occurs when monitoring result is higher than the limit.

2.7.6 Based on the criteria listed in **Table 2.6**, the action and limit levels for water quality are determined in **Table 2.7**.

Table 2.7 Action and Limit Levels of Water Quality

Monitoring Station ID	Parameters	Action	Limit
KTN-IS1	DO in mg/L (depth average)	< 7.18	< 4(1)
	SS in mg/L (depth average)	> 62 or >120% of upstream control station	> 85(2) or >130% of upstream control station
	Turbidity in NTU (depth average)	> 66.48 or >120% of upstream control station	> 75.92 or >130% of upstream control station
	Unionized Ammonia in mg/L (depth average)	> 0.001(3) or >120% of upstream control station	> 0.021(3)(4) or >130% of upstream control station
	Nitrate nitrogen in mg/L (depth average)	> 0.89 or >120% of upstream control station	> 0.96 or >130% of upstream control station
	Orthophosphate in mg/L (depth average)	> 0.085 or >120% of upstream control station	> 0.089 or >130% of upstream control station
FLN-IS1(5)	DO in mg/L (depth average)	<7.84	< 4(1)
	SS in mg/L (depth average)	> 55 or >120% of upstream control station	> 68(2) or >130% of upstream control station
	Turbidity in NTU (depth average)	> 73.92 or >120% of upstream control station	> 92.37 or >130% of upstream control station
	Unionized Ammonia in mg/L (depth average)	> 0.0093(3) or >120% of upstream control station	> 0.021(4) or >130% of upstream control station
	Nitrate nitrogen in mg/L (depth average)	> 0.59 or >120% of upstream control station	> 0.61 or >130% of upstream control station
	Orthophosphate in mg/L (depth average)	> 0.33 or >120% of upstream control station	> 0.49 or >130% of upstream control station

Notes:

(1) The 1%-ile of baseline DO data are 6.66 mg/L at KTN-IS1 and 7.83 mg/L at FLN-IS1 respectively, which are higher than 4 mg/L. Thus, DO concentration of 4 mg/L, which is in line with the Water Quality Objectives, is adopted as the limit level in DO level at KTN-IS1 and FLN-IS1.

(2) The 99%-ile of baseline SS data are 85 mg/L at KTN-IS1 and 68 mg/L at FLN-IS1 respectively, which are higher than 20 mg/L. Thus, SS concentration of 85 mg/L or 130% of upstream control station is adopted as the limit level at KTN-IS1 while SS concentration of 68 mg/L or 130% of upstream control station is adopted as the limit level at FLN-IS1.

(3) For the Unionized Ammonia concentrations below the reporting limit stipulated in **Table 2.4**, the Unionized Ammonia concentration is taken as 0.001 mg/L for the determination of Action Level and Limit Level of depth-averaged value.

(4) The 99%-ile of baseline Unionized Ammonia data are 0.001 mg/L at KTN-IS1 and 0.0104 mg/L at FLN-IS1 respectively, which are lower than 0.021mg/L. Thus, Unionized Ammonia concentration of 0.021 mg/L or 130% of upstream control station is adopted as the limit level at both KTN-IS1 and FLN-IS1.

(5) The action and limit levels at FLN-IS1 are determined by the monitoring results extracted from the baseline water quality monitoring report prepared by the Pre-construction ET, the relevant sections of the report are attached in **Appendix 1.1**.

2.8 Event and Action Plan

2.8.1 The Action and Limit levels for water quality are shown in **Table 2.7**. Should non-compliance of the criteria occur, action in accordance with the Event/ Action Plans in **Table 2.8** shall be carried out.

Table 2.8 Event and Action Plan for Water Quality

Event	Action			
	ET	IEC	ER	Contractor
Action Level being exceeded by one sampling day	1. Inform IEC, Contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; and 3. Discuss remedial measures with IEC and Contractor and ER.	1. Discuss with ET, ER and Contractor on the implemented mitigation measures; 2. Review proposals on remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with IEC, ET and Contractor on the implemented mitigation measures; 2. Make agreement on the remedial measures to be implemented; 3. Supervise the implementation of agreed remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment; 5. Consider changes of working methods; 6. Discuss with ER, ET and IEC and purpose remedial measures to IEC and ER; and 7. Implement the agreed mitigation measures.
Action Level being exceeded by more than one consecutive sampling days	1. Repeat in-situ measurement on next day of exceedance to confirm findings; 2. Inform IEC, Contractor and ER; 3. Check monitoring data, all plant, equipment and Contractor's working methods; 4. Discuss remedial measures with IEC, contractor and ER 5. Ensure remedial measures are implemented	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the proposed mitigation measures; 2. Make agreement on the remedial measures to be implemented ; and 3. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of remedial measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed mitigation measures.

Event	Action			
	ET	IEC	ER	Contractor
Limit Level being exceeded by one sampling days	1. Repeat measurement on next day of exceedance to confirm findings; 2. Inform IEC, Contractor and ER; 3. Rectify unacceptable practice; 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Consider changes of working methods; 6. Discuss mitigation measures with IEC, ER and Contractor; and 7. Ensure the agreed remedial measures are implemented	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the implemented remedial measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; and 4. Discuss with ET, IEC and Contractor on the effectiveness of the implemented remedial measures.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed remedial measures.

Event	Action			
	ET	IEC	ER	Contractor
Limit Level being exceeded by more than one consecutive sampling days	1. Inform IEC, contractor and ER; 2. Check monitoring data, all plant, equipment and Contractor's working methods; 3. Discuss mitigation measures with IEC, ER and Contractor; and 4. Ensure mitigation measures are implemented; and 5. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days	1. Discuss with ET, Contractor and ER on the implemented mitigation measures; 2. Review the proposed remedial measures submitted by Contractor and advise the ER accordingly; and 3. Review and advise the ET and ER on the effectiveness of the implemented mitigation measures.	1. Discuss with ET, IEC and Contractor on the implemented remedial measures; 2. Request Contractor to critically review the working methods; 3. Make agreement on the remedial measures to be implemented; 4. Discuss with ET and IEC on the effectiveness of the implemented mitigation measures; and 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the dredging activities until no exceedance of Limit level.	1. Identify source(s) of impact; 2. Inform the ER and confirm notification of the non-compliance in writing; 3. Rectify unacceptable practice; 4. Check all plant and equipment and consider changes of working methods; 5. Discuss with ET, IEC and ER and submit proposal of additional mitigation measures to ER and IEC within 3 working days of notification; and 6. Implement the agreed remedial measures. 7. As directed by the ER, to slow down or stop all or part of the dredging activities until no exceedance of Limit level.

Notes:
ET: Environmental Team
IEC: Independent Environmental Checker
ER: Engineer's Representative
EPD: Environmental Protection Department

3 Conclusion

3.1 Revision for Inclusion in the EM&A Manual

3.1.1 In accordance with the EM&A Manual issued in the EIA stage and the updated EM&A Manual prepared for Contract No. NDO 14/2018, baseline monitoring for water quality at KTN-CS1, KTN-IS1, FLN-CS1 and FLN-IS1 have been conducted prior to commencement of the construction works under the Project. The adoption of baseline water quality monitoring data at FLN-CS1 and FLN-IS1 from Pre-construction Baseline WQM Report along with the decision to carry out a new set of baseline monitoring at KTN-CS1 and KTN-IS1, is justified for the following reasons:

- The locations FLN-CS1 and FLN-IS1 are currently situated within works areas for Contract Nos. ND/2019/05 and ND/2019/04 for the First Phase Development of the Project with construction activities being undertaken. The current site conditions imply that a new sets of baseline WQM data at those stations are not practically feasible in accordance with Section 4.5.3 of the Updated EM&A Manual.

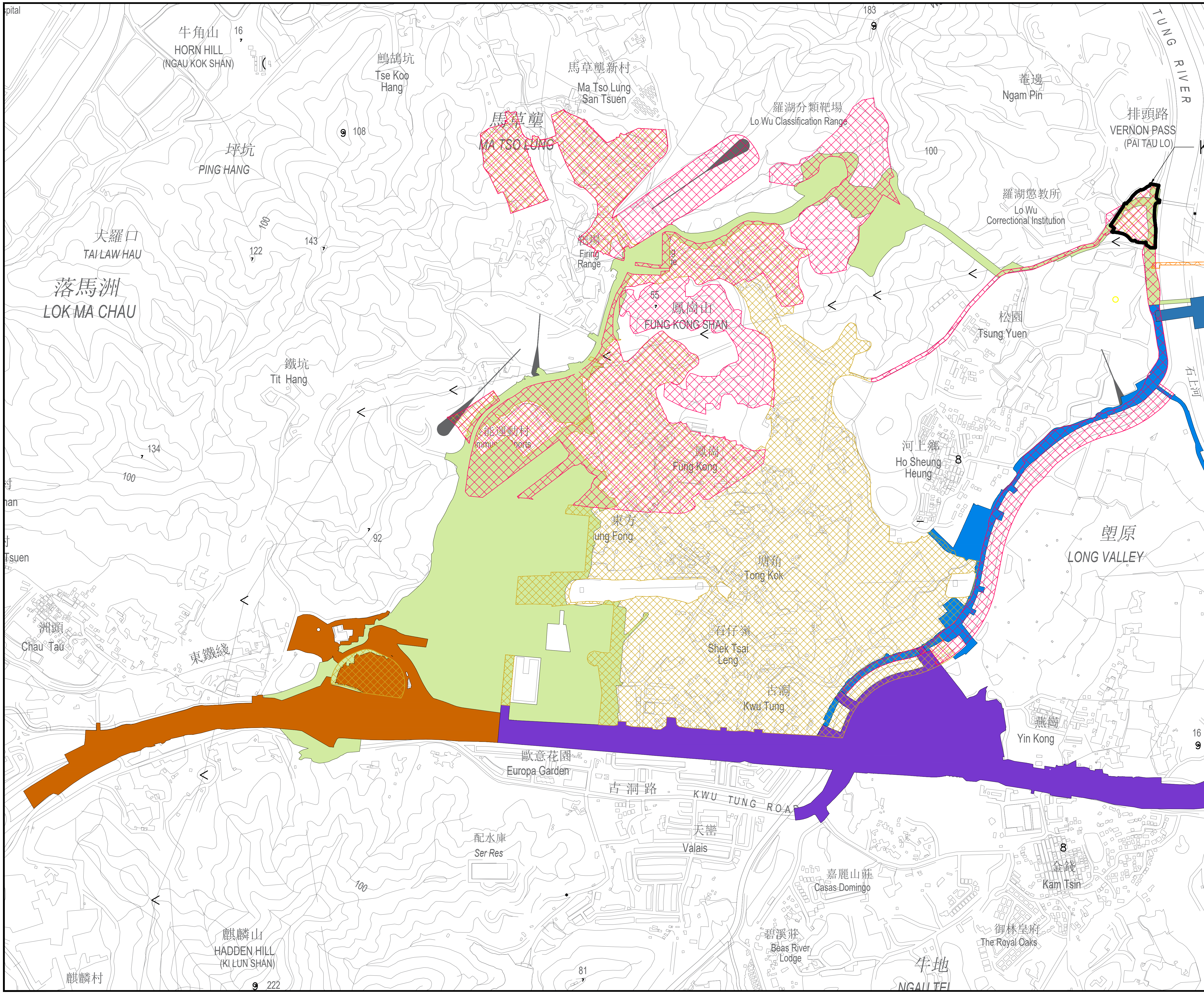
- The locations KTN-CS1 and KTN-IS1 are situated near the works areas for Contract Nos. ND/2024/01 and ND/2024/02 for the Remaining Development of the Project. Considering that the baseline water quality monitoring conducted by the Pre-construction ET was performed four years ago and no construction activity had occurred nearby since then, obtaining a new sets of baseline water quality monitoring data is feasible to reflect the current baseline conditions.

3.1.2 This report summarizes the baseline monitoring locations, requirements, and equipment adopted in baseline water quality monitoring.

