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BASELINE ENVIRONMENATL MONITORING REPORT (WATER)

Client : Drainage Services Department

Contract No. : CM 8/2018

Project : Expansion of Sha Tau Kok Sewage Treatment Works – Environmental Team Services for Baseline Phase

EP No. : EP-517/2017/A

Report No.: 0118/18/ED/0307F

Prepared by : Wingo H. W. So

Reviewed by : Cyrus C. Y. Lai

Certified by :

Calvin M. P. Leung
Environmental Team Leader
Fugro Technical Services Limited

ANEWR

Drainage Services Department
42/F, Revenue Tower
5 Gloucester Road
Wan Chai
Hong Kong

Your reference:

Our reference: HKDSD206/50/106202

Date: 27 December 2019

Attention: Mr K K Leung

BY EMAIL & POST
(email: kkleung04@dsd.gov.hk)

Dear Sirs

Agreement No.: CM 14/2018
Independent Environmental Checker Services for
Expansion of Sha Tau Kok Sewage Treatment Works
Baseline Environmental Monitoring Report (Water)

We refer to email of 12 December 2019 from Fugro Technical Services Limited attaching the Baseline Environmental Monitoring Report (Water) (0118_18_ED_0307F).

We have no comment and hereby verify the captioned Report in accordance with Clause 3.3 of the Environmental Permit no. EP-517/2017/A.

Should you have any queries, please do not hesitate to contact the undersigned or our Mr Adi Lee at 2618 2831.

Yours faithfully
ANEWR CONSULTING LIMITED

James Choi
Independent Environmental Checker

CPSJ/LYMA/CYYH/lhmh

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ISO 9001 : 2015
Certificate No.: CC 3988

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EXECUTIVE SUMMARY

i. Drainage Services Department (hereafter referred as “DSD”) is the Project Proponent and the Permit Holder of Contract No. CM 8/2018 Expansion of Sha Tau Kok Sewage Treatment Works (STKSTW) (hereinafter referred as “the Project”), which is a Designated Project to be implemented under Environmental Permit number EP-517/2017/A (hereinafter referred as “the VEP-567/2019” or “the EP”).

ii. Fugro Technical Services Limited (hereinafter referred as “FTS”) has been commissioned as the Environmental Team for Baseline Phase (hereinafter referred as “the ET”) to perform relevant Environmental Monitoring and Audit (EM&A) programme for baseline environmental monitoring in accordance with the EM&A Manual approved under the Environmental Impact Assessment Ordinance (EIAO).

iii. According to the Environmental Monitoring and Audit (EM&A) Manual in August 2016 (hereinafter referred as ‘the EM&A Manual’), water quality monitoring should be required to be monitored during the baseline phase of the Project. Moreover, baseline environmental monitoring for water quality is required to be conducted prior to commencement of the construction works/activities under the Project.

iv. Baseline water quality monitoring, which comprise with 3 sampling days a week, have been undertaken at the proposed monitoring locations from 26 February and 23 March 2019. During the baseline monitoring period, no construction activities under the Project were observed by ET.

v. 5 monitoring locations stated in the EM&A Manual (M6, H4, H1, M1, SG) was relocated for water sampling during the baseline monitoring due to accessibility and safety concern. The relocation of monitoring location is following the criteria in approved EM&A Manual. The coordinates of water quality monitoring locations are listed in **Table 2.5**.

vi. This report summarizes the key findings and presents the process and rationale behind determining a set of Action and Limit Levels (A/L Levels) of water quality based on the baseline data. They are statistical in nature and derived according to the criteria set out in the EM&A Manual

vii. Collected data was processed, reviewed and analysed to establish the Action and Limit Levels for pH, temperature, salinity, phosphorus, nitrogen, ammonia nitrogen, dissolved oxygen (DO), suspended solid (SS), ammonia, turbidity, biological oxygen demand (BOD) and E.*coli*.

viii. Results of the derived Action and Limit Levels for the Construction Phase and the First-year Operation of the Temporary Sewage Treatment Plant (TSTP) and Expanded STKSTW are given in Tables ES-1 and Table ES-2 as follows.

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Table ES-1 Determination of Action and Limit Levels for Construction Phase

Monitoring Location	Monitoring Level	DO (mg/L)		Turbidity (NTU)		Total Suspended Solids (mg/L)	
		AL	LL	AL	LL	AL	LL
FCZ2	S & M	5.10#	5.00#	2.6*	5.0^	5*	6^
	B	5.10#	5.00#				
M6A	M	6.14	6.08+	17.1*	20.8^	7*	7^
N1	S & M	5.36	5.34+	7.5*	13.1^	5*	8^
	B	5.06	5.05+				
N2	S & M	5.95	5.71+	4.7*	5.9^	5*	6^
	B	5.56	5.53+				
FCZ7	S & M	5.10#	5.00#	6.0*	6.4^	5*	5^
	B	5.10#	5.00#				
FCZ1B	S &M	5.10#	5.00#	4.5*	5.5^	8*	12^
	B	5.10#	5.00#				
FCZ8	S	5.10#	5.00#	5.2*	9.1^	6*	7^
	B	5.10#	5.00#				
H4A	M	5.94	5.86+	4.7*	4.8^	8*	9^
FCZ1A	S	5.10#	5.00#	8.0*	10.5^	13*	21^
	B	5.10#	5.00#				
H1A	M	6.01	5.97+	6.5*	6.6^	14*	15^
M1A	M	5.63	5.54+	5.8*	6.1^	9*	10^
SGA	M	6.00	5.90+	6.0*	6.2^	10*	11^

Remarks:
According to the EM&A Manual, for FCZ:
AL of DO is 5.1 mg/L or level at control station at same tide of the same day (whichever lower) and LL of DO is 5.0 mg/L or level at control station at same tide of the same day (whichever lower);
+ 1 percentile of baseline data were adopted for LL for DO as those levels were greater than 4 mg/L for Surface and Middle and 2 mg/L for Bottom;
* Or 120% of control station's level at the same tide of the same day;
^ Or 130% of control station's level at the same tide of the same day.

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Table ES-2 Determination of Action and Limit Levels for Marine Water Monitoring for First-year Operation of TSTP and Expanded STKSTW

Monitoring Location	Monitoring Level	DO (mg/L)		Turbidity (NTU)		Salinity (ppt)		Total Suspended Solids (mg/L)		BOD_5 (mg/L)		Total Phosphorus (mg/L)		Total Nitrogen (mg/L-N)		Ammonia Nitrogen (mg/L-N)		Total Inorganic Nitrogen (mg/L-N)		*E.coli* (cfu/100mL)	
		AL	LL	AL	LL	AL[c]	LL[c]	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
FCZ2	S & M	5.10[#]	5.00[#]	2.6*	5.0^	31.25	31.24	5*	6^	3*	4^	0.01*	0.02^	0.69*	1.00 ^	0.22*	0.26^	0.29[a]	0.33[a]	600[b]	610[b]
	B	5.10[#]	5.00[#]																		
M6A	M	6.14	6.08[+]	17.1*	20.8^	30.68	30.68	7*	7^	3*	3^	0.02*	0.03^	0.50*	0.58 ^	0.15*	0.16^	0.32[a]	0.34[a]	104[b]	133[b]
N1	S & M	5.36	5.34[+]	7.5*	13.1^	31.49	31.44	5*	8^	3*	4^	0.02*	0.02^	0.50*	0.60 ^	0.20*	0.21^	0.33[a]	0.36[a]	536[b]	707[b]
	B	5.06	5.05[+]																		
N2	S & M	5.95	5.71[+]	4.7*	5.9^	31.29	31.28	5*	6^	3*	4^	0.04*	0.04^	0.60*	0.72^	0.21*	0.26^	0.35[a]	0.48[a]	495[b]	529[b]
	B	5.56	5.53[+]																		
FCZ7	S & M	5.10[#]	5.00[#]	6.0*	6.4^	31.13	31.10	5*	5^	3*	3^	0.02*	0.03^	0.50*	0.56^	0.21*	0.22^	0.34[a]	0.36[a]	600[b]	610[b]
	B	5.10[#]	5.00[#]																		
FCZ1B	S & M	5.10[#]	5.00[#]	4.5*	5.5^	30.93	30.92	8*	12^	6*	8^	0.07*	0.08^	0.60*	0.73^	0.22*	0.25^	0.36[a]	0.39[a]	600[b]	610[b]
	B	5.10[#]	5.00[#]																		
FCZ8	S	5.10[#]	5.00[#]	5.2*	9.1^	31.14	31.13	6*	7^	5*	6^	0.04*	0.04^	0.60*	0.80^	0.32*	0.62^	0.41[a]	0.70[a]	600[b]	610[b]
	B	5.10[#]	5.00[#]																		
H4A	M	5.94	5.86[+]	4.7*	4.8^	30.42	30.42	8*	9^	3*	3^	0.06*	0.06^	0.60*	0.60^	0.23*	0.26^	0.44[a]	0.57[a]	78[b]	91[b]
FCZ1A	S	5.10[#]	5.00[#]	8.0*	10.5^	30.60	30.59	13*	21^	3*	3^	0.03*	0.04^	0.67*	0.70^	1.10*	1.96^	1.18[a]	2.03[a]	600[b]	838[b]
	B	5.10[#]	5.00[#]																		
H1A	M	6.01	5.97[+]	6.5*	6.6^	30.39	30.39	14*	15^	3*	3^	0.03*	0.04^	2.32*	2.60^	0.97*	1.10^	2.31[a]	2.50[a]	127[b]	153[b]
M1A	M	5.63	5.54[+]	5.8*	6.1^	30.43	30.42	9*	10^	3*	3^	0.04*	0.04^	0.69*	0.70^	1.49*	1.70^	1.58[a]	1.80[a]	864[b]	1385[b]
SGA	M	6.00	5.90[+]	6.0*	6.2^	30.82	30.81	10*	11^	3*	3^	0.03*	0.04^	0.60*	0.68^	1.06*	1.20^	1.08[a]	1.26[a]	129[b]	138[b]

Remarks:

[#] According to the EM&A Manual, for FCZ:
AL of DO is 5.1 mg/L or level at control station at same tide of the same day (whichever lower) and LL of DO is 5.0 mg/L or level at control station at same tide of the same day (whichever lower);

[+] 1 percentile of baseline data were adopted for LL for DO as those levels were greater than 4 mg/L for Surface and Middle and 2 mg/L for Bottom;

* Or 120% of control station's level at the same tide of the same day;

^ Or 130% of control station's level at the same tide of the same day.

[a] According to the EM&A Manual, AL of TIN is 0.29 mg/L or 95%-ile of baseline level and LL of TIN is 0.30 mg/L or 99%-ile of baseline level

[b] According to the EM&A Manual, AL of *E.coli* is 600 cfu/100mL for fish culture zones or 95%-ile of baseline level and LL of *E.coli* is 610 cfu/100mL for fish culture zones or 99%-ile of baseline level

[c] According to the EM&A Manual, AL of Salinity is Below 91% of baseline level or 9% less than value at any impact station compared with corresponding data from control station and LL of Salinity is Below 90% of baseline level or 10% less than value at any impact station compared with corresponding data from control station

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1. INTRODUCTION

1.1 Background

1.1.1 The Project in Sha Tau Kok mainly comprises of the following items:

i) Increase the treatment capacity of Sha Tau Kok Sewage Treatment Works (STKSTW) to 5,000 m^3/day at Average Dry Weather Flow (ADWF) in Phase 1, with suitable allowance to cater for a further increase of treatment capacity to 10,000 m^3/day at ADWF in Phase 2;
ii) Construct a Temporary Sewage Treatment Plant (TSTP);
iii) Demolish the existing Sha Tau Kok Sewage Pumping Station (STKSPS) and decommission the rising main between STKSPS and STKSTW;
iv) Construct a new gravity sewer; and
v) Decommission the existing submarine outfall and construct a new one.

1.1.2 The construction programme of the Project is provided in **Appendix F**.

1.1.3 The Project site will be within the existing STKSTW while the construction of the gravity sewers and demolition of STKSPS will be carried out in Sha Tau Kok Town. The proposed submarine outfall will be constructed by Horizontal Directional Drilling (HDD) method under the sea bed of Starling Inlet.

1.1.4 Fugro Technical Services Limited (FTS) has been appointed to work as the Baseline Phase Environmental Team (ET) for Drainage Services Department to implement the Environmental Monitoring and Audit (EM&A) programme for the Environmental Permit No. EP-517/2017/A - Expansion of Sha Tau Kok Sewage Treatment Works.

1.1.5 The EM&A programme of this project shall be implemented in accordance with the requirements and procedures set out in the EM&A Manual (AEIAR-207/2017) and the Environmental Permit No. EP-517/2017/A.

1.2 Purpose of Baseline Monitoring Report

1.2.1 The purpose of this baseline water quality monitoring report is to determine the ambient conditions of water quality and to establish the Action and Limit Levels (A/L Levels) for impact and compliance monitoring during the project implementation period. This report presents the locations, period, equipment methodology and results of baseline measurements.

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2. MONITORING DETAILS

2.1 Monitoring Parameter and Frequency

2.1.1 The monitoring parameters and frequency for both in-situ measurement and laboratory analysis are summarised in **Table 2.1**. Baseline water quality monitoring was carried out 3 days per week for 4 consecutive weeks from 26 Feb to 23 Mar, 2019. Detailed baseline monitoring schedule is included in Appendix A.

Table 2.1 Monitoring Parameters and Frequency

Parameters	Monitoring Frequency
In-situ Measurement Turbidity (in NTU), pH, DO (in mg/L), Temperature (in°C), Salinity (in ‰)	- Duplicate measurements/samples taken once per day for 3 days per week for 4 consecutive weeks - 36 hours interval shall be allowed between subsequent sets of measurement
Laboratory Measurement/Analysis Total Suspended Solids (in mg/L), Biochemical Oxygen Demand (in mg/L), Total Phosphorus(in mg/L), Total Nitrogen (in mg/L), Ammonia Nitrogen (in mg/L), Total Inorganic Nitrogen (in mg/L), *E.coli* (in CFU/100 mL)	

2.2 Monitoring Equipment

2.2.1 Equipment used for in-situ measurement and water sampling during baseline water quality monitoring is summarised in **Table 2.2** and **Table 2.3**. The equipment is in compliance with the requirements set out in the EM&A Manual. All in-situ monitoring instruments were calibrated by a HOKLAS-accredited laboratory or by standard solutions before commencement of the baseline monitoring programme. Calibration certificates for the water quality monitoring equipment are attached in **Appendix B**.

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Table 2.2 Water Quality Monitoring and Sampling 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 Depth: 0-61 meters	Temp: ±0.15°C DO: ±0.1mg/L or 1% (whichever greater) for 0-20mg/L; ±15% for 20-50mg/L (with correction for salinity and temperature) 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)
Current Velocity and Direction	Current Meter	Valeport Model 106	Speed: 0.03 to 5 m/s Direction: 0 to 360	Speed: ± 1.5% of reading above 0.15m/s, ± 0.004 m/s below 0.15m/s Direction: ± 2.5o
Water Sampling	Water Sampler	Acrylic Beta Water Bottle Kit, Horizontal, 3.2L / 4.2L	NA	NA
Positioning	Global Positioning System (GPS)	Garmin eTrex	NA	±3m
Water Depth	Echo Sounder	Garmin ECHO 101	Maximum depth: 457.2 m	0.1 m

Table 2.3 Container Types for Holding Water Samples

Test Parameter	Container Type (Preservation)
TSS, BOD_5, Total Nitrogen, Ammonia Nitrogen, Total Inorganic Nitrogen	1 x 2 L Plastic Bottle (none)
Total Phosphorus	1 x 180 mL Plastic Bottle (none)
E. coli	1 x 100 mL Sterilized Plastic Bottle (Sodium Thiosulfate)

2.3 Equipment Calibration

2.3.1 All in-situ monitoring instruments shall be checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 months intervals throughout the water quality monitoring programme. Responses of sensors and electrodes shall be checked with certified standard solutions before each use. Certificate for calibration of in-situ instruments shall also be provided for auditing.

2.3.2 Wet bulb calibration for a DO probe shall be carried out at least once per monitoring day. 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 mgL-1).

2.3.3 For the on-site calibration of field equipment, the BS 1427: 1993, Guide to Field and On-Site Test Methods for the Analysis of Waters should 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 is uninterrupted even when some equipment is under maintenance or calibration etc.

2.4 Monitoring Methodology

2.4.1 There should not be any construction activities in the vicinity of the monitoring stations during the baseline monitoring. Any non-project related construction activities in the vicinity of the monitoring stations during the baseline monitoring should be noted and the source and location of such activities should be recorded.

2.4.2 The position of water monitoring station will be located by the Differential Global Positioning System (DGPS) or equivalent. The water depth of water monitoring station will be determined by the echo sounder affixed to the bottom of the monitoring vessel or a portable echo sounder depth detector.

2.4.3 Once the location and water depth are confirmed, the in-situ measurements and water samples were taken at 3 depths (1m below the surface, mid-depth, and 1m above the seabed) of the water column for each monitoring location, except where the water depth was less than 6m in which case the mid-depth was omitted and for locations where the water depth was less than 3m only the mid-depth level was monitored.

In-Situ Measurement

2.4.4 Prior to each monitoring day, wet bulb calibration was performed for the DO probes. Zero check in distilled water and calibration with a solution of known NTU were carried out for the turbidity probes. Three-point calibration of pH probes was completed each monitoring day.