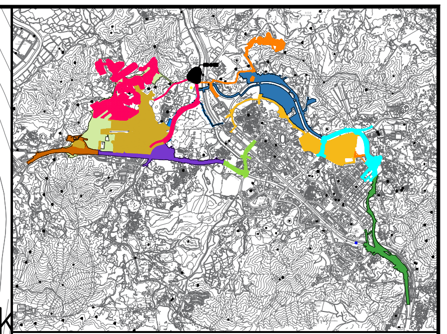
3.1.3 Baseline water quality monitoring was carried out at FLN-CS1 and FLN-IS1 during the period between 3 August 2019 and 29 August 2019 by the Pre-construction ET (Fugro Technical Services Limited) while the baseline water quality monitoring at KTN-CS1 and KTN-IS1 was carried out between 15 November 2024 and 11 December 2024 by remaining phase ET (Aurecon Hong Kong Limited).

3.1.4 The baseline water quality monitoring data at FLN-CS1 and FLN-IS1 from the Pre-construction ET is still considered as valid and being adopted in this report after reviewing the current site conditions of monitoring location FLN-CS1 and FLN-IS1.

Figure 1.1
Layout Plan of the Project at KTN NDA



牛角山
HORN HILL
(NGAU KOK SHAN)
鴿鵠坑
Tse Koo Hang
馬草壟新村
Ma Tso Lung San Tsuen
馬草壟
MA TSO LUNG
坪坑
PING HANG
羅湖分類靶場
Lo Wu Classification Range
菴邊
Ngam Pin
排頭路
VERNON PASS
(PAI TAU LO)
TUNG RIVER
羅湖懲教所
Lo Wu Correctional Institution
大羅口
TAI LAW HAU
落馬洲
LOK MA CHAU
Firing Range
鳳崗山
FUNG KONG SHAN
松園
Tsung Yuen
鐵坑
Tit Hang
鳳崗
Fung Kong
河上鄉
Ho Sheung Heung
望原
LONG VALLEY
塘角
Tong Kok
洲頭
Chau Tau
東鐵綫
石仔嶺
Shek Tsai Leng
古洞
Kwu Tung
燕崗
Yin Kong
歐意花園
Europa Garden
古洞路
KWU TUNG ROAD
天巒
Valais
配水庫
Ser Res
嘉麗山莊
Casas Domingo
金錢
Kam Tsin
麒麟山
HADDEN HILL
(KI LUN SHAN)
碧溪莊
Beas River Lodge
御林皇府
The Royal Oaks
牛地
NGAU TEI
麒麟村



Key Plan

Legend

- ND/2019/01
- ND/2019/02
- ND/2019/04
- ND/2019/05
- ND/2024/01
- ND/2024/02
- ND/2024/03
- ND/2024/04
- ND/2024/05
- ND/2024/06
- ND/2024/07
- ND/2024/08

Client

Project

Contract No. NDO 05/2024
Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tong North and Fanling North New Development Areas

Drawing Title

Location and Site Layout Plan in KTN NDA

Consultant

aurecon
www.aurecongroup.com

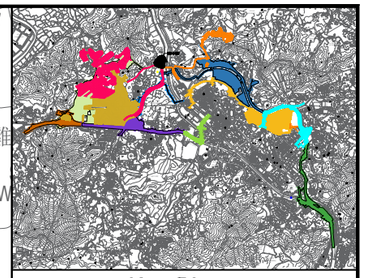
Scale	Date	Rev
Not to Scale	13 Nov 2024	0

Drawing Number

Figure 1.1

Figure 1.2
Layout Plan of the Project at FLN NDA

KTN-2 SITE



Key Plan

Legend

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- ND/2019/02
- ND/2019/04
- ND/2019/05
- ND/2024/01
- ND/2024/02
- ND/2024/03
- ND/2024/04
- ND/2024/05
- ND/2024/06
- ND/2024/07
- ND/2024/08

Client

Project

Contract No. NDO 05/2024
Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tong North and Fanling North New Development Areas

Drawing Title

Location and Site Layout Plan in FLN NDA

Consultant

aurecon
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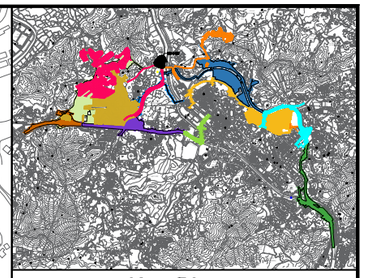
Scale	Date	Rev
Not to Scale	24 Oct 2024	0

Drawing Number

Figure 1.2a



Key Plan

Legend

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- ND/2019/02
- ND/2019/04
- ND/2019/05
- ND/2024/01
- ND/2024/02
- ND/2024/03
- ND/2024/04
- ND/2024/05
- ND/2024/06
- ND/2024/07
- ND/2024/08

Client

Project

Contract No. NDO 05/2024
Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tong North and Fanling North New Development Areas

Drawing Title

Location and Site Layout Plan in FLN NDA

Consultant

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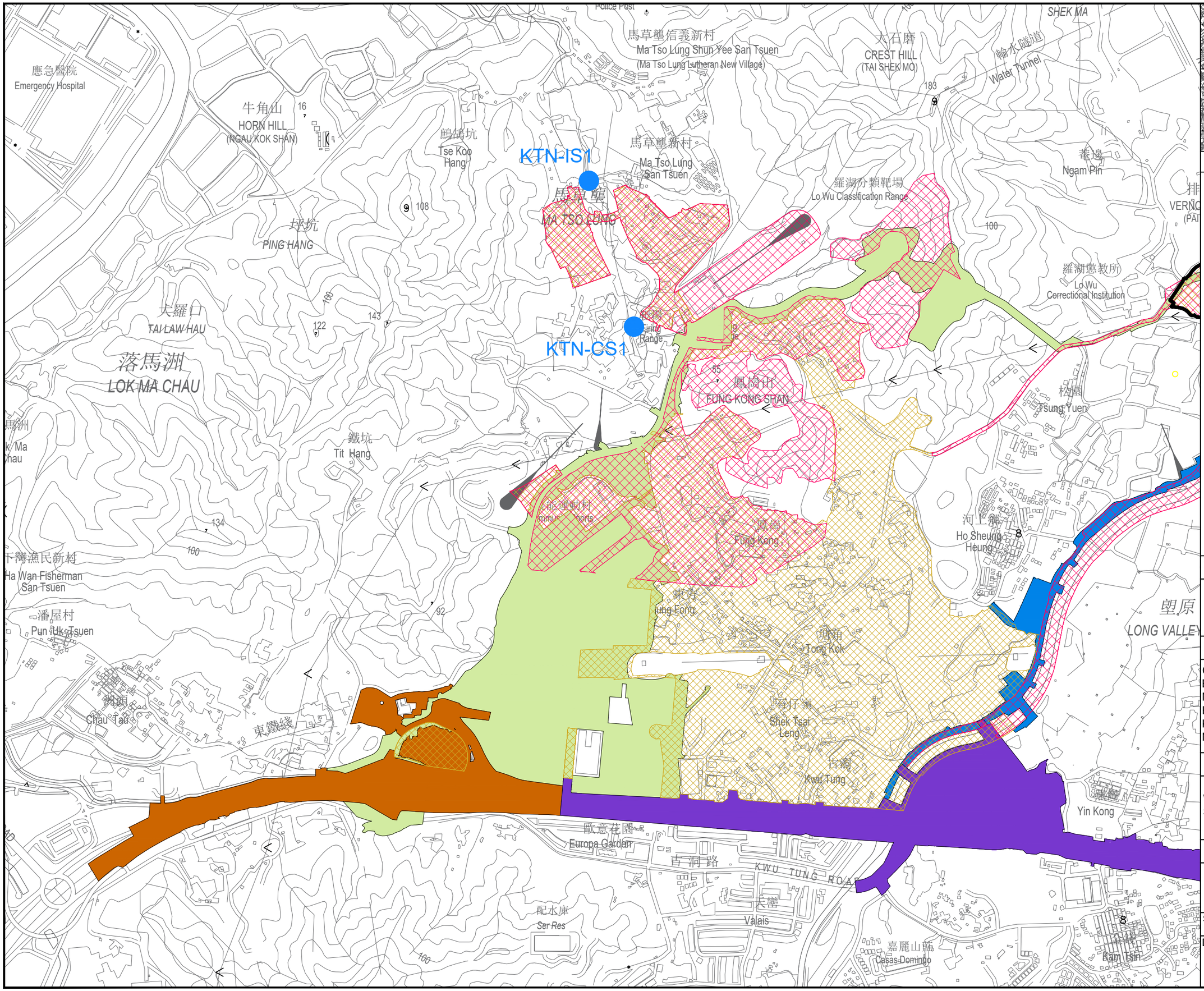
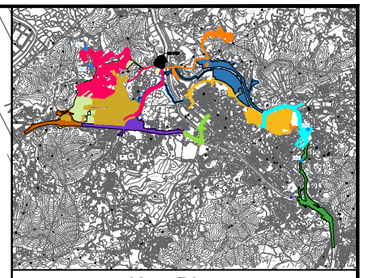
Scale	Date	Rev
Not to Scale	24 Oct 2024	0

Drawing Number

Figure 1.2b

Figure 2.1
Locations of Water Quality Monitoring Stations for KTN NDA





Key Plan

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- ND/2019/04
- ND/2019/05
- ND/2024/01
- ND/2024/02
- ND/2024/03
- ND/2024/04
- ND/2024/05
- ND/2024/06
- ND/2024/07
- ND/2024/08
- Water Quality Monitoring Station for Baseline Monitoring Carried out by Remaining Phase ET

Client

Project

Contract No. NDO 05/2024
Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tong North and Fanling North New Development Areas

Drawing Title

Water Quality Monitoring Stations in KTN NDA

Consultant

aurecon
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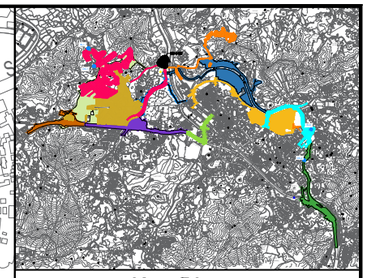
Scale	Date	Rev
Not to Scale	13 Nov 2024	0

Drawing Number

Figure 2.1a

Figure 2.2 Locations of Water Quality Monitoring Stations for FLN NDA



Key Plan

Legend

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- ND/2019/02
- ND/2019/04
- ND/2019/05
- ND/2024/01
- ND/2024/02
- ND/2024/03
- ND/2024/04
- ND/2024/05
- ND/2024/06
- ND/2024/07
- ND/2024/08
- Water Quality Monitoring Station for Baseline Monitoring Carried out by Pre-construction ET

Client

Project

Contract No. NDO 05/2024
Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tong North and Fanling North New Development Areas

Drawing Title

Water Quality Monitoring Stations in FLN NDA

Consultant

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Scale	Date	Rev
Not to Scale	24 Oct 2024	0

Drawing Number

Figure 2.2

Appendix 1.1
Relevant Sections of Baseline Water Quality Monitoring Report Prepared by The Pre-construction ET

(Source: https://www.ktnfln-ndas-firstphase.hk/image/catalog/EP_Environmental_Permit/Baseline_Water_Monitoring_Report.pdf)

Monitoring Requirement, Monitoring Equipment and Methodology

(Page 3 to Page 6 of the Pre-construction Baseline WQM Report

2. WATER QUALITY MONITORING

2.1 Monitoring Requirement

2.1.1 With reference to Section 4 of the Updated EM&A Manual (0032/19/ED/0108), the baseline water quality monitoring will be conducted to determine the Dissolved Oxygen (DO), temperature, turbidity, pH, Suspended Solids (SS), unionized ammonia, nitrate nitrogen and orthophosphate at the proposed monitoring locations prior to the commencement of the construction works. At each proposed monitoring station, it will be carried out 3 days per week, for four weeks prior to the commencement of the works.

2.1.2 Replicate in-situ measurements and samples collected from each independent sampling event shall be collected to ensure a robust statistically interpretable database. DO, temperature, pH and turbidity should be measured in-situ whereas SS should be determined by an accredited laboratory.

2.1.3 Other relevant data shall also be recorded, including monitoring location / position, time, water depth, weather conditions and any special phenomena or work underway at the construction site.

2.1.4 Measurements shall be taken at 3 water depths, namely, lm below water surface, mid-depth and 1m above river bed, except where the water depth is less than 6m, the mid-depth station may be omitted. Should the water depth be less than 3m, only the mid-depth station will be monitored.

2.2 Monitoring Locations

2.2.1 With reference to Section 4.3.2 of the Updated EM&A Manual (0032/19/ED/0108), 4 proposed water quality monitoring stations (FLN-CS1, FLN-IS1, KTN-CS1 & KTN-IS1) are proposed and summarized in **Table 2.1**. The locations of the proposed water quality stations are shown in **Figure 2.1 & Figure 2.2**

Table 2.1 Summary of Water Quality Monitoring Stations

Monitoring Station	Description	Locations	Measurment Periods
KTN NDA			
KTN-CS1	Control Station for KTN NDA	Centerline of river, upstream of the channel	During construction of channel
KTN-IS1	Impact Station for KTN NDA	Centerline of river, downstream of the channel	During construction of channel
FLN NDA			
FLN-CS1	Control Station for FLN NDA	Centerline of river, upstream of the channel	During construction of channel
FLN-IS1	Impact Station for FLN NDA	Centerline of river, downstream of the channel	During construction of channel

2.3 Monitoring Equipment and Methodology

2.3.1 **Table 2.2** summarizes the water quality monitoring equipment model being used for this project.

Table 2.2 Water Quality Monitoring Equipment

Parameter	Equipment	Model	Range	Equipment Accuracy
Temperature, Dissolved Oxygen, salinity, pH, Turbidity	Water Quality Monitoring Device	YSI 6920V2-2-M Sonde	Temp: -5 to 50°C DO: 0-50mg/L DO%: 0-500% Sal: 0 to 70 ppt pH: 0 to 14 pH units Turb: 0-1000NTU	Temp: ±0.15°C DO: ±0.1mg/L or 1% (whichever greater) for 0-20mg/L; ±15% for 20-50mg/L Sal: ±1% or 0.1ppt (whichever greater) pH: ±0.2 units Turb: ±2% or 0.3NTU (whichever greater)
		In-situ Aqua TROLL 600	Temp: -5 to 50°C DO: 0-50mg/L DO%: 0-500% Sal: 0 to 350 psu (ppt) pH: 0 to 14 pH units Turb: 0-4000NTU	Temp: ±0.1°C DO: ±0.1mg/L for 0-8mg/L; ±0.2mg/L for 8-20mg/L; ±10% for 20-50mg/L Sal: resolution: 0.1psu (ppt) pH: ±0.1 units Turb: ±2% or ±2NTU (whichever greater)
Water Sampling	Water Sampler	Aquatic Research Transparent PC Vertical Water Sampler 2.2L / 3L / 5L	NA	NA
Water Depth	Echo Sounder	Garmin ECHO 100	0.6 to 91 m	0.1 m

2.3.2 The monitoring procedures are as follows:

Measurement Procedures

2.3.3 All in-situ monitoring instruments shall be checked, calibrated and certified and subsequently re-calibrated at three monthly intervals throughout all stages of the water quality monitoring, or as required by the manufactures specification. Certificate(s) of Calibration specifying the instrument shall be attached to the monitoring reports.

Sampling

2.3.4 The Contractor will record all data from in situ testing and from any analysis carried out in a Field Log. All samples will be identified with a unique date /time /location /depth /sample-type code which will be attached to the sample container or written in indelible ink directly on the container. In order to avoid contamination of the samples, all containers will be new and unused and of analytical grade quality. Sources of

contamination will be isolated from the working area and any sample contaminated by local material will be discarded and the sampling repeated.

Transport of Samplers

2.3.5 All samples transferred from one sub-contractor to another will be accompanied by Chain of Custody (COC) forms. Any missing or damaged samples require notification to ET Leader following logging in the laboratory QA system. The number of samples, the parameters to be tested and the time of delivery should be clearly stated on the COC forms to ensure that samples are analyzed for the correct parameters and suitable time is provided to the analytical laboratory for provision of resources required in the analyses.

2.4 Baseline Monitoring Parameters

2.4.1 **Table 2.3** presents the baseline water quality monitoring parameters.

Table 2.3 Monitoring Parameters for Baseline Water Quality Monitoring

Parameters	Analytical method	Reporting Limit
Dissolved Oxygen (DO)	YSI 6920V2-2-M Sonde or In-situ Aqua TROLL 600	0-50mg/L
Temperature	YSI 6920V2-2-M Sonde or In-situ Aqua TROLL 600	-5 to 50°C
Turbidity	YSI 6920V2-2-M Sonde	0-1000NTU
	In-situ Aqua TROLL 600	0-4000NTU
pH	YSI 6920V2-2-M Sonde In-situ Aqua TROLL 600	0 to 14 pH units
Suspended Solid (SS)	APHA 17e 2540D	2mg/L
Ammonia as N	Inhouse method E-T-095	0.02 mg/L
Unionized ammonia	By calculation	By calculation
Nitrate	APHA 20e 4500-NO3 E&F	0.01 mg/L
Orthophosphate	Inhouse method E-T-055	0.02 mg/L

2.5 Calibration

2.5.1 Calibration procedures are as follows:

- The pH meter, DO meter and turbidimeter shall be checked and calibrated before use. DO meter and turbidimeter shall be certified by a laboratory accredited under HOKLAS or any other international accreditation scheme, and subsequently re-calibrated at quarterly basis throughout all stages of the water quality monitoring. Responses of sensors and electrodes should be checked with certified standard solutions before each use. Wet bulb calibration for a DO meter shall be carried out before measurement at each monitoring station.

- One-point saturated air calibration for a DO probe shall be carried out prior to each field sampling. A zero check in distilled water shall be performed with the turbidity probe at least once per monitoring day. The probe shall then be calibrated with a solution of known NTU. In addition, the turbidity probe shall be calibrated at least twice per month to establish the relationship between turbidity readings (in NTU) and levels of suspended solids (in mg/L).
- For the on-site calibration of field equipment, the BS 1427:2009, Guide On-Site Test Methods for the Analysis of Waters shall be observed.
- Sufficient stocks of spare parts shall be maintained for replacements when necessary. Backup monitoring equipment shall also be made available so that monitoring could proceed uninterrupted even when some equipment is under maintenance, calibration etc.
- Relevant calibration certificates are provided in **Appendix B**.

2.6 Action and Limit Level for Water Quality Monitoring

2.6.1 **Table 2.4** summarizes the Action and Limit Levels to be used for impact water quality monitoring.

Table 2.4 Action and Limit Levels for Impact Water Quality Monitoring

Parameters	Action	Limit
DO in mg/L (depth average)	5 percentile of baseline data.	4 mg/L or 1 percentile of baseline data.
SS in mg/L (depth averaged)	95 percentile of baseline data or 120% of upstream control station.	20 mg/L or 99 percentile of baseline data or 130% of upstream control station.
Turbidity in NTU (depth averaged)	95 percentile of baseline data or 120% of upstream control station.	99 percentile of baseline data or 130% of upstream control station.
Unionized ammonia in mg/L (depth averaged)	95 percentile of baseline data or 120% of upstream control station.	0.021mg/L or 99 percentile of baseline data or 130% of upstream control station.
Nitrate nitrogen in mg/L (depth averaged)	95 percentile of baseline data or 120% of upstream control station.	99 percentile of baseline data or 130% of upstream control station.
Orthophosphate in mg/L (depth averaged)	95 percentile of baseline data or 120% of upstream control station.	99 percentile of baseline data or 130% of upstream control station.

Notes:
1) "Depth-averaged" is calculated by taking the arithmetic mean of all three depths.
2) For DO, non-compliance occurs when monitoring results is lower than the limits.
3) For SS, turbidity, non-compliance occurs when monitoring results is larger than the limits.

Monitoring Result Summary and Detailed Results at FLN-CS1 and FLN-IS1

(Page 8 and Appendix C of the Pre-construction Baseline WQM Report)

Table 2.6 Summary of Baseline Water Quality Monitoring Results (FLN)

Monitoring Parameter					
Location / Parameter	FLN-CS1				
	Max	Min	Ave	5 Percentile	1 Percentile
DO in mg/L	9.30	7.79	8.49	7.81	7.79
	Max	Min	Ave	95 Percentile	99 Percentile
Turbidity in NTU	70.46	6.01	15.25	61.40	70.27
Suspended Solid in mg/L	60	3	12	46	58
Unionized ammonia in mg/L	0.0162	0.0012	0.0059	0.0130	0.0155
Nitrate nitrogen in mg/L	2.60	0.05	0.56	0.88	2.22
Orthophosphate in mg/L	0.22	0.06	0.11	0.15	0.20

Monitoring Parameter					
Location / Parameter	FLN-IS1				
	Max	Min	Ave	5 Percentile	1 Percentile
DO in mg/L	9.82	7.83	8.64	7.84	7.83
	Max	Min	Ave	95 Percentile	99 Percentile
Turbidity in NTU	95.92	6.10	18.64	73.92	92.37
Suspended Solid in mg/L	70	3	11.5	55	68
Unionized ammonia in mg/L	0.0107	0.0011	0.0054	0.0093	0.0104
Nitrate nitrogen in mg/L	0.61	0.05	0.41	0.59	0.61
Orthophosphate in mg/L	0.53	0.08	0.14	0.33	0.49

Monitoring Location	Date	Weather	Water Depth (m)	Time	Replicate	In-situ Measurement										Laboratory Analysis										Remarks
						pH		Temperature (ºC)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspeded solids dried at 103 - 105 (ºC), mg/L		Ammonia Nitrogen content in mg/L		Nitrate nitrogen in mg/L		Unionized ammonia in mg/L		* Reactive phosphorus content in mg/L		
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	
FLN-CS1	03-Aug-19	Cloudy	1.2	10:59	1	7.12	7.12	26.79	26.80	100.1	100.1	7.91	7.91	70.5	70.1	60	55.5	0.20	0.2	0.05	0.05	0.0022	0.0022	0.15	0.15	NA
					2	7.12		26.80		100.1		7.91		69.6		51		0.20		0.05		0.0022		0.15		
FLN-IS1			1.1	11:15	1	7.14	7.14	26.64	26.67	98.8	98.9	7.83	7.84	80.5	88.2	70	66.5	0.21	0.2	0.05	0.05	0.0024	0.0024	0.16	0.16	NA
					2	7.14		26.69		99.1		7.84		95.9		63		0.21		0.05		0.0024		0.16		
FLN-CS1	06-Aug-19	Cloudy	1.2	12:06	1	7.40	7.40	27.38	27.38	96.4	96.4	7.79	7.79	12.7	12.7	7	8.0	0.38	0.3	0.59	0.52	0.0028	0.0032	0.07	0.07	NA
					2	7.39		27.38		96.4		7.79		12.8		9		0.29		0.45		0.0035		0.07		
FLN-IS1			1.2	13:34	1	6.89	6.87	25.82	25.87	98.2	98.1	8.14	8.13	8.3	8.3	9	8.0	0.43	0.4	0.19	0.19	0.0035	0.0040	0.12	0.12	NA
					2	6.85		25.91		98.0		8.12		8.3		7		0.46		0.19		0.0044		0.11		
FLN-CS1	08-Aug-19	Sunny	1.2	11:28	1	7.55	7.55	31.08	31.08	115.7	115.7	8.47	8.47	14.7	14.7	6	6.0	0.21	0.2	0.54	0.54	0.0032	0.0043	0.07	0.07	NA
					2	7.55		31.08		115.7		8.47		14.7		6		0.21		0.54		0.0053		0.06		
FLN-IS1			1.1	11:48	1	7.53	7.53	31.08	31.08	116.7	116.7	8.55	8.55	27.9	27.9	7	7.0	0.19	0.2	0.61	0.61	0.0055	0.0057	0.09	0.09	NA
					2	7.53		31.08		116.7		8.55		27.9		7		0.19		0.60		0.0058		0.09		
FLN-CS1	10-Aug-19	Fine	1.0	10:20	1	7.61	7.62	30.44	30.44	111.1	111.3	8.62	8.64	6.9	6.8	3	3.5	0.18	0.2	0.45	0.43	0.0021	0.0025	0.07	0.07	NA
					2	7.63		30.44		111.5		8.65		6.8		4		0.24		0.40		0.0028		0.07		
FLN-IS1			0.9	10:42	1	7.73	7.73	30.32	30.32	128.1	128.1	9.53	9.53	10.2	10.2	3	3.0	0.25	0.2	0.37	0.37	0.0030	0.0035	0.08	0.09	NA
					2	7.73		30.31		128.1		9.52		10.3		3		0.21		0.37		0.0040		0.09		

Note: 1. ND: Not Detected
2. NA: Not Applicable

* As confirmed by laboratory, Reactive phosphorus content is same as Orthophosphate