2.4.5 Two consecutive measurements of water quality data, including pH, salinity, dissolved oxygen and turbidity will be recorded according to the monitoring locations. Separate deployment of the monitoring instruments and water samplers will be conducted for the consecutive measurements or samplings. The monitoring location / position, time, water depth, sampling depth, tidal stages, weather conditions, sea condition and any special phenomena or work underway nearby shall also be recorded. If the difference in value between the first and second measurement of DO or turbidity parameters is more than 25% of the value of the first reading, the reading shall be discarded and further readings should be taken.

Laboratory Analysis

2.4.6 Water samples shall be collected in plastic bottles, packed in ice (cooled to 4°C without being frozen), and delivered to the laboratory as soon as possible after collection. Types and volume of sample container and preservatives used (if any) are displayed in **Table 2.3**. Each bottle will be labelled on the surface with location, tide, parameter and replicate information of the sample. The holding time for sample is 24 hours after collection of water sample.

2.4.7 Duplicate marine samples will be collected in each sampling event. The water samples are decanted from the water sampler into the water sample bottles. The bottles are labelled, tightly sealed, placed into a cool-box and packed with ice ready for delivery to the laboratory.

2.4.8 Fugro Technical Services Limited and ALS Technichem (HK) Pty Ltd (for Total Phosphorus and E.coli test only) will be responsible for the analysis of the following parameters.

Table2.4 Laboratory Measurement/Analysis Method and Reporting Limits

Analysis Description	Method	Reporting limits
Total Suspended Solids	APHA 2540D	1 mg/L
5-day Biochemical Oxygen Demand	BS 6068: Section 2.14:1990	3 mg/L
Total Phosphorus	APHA 17e 4500-PB5 and Inhouse method E-T-056	0.01 mg/L
Total Nitrogen	Inhouse method E-T-037 & APHA 20e 4500-NO3F	0.05 mg/L
Ammonia Nitrogen	Inhouse method E-T-095	0.02 mg/L
Total Inorganic Nitrogen	Inhouse method E-T-095, APHA 20e 4500-NO2-A & NO3-F and APHA 20e 4500-NO3-E & F	0.05 mg/L
E. coli	DoE Section 7.8 & 7.9 plus in situ urease test	1 cfu/100mL

2.4.9 In exceptional cases, when baseline monitoring data obtained are insufficient or questionable, the ET should liaise with the IEC and EPD to agree on an appropriate set of data to be used as the baseline reference.

2.4.10 The monitoring and the QA/QC procedures are as follows:

The laboratory incorporates a variety of QA/QC monitoring programme into their testing system. Where applicable or available, the quality of the analysis will be monitored by conducting the following QC analysis:

For each batch of 20 samples:
- A minimal of 1 laboratory method blank will be analyzed;
- A minimal of 1 sample duplicate will be analyzed;
- A minimal of 1 sample matrix spike will be analyzed.

Details of the Quality Assurance / Quality Control results for the laboratory analysis are shown in **Appendix C**.

2.5 Monitoring Locations

2.5.1 5 monitoring locations stated in the EM&A Manual (SG, M1, M6, H1 and H4) were relocated for the baseline water sampling due to the following reasons:

- The original coordinates are located on the shallow water area which may cause safety concern for vessel to access as cracking of vessel may be caused by hitting rocks at the seabed
- Insufficient depth of water sample would cause disturbance from the seabed which may also affect monitoring results; and
- The proposed coordinates are the closest locations to original coordinates and can be reached safely, and interference should be minimized. Thus it is a suitable alternative water quality monitoring location.

2.5.2 It is not recommended to access the 5 original monitoring locations (M6, H4, H1, M1, SG) by walk or from the shore due to the following reasons:

- SG and H4 are located approximate 60m and 90m respectively away from the shore. It is not recommended to access SG and H4 by walk due to safety concern;
- M1, M6 and H1 are located close to the shore. However, with consideration of safety concern, it is not recommended to access M1, M6 and H1 from the shore with rocky surface. Besides the shores may be flooded during flood tides.

2.5.3 The Monitoring Stations are summarized in **Table 2.5** and shown in **Figure 1**.

Table 2.5 Coordinates of Proposed Water Quality Monitoring Locations

Sampling Location		Easting	Northing
FCZ1A	Sha Tau Kok Fish Culture Zone – East	840892	844241
FCZ1B	Sha Tau Kok Fish Culture Zone – West	841565	844299
FCZ2	Ap Chau Fish Culture Zone	845701	845691
FCZ7	Temporary Relocation Site for Fish Rafts of the Sha Tau Kok Fish Culture Zone	842282	844451
FCZ8	Temporary Relocation Site for Fish Rafts of the Sha Tau Kok Fish Culture Zone	841511	843959
SGA*	Seagrass Colony	841064	844580
M1A*	Mangrove Stand	840744	844853
M6A*	Mangrove Stand	843196	845173
H1A*	Horseshoe Crab	840645	844398
H4A*	Horseshoe Crab	840304	843546
N1	Impact Station of the Expanded STKSTW (Ebb Tide)	842863	845378

Sampling Location		Easting	Northing
N2	Impact Station of the Expanded STKSTW (Flood Tide)	842109	844631
C	Control Station	844690	845886

Remark:
* Relocation for water sampling during the baseline monitoring due to accessibility and safety concern.

2.5.4 The distance of proposed alternative water quality monitoring locations to its original location and detected water depth are given in **Table 2.6**.

Table 2.6 Detected Water Depth and Distance Deviation of Alternative Locations

Sampling Location		Distance Deviation to its Original Location in EM&A Manual (m)	Detected Water Depth in Reconnaissance Visit (m)
SGA	Seagrass Colony	<80	1.1
M1A	Mangrove Stand	<100	0.9
M6A	Mangrove Stand	<50	1.5
H1A	Horseshoe Crab	<400	1.4
H4A	Horseshoe Crab	<900	2.0

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3. RESULTS AND OBSERVATIONS

3.1 Results

3.1.1 The baseline monitoring work was conducted between 26 February and 23 March 2019.

3.1.2 A summary of the in-situ baseline water quality monitoring results is given in **Table 3.1**. The complete record of baseline monitoring results is provided in **Appendix D**.

3.1.3 Results of laboratory analysis of baseline water quality are presented in **Table 3.2**. The complete record of laboratory analysis results are given in **Appendix D**.

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Table 3.1 Summary of In-situ Monitoring Results

Monitoring Location		DO (mg/L)					Turbidity (NTU) Depth Averaged				
		Mean	Max	Min	5 %-tile	1 %-tile	Mean	Max	Min	95 %-tile	99 %-tile
	S & M	7.48	8.90	5.88	6.23	5.99					
FCZ2	B	6.77	7.69	5.44	5.69	5.50	1.2	5.1	0.0	2.6	5.0
	S & M	7.36	9.02	6.06	6.08	6.06					
C	B	6.66	7.34	5.44	5.57	5.45	1.3	4.2	0.0	4.1	4.1
M6A	M	7.11	8.02	6.07	6.14	6.08	3.7	21.2	0.5	17.1	20.8
	S & M	7.17	8.71	5.33	5.36	5.34					
N1	B	5.96	6.93	5.05	5.06	5.05	1.9	13.7	0.2	7.5	13.1
	S & M	7.94	10.12	5.70	5.95	5.71					
N2	B	6.20	7.60	5.53	5.56	5.53	1.8	6.0	0.0	4.7	5.9
	S & M	7.61	9.21	5.90	6.31	5.90					
FCZ7	B	5.96	7.92	5.08	5.10	5.08	2.0	6.4	0.1	6.0	6.4
	S & M	7.69	11.71	5.56	6.18	5.58					
FCZ1B	B	6.06	6.88	5.21	5.27	5.22	2.0	6.5	0.0	4.5	5.5
	S	7.73	10.34	5.88	6.03	5.88					
FCZ8	B	5.98	6.74	3.40	3.78	3.42	2.3	9.5	0.3	5.2	9.1
H4A	M	6.71	7.78	5.86	5.94	5.86	2.4	4.8	0.2	4.7	4.8
	S	7.13	7.73	6.13	6.19	6.13					
FCZ1A	B	6.49	6.93	5.66	5.74	5.67	2.4	10.6	0.0	8.0	10.5
H1A	M	6.85	7.37	5.97	6.01	5.97	3.3	6.6	0.2	6.5	6.6
M1A	M	6.42	7.24	5.53	5.63	5.54	3.3	6.2	1.1	5.8	6.1
SGA	M	7.11	7.78	5.90	6.00	5.90	2.9	6.2	1.2	6.0	6.2

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Table 3.1 Summary of In-situ Monitoring Results (Continued)

Monitoring Location	pH Depth Averaged			Salinity (ppt) Depth Averaged					Temperature (℃) Depth Averaged		
	Mean	Max	Min	Mean	Max	Min	91 %-tile	90 %-tile	Mean	Max	Min
FCZ2	8.09	8.26	7.84	30.06	31.69	20.53	31.25	31.24	20.05	21.43	19.27
C	8.14	8.24	7.95	30.93	31.88	30.11	31.42	31.41	19.99	21.52	19.22
M6A	8.10	8.17	7.95	30.58	30.69	30.11	30.68	30.68	20.43	21.98	19.23
N1	8.13	8.48	7.94	30.79	31.83	29.92	31.49	31.44	20.15	21.87	18.86
N2	8.12	8.85	7.54	30.61	31.76	29.42	31.29	31.28	20.28	22.03	19.16
FCZ7	8.10	8.28	7.85	30.62	31.77	29.55	31.13	31.10	20.30	21.72	19.23
FCZ1B	8.12	8.43	7.55	30.43	31.33	29.09	30.93	30.92	21.36	50.82	19.13
FCZ8	8.09	8.34	7.92	30.43	31.72	29.20	31.14	31.13	20.65	21.89	19.15
H4A	8.06	8.20	7.93	29.96	30.72	27.90	30.42	30.42	20.86	22.34	19.16
FCZ1A	8.07	8.17	7.80	30.23	31.11	28.52	30.60	30.59	20.71	22.17	19.18
H1A	8.07	8.13	7.91	30.15	30.59	28.97	30.39	30.39	21.31	29.26	19.28
M1A	8.01	8.12	7.89	29.84	30.61	27.14	30.43	30.42	21.03	22.69	19.23
SGA	8.08	8.17	7.93	30.08	30.98	27.23	30.82	30.81	20.78	22.01	19.26

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Table 3.2 Summary of Laboratory Analysis Results

Monitoring Location	Total Suspended Solids (mg/L) Depth Averaged					Ammonia Nitrogen (mg/L-N) Depth Averaged					Total Inorganic Nitrogen (mg/L-N) Depth Averaged				
	Mean	Max	Min	95 %-tile	99 %-tile	Mean	Max	Min	95 %-tile	99 %-tile	Mean	Max	Min	95 %-tile	99 %-tile
FCZ2	3	6	2	5	6	0.12	0.27	0.04	0.22	0.26	0.16	0.34	0.05	0.28	0.33
C	3	5	2	5	5	0.10	0.18	0.04	0.15	0.17	0.15	0.29	0.05	0.27	0.28
M6A	4	7	2	7	7	0.11	0.16	0.06	0.15	0.16	0.19	0.35	0.09	0.32	0.34
N1	4	10	2	5	8	0.13	0.22	0.07	0.20	0.21	0.19	0.37	0.09	0.33	0.36
N2	4	7	2	5	6	0.13	0.30	0.04	0.21	0.26	0.21	0.76	0.07	0.35	0.48
FCZ7	4	6	2	5	5	0.13	0.23	0.08	0.21	0.22	0.21	0.37	0.10	0.34	0.36
FCZ1B	4	15	2	8	12	0.15	0.30	0.08	0.22	0.25	0.23	0.40	0.09	0.36	0.39
FCZ8	5	8	3	6	7	0.18	0.65	0.09	0.32	0.62	0.26	0.73	0.14	0.41	0.70
H4A	5	9	2	8	9	0.15	0.26	0.08	0.23	0.26	0.27	0.60	0.16	0.44	0.57
FCZ1A	6	24	3	13	21	0.27	2.10	0.07	1.10	1.96	0.37	2.17	0.16	1.18	2.03
H1A	6	15	2	14	15	0.24	1.10	0.05	0.97	1.10	0.56	2.50	0.21	2.31	2.50
M1A	6	10	3	9	10	0.31	1.70	0.08	1.49	1.70	0.45	1.81	0.21	1.58	1.80
SGA	6	11	4	10	11	0.25	1.20	0.09	1.06	1.20	0.37	1.28	0.17	1.08	1.26

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Table 3.2 Summary of Laboratory Analysis Results (Continued)

Monitoring Location	Total Nitrogen (mg/L-N) Depth Averaged					E.coli (cfu/100mL) Depth Averaged					Total Phosphorus (mg/L) Depth Averaged					BOD_5 (mg/L) Depth Averaged				
	Mean	Max	Min	95 %-tile	99 %-tile	Mean	Max	Min	95 %-tile	99 %-tile	Mean	Max	Min	95 %-tile	99 %-tile	Mean	Max	Min	95 %-tile	99 %-tile
FCZ2	0.37	1.00	0.20	0.69	1.00	6	83	1	33	59	0.01	0.02	0.01	0.01	0.02	3	4	3	3	4
C	0.34	0.90	0.10	0.50	0.69	8	41	1	28	38	0.01	0.03	0.01	0.01	0.02	3	3	3	3	3
M6A	0.37	0.60	0.10	0.50	0.58	23	140	1	104	133	0.01	0.03	0.01	0.02	0.03	3	3	3	3	3
N1	0.38	0.60	0.20	0.50	0.60	60	750	1	536	707	0.02	0.03	0.01	0.02	0.02	3	4	3	3	4
N2	0.41	1.00	0.30	0.60	0.72	57	550	1	495	529	0.02	0.04	0.01	0.04	0.04	3	5	3	3	4
FCZ7	0.39	0.70	0.20	0.50	0.56	15	130	1	72	102	0.02	0.03	0.01	0.02	0.03	3	3	3	3	3
FCZ1B	0.44	0.80	0.20	0.60	0.73	17	94	1	58	90	0.02	0.08	0.01	0.07	0.08	3	8	3	6	8
FCZ8	0.44	0.80	0.30	0.60	0.80	9	52	1	39	48	0.02	0.04	0.01	0.04	0.04	3	6	3	5	6
H4A	0.43	0.60	0.30	0.60	0.60	16	94	1	78	91	0.03	0.06	0.01	0.06	0.06	3	3	3	3	3
FCZ1A	0.42	0.70	0.20	0.67	0.70	85	880	1	556	838	0.02	0.04	0.01	0.03	0.04	3	3	3	3	3
H1A	0.65	2.60	0.20	2.32	2.60	31	160	1	127	153	0.02	0.04	0.01	0.03	0.04	3	3	3	3	3
M1A	0.46	0.70	0.30	0.69	0.70	131	1500	1	864	1385	0.03	0.04	0.02	0.04	0.04	3	3	3	3	3
SGA	0.45	0.70	0.30	0.60	0.68	35	140	1	129	138	0.02	0.04	0.01	0.03	0.04	3	3	3	3	3

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3.2 Observations

3.2.1 No major construction activities were observed during the period of baseline monitoring, the weather condition during the baseline monitoring is provided in **Appendix E.**

4. ACTION AND LIMIT LEVELS

4.1.1 The determination of Action and Limit Levels (A/L Levels) for impact monitoring was set out in the EM&A Manual, as shown in **Table 4.1**.

4.1.2 The Action Level (AL) and Limit Level (LL) are determined from the baseline monitoring data and are shown in **Table 4.2** & **Table 4.3**.

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Table 4.1 Determination of Action and Limit Levels

Parameters	Action Level	Limit Level
Construction Phase Marine Water Monitoring		
DO in mg/L (Surface, Middle & Bottom)	Surface and Middle 5 percentile of baseline data Bottom 5 percentile of baseline data Fish Culture Zones 5.1 mg/L or level at control station (whichever the lower)	Surface and Middle 4 mg/L or 1 percentile of baseline data Bottom 2 mg/L or 1 percentile of baseline data Fish Culture Zones 5.0 mg/L or level at control station (whichever the lower)
Turbidity (Tby) in NTU (depth-averaged)	95 percentile of baseline data or 120% of control station's Tby at the same tide of the same day	99 percentile of baseline data or 130% of control station's Tby at the same tide of the same day
SS in mg/L (depth-averaged)	95 percentile of baseline data or 120% of control station's SS at the same tide of the same day	99 percentile of baseline data or 130% of control station's SS at the same tide of the same day
Marine Water Monitoring for First-year Operation of TSTP and Expanded STKSTW as well as Follow-up Monitoring for Emergency Discharge		
Dissolved oxygen in mg/L	Surface and Middle 5 percentile of baseline data Bottom 5 percentile of baseline data Fish Culture Zones 5.1 mg/L or level at control station (whichever the lower)	Surface and Middle 4 mgL^{-1} or 1 percentile of baseline data Bottom 2 mg/L or 1 percentile of baseline data Fish Culture Zones 5.0 mg/L or level at control station (whichever the lower)
Turbidity in NTU (depth-averaged)	95 percentile of baseline data or 120% of control station's level at the same tide of the same day	99 percentile of baseline data or 130% of control station's level at the same tide of the same day
SS in mg/L (depth-averaged)		
Biochemical Oxygen Demand in mg/L (depth-averaged)		
Total Phosphorus in mg/L (Depth-averaged)		
Total Nitrogen in mg/L (depth-averaged)		
Ammonia Nitrogen in mg/L (depth-averaged)		
Salinity in PSU (depth-averaged)	Below 91% of baseline level or below 91% of control station's levels at the same tide of the same day	Below 90% of baseline level or below 90% of control station's levels at the same tide of the same day
TIN in mg/L (depth-averaged)	0.29 mg/L or 95 percentile of baseline level	0.30 mg/L or 99 percentile of baseline level
E.coli CFU/100 mL (depth-averaged)	600 for fish culture zones or 95 percentile of baseline level	610 for fish culture zones or 99 percentile of baseline level