Monitoring Location	Date	Weather	Water Depth (m)	Time	Replicate	In-situ Measurement										Laboratory Analysis										Remarks
						pH		Temperature (ºC)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspeded solids dried at 103 - 105 (ºC), mg/L		Ammonia Nitrogen content in mg/L		Nitrate nitrogen in mg/L		Unionized ammonia in mg/L		* Reactive phosphorus content in mg/L		
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	
FLN-CS1	13-Aug-19	Fine	1.2	10:18	1	7.62	7.62	29.88	29.88	123.4	123.5	9.25	9.27	14.1	14.1	16	16.0	0.19	0.20	0.48	0.47	0.0086	0.0085	0.09	0.09	NA
					2	7.61		29.87		123.7		9.28		14.1		16		0.20		0.45		0.0083		0.09		
FLN-IS1			1.2	10:37	1	7.78	7.78	30.21	30.21	128.0	128.0	9.47	9.65	8.9	9.0	7	6.5	0.17	0.18	0.43	0.43	0.0083	0.0083	0.08	0.09	NA
					2	7.78		30.20		128.1		9.82		9.0		6		0.18		0.42		0.0083		0.09		
FLN-CS1	15-Aug-19	Fine	1.1	10:39	1	7.78	7.77	29.57	29.62	111.7	117.9	8.39	8.85	13.9	13.7	16	16.0	0.34	0.34	0.93	0.76	0.0094	0.0085	0.11	0.11	NA
					2	7.76		29.66		124.1		9.30		13.4		16		0.34		0.58		0.0075		0.11		
FLN-IS1			1.2	11:08	1	7.76	7.65	29.56	28.25	119.7	109.8	9.00	8.44	12.5	24.6	7	6.5	0.38	0.37	0.55	0.55	0.0084	0.0084	0.11	0.11	NA
					2	7.53		26.93		99.9		7.87		36.7		6		0.35		0.54		0.0084		0.10		
FLN-CS1	17-Aug-19	Fine	1.2	09:30	1	7.79	7.92	29.85	29.98	110.3	110.5	8.25	8.29	6.3	6.3	5	5.0	0.31	0.31	2.60	1.60	0.0069	0.0071	0.10	0.11	NA
					2	8.04		30.10		110.8		8.32		6.3		5		0.30		0.60		0.0073		0.11		
FLN-IS1			1.1	10:47	1	7.79	7.80	29.85	29.93	110.3	112.4	8.25	8.33	6.4	6.4	5	4.5	0.24	0.24	0.56	0.56	0.0094	0.0101	0.11	0.11	NA
					2	7.80		30.01		114.6		8.41		6.4		4		0.24		0.55		0.0107		0.10		
FLN-CS1	20-Aug-19	Fine	1.1	14:55	1	7.93	7.94	30.32	30.34	117.7	117.9	8.73	8.75	8.1	8.0	6	6.0	0.20	0.21	0.46	0.45	0.0034	0.0038	0.10	0.10	NA
					2	7.94		30.36		118.2		8.77		7.9		6		0.21		0.44		0.0042		0.10		
FLN-IS1			1.1	15:19	1	7.92	7.92	30.09	30.11	117.8	117.9	8.73	8.74	12.2	12.3	7	7.0	0.27	0.29	0.44	0.44	0.0055	0.0052	0.14	0.14	NA
					2	7.91		30.12		118.1		8.74		12.4		7		0.31		0.43		0.0049		0.14		

Note: 1. ND: Not Detected
2. NA: Not Applicable

* As confirmed by laboratory, Reactive phosphorus content is same as Orthophosphate

Monitoring Location	Date	Weather	Water Depth (m)	Time	Replicate	In-situ Measurement										Laboratory Analysis										Remarks
						pH		Temperature (ºC)		DO Saturation (%)		DO (mg/L)		Turbidity (NTU)		Total suspeded solids dried at 103 - 105 (ºC), mg/L		Ammonia Nitrogen content in mg/L		Nitrate nitrogen in mg/L		Unionized ammonia in mg/L		* Reactive phosphorus content in mg/L		
						Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	
FLN-CS1	22-Aug-19	Fine	0.9	13:17	1	7.83	7.84	30.36	30.38	106.3	106.4	8.13	8.14	6.6	6.7	7	7.5	0.24	0.24	0.54	0.53	0.0135	0.0149	0.10	0.16	NA
					2	7.84		30.40		106.5		8.15		6.7		8		0.24		0.52		0.0162		0.22		
FLN-IS1			1.0	13:31	1	7.86	7.86	30.33	30.36	120.3	120.8	8.93	8.96	7.1	7.1	8	8.0	0.31	0.30	0.51	0.51	0.0029	0.0030	0.53	0.34	NA
					2	7.85		30.39		121.3		8.99		7.2		8		0.28		0.51		0.0031		0.14		
FLN-CS1	24-Aug-19	Hazy	1.1	10:13	1	8.63	8.64	28.86	28.83	114.5	114.6	8.71	8.73	11.1	11.0	6	6.5	0.18	0.18	0.49	0.50	0.0050	0.0049	0.10	0.10	NA
					2	8.64		28.80		114.8		8.75		10.9		7		0.17		0.50		0.0047		0.10		
FLN-IS1			1.2	10:29	1	7.57	7.57	28.61	28.60	109.3	109.6	8.38	8.39	6.1	6.1	6	6.0	0.21	0.21	0.49	0.48	0.0047	0.0047	0.12	0.12	NA
					2	7.56		28.59		109.8		8.40		6.2		6		0.21		0.47		0.0047		0.12		
FLN-CS1	27-Aug-19	Fine	1.2	14:51	1	7.69	7.69	30.31	30.34	110.9	110.8	8.22	8.21	12.9	12.9	8	7.5	0.25	0.28	0.61	0.59	0.0101	0.0103	0.15	0.15	NA
					2	7.69		30.37		110.8		8.20		12.9		7		0.30		0.56		0.0104		0.14		
FLN-IS1			1.2	15:11	1	7.76	7.75	30.29	30.33	110.5	110.6	8.19	8.20	17.3	17.2	6	6.0	0.33	0.34	0.54	0.54	0.0086	0.0088	0.36	0.26	NA
					2	7.74		30.37		110.8		8.21		17.1		6		0.35		0.54		0.0089		0.15		
FLN-CS1	29-Aug-19	Cloudy	1.1	11:10	1	7.82	7.82	30.08	30.08	119.2	119.2	8.87	8.87	6.1	6.1	8	8.0	0.29	0.30	0.27	0.27	0.0014	0.0013	0.10	0.10	NA
					2	7.82		30.08		119.2		8.87		6.0		8		0.30		0.27		0.0012		0.10		
FLN-IS1			1.0	11:30	1	7.74	7.74	29.60	29.60	119.8	119.8	8.99	8.99	6.4	6.4	8	8.5	0.31	0.32	0.27	0.27	0.0011	0.0011	0.12	0.12	NA
					2	7.74		29.60		119.8		8.99		6.4		9		0.32		0.27		0.0011		0.11		

Note: 1. ND: Not Detected
2. NA: Not Applicable

* As confirmed by laboratory, Reactive phosphorus content is same as Orthophosphate

Calibration Certificates for Equipment Used for Baseline Monitoring at FLN-CS1 and FLN-IS1

(Appendix B of the Pre-construction Baseline WQM Report)

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MateriaLab

Report No. : 142626WA191408

Report on Calibration of YSI 69201V2-M Multi-parameter Water Quality Meter

Information Supplied by Client

Client	:	Fugro Technical Services Limited (MCL)
Client's address	:	Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15, Kwai Fung Crescent, Kwai Chung, N.T.
Sample description	:	One YSI 69201V2-M Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 18L104181
Test required	:	Calibration of the YSI 69201V2-M Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA191408/1
Date sample received	:	28/06/2019
Date of calibration	:	03/07/2019
Next calibration date	:	02/10/2019
Test method used	:	In-house comparison method

Note : This report refers only to the sample(s) tested.

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E-mail : matlab@fugro.com
Website : www.fugro.com

MateriaLab

Report No. : 142626WA191408

Results :

A. pH calibration

pH reading at 22°C for Q.C. solution(6.86) and at 22°C for Q.C. solution(9.18)		
Theoretical	Measured	Deviation
9.18	9.18	0.00
6.86	6.78	-0.08

B. Salinity calibration

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
10	10.1	+0.1	± 0.5
20	20.3	+0.3	± 1.0
30	30.2	+0.2	± 1.5
40	40.8	+0.8	± 2.0

C. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	8.02	8.20
2	7.99	8.13
3	7.92	8.10
Average	7.98	8.14

Differences of D.O. Content between Winkler Titration and D.O. meter should be less than 0.2 mg/L

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 11/7/2019

Note : This report refers only to the sample(s) tested.

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MateriaLab

Report No. : 142626WA191408

Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
22.2	22.13

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	0.0	0.0	± 0.5
4	4.4	+0.4	± 0.6
8	7.6	-0.4	± 0.8
40	39.7	-0.3	± 3.0
80	80.0	0.0	± 4.0

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 11/7/2019

** End of Report **

Note : This report refers only to the sample(s) tested.

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MateriaLab

Report No. : 142626WA191408(1)

Report on Calibration of YSI 69201V2-M Multi-parameter Water Quality Meter

Information Supplied by Client

Client	:	Fugro Technical Services Limited (MCL)
Client's address	:	Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15, Kwai Fung Crescent, Kwai Chung, N.T.
Sample description	:	One YSI 69201V2-M Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 14A102907
Test required	:	Calibration of the YSI 69201V2-M Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA191408/2
Date sample received	:	28/06/2019
Date of calibration	:	04/07/2019
Next calibration date	:	03/10/2019
Test method used	:	In-house comparison method

Note : This report refers only to the sample(s) tested.

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MateriaLab

Report No. : 142626WA191408(1)

Results :

A. Salinity calibration

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
10	10.2	+0.2	± 0.5
20	20.9	+0.9	± 1.0
30	30.0	0.0	± 1.5
40	40.5	+0.5	± 2.0

B. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	8.04	7.83
2	8.11	8.28
3	8.14	8.27
Average	8.10	8.13

Differences of D.O. Content between Wrinkler Titration and D.O. meter should be less than 0.2 mg/L

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 11/7/2019

Note : This report refers only to the sample(s) tested.

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Website : www.fugro.com

MateriaLab

Report No. : 142626WA191408(1)

Results :

C. Temperature calibration

Thermometer reading, °C	Meter reading, °C
23.5	23.38

D. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	0.0	0.0	± 0.5
4	4.5	+0.5	± 0.6
8	7.7	-0.3	± 0.8
40	40.7	+0.7	± 3.0
80	80.4	+0.4	± 4.0

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 11/7/2019

** End of Report **

Note : This report refers only to the sample(s) tested.

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MateriaLab

HOKLAS 015 TEST

Report No. : 142626WA191729(3)

Report on Calibration of Aqua Troll 600 Multi-parameter Water Quality Meter

Information Supplied by Client

Client	:	MateriaLab Consultants Limited
Client's address	:	Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15, Kwai Fung Crescent, Kwai Chung, N.T.
Sample description	:	One Aqua Troll 600 Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 579950
Test required	:	Calibration of the Aqua Troll 600 Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA191729/4
Date sample received	:	09/08/2019
Date of calibration	:	15/08/2019
Next calibration date	:	14/11/2019
Test method used	:	In-house comparison method

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
5 Lok Yi Street, Tai Lam,
Tuen Mun, N.T.,
Hong Kong.

Tel : +852 2450 8233
Fax : +852 2450 6138
E-mail : matlab@fugro.com
Website : www.fugro.com

MaterialLab

HOKLAS 015 TEST

Report No. : 142626WA191729(3)

Results :

A. pH calibration

pH reading at 25°C for Q.C. solution(6.86) and at 25°C for Q.C. solution(9.18)		
Theoretical	Measured	Deviation
9.18	9.17	-0.01
6.86	6.88	+0.02

B. Salinity calibration

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
10	10.06	+0.06	± 0.5
20	20.16	+0.16	± 1.0
30	30.62	+0.62	± 1.5
40	40.88	+0.88	± 2.0

C. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	7.49	7.61
2	.7.37	7.54
3	7.39	7.55
Average	7.42	7.57

Differences of D.O. Content between Wrinkler Titration and D.O. meter should be less than 0.4 mg/L

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 21/8/2019

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MateriaLab

HOKLAS 015 TEST

Report No. : 142626WA191729(3)

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
24.6	24.57

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	-	-	± 0.5
4	4.08	+0.08	± 0.6
8	8.03	+0.03	± 0.8
40	39.87	-0.13	± 3.0
80	79.31	-0.69	± 4.0

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories
Date : 21/8/2019

** End of Report **

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MateriaLab

Report No. : 142626WA191853(2)

Report on Calibration of Aqua Troll 600 Multi-parameter Water Quality Meter

Information Supplied by Client

Client	:	MateriaLab Consultants Limited
Client's address	:	Rm. 723-726, 7/F, Profit Industrial Building, No. 1-15, Kwai Fung Crescent, Kwai Chung, N.T.
Sample description	:	One Aqua Troll 600 Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 551996
Test required	:	Calibration of the Aqua Troll 600 Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA191853/3
Date sample received	:	22/08/2019
Date of calibration	:	28/08/2019
Next calibration date	:	27/11/2019
Test method used	:	In-house comparison method

Note : This report refers only to the sample(s) tested.