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Table 4.1 Determination of Action and Limit Levels (Continued)

Continuous Effluent Quality Monitoring for First Year Operation of the TSTP and Expanded STKSTW (Phase 1 & 2)		
SS in mg/L	TSTP 20 mg/L Expanded STKSTW (Stage 1) 30 mg/L Expanded STKSTW (Stage 2) 30 mg/L	TSTP 40 mg/L Expanded STKSTW (Stage 1) 60 mg/L Expanded STKSTW (Stage 2) 60 mg/L
Biochemical Oxygen Demand in mg/L	TSTP 13.3 mg/L Expanded STKSTW (Stage 1) 20 mg/L Expanded STKSTW (Stage 2) 20 mg/L	TSTP 26.6 mg/L Expanded STKSTW (Stage 1) 40 mg/L Expanded STKSTW (Stage 2) 40 mg/L
Total Nitrogen in mg/L	TSTP 28.6 mg/L Expanded STKSTW (Stage 1) 12 mg/L Expanded STKSTW (Stage 2) 12 mg/L	TSTP 57.1 mg/L Expanded STKSTW (Stage 1) 24 mg/L Expanded STKSTW (Stage 2) 24 mg/L
Total Phosphorus in mg/L	TSTP 3.3 mg/L Expanded STKSTW (Stage 1) 4 mg/L Expanded STKSTW (Stage 2) 4 mg/L	TSTP 6.6 mg/L Expanded STKSTW (Stage 1) 8 mg/L Expanded STKSTW (Stage 2) 8 mg/L
E.coli CFU/100 mL	TSTP 664 cfu/100ml Expanded STKSTW (Stage 1) 1,000 cfu/100ml Expanded STKSTW (Stage 2) 1,000 cfu/100ml	TSTP 996 cfu/100ml Expanded STKSTW (Stage 1) 1,500 cfu/100ml Expanded STKSTW (Stage 2) 1,500 cfu/100ml

Notes:
1. “Depth-averaged” is calculated by taking the arithmetic means of the readings of the surface, middle and bottom depths;
2. For DO measurement, non-compliance occurs when monitoring result is lower than the limits;
3. For SS, NH_3-N and turbidity, non-compliance of water quality results when monitoring results is higher than the limits;

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Table 4.2 Determination of Action and Limit Levels for Construction Phase

Monitoring Location	Monitoring Level	DO (mg/L)		Turbidity (NTU)		Total Suspended Solids (mg/L)	
		AL	LL	AL	LL	AL	LL
FCZ2	S & M	5.10#	5.00#	2.6*	5.0^	5*	6^
	B	5.10#	5.00#				
M6A	M	6.14	6.08+	17.1*	20.8^	7*	7^
N1	S & M	5.36	5.34+	7.5*	13.1^	5*	8^
	B	5.06	5.05+				
N2	S & M	5.95	5.71+	4.7*	5.9^	5*	6^
	B	5.56	5.53+				
FCZ7	S & M	5.10#	5.00#	6.0*	6.4^	5*	5^
	B	5.10#	5.00#				
FCZ1B	S &M	5.10#	5.00#	4.5*	5.5^	8*	12^
	B	5.10#	5.00#				
FCZ8	S	5.10#	5.00#	5.2*	9.1^	6*	7^
	B	5.10#	5.00#				
H4A	M	5.94	5.86+	4.7*	4.8^	8*	9^
FCZ1A	S	5.10#	5.00#	8.0*	10.5^	13*	21^
	B	5.10#	5.00#				
H1A	M	6.01	5.97+	6.5*	6.6^	14*	15^
M1A	M	5.63	5.54+	5.8*	6.1^	9*	10^
SGA	M	6.00	5.90+	6.0*	6.2^	10*	11^

Remarks:
According to EM&A Manual, for FCZ:
AL of DO is 5.1 mg/L or level at control station at same tide of the same day (whichever lower) and LL of DO is 5.0 mg/L or level at control station at same tide of the same day (whichever lower);
+ 1 percentile of baseline data were adopted for LL for DO as those levels were greater than 4 mg/L for Surface and Middle and 2 mg/L for Bottom;
* Or 120% of control station's level at the same tide of the same day;
^ Or 130% of control station's level at the same tide of the same day.

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Table 4.3 Determination of Action and Limit Levels for Marine Water Monitoring for First-year Operation of TSTP and Expanded STKSTW

Monitoring Location	Monitoring Level	DO (mg/L)		Turbidity (NTU)		Salinity (ppt)		Total Suspended Solids (mg/L)		BOD_5 (mg/L)		Total Phosphorus (mg/L)		Total Nitrogen (mg/L-N)		Ammonia Nitrogen (mg/L-N)		Total Inorganic Nitrogen (mg/L-N)		*E.coli* (cfu/100mL)	
		AL	LL	AL	LL	AL[c]	LL[c]	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL	AL	LL
FCZ2	S & M	5.10#	5.00#	2.6*	5.0^	31.25	31.24	5*	6^	3*	4^	0.01*	0.02^	0.69*	1.00 ^	0.22*	0.26^	0.29[a]	0.33[a]	600[b]	610[b]
	B	5.10#	5.00#																		
M6A	M	6.14	6.08+	17.1*	20.8^	30.68	30.68	7*	7^	3*	3^	0.02*	0.03^	0.50*	0.58 ^	0.15*	0.16^	0.32[a]	0.34[a]	104[b]	133[b]
N1	S & M	5.36	5.34+	7.5*	13.1^	31.49	31.44	5*	8^	3*	4^	0.02*	0.02^	0.50*	0.60 ^	0.20*	0.21^	0.33[a]	0.36[a]	536[b]	707[b]
	B	5.06	5.05+																		
N2	S & M	5.95	5.71+	4.7*	5.9^	31.29	31.28	5*	6^	3*	4^	0.04*	0.04^	0.60*	0.72^	0.21*	0.26^	0.35[a]	0.48[a]	495[b]	529[b]
	B	5.56	5.53+																		
FCZ7	S & M	5.10#	5.00#	6.0*	6.4^	31.13	31.10	5*	5^	3*	3^	0.02*	0.03^	0.50*	0.56^	0.21*	0.22^	0.34[a]	0.36[a]	600[b]	610[b]
	B	5.10#	5.00#																		
FCZ1B	S & M	5.10#	5.00#	4.5*	5.5^	30.93	30.92	8*	12^	6*	8^	0.07*	0.08^	0.60*	0.73^	0.22*	0.25^	0.36[a]	0.39[a]	600[b]	610[b]
	B	5.10#	5.00#																		
FCZ8	S	5.10#	5.00#	5.2*	9.1^	31.14	31.13	6*	7^	5*	6^	0.04*	0.04^	0.60*	0.80^	0.32*	0.62^	0.41[a]	0.70[a]	600[b]	610[b]
	B	5.10#	5.00#																		
H4A	M	5.94	5.86+	4.7*	4.8^	30.42	30.42	8*	9^	3*	3^	0.06*	0.06^	0.60*	0.60^	0.23*	0.26^	0.44[a]	0.57[a]	78[b]	91[b]
FCZ1A	S	5.10#	5.00#	8.0*	10.5^	30.60	30.59	13*	21^	3*	3^	0.03*	0.04^	0.67*	0.70^	1.10*	1.96^	1.18[a]	2.03[a]	600[b]	838[b]
	B	5.10#	5.00#																		
H1A	M	6.01	5.97+	6.5*	6.6^	30.39	30.39	14*	15^	3*	3^	0.03*	0.04^	2.32*	2.60^	0.97*	1.10^	2.31[a]	2.50[a]	127[b]	153[b]
M1A	M	5.63	5.54+	5.8*	6.1^	30.43	30.42	9*	10^	3*	3^	0.04*	0.04^	0.69*	0.70^	1.49*	1.70^	1.58[a]	1.80[a]	864[b]	1385[b]
SGA	M	6.00	5.90+	6.0*	6.2^	30.82	30.81	10*	11^	3*	3^	0.03*	0.04^	0.60*	0.68^	1.06*	1.20^	1.08[a]	1.26[a]	129[b]	138[b]

Remarks:

According to the EM&A Manual, for FCZ:
AL of DO is 5.1 mg/L or level at control station at same tide of the same day (whichever lower) and LL of DO is 5.0 mg/L or level at control station at same tide of the same day (whichever lower);

+ 1 percentile of baseline data were adopted for LL for DO as those levels were greater than 4 mg/L for Surface and Middle and 2 mg/L for Bottom;

* Or 120% of control station's level at the same tide of the same day;

^ Or 130% of control station's level at the same tide of the same day.

[a] According to the EM&A Manual, AL of TIN is 0.29 mg/L or 95%-ile of baseline level and LL of TIN is 0.30 mg/L or 99%-ile of baseline level

[b] According to the EM&A Manual, AL of *E.coli* is 600 cfu/100mL for fish culture zones or 95%-ile of baseline level and LL of *E.coli* is 610 cfu/100mL for fish culture zones or 99%-ile of baseline level

[c] According to the EM&A Manual, AL of Salinity is Below 91% of baseline level or 9% less than value at any impact station compared with corresponding data from control station and LL of Salinity is Below 90% of baseline level or 10% less than value at any impact station compared with corresponding data from control station

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5. COMMENTS AND CONCLUSIONS

5.1.1 The baseline monitoring work was conducted between 26 February and 23 March 2019.

5.1.2 The baseline monitoring was carried out in accordance with the EM&A Manual, in respect of the methodology, equipment, location and monitoring parameters.

5.1.3 The Action and Limit Levels were derived based on the baseline monitoring results, impact monitoring will be conducted in the construction phase based on the established Action and Limit Levels.

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Figure 1

Locations of Water Quality Monitoring Stations

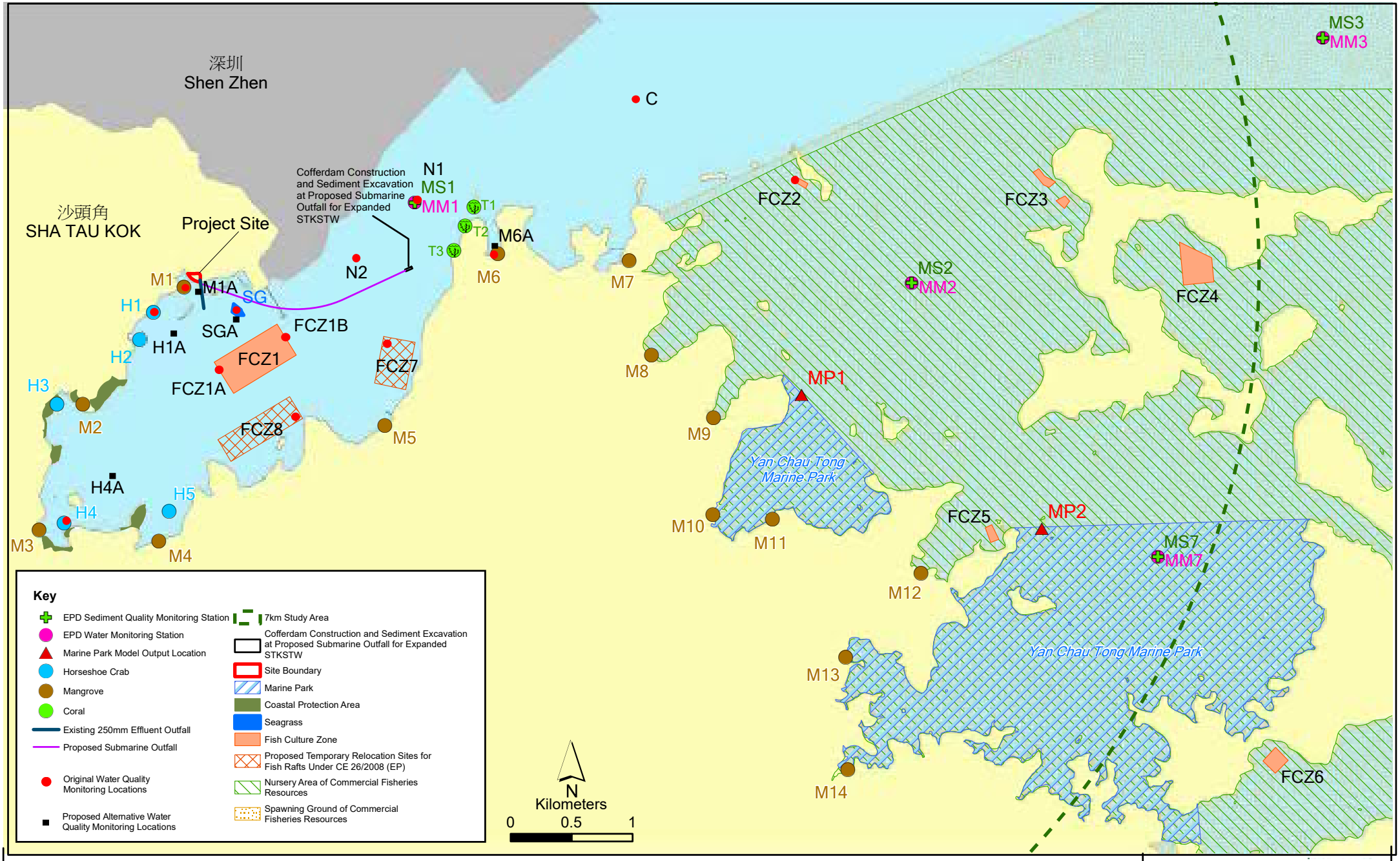

Figure 1

(Edited from EM&A Manual Figure 5.1)

Proposed Water Quality Monitoring Locations and Water Sensitive Receiver near the Project

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Appendix A

Baseline Monitoring Schedule

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Sun	Mon	Tue	Wed	Thu	Fri	Sat
24 February	25 BNM (16:00-19:00)	26 BWQM Mid-Flood (09:16-13:16) BNM (07:00-19:00)	27 BNM (07:00-19:00)	28 BWQM Mid-Flood (10:54-14:54) BNM (07:00-19:00)	1 March BNM (07:00-19:00)	2 BWQM Mid-Flood (13:19-17:19) BNM (07:00-19:00)
3 BNM (07:00-19:00)	4 BNM (07:00-19:00)	5 BWQM Mid-Ebb (09:58-13:58) BNM (07:00-19:00)	6 BNM (07:00-19:00)	7 BWQM Mid-Ebb (11:07-15:07) BNM (07:00-19:00)	8 BNM (07:00-19:00)	9 BWQM Mid-Ebb (12:16-16:16) BNM (07:00-19:00)
10 BNM (07:00-19:00)	11 BNM (07:00-16:00)	12 BWQM Mid-Flood (07:52-11:52)	13	14 BWQM Mid-Flood (08:49-12:49)	15	16 BWQM Mid-Flood (06:33-10:33)
17	18	19 BWQM Mid-Ebb (09:03-13:03)	20	21 BWQM Mid-Ebb (10:38-14:38)	22	23 BWQM Mid-Ebb (11:22-15:22)

Remarks

1. BWQM refers to Baseline Water Quality Monitoring; BNM refers to Baseline Noise Monitoring;
2. Actual monitoring will be subjected to change due to any safety concern or adverse weather condition.

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Appendix B

Monitoring Equipment Calibration Certificates

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MateriaLab

Report No. : 142626WA190353

Report on Calibration of Aqua Troll 600 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 Aqua Troll 600 Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 543639
Test required	:	Calibration of the Aqua Troll 600 Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA190353/1
Date of calibration	:	21/01/2019
Next calibration date	:	20/04/2019
Test method used	:	In-house comparison method

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

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MateriaLab

Report No. : 142626WA190353

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	10.05	+0.05	± 0.5
20	20.07	+0.07	± 1.0
30	29.91	-0.09	± 1.5
40	39.82	-0.18	± 2.0

C. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By calibrated D.O. meter	By D.O. meter
1	7.89	7.90
2	7.91	7.92
3	7.88	7.89
Average	7.89	7.90

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

Certified by : _____
Approved Signatory : CHAN Hoi Yan, Winnie
Assistant Manager

Date : 24/01/2019

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

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MateriaLab

Report No. : 142626WA190353

Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
25.11	25.07

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
4	4.08	+0.08	± 0.4
8	8.09	+0.09	± 0.6
40	40.01	+0.01	± 3.0
80	79.93	-0.07	± 4.0

Certified by : _____
Approved Signatory : CHAN Hoi Yan, Winnie
Assistant Manager

Date : 24/01/2019

** End of Report **

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

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MateriaLab

Report No. : 142626WA190026(3)

Report on Calibration of YSI 69201V2-M 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.
Project	:	CV/2013/04 – Providing Sufficient Water Depth for Kwai Tsing Container Basin and its Approach Channel
Sample description	:	One YSI 69201V2-M Multi-parameter Water Quality Meter
Client sample ID	:	Serial No. 18L104182
Test required	:	Calibration of the YSI 69201V2-M Multi-parameter Water Quality Meter

Laboratory Information

Lab. sample ID	:	WA190026/4
Date sample received	:	21/12/2018
Date of calibration	:	04/01/2019
Next calibration date	:	03/04/2019
Test method used	:	In-house comparison method

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

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MaterialLab

Report No. : 142626WA190026(3)

Results :

A. pH calibration

pH reading at 21°C for Q.C. solution(6.86) and at 21°C for Q.C. solution(9.18)		
Theoretical	Measured	Deviation
9.18	9.10	-0.08
6.86	6.87	+0.01