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E-mail : matlab@fugro.com
Website : www.fugro.com

MaterialLab

Report No. : 142626WA191853(2)

Results :

A. pH calibration

pH reading at 21°C for Q.C. solution(6.86) and at 22°C for Q.C. solution(9.18)		
Theoretical	Measured	Deviation
9.18	9.17	-0.01
6.86	6.83	-0.03

B. Salinity calibration

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
10	10.29	+0.29	± 0.5
20	20.48	+0.48	± 1.0
30	30.00	0.00	± 1.5
40	40.51	+0.51	± 2.0

C. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	8.10	7.93
2	7.84	7.98
3	7.84	7.94
Average	7.93	7.95

Differences of D.O. Content between Wrinkler Titration and D.O. meter should be less than 0.4 mg/L

Certified by : _____
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 04/09/2019

Note : This report refers only to the sample(s) tested.

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Website : www.fugro.com

MateriaLab

Report No. : 142626WA191853(2)

Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
22.7	22.45

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	-	-	± 0.5
4	4.11	+0.11	± 0.6
8	8.30	+0.30	± 0.8
40	39.56	-0.44	± 3.0
80	79.51	-0.49	± 4.0

F. Conductivity calibration

Conductivity, umhos/cm			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
1408	1372	-35	± 70
6668	6699	+31	± 400
12860	12524	-336	± 700
24820	25033	+213	± 1200

Certified by :
Approved Signatory : HO Kin Man, John
Assistant General Manager – Laboratories

Date : 04/09/2019

** End of Report **

Note : This report refers only to the sample(s) tested.

Appendix 2.1
Certificates for Baseline Water Quality Monitoring

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 5/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BD100073
Date of Issue : 21 October 2024

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

PART B - SAMPLE INFORMATION

Name of Equipment :	YSI ProDSS Multi Parameters
Manufacturer :	YSI
Serial Number :	15M101091
Date of Received :	16 October 2024
Date of Calibration :	21 October 2024
Date of Next Calibration :	20 January 2025
Request No. :	D-BD100073

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500-H^+ B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 23e 4500-O G (Membrane Electrode Method)
Turbidity	APHA 21e 2130 B (Nephelometric Method)

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.01	0.01	Satisfactory
7.42	7.43	0.01	Satisfactory
10.01	10.14	0.13	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
16.0	16.1	0.1	Satisfactory
25.5	25.2	-0.3	Satisfactory
40.0	39.6	-0.4	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	9.71	-2.9	Satisfactory
20	19.84	-0.8	Satisfactory
30	30.42	1.4	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

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AUTHORIZED SIGNATORY:

LEE Chun-ning
Assistant Manager

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
Unit 10, 5/F, Wah Wai Centre, 38-40 Au Pui Wan St., Fotan, Hong Kong
Email: info@qualityprotest.com; Website: www.qualityprotest.com
Tel: (852) 3956 8717; Fax: (852) 3956 3928

REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BD100073
Date of Issue : 21 October 2024

(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.41	7.77	0.36	Satisfactory
5.61	5.22	-0.39	Satisfactory
3.49	3.56	0.07	Satisfactory
0.56	0.29	-0.27	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance [a] (%)	Result
0	0.02	--	Satisfactory
10	10.11	1.1	Satisfactory
20	19.85	-0.7	Satisfactory
100	103.25	3.3	Satisfactory
800	822.19	2.8	Satisfactory

Tolerance of Turbidity should be less than ± 10.0 (%)

[a] For 0 NTU, Display Reading should be less than 1 NTU

Remark(s)

·The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.

·The results relate only to the calibrated equipment as received

·The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

·"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

·The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

--- END OF REPORT ---

專業化驗有限公司
QUALITY PRO TEST-CONSULT LIMITED
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Email: info@qualityprotest.com; Website: www.qualityprotest.com
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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BD090078
Date of Issue : 02 October 2024

PART A - CUSTOMER INFORMATION

Acuity Sustainability Consulting Limited
Unit E, 12/F, Ford Glory Plaza 37-39 Wing Hong Street, Cheung Sha Wan, Kowloon, Hong Kong

PART B - SAMPLE INFORMATION

Name of Equipment :	YSI ProDSS Multi Parameters
Manufacturer :	YSI
Serial Number :	22C106561
Date of Received :	26 September 2024
Date of Calibration :	27 September 2024
Date of Next Calibration :	26 December 2024
Request No. :	D-BD090078

PART C - REFERENCE METHODS/ DOCUMENTS FOR THE CALIBRATION

Test Parameter	Reference Method
pH value	APHA 21e 4500-H^+ B
Temperature	Section 6 of international Accreditation New Zealand Technical Guide no. 3 Second edition March 2008: Working Thermometer Calibration Procedure
Salinity	APHA 21e 2520 B
Dissolved oxygen	APHA 23e 4500-O G (Membrane Electrode Method)
Turbidity	APHA 21e 2130 B (Nephelometric Method)

PART D - CALIBRATION RESULT

(1) pH value

Target (pH unit)	Display Reading (pH unit)	Tolerance	Result
4.00	4.03	0.03	Satisfactory
7.42	7.49	0.07	Satisfactory
10.01	10.07	0.06	Satisfactory

Tolerance of pH value should be less than ± 0.2 (pH unit)

(2) Temperature

Reading of Ref. thermometer (°C)	Display Reading (°C)	Tolerance	Result
17.0	15.6	-1.4	Satisfactory
28.0	26.2	-1.8	Satisfactory
32.5	30.7	-1.8	Satisfactory

Tolerance of Temperature should be less than ± 2.0 (°C)

(3) Salinity

Expected Reading (g/L)	Display Reading (g/L)	Tolerance (%)	Result
10	10.11	1.10	Satisfactory
20	20.59	2.95	Satisfactory
30	31.25	4.17	Satisfactory

Tolerance of Salinity should be less than ± 10.0 (%)

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AUTHORIZED SIGNATORY:

LEE Chun-ning
Assistant Manager

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REPORT OF EQUIPMENT PERFORMANCE CHECK/ CALIBRATION

Test Report No. : R-BD090078
Date of Issue : 02 October 2024

(4) Dissolved oxygen

Expected Reading (mg/L)	Display Reading (mg/L)	Tolerance	Result
7.37	7.35	-0.02	Satisfactory
5.56	5.49	-0.07	Satisfactory
2.30	2.58	0.28	Satisfactory
0.20	0.39	0.19	Satisfactory

Tolerance of Dissolved oxygen should be less than ± 0.5 (mg/L)

(5) Turbidity

Expected Reading (NTU)	Display Reading (NTU)	Tolerance (%)	Result [a]
0	0.75	--	Satisfactory
10	10.92	9.2	Satisfactory
20	21.08	5.4	Satisfactory
100	102.32	2.3	Satisfactory
800	786.90	-1.6	Satisfactory

[a] For 0 NTU, Display Reading should be less than 1 NTU

Remark(s)

·The "Date of Next Calibration" is recommended according to best practice principals as practiced by QPT or quoted from relevant international standards.

·The results relate only to the calibrated equipment as received

·The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

·"Displayed Reading" denotes the figure shown on item under calibration/ checking regardless of equipment precision or significant figures.

·The "Tolerance Limit" mentioned is the acceptance criteria applicable for similar equipment used by Quality Pro Test-Consult Ltd. or quoted from relevant international standards.

--- END OF REPORT ---

Appendix 2.2
Monitoring Schedule

Contract No.: NDO 05/2024 - Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas
Baseline Water Quality Monitoirng Schedule (August 2018)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
						Baseline Water Quality Monitoring(1)
4	5	6	7	8	9	10
		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)
11	12	13	14	15	16	17
		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)
18	19	20	21	22	23	24
		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)
25	26	27	28	29	30	31
		Baseline Water Quality Monitoring(1)		Baseline Water Quality Monitoring(1)		

Baseline Water Quality Monitoring Location: FLN-CS1, FLN-IS1
Baseline Water Quality Monitoring Parameters:
1. *In-situ* Monitoring: Dissolved oxygen, Temperature, pH, Turbidity
2. Laboratory Measurement / Analysis: Suspended Solids, Ammonia Nitrogen, Unionized Ammonia, Nitrate Nitrogen, Orthophosphate

Remark:
(1) Baseline water quality monitoring at FLN-CS1 and FLN-IS1 carried out by the First Phase Pre-construction ET

Contract No.: NDO 05/2024 - Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas
Baseline Water Quality Monitoirng Schedule (November 2024)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
					Baseline Water Quality Monitoring(2)	
17	18	19	20	21	22	23
	Baseline Water Quality Monitoring(2)			**Baseline Water Quality Monitoring(2)**		**Baseline Water Quality Monitoring(2)**
24	25	26	27	28	29	30
	Baseline Water Quality Monitoring(2)		**Baseline Water Quality Monitoring(2)**		**Baseline Water Quality Monitoring(2)**	

Baseline Water Quality Monitoring Location: KTN-IS1, KTN-CS1
Baseline Water Quality Monitoring Parameters:
1. *In-situ* Monitoring: Dissolved oxygen, Temperature, pH, Turbidity
2. Laboratory Measurement / Analysis: Suspended Solids, Ammonia Nitrogen, Unionized Ammonia, Nitrate Nitrogen, Orthophosphate

Remark:
(2) Baseline water quality monitoring at KTN-IS1 and KTN-CS1 carried out by Remaining Phase ET

Contract No.: NDO 05/2024 - Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas
Baseline Water Quality Monitoirng Schedule (December 2024)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4	5	6	7
	Baseline Water Quality Monitoring(2)		Baseline Water Quality Monitoring(2)		Baseline Water Quality Monitoring(2)	
8	9	10	11	12	13	14
	Baseline Water Quality Monitoring(2)		Baseline Water Quality Monitoring(2)			
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Baseline Water Quality Monitoring Location: KTN-IS1, KTN-CS1
Baseline Water Quality Monitoring Parameters:
1. *In-situ* Monitoring: Dissolved oxygen, Temperature, pH, Turbidity
2. Laboratory Measurement / Analysis: Suspended Solids, Ammonia Nitrogen, Unionized Ammonia, Nitrate Nitrogen, Orthophosphate

Remark:
(2) Baseline water quality monitoring at KTN-IS1 and KTN-CS1 carried out by Remaining Phase ET