B. Salinity calibration

Salinity, ppt			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
10	10.01	+0.01	± 0.5
20	20.00	0.00	± 1.0
30	30.04	+0.04	± 1.5
40	39.93	-0.07	± 2.0

C. Dissolved Oxygen calibration

Trial No.	Dissolved oxygen content, mg/L	
	By Titration	By D.O. meter
1	8.76	8.64
2	8.48	8.66
3	8.76	8.70
Average	8.67	8.67

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

Certified by :
Approved Signatory : CHAN Hoi Yan, Winnie
Assistant Manager

Date : 16/1/2019

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

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MateriaLab

Report No. : 142626WA190026(3)

Results :

D. Temperature calibration

Thermometer reading, °C	Meter reading, °C
20.9	20.69

E. Turbidity calibration

Turbidity, N.T.U.			
Theoretical	Measured	Deviation	Maximum acceptable Deviation
0	0.1	+0.1	± 0.5
4	4.0	0.0	± 0.6
8	8.4	+0.4	± 0.8
40	39.0	-1.0	± 3.0
80	80.0	0.0	± 4.0

Certified by : _____
Approved Signatory : CHAN Hoi Yan, Winnie
Assistant Manager

Date : 16/1/2019

** End of Report **

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

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Appendix C

Quality Assurance / Quality Control for the laboratory analysis

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MateriaLab

Report No. : 181172WA190357

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 26/02/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190357/1-54
Temperature	:	3.4°C
Date of receipt of sample	:	26/02/2019
Date test commenced	:	27/02/2019
Date test completed	:	04/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MaterialLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.08	-	3.45	3.47	0.6
	-	-	0.86	0.71	19.1
	-	-	0.45	0.47	4.3

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.35	-	3.75	4.30	13.7
	-	-	3.85	3.45	11.0
	-	-	9.05	10.00	10.0

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.05	111.8	0.2	0.2	1.1
	-	101.4	0.2	0.2	0.5
	-	95.2	0.4	0.4	3.8

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	108.3	0.06	0.06	3.2
	0.00	93.3	0.08	0.08	0.0
	0.00	118.8	0.38	0.36	3.8

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	97.5	0.20	0.18	13.3
	0.00	103.6	0.58	0.60	3.1
	0.00	107.8	1.19	1.20	0.5

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

Date : 27/3/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1906488
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 26-Feb-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 04-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2208454)								
HK1906488-020	N1/B/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2208455)								
HK1906488-040	FCZ8/S/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2208456)								
HK1906488-058	SGA/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2208454)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.0	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2208455)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.3	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2208456)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	99.8	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2208454)										
HK1906488-020	N1/B/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.4	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2208455)										
HK1906488-040	FCZ8/S/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.7	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2208456)										
HK1906488-058	SGA/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.5	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190378

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 28/02/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190378/1-54
Temperature	:	3.5°C
Date of receipt of sample	:	28/02/2019
Date test commenced	:	28/02/2019
Date test completed	:	06/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.39	-	1.43	1.86	26.1
	-	-	1.56	1.27	20.5
	-	-	2.30	2.26	1.8

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.25	-	4.50	4.31	4.26
	-	-	2.50	2.62	4.88
	-	-	4.62	5.56	18.4

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.05	104.2	0.37	0.38	1.30
	-	98.8	0.49	0.48	2.30
	-	97.6	0.33	0.34	2.10

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	97.5	0.03	0.03	0.00
	0.00	118.8	0.00	0.00	0.00
	0.00	90.0	0.14	0.15	7.80

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	108.6	0.12	0.11	0.90
	0.00	102.6	0.22	0.20	11.3
	0.00	113.0	0.16	0.14	8.10

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908113
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 28-Feb-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 07-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2213160)								
HK1908113-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2213161)								
HK1908113-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2213162)								
HK1908113-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2213160)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.6	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2213161)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.6	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2213162)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	99.3	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2213160)										
HK1908113-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	95.1	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2213161)										
HK1908113-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	93.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2213162)										
HK1908113-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	97.2	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190393

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 02/03/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190393/1-54
Temperature	:	3.2°C
Date of receipt of sample	:	02/03/2019
Date test commenced	:	03/03/2019
Date test completed	:	08/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.33	-	<3	<3	0.00
	-	-	6.0	5.5	2.93
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.30	-	4	4	1.61
	-	-	8	8	0.25
	-	-	9	10	10.2

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.08	102	0.4	0.4	3.50
	-	97.2	0.7	0.7	3.69
	-	97.2	0.2	0.2	3.05

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	119	<0.01	<0.01	0.00
	0.00	96.8	0.06	0.06	8.00
	0.00	97.5	0.09	0.09	3.24

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	113	0.08	0.08	2.43
	0.00	104	0.37	0.33	11.8
	0.00	106	0.10	0.10	0.00

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908115
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 02-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 07-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2218325)								
HK1908115-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2218326)								
HK1908115-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2218327)								
HK1908115-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2218325)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.7	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2218326)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	99.3	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2218327)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	99.4	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2218325)										
HK1908115-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2218326)										
HK1908115-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.5	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2218327)										
HK1908115-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.6	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190412

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 05/03/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190412/1-54
Temperature	:	3.0°C
Date of receipt of sample	:	05/03/2019
Date test commenced	:	05/03/2019
Date test completed	:	11/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.32	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.45	-	3	3	7.51
	-	-	4	4	7.69
	-	-	7	7	4.31

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.07	95.6	0.2	0.2	2.96
	-	95.0	0.3	0.3	2.90
	-	106.0	0.4	0.4	4.12

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	99.0	0.069	0.069	0.00
	0.00	114.0	0.099	0.096	3.07
	0.00	115.0	0.184	0.173	6.16

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	112.0	0.11	0.09	0.06
	0.00	112.0	0.13	0.15	18.3
	0.00	112.0	0.22	0.21	18.1

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908493
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 05-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 11-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2222997)								
HK1908493-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2222998)								
HK1908493-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2222999)								
HK1908493-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.03	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2222997)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	96.9	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2222998)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	96.9	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2222999)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.1	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2222997)										
HK1908493-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.5	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2222998)										
HK1908493-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2222999)										
HK1908493-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.1	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190429

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 07/03/2019 11:10
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190429/1-54
Temperature	:	3.2°C
Date of receipt of sample	:	07/03/2019
Date test commenced	:	07/03/2019
Date test completed	:	13/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.42	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.25	-	2	2	10.9
	-	-	4	3	7.75
	-	-	3	3	10.3

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.09	101.9	0.3	0.3	4.31
	-	101.2	0.3	0.3	5.18
	-	97.6	0.4	0.4	3.78

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	99.0	0.12	0.12	1.65
	0.00	113.0	0.13	0.12	11.8
	0.00	115.0	0.20	0.20	1.49

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	109.0	0.09	0.10	3.96
	0.00	94.0	0.13	0.15	3.79
	0.00	109.0	0.21	0.23	10.8

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908494
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 07-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 13-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2227626)								
HK1908494-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2227627)								
HK1908494-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2227628)								
HK1908494-054	H1A/S/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.03	0.03	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2227626)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.4	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2227627)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.1	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2227628)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.4	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2227626)										
HK1908494-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2227627)										
HK1908494-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.8	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2227628)										
HK1908494-054	H1A/S/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	97.7	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190444

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 09/03/2019 12:16
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190444/1-54
Temperature	:	3.0°C
Date of receipt of sample	:	09/03/2019
Date test commenced	:	10/03/2019
Date test completed	:	15/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MaterialLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.40	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.30	-	2	2	4.54
	-	-	4	4	2.81
	-	-	3	3	8.13

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.07	102.7	0.3	0.3	6.40
	-	94.3	0.3	0.3	4.59
	-	98.8	0.2	0.2	3.10

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	102.0	0.12	0.13	7.28
	0.00	112.7	0.15	0.16	6.66
	0.00	99.0	0.19	0.23	14.0

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	114.0	0.22	0.19	13.9
	0.00	96.0	0.24	0.24	1.24
	0.00	95.0	0.25	0.25	0.81

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909075
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 09-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 18-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2232820)								
HK1909075-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2232821)								
HK1909075-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2232822)								
HK1909075-054	H1A/S/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.03	0.04	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2232820)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.0	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2232821)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	96.9	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2232822)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.7	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2232820)										
HK1909075-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	97.5	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2232821)										
HK1909075-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	101	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2232822)										
HK1909075-054	H1A/S/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.2	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190465

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 12/03/2019 09:00
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190465/1-54
Temperature	:	3.7°C
Date of receipt of sample	:	12/03/2019
Date test commenced	:	13/03/2019
Date test completed	:	18/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.31	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.45	-	4	5	7.37
	-	-	4	4	5.55
	-	-	4	5	3.31

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.07	90.3	0.3	0.3	3.04
	-	98.6	0.3	0.4	5.24
	-	99.6	0.3	0.3	1.85

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	112.5	0.13	0.14	3.00
	0.00	104.2	0.12	0.13	5.66
	0.00	117.5	0.11	0.11	7.27