Appendix 2.3
Baseline Water Quality Monitoring Data at KTN-CS1 and KTN-IS1

Contract No. NDO 05/2024

Environmental Team for Environmental Monitoring and Audit Works

Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas

Baseline Water Quality Monitoring Result

Water Quality Monitoring Location : KTN-CS1

Sample ID	Date	Weather	Depth (m)		Time	DO (mg/L)		DO (%)		pH		Temp (°C)		Turbidty (NTU)		SS (mg/L)		Unionized Ammonia (mg/L)		Ammonia Nitrogen (mg/L)		Orthophosphate (mg/L)		Nitrate Nitrogen (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average[1]	Value	Average	Value	Average[2]	Value	Average
KTN-CS1#1	11/15/2024	Rainy	0.09	Middle	14:16	6.89	6.89	82.2	82.2	7.37	7.37	24.2	24.2	164.07	163.56	53	65	<0.001	0.001	0.06	0.06	0.02	0.02	1.06	1.01
KTN-CS1#2	11/15/2024	Rainy	0.09	Middle	14:16	6.89		82.2		7.37		24.2		163.04		77		<0.001		0.06		0.02		0.96	
KTN-CS1#1	11/18/2024	Rainy	1.10	Middle	13:54	7.71	7.71	91.9	91.9	7.39	7.39	24.2	24.2	81.00	80.83	100	104	<0.001	0.001	0.07	0.07	0.02	0.02	0.59	0.58
KTN-CS1#2	11/18/2024	Rainy	1.10	Middle	13:54	7.71		91.9		7.39		24.2		80.66		107		<0.001		0.06		0.02		0.57	
KTN-CS1#1	11/21/2024	Rainy	1.00	Middle	11:32	8.29	8.29	92.5	92.5	7.39	7.39	20.7	20.7	112.93	112.76	125	144	<0.001	0.001	0.04	0.04	0.02	0.03	0.79	0.79
KTN-CS1#2	11/21/2024	Rainy	1.00	Middle	11:32	8.29		92.5		7.38		20.7		112.58		163		<0.001		0.04		0.03		0.78	
KTN-CS1#1	11/23/2024	Sunny	1.00	Middle	16:07	7.90	7.90	88.6	88.6	7.63	7.63	20.9	20.9	190.22	189.88	95	104	0.003	0.003	0.16	0.15	0.01	0.01	0.56	0.56
KTN-CS1#2	11/23/2024	Sunny	1.00	Middle	16:07	7.90		88.5		7.63		20.9		189.54		113		0.002		0.14		0.01		0.55	
KTN-CS1#1	11/25/2024	Cloudy	0.10	Middle	16:07	8.80	8.80	97.8	97.8	8.09	8.09	20.5	20.5	148.57	148.58	386	382	0.001	0.001	0.02	0.02	<0.01	0.01	0.37	0.38
KTN-CS1#2	11/25/2024	Cloudy	0.10	Middle	16:07	8.80		97.8		8.09		20.5		148.59		378		0.001		0.02		<0.01		0.38	
KTN-CS1#1	11/27/2024	Cloudy	0.10	Middle	16:27	8.18	8.18	89.7	89.7	8.09	8.13	19.8	19.8	1999.38	2009.96	1740	1815	0.004	0.004	0.08	0.08	0.08	0.08	0.63	0.63
KTN-CS1#2	11/27/2024	Cloudy	0.10	Middle	16:27	8.17		89.6		8.17		19.8		2020.53		1890		0.003		0.08		0.07		0.63	
KTN-CS1#1	11/29/2024	Cloudy	0.08	Middle	16:07	8.69	8.67	93.0	92.8	7.56	7.53	18.6	18.6	86.28	85.99	75	75	0.002	0.002	0.14	0.16	0.03	0.03	0.92	0.93
KTN-CS1#2	11/29/2024	Cloudy	0.08	Middle	16:07	8.65		92.6		7.49		18.6		85.70		74		0.002		0.17		0.03		0.94	
KTN-CS1#1	12/2/2024	Cloudy	0.08	Middle	17:01	7.90	7.90	89.4	89.4	7.45	7.45	21.4	21.4	16.19	16.23	16	17	<0.001	0.001	0.05	0.06	0.03	0.03	0.99	0.99
KTN-CS1#2	12/2/2024	Cloudy	0.08	Middle	17:01	7.90		89.4		7.44		21.4		16.26		17		<0.001		0.06		0.03		0.99	
KTN-CS1#1	12/4/2024	Cloudy	0.08	Middle	16:28	8.09	8.09	92.1	92.2	7.50	7.50	21.8	21.8	45.42	45.65	33	34	<0.001	0.001	0.06	0.06	<0.01	0.01	1.05	1.04
KTN-CS1#2	12/4/2024	Cloudy	0.08	Middle	16:28	8.09		92.2		7.50		21.7		45.87		35		<0.001		0.06		<0.01		1.02	
KTN-CS1#1	12/6/2024	Cloudy	0.08	Middle	10:30	7.83	7.83	88.3	88.3	7.31	7.32	21.3	21.3	47.48	47.51	58	59	<0.001	0.001	0.08	0.08	0.02	0.02	0.49	0.49
KTN-CS1#2	12/6/2024	Cloudy	0.08	Middle	10:30	7.83		88.3		7.32		21.2		47.54		60		<0.001		0.08		0.02		0.48	
KTN-CS1#1	12/9/2024	Cloudy	0.08	Middle	12:07	8.01	8.01	88.3	88.3	7.52	7.52	20.1	20.1	84.20	84.15	46	47	<0.001	0.001	0.04	0.04	<0.01	0.01	0.40	0.41
KTN-CS1#2	12/9/2024	Cloudy	0.08	Middle	12:07	8.01		88.3		7.52		20.1		84.10		47		<0.001		0.04		0.01		0.41	
KTN-CS1#1	12/11/2024	Cloudy	0.08	Middle	10:21	8.16	8.16	91.9	91.9	7.83	7.83	21.2	21.2	689.45	688.95	656	676	0.001	0.001	0.04	0.04	0.02	0.02	0.31	0.31
KTN-CS1#2	12/11/2024	Cloudy	0.08	Middle	10:21	8.16		91.9		7.83		21.2		688.45		696		0.001		0.04		0.02		0.30	
					Mean	-	8.04	-	90.5	-	7.59	-	21.2	-	306.17	-	293	-	0.001	-	0.07	-	0.02	-	0.67
					Minimum	-	6.89	-	82.2	-	7.32	-	18.6	-	16.23	-	17	-	<0.001	-	0.02	-	<0.01	-	0.31
					Maximum	-	8.80	-	97.8	-	8.13	-	24.2	-	2009.96	-	1815	-	0.004	-	0.16	-	0.08	-	1.04

Note: (1) For the Unionized Ammonia concentrations below the detection limit stipulated in Table 2.4, the Unionized Ammonia concentration is taken as 0.001 mg/L for the calculation of depth-averaged value.

(2) For the Orthophosphate concentrations below the detection limit stipulated in Table 2.4, the Orthophosphate concentration is taken as 0.1 mg/L for the calculation of depth-averaged value.

Contract No. NDO 05/2024

Environmental Team for Environmental Monitoring and Audit Works

Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas

Baseline Water Quality Monitoring Result

Water Quality Monitoring Location : KTN-IS1

Sample ID	Date	Weather	Depth (m)		Time	DO (mg/L)		DO (%)		pH		Temp (°C)		Turbidty (NTU)		SS (mg/L)		Unionized Ammonia (mg/L)		Ammonia Nitrogen (mg/L)		Orthophosphate (mg/L)		Nitrate Nitrogen (mg/L)	
						Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average	Value	Average[1]	Value	Average	Value	Average	Value	Average
KTN-IS1#1	11/15/2024	Rainy	0.40	Middle	14:37	6.22	6.21	73.9	73.8	7.24	7.22	23.9	23.9	59.87	56.53	157	146	<0.001	0.001	0.07	0.08	0.06	0.06	1.37	1.34
KTN-IS1#2	11/15/2024	Rainy	0.40	Middle	14:38	6.20		73.6		7.20		23.9		53.19		134		<0.001		0.09		0.06		1.31	
KTN-IS1#1	11/18/2024	Rainy	0.40	Middle	14:27	6.53	6.53	77.9	77.9	7.05	7.05	24.2	24.2	52.58	52.28	30	33	0.001	0.001	0.23	0.23	0.07	0.08	0.73	0.73
KTN-IS1#2	11/18/2024	Rainy	0.40	Middle	14:27	6.53		77.9		7.05		24.2		51.97		35		0.001		0.22		0.08		0.73	
KTN-IS1#1	11/21/2024	Rainy	0.40	Middle	11:47	7.97	7.97	88.4	88.4	7.17	7.17	20.4	20.4	34.01	33.99	35	33	<0.001	0.001	0.07	0.07	0.08	0.08	0.78	0.81
KTN-IS1#2	11/21/2024	Rainy	0.40	Middle	11:47	7.97		88.4		7.17		20.4		33.97		31		<0.001		0.06		0.08		0.83	
KTN-IS1#1	11/23/2024	Sunny	0.40	Middle	16:22	7.83	7.83	86.1	86.1	7.63	7.62	20.0	20.0	9.26	9.24	9	9	<0.001	0.001	0.06	0.07	0.08	0.08	0.65	0.66
KTN-IS1#2	11/23/2024	Sunny	0.40	Middle	16:22	7.83		86.1		7.61		20.0		9.21		8		<0.001		0.07		0.08		0.66	
KTN-IS1#1	11/25/2024	Cloudy	0.40	Middle	16:22	8.03	8.03	90.6	90.6	7.64	7.64	21.3	21.3	56.74	56.83	83	91	0.001	0.001	0.06	0.07	0.09	0.09	0.71	0.72
KTN-IS1#2	11/25/2024	Cloudy	0.40	Middle	16:22	8.03		90.5		7.63		21.3		56.91		99		0.001		0.07		0.09		0.72	
KTN-IS1#1	11/27/2024	Cloudy	0.40	Middle	16:41	8.30	8.30	89.3	89.3	7.37	7.37	18.9	18.9	26.36	26.44	23	18	<0.001	0.001	0.06	0.07	0.07	0.08	0.56	0.55
KTN-IS1#2	11/27/2024	Cloudy	0.40	Middle	16:41	8.30		89.3		7.36		18.9		26.51		12		0.001		0.08		0.08		0.54	
KTN-IS1#1	11/29/2024	Cloudy	0.40	Middle	16:17	8.85	8.84	92.8	92.9	7.36	7.36	17.7	17.7	17.08	17.20	19	20	<0.001	0.001	0.07	0.07	0.07	0.07	0.56	0.56
KTN-IS1#2	11/29/2024	Cloudy	0.40	Middle	16:17	8.83		93.0		7.36		17.7		17.31		21		<0.001		0.07		0.07		0.56	
KTN-IS1#1	12/2/2024	Cloudy	0.40	Middle	17:15	8.47	8.46	93.2	93.2	7.44	7.44	20.0	20.0	13.35	13.37	14	15	0.001	0.001	0.10	0.10	0.07	0.07	0.58	0.57
KTN-IS1#2	12/2/2024	Cloudy	0.40	Middle	17:15	8.45		93.1		7.44		20.0		13.39		15		0.001		0.10		0.07		0.56	
KTN-IS1#1	12/4/2024	Cloudy	0.40	Middle	16:39	8.26	8.25	93.2	93.1	7.39	7.39	21.3	21.3	7.60	7.60	8	8	<0.001	0.001	0.06	0.06	0.08	0.08	0.52	0.53
KTN-IS1#2	12/4/2024	Cloudy	0.40	Middle	16:39	8.24		93.0		7.39		21.3		7.59		8		<0.001		0.06		0.08		0.53	
KTN-IS1#1	12/6/2024	Cloudy	0.40	Middle	10:41	8.45	8.45	93.6	93.6	7.31	7.31	20.4	20.4	6.32	6.29	6	6	<0.001	0.001	0.07	0.07	0.07	0.07	0.97	0.98
KTN-IS1#2	12/6/2024	Cloudy	0.40	Middle	10:41	8.44		93.6		7.31		20.4		6.26		5		<0.001		0.07		0.07		0.98	
KTN-IS1#1	12/9/2024	Cloudy	0.39	Middle	12:19	8.31	8.31	90.8	90.8	7.48	7.48	19.6	19.6	78.27	78.29	26	24	<0.001	0.001	0.06	0.06	0.07	0.07	0.50	0.50
KTN-IS1#2	12/9/2024	Cloudy	0.39	Middle	12:19	8.31		90.8		7.47		19.6		78.30		21		<0.001		0.06		0.06		0.50	
KTN-IS1#1	12/11/2024	Cloudy	0.40	Middle	10:33	8.24	8.24	92.1	92.1	7.65	7.65	20.8	20.8	14.20	14.21	6	7	<0.001	0.001	0.05	0.05	0.07	0.08	0.48	0.48
KTN-IS1#2	12/11/2024	Cloudy	0.40	Middle	10:33	8.24		92.1		7.65		20.8		14.21		8		<0.001		0.05		0.09		0.47	
				Mean		-	7.95	-	88.47	-	7.39	-	20.71	-	31.02	-	34	-	0.001		0.08	-	0.07	-	0.70
				Minimum		-	6.21	-	73.75	-	7.05	-	17.70	-	6.29	-	6	-	<0.001		0.05	-	0.06	-	0.48
				Maximum		-	8.84	-	93.60	-	7.65	-	24.20	-	78.29	-	146	-	0.001		0.23	-	0.09	-	1.34
				Standard Deviation (SD)		-	0.79	-	6.37	-	-	-	-	-	24.22	-	42.12	-	0.000		-	-	0.01	-	0.25
				Lower Limit under 95% of Confidence Level		-	6.38	-	75.72	-	-	-	-	-	-17.42	-	-50.36	-	0.001		-	-	0.06	-	0.20
				Upper Limit under 95% of Confidence Level		-	9.52	-	101.22	-	-	-	-	-	79.46	-	118.11	-	0.001		-	-	0.09	-	1.20
				Action Level		-	**7.18**	-	**82.00**	-	-	-	-	-	**66.48**	-	**62**	-	**0.001**		-	-	**0.085**	-	**0.89**
				Limit Level		-	**6.66**	-	**78.72**	-	-	-	-	-	**75.92**	-	**85**	-	**0.001**		-	-	**0.089**	-	**0.96**

Note: (1) For the Unionized Ammonia concentrations below the detection limit stipulated in Table 2.4, the Unionized Ammonia concentration is taken as 0.001 mg/L for the calculation of depth-averaged value and determination of Action Level and Limit Level.

(2) Oulier result is highlighted in

Appendix 2.4
Laboratory Testing Reports

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2447826
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 15-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 25-Nov-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
		
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 15-Nov-2024 to 25-Nov-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2447826

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were picked up from client by ALS staff. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	15-Nov-2024	15-Nov-2024	15-Nov-2024	15-Nov-2024	----
					HK2447826-001	HK2447826-002	HK2447826-003	HK2447826-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		53	77	157	134	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.06	0.06	0.07	0.09	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		1.06	0.96	1.37	1.31	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.02	0.02	0.06	0.06	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6197101)								
HK2447950-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	75	73	2.7
HK2447953-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	700	685	2.2
EA/ED: Physical and Aggregate Properties (QC Lot: 6202396)								
HK2447826-004	KTN-IS1#2	EA025: Suspended Solids (SS)	----	2	mg/L	134	141	4.8
HK2447944-004	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	20	21	9.2
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6194783)								
HK2447709-001	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6194806)								
HK2447751-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	12.2	12.6	3.9

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6197101)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	89.5	----	80.1	117	----	----
EA/ED: Physical and Aggregate Properties (QC Lot: 6202396)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	90.0	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6194783)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	96.4	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6194806)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.1	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6194783)										
HK2447709-001	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	114	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6194806)										
HK2447751-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	96.3	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2448035
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 18-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 26-Nov-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 18-Nov-2024 to 26-Nov-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2448035

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	18-Nov-2024	18-Nov-2024	18-Nov-2024	18-Nov-2024	----
					HK2448035-001	HK2448035-002	HK2448035-003	HK2448035-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		100	107	30	35	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.07	0.06	0.23	0.22	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	0.001	0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.59	0.57	0.73	0.73	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.02	0.02	0.07	0.08	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6203685)								
HK2448035-002	KTN-CS1#2	EA025: Suspended Solids (SS)	----	2	mg/L	107	110	3.6
HK2448144-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	34	35	3.3
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6200628)								
HK2447873-010	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6200637)								
HK2447950-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	22.0	22.6	2.4

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6203685)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	87.0	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6200628)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.7	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6200637)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	100	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6200628)										
HK2447873-010	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	95.6	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6200637)										
HK2447950-001	Anonymous	EK055K: Ammonia as N	7664-41-7	50 mg/L	105	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2448579
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 21-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 02-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 21-Nov-2024 to 02-Dec-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2448579

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	21-Nov-2024	21-Nov-2024	21-Nov-2024	21-Nov-2024	----
					HK2448579-001	HK2448579-002	HK2448579-003	HK2448579-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		125	163	35	31	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.04	0.04	0.07	0.06	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.79	0.78	0.78	0.83	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.02	0.03	0.08	0.08	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6215788)								
HK2448673-005	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	12	13	0.0
HK2448994-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	18800	19900	6.1
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6207909)								
HK2448582-001	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211229)								
HK2448498-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	10.0	10.2	1.1

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6215788)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	110	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6207909)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	97.9	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211229)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	97.3	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6207909)										
HK2448582-001	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	100	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211229)										
HK2448498-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	97.4	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2448816
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 23-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 02-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
		
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 23-Nov-2024 to 02-Dec-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2448816

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	23-Nov-2024	23-Nov-2024	23-Nov-2024	23-Nov-2024	----
					HK2448816-001	HK2448816-002	HK2448816-003	HK2448816-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		95	113	9	8	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.16	0.14	0.06	0.07	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		0.003	0.002	<0.001	0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.56	0.55	0.65	0.66	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.01	0.01	0.08	0.08	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6217162)								
HK2448701-003	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	52	52	0.0
HK2448816-001	KTN-CS1#1	EA025: Suspended Solids (SS)	----	2	mg/L	95	100	5.6
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211218)								
HK2448816-004	KTN-IS1#2	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.08	0.08	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211231)								
HK2448819-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	20.5	20.6	0.8

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6217162)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	89.0	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211218)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	97.1	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211231)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	96.0	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211218)										
HK2448816-004	KTN-IS1#2	EK071K: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6211231)										
HK2448819-001	Anonymous	EK055K: Ammonia as N	7664-41-7	50 mg/L	97.6	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2448890
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 25-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 02-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2448890

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	22-Nov-2024	25-Nov-2024	22-Nov-2024	25-Nov-2024	----
					HK2448890-001	HK2448890-002	HK2448890-003	HK2448890-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		386	378	83	99	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.02	0.02	0.06	0.07	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		0.001	0.001	0.001	0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.37	0.38	0.71	0.72	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	0.09	0.09	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6219223)								
HK2448890-001	KTN-CS1#1	EA025: Suspended Solids (SS)	----	2	mg/L	386	383	0.6
HK2448890-002	KTN-CS1#2	EA025: Suspended Solids (SS)	----	2	mg/L	378	379	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6217695)								
HK2448890-004	KTN-IS1#2	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.09	0.09	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6217706)								
HK2449025-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	23.7	22.8	4.2

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6219223)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	86.0	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6217695)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	97.8	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6217706)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6217695)										
HK2448890-004	KTN-IS1#2	EK071K: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	104	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6217706)										
HK2449025-001	Anonymous	EK055K: Ammonia as N	7664-41-7	50 mg/L	105	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2449264
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 27-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 05-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2449264

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	27-Nov-2024	27-Nov-2024	27-Nov-2024	27-Nov-2024	----
					HK2449264-001	HK2449264-002	HK2449264-003	HK2449264-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		1740	1890	23	12	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.08	0.08	0.06	0.08	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		0.004	0.003	<0.001	0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.63	0.63	0.56	0.54	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.08	0.07	0.07	0.08	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6226096)								
HK2449249-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	1270	1300	2.2
HK2449249-003	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	12100	12000	0.7
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6224063)								
HK2449264-001	KTN-CS1#1	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.08	0.08	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6224066)								
HK2449240-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	18.6	21.6	15.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6226096)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	104	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6224063)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6224066)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	95.8	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6224063)										
HK2449264-001	KTN-CS1#1	EK071K: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6224066)										
HK2449240-001	Anonymous	EK055K: Ammonia as N	7664-41-7	50 mg/L	100	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2449588
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 29-Nov-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 11-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	**Managing Director**	**Inorganics**

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 29-Nov-2024 to 11-Dec-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2449588

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	29-Nov-2024	29-Nov-2024	29-Nov-2024	29-Nov-2024	----
					HK2449588-001	HK2449588-002	HK2449588-003	HK2449588-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		75	74	19	21	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.14	0.17	0.07	0.07	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		0.002	0.002	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.92	0.94	0.56	0.56	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.03	0.03	0.07	0.07	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6238533)								
HK2449726-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	11	12	0.0
HK2449726-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	11	12	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6227832)								
HK2449473-001	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6227858)								
HK2449587-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	26.3	26.3	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6238533)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	87.5	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6227832)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.8	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6227858)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6227832)										
HK2449473-001	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	102	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6227858)										
HK2449587-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	107	----	75.0	125	----	----

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ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2449792
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 02-Dec-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 11-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 02-Dec-2024 to 11-Dec-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2449792

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	02-Dec-2024	02-Dec-2024	02-Dec-2024	02-Dec-2024	----
					HK2449792-001	HK2449792-002	HK2449792-003	HK2449792-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		16	17	14	15	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.05	0.06	0.10	0.10	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	0.001	0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.99	0.99	0.58	0.56	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.03	0.03	0.07	0.07	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6238534)								
HK2449726-006	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	27	26	0.0
HK2449726-007	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	94	95	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6233423)								
HK2449889-001	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6233443)								
HK2449766-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	24.9	26.0	4.2

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6238534)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	91.5	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6233423)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.1	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6233443)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	97.7	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6233423)										
HK2449889-001	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	108	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6233443)										
HK2449766-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	96.1	----	75.0	125	----	----

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ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2450219
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 04-Dec-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 13-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2450219

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

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EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	04-Dec-2024	04-Dec-2024	04-Dec-2024	04-Dec-2024	----
					HK2450219-001	HK2450219-002	HK2450219-003	HK2450219-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		33	35	8	8	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.06	0.06	0.06	0.06	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		1.05	1.02	0.52	0.53	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	0.08	0.08	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6246213)								
HK2450203-007	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	61	63	3.5
HK2450203-008	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	64	63	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6239980)								
HK2450092-005	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6239986)								
HK2450245-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	28.8	28.7	0.3

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6246213)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	87.5	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6239980)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.7	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6239986)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.3	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6239980)										
HK2450092-005	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	116	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6239986)										
HK2450245-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	92.6	----	75.0	125	----	----

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ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2450719
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 06-Dec-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 16-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

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Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2450719

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	06-Dec-2024	06-Dec-2024	06-Dec-2024	06-Dec-2024	----
					HK2450719-001	HK2450719-002	HK2450719-003	HK2450719-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		58	60	6	5	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.08	0.08	0.07	0.07	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.49	0.48	0.97	0.98	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.02	0.02	0.07	0.07	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6252791)								
HK2450719-001	KTN-CS1#1	**EA025: Suspended Solids (SS)**	----	2	mg/L	58	60	1.9
HK2450828-001	Anonymous	**EA025: Suspended Solids (SS)**	----	2	mg/L	15	16	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6244614)								
HK2450593-001	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6244625)								
HK2450874-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	0.01	mg/L	26.7	30.6	13.5

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6252791)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	88.5	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6244614)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.4	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6244625)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	97.4	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6244614)										
HK2450593-001	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	98.9	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6244625)										
HK2450874-001	Anonymous	EK055K: Ammonia as N	7664-41-7	50 mg/L	101	----	75.0	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2451072
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 09-Dec-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 23-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 09-Dec-2024 to 23-Dec-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2451072

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	09-Dec-2024	09-Dec-2024	09-Dec-2024	09-Dec-2024	----
					HK2451072-001	HK2451072-002	HK2451072-003	HK2451072-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		46	47	26	21	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.04	0.04	0.06	0.06	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.40	0.41	0.50	0.50	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	0.01	0.07	0.06	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6252793)								
HK2451067-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	9	8	0.0
HK2451067-005	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	60	62	3.3
EA/ED: Physical and Aggregate Properties (QC Lot: 6252794)								
HK2451491-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	88	84	4.4
HK2451515-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6251087)								
HK2451006-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	31.7	31.3	1.4
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6251091)								
HK2451072-001	KTN-CS1#1	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6252793)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	89.0	----	80.1	117	----	----
EA/ED: Physical and Aggregate Properties (QC Lot: 6252794)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	88.0	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6251087)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	98.5	----	89.3	109	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6251091)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.4	----	92.4	106	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report										
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number		MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6251087)										
HK2451006-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	114	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6251091)										
HK2451072-001	KTN-CS1#1	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	99.6	----	75.0	125	----	----

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CERTIFICATE OF ANALYSIS

Client	: AURECON HONG KONG LIMITED	Laboratory	: ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	: JOE HO	Contact	: Richard Fung	Work Order	: HK2451674
Address	: UNIT 1608, 16/F, TOWER B, MANULIFE FINANCIAL CENTRE, 223-231 WAI YIP STREET, KWUN TONG, HONG KONG	Address	: 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	: Joe.Ho@aurecongroup.com	E-mail	: richard.fung@alsglobal.com		
Telephone	: ----	Telephone	: +852 2610 1044		
Facsimile	: ----	Facsimile	: +852 2610 2021		
Project	: CONTRACT NO.: NDO 05/2024 - ENVIRONMENTAL TEAM FOR ENVIRONMENTAL MONITORING AND AUDIT WORKS FOR REMAINING PHASE DEVELOPMENT OF KWU TUNG NORTH AND FANLING NORTH NEW DEVELOPMENT AREA			Date Samples Received	: 11-Dec-2024
Order number	: ----	Quote number	: HKE/2438/2024	Issue Date	: 23-Dec-2024
C-O-C number	: ----			No. of samples received	: 4
Site	: ----			No. of samples analysed	: 4

This document has been signed by those names that appear on this report and are the authorised signatories.

Signatories	*Position*	*Authorised results for*
Fung Lim Chee, Richard	Managing Director	Inorganics

General Comments

This report supersedes any previous report(s) with the same work order number. All pages of this report have been checked and approved for release. When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes. Testing period is from 11-Dec-2024 to 23-Dec-2024.

Key: LOR = Limit of reporting; CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

Specific Comments for Work Order: HK2451674

Sample information (Project name, Sample ID, Sampling date/time, etc.) is provided by client.

Result(s) of sample(s) is/are reported on as received basis, unless otherwise specified. The result(s) is/are related only to the item(s) tested.

Sample(s) was/ were submitted by client. Sample(s) arrived laboratory in chilled condition.

EK055K - Result of Unionized Ammonia was calculated from Ammoniacal Nitrogen (NH3-N) and in-situ measurement of temperature, pH and Salinity. Ammoniacal Nitrogen results are determined by the laboratory and in-situ measurement results were provided by the client.

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Sample ID	KTN-CS1#1	KTN-CS1#2	KTN-IS1#1	KTN-IS1#2	----
				Sampling date / time	11-Dec-2024	11-Dec-2024	11-Dec-2024	11-Dec-2024	----
					HK2451674-001	HK2451674-002	HK2451674-003	HK2451674-004	--------
EA/ED: Physical and Aggregate Properties									
EA025: Suspended Solids (SS)	----	2	mg/L		656	696	6	8	----
ED/EK: Inorganic Nonmetallic Parameters									
EK055K: Ammonia as N	7664-41-7	0.01	mg/L		0.04	0.04	0.05	0.05	----
EK055K: Unionized Ammonia (as N)	----	0.001	mg/L		0.001	0.001	<0.001	<0.001	----
EK058A: Nitrate as N	14797-55-8	0.01	mg/L		0.31	0.30	0.48	0.47	----
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L		0.02	0.02	0.07	0.09	----

-------- END OF REPORT --------

Laboratory Duplicate (DUP) Report

In the Laboratory Duplicate (DUP) report, RPD (%) of sample duplicate reporting “0.0” denotes that the difference between unrounded results of the sample and its duplicate analyses is less than the value of the limit of reporting of the specific testing. The RPD (%) meets the quality control requirement of the corresponding testing procedure.

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 6256270)								
HK2451674-001	KTN-CS1#1	EA025: Suspended Solids (SS)	----	2	mg/L	656	650	0.9
HK2451674-002	KTN-CS1#2	EA025: Suspended Solids (SS)	----	2	mg/L	696	687	1.4
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6258005)								
HK2451564-001	Anonymous	EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6258008)								
HK2451491-001	Anonymous	EK055K: Ammonia as N	7664-41-7	0.01	mg/L	25.0	24.9	0.5

Method Blank (MB), Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike Concentration	Spike Recovery (%)		Recovery Limits(%)		RPD (%)	
		LOR	Unit	Result		LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QC Lot: 6256270)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	10 mg/L	89.0	----	80.1	117	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6258005)											
EK071K: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.3	----	92.4	106	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6258008)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	95.2	----	89.3	109	----	----

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPD (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6258005)										
HK2451564-001	Anonymous	**EK071K: Reactive Phosphorus as P**	14265-44-2	0.5 mg/L	109	----	75.0	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 6258008)										
HK2451491-001	Anonymous	**EK055K: Ammonia as N**	7664-41-7	50 mg/L	98.7	----	75.0	125	----	----

Appendix 2.5
Quality Control Summary Table

Project Name:
Contract No. NDO 05/2024 Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas

Baseline Water Quality Monitoring Result – Appendix Quality Control Summary Table

		Method Blank Report		Duplicate Report			Sample Spike Report		Matrix Spike Report		Pass / Fail
		Limit of Reporting (LOR)	Result	Original Result	Duplicate Result	Relative Percent Difference (RPD)	Spike Concentration	Spike Recovery	Spike Concentration	Spike Recovery	
Sampling Date	Units / Work Order	mg/L	mg/L	mg/L	mg/L	%	mg/L	%	mg/L	%	
15 Nov 2024	HK2447826 (SS)	2	<2	75	73	2.7	10	89.5	-	-	Pass
15 Nov 2024	HK2447826 (SS)	2	<2	700	685	2.2	10	89.5	-	-	Pass
15 Nov 2024	HK2447826 (SS)	2	<2	134	141	4.8	10	90	-	-	Pass
15 Nov 2024	HK2447826 (SS)	2	<2	20	21	9.2	10	90	-	-	Pass
15 Nov 2024	HK2447826 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	96.4	0.5	114	Pass
15 Nov 2024	HK2447826 (Ammonia Nitrogen)	0.01	<0.01	12.2	12.6	3.9	0.5	99.1	50	96.3	Pass
18 Nov 2024	HK2448035 (SS)	2	<2	107	110	3.6	10	87	-	-	Pass
18 Nov 2024	HK2448035 (SS)	2	<2	34	35	3.3	10	87	-	-	Pass
18 Nov 2024	HK2448035 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	98.7	0.5	95.6	Pass
18 Nov 2024	HK2448035 (Ammonia Nitrogen)	0.01	<0.01	22.0	22.6	2.4	0.5	100	50	105	Pass
21 Nov 2024	HK2448579 (SS)	2	<2	12	13	0	10	110	-	-	Pass
21 Nov 2024	HK2448579 (SS)	2	<2	18800	19900	6.1	10	110	-	-	Pass
21 Nov 2024	HK2448579 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	97.9	0.5	100	Pass
21 Nov 2024	HK2448579 (Ammonia Nitrogen)	0.01	<0.01	10	10.2	1.1	0.5	97.3	50	97.4	Pass
23 Nov 2024	HK2448816 (SS)	2	<2	52	52	0	10	89	-	-	Pass
23 Nov 2024	HK2448816 (SS)	2	<2	95	100	5.6	10	89	-	-	Pass
23 Nov 2024	HK2448816 (Orthophosphate)	0.01	<0.01	0.08	0.08	0	0.5	97.1	0.5	102	Pass
23 Nov 2024	HK2448816 (Ammonia Nitrogen)	0.01	<0.01	20.5	20.6	0.8	0.5	96	50	97.6	Pass
25 Nov 2024	HK2448890 (SS)	2	<2	386	383	0.6	10	86	-	-	Pass

Project Name:
Contract No. NDO 05/2024 Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas

Baseline Water Quality Monitoring Result – Appendix Quality Control Summary Table

		Method Blank Report		Duplicate Report			Sample Spike Report		Matrix Spike Report		Pass / Fail
		Limit of Reporting (LOR)	Result	Original Result	Duplicate Result	Relative Percent Difference (RPD)	Spike Concentration	Spike Recovery	Spike Concentration	Spike Recovery	
Sampling Date	Work Order / Units	mg/L	mg/L	mg/L	mg/L	%	mg/L	%	mg/L	%	
25 Nov 2024	HK2448890 (SS)	2	<2	378	379	0	10	86	-	-	Pass
25 Nov 2024	HK2448890 (Orthophosphate)	0.01	<0.01	0.09	0.09	0	0.5	97.8	0.5	104	Pass
25 Nov 2024	HK2448890 (Ammonia Nitrogen)	0.01	<0.01	23.7	22.8	4.2	0.5	102	50	106	Pass
27 Nov 2024	HK2449264 (SS)	2	<2	1270	1300	2.2	10	104	-	-	Pass
27 Nov 2024	HK2449264 (SS)	2	<2	12100	12000	2.2	10	104	-	-	Pass
27 Nov 2024	HK2449264 (Orthophosphate)	0.01	<0.01	0.08	0.08	0	0.5	103	0.5	102	Pass
27 Nov 2024	HK2449264 (Ammonia Nitrogen)	0.01	<0.01	18.6	21.6	15	0.5	95.8	50	100	Pass
29 Nov 2024	HK2449588 (SS)	2	<2	11	12	0	10	87.5	-	-	Pass
29 Nov 2024	HK2449588 (SS)	2	<2	11	12	0	10	87.5	-	-	Pass
29 Nov 2024	HK2449588 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	98.8	0.5	102	Pass
29 Nov 2024	HK2449588 (Ammonia Nitrogen)	0.01	<0.01	26.3	26.3	0	0.5	101	50	107	Pass
02 Dec 2024	HK2449792 (SS)	2	<2	27	26	0	10	91.5	-	-	Pass
02 Dec 2024	HK2449792 (SS)	2	<2	94	95	0	10	91.5	-	-	Pass
02 Dec 2024	HK2449792 (Orthophosphate)	0.01	<0.01	0.02	0.02	0	0.5	99.1	0.5	108	Pass
02 Dec 2024	HK2449792 (Ammonia Nitrogen)	0.01	<0.01	24.9	26	4.2	0.5	97.7	50	96.1	Pass
04 Dec 2024	HK2450219 (SS)	2	<2	61	63	3.5	10	87.5	-	-	Pass
04 Dec 2024	HK2450219 (SS)	2	<2	64	63	0	10	87.5	-	-	Pass
04 Dec 2024	HK2450219 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	99.7	0.5	116	Pass
04 Dec 2024	HK2450219 (Ammonia Nitrogen)	0.01	<0.01	28.8	28.7	0.3	0.5	99.3	50	92.6	Pass

Project Name:
Contract No. NDO 05/2024 Environmental Team for Environmental Monitoring and Audit Works for Remaining Phase Development of Kwu Tung North and Fanling North New Development Areas

Baseline Water Quality Monitoring Result – Appendix Quality Control Summary Table

		Method Blank Report		Duplicate Report			Sample Spike Report		Matrix Spike Report		Pass / Fail
		Limit of Reporting (LOR)	Result	Original Result	Duplicate Result	Relative Percent Difference (RPD)	Spike Concentration	Spike Recovery	Spike Concentration	Spike Recovery	
Sampling Date	Units / Work Order	mg/L	mg/L	mg/L	mg/L	%	mg/L	%	mg/L	%	
06 Dec 2024	HK2450719 (SS)	2	<2	58	60	1.9	10	88.5	-	-	Pass
06 Dec 2024	HK2450719 (SS)	2	<2	15	16	0	10	88.5	-	-	Pass
06 Dec 2024	HK2450719 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	98.4	0.5	98.9	Pass
06 Dec 2024	HK2450719 (Ammonia Nitrogen)	0.01	<0.01	26.7	30.6	13.5	0.5	97.4	50	101	Pass
09 Dec 2024	HK2451072 (SS)	2	<2	9	8	0	10	89	-	-	Pass
09 Dec 2024	HK2451072 (SS)	2	<2	60	62	3.3	10	89	-	-	Pass
09 Dec 2024	HK2451072 (SS)	2	<2	88	84	4.4	10	88	-	-	Pass
09 Dec 2024	HK2451072 (SS)	2	<2	3	3	0	10	88	-	-	Pass
09 Dec 2024	HK2451072 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	99.4	0.5	99.6	Pass
09 Dec 2024	HK2451072 (Ammonia Nitrogen)	0.01	<0.01	31.7	31.3	1.4	0.5	98.5	50	114	Pass
11 Dec 2024	HK2451674 (SS)	2	<2	656	650	0.9	10	89	-	-	Pass
11 Dec 2024	HK2451674 (SS)	2	<2	696	687	1.4	10	89	-	-	Pass
11 Dec 2024	HK2451674 (Orthophosphate)	0.01	<0.01	<0.01	<0.01	0	0.5	99.3	0.5	109	Pass
11 Dec 2024	HK2451674 (Ammonia Nitrogen)	0.01	<0.01	25	24.9	0.5	0.5	95.2	50	98.7	Pass

Document prepared by

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Bringing ideas to life