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.00	111.0	0.16	0.16	1.24
	0.00	93.0	0.15	0.15	0.66
	0.00	105.0	0.13	0.12	7.93

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909077
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 12-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 20-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2235612)								
HK1909077-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2235613)								
HK1909077-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2235614)								
HK1909077-054	H1A/S/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2235612)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	95.5	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2235613)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	95.4	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2235614)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.9	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2235612)										
HK1909077-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	95.7	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2235613)										
HK1909077-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2235614)										
HK1909077-054	H1A/S/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.0	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190482

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 14/03/2019 09:38
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190482/1-54
Temperature	:	3.5°C
Date of receipt of sample	:	14/03/2019
Date test commenced	:	14/03/2019
Date test completed	:	20/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.42	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.40	-	3	4	12.1
	-	-	4	5	14.1
	-	-	3	3	3.07

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.06	105	0.2	0.2	6.69
	-	100.2	0.3	0.3	3.61
	-	101.8	0.4	0.4	2.66

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	106.5	0.08	0.08	1.32
	0.00	108.0	0.12	0.11	15.7
	0.00	107.0	0.17	0.16	7.85

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.01	111.0	0.09	0.08	10.2
	0.01	92.0	0.16	0.17	2.42
	0.02	111.0	0.22	0.21	6.60

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909610
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 14-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 21-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2241269)								
HK1909610-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.01	0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2241270)								
HK1909610-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2241271)								
HK1909610-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2241269)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.2	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2241270)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.9	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2241271)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.8	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2241269)										
HK1909610-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	90.1	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2241270)										
HK1909610-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	97.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2241271)										
HK1909610-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.7	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190497

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 16/03/2019 07:10
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190497/1-54
Temperature	:	3.6°C
Date of receipt of sample	:	16/03/2019
Date test commenced	:	17/03/2019
Date test completed	:	22/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.47	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.35	-	4	4	11.6
	-	-	4	5	7.73
	-	-	3	3	6.55

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.06	100.5	0.3	0.3	2.17
	-	100.8	0.3	0.3	1.31
	-	97.8	0.2	0.2	4.10

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	106.7	0.06	0.06	4.80
	0.00	115.2	0.07	0.06	14.4
	0.00	111.7	0.07	0.09	15.1

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.01	115.0	0.07	0.07	2.74
	0.01	111.0	0.09	0.09	4.25
	0.01	104.0	0.09	0.08	9.09

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909611
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 16-Mar-2019
Order number	:	—	Quote number	:	HKE/1312b/2019	Date of issue	: 25-Mar-2019
C-O-C number	:	—				No. of samples	- Received : 54
Site	:	0118/18					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2246543)								
HK1909611-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2246544)								
HK1909611-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2246545)								
HK1909611-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246543)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.8	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246544)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.5	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246545)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	96.2	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246543)										
HK1909611-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.3	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246544)										
HK1909611-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246545)										
HK1909611-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	94.6	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190526

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 19/03/2019 09:10
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190526/1-54
Temperature	:	3.2°C
Date of receipt of sample	:	19/03/2019
Date test commenced	:	20/03/2019
Date test completed	:	25/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.32	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.15	-	5	4	7.91
	-	-	3	3	4.44
	-	-	5	5	14.1

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.08	97.5	0.3	0.3	0.70
	-	105.1	0.3	0.3	11.6
	-	93.4	0.3	0.3	2.06

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	103.5	0.02	0.02	6.45
	0.00	103.2	0.07	0.07	4.19
	0.00	104.7	0.07	0.07	0.00

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.01	108.3	0.07	0.08	7.79
	0.01	116.7	0.10	0.09	4.30
	0.01	107.1	0.10	0.10	3.01

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: **HK1910489**
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 19-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 23-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2246551)								
HK1910489-020	N1/B/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2246552)								
HK1910489-040	FCZ8/S/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2246553)								
HK1910489-058	SGA/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246551)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	99.4	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246552)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	98.0	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246553)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.5	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246551)										
HK1910489-020	N1/B/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	94.9	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246552)										
HK1910489-040	FCZ8/S/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	97.7	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2246553)										
HK1910489-058	SGA/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.5	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190566

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 21/03/2019 10:39
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190566/1-54
Temperature	:	3.6°C
Date of receipt of sample	:	21/03/2019
Date test commenced	:	22/03/2019
Date test completed	:	27/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.18	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.25	-	4	4	2.66
	-	-	4	4	1.18
	-	-	4	4	5.19

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.06	98.7	0.2	0.2	2.70
	-	99.4	0.3	0.3	4.60
	-	101.4	0.5	0.5	1.96

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	93.3	0.03	0.03	3.17
	0.00	98.8	0.05	0.05	12.0
	0.00	91.8	0.10	0.09	5.18

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.02	115.0	0.10	0.11	4.87
	0.02	109.0	0.12	0.12	1.68
	0.02	117.0	0.16	0.16	0.63

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1910492
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 21-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 28-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology EN

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2251981)								
HK1910492-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2251982)								
HK1910492-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2251983)								
HK1910492-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	0.02	0.02	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2251981)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.9	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2251982)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.7	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2251983)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.8	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2251981)										
HK1910492-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	99.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2251982)										
HK1910492-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	104	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2251983)										
HK1910492-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	102	----	75	125	----	----

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MateriaLab

Report No. : 181172WA190576

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 23/03/2019 11:25
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190576/1-54
Temperature	:	3.6°C
Date of receipt of sample	:	23/03/2019
Date test commenced	:	24/03/2019
Date test completed	:	29/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Note

Laboratory Duplicate, Quality Assurance/Quality Control Report

Biochemical oxygen demand					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
3 mg/L	0.45	-	<3	<3	0.00
	-	-	<3	<3	0.00
	-	-	<3	<3	0.00

Total suspended solids dried at 103°C – 105°C					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
2 mg/L	0.35	-	3	3	4.58
	-	-	3	3	9.83
	-	-	3	3	9.67

Total Kjeldahl nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.1 mg/L	0.05	97.0	0.29	0.27	7.14
	-	100.1	0.34	0.33	2.99
	-	104.3	0.40	0.41	2.48

Total Oxidized Nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.01 mg/L	0.00	111.0	0.04	0.04	2.35
	0.00	109.2	0.07	0.07	0.00
	0.00	107.5	0.07	0.07	1.48

Ammonical nitrogen content					
Reporting Limit	Blank	Spike recovery (%)	Laboratory Duplicate		
			Original result	Duplicate result	RPD%
0.02 mg/L	0.02	114.0	0.13	0.11	13.2
	0.02	109.0	0.17	0.16	7.45
	0.02	116.0	0.14	0.16	8.00

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

Date : 3/4/2019

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1911340
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 23-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 28-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology EN

Laboratory Duplicate (DUP) Report

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report				
				LOR	Unit	Original Result	Duplicate Result	RPD (%)
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2257157)								
HK1911340-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2257158)								
HK1911340-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 2257159)								
HK1911340-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00

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	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2257157)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.6	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2257158)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.5	----	90	104	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2257159)											
EK067P: Total Phosphorus as P	----	0.01	mg/L	<0.01	0.5 mg/L	97.4	----	90	104	----	----

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

Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
				Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2257157)										
HK1911340-010	C/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2257158)										
HK1911340-030	FCZ7/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	96.4	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 2257159)										
HK1911340-054	H1A/M/Dup	EK067P: Total Phosphorus as P	----	0.5 mg/L	98.0	----	75	125	----	----

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Appendix D

Baseline Water Quality Monitoring Results

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	26/2/2019	Cloudy	Smooth	9:36	10	S	1	1	8.06	8.06	20.53	25.18	19.94	19.93	95.2	93.7	7.54	7.30	6.98	0.3	0.4	0.9
								2	8.05		29.82		19.92		92.1		7.06			0.4		
						M	5	1	8.14	8.11	27.66	28.21	20.06	20.06	88.7	86.9	6.82	6.66		0.6	0.7	
						M		2	8.08		28.75		20.05		85.1		6.49			0.7		
						B	9	1	8.14	8.14	28.62	29.13	20.00	20.03	85.3	84.5	6.53	6.46		1.8	1.8	
						B		2	8.13		29.64		20.05		83.6		6.39			1.8		
C	26/2/2019	Cloudy	Smooth	10:00	11	S	1	1	8.24	8.23	30.60	30.60	19.39	19.64	98.3	98.2	9.02	8.24	7.82	0.6	0.7	1.0
						S		2	8.22		30.59		19.89		98.1		7.46			0.8		
						M	5.5	1	8.22	8.22	30.60	30.60	19.90	19.90	97.5	97.4	7.41	7.41		0.9	1.0	
						M		2	8.22		30.60		19.90		97.3		7.40			1.1		
						B	10	1	8.22	8.23	30.64	30.65	19.91	19.91	96.6	96.5	7.34	7.34		1.2	1.3	
						B		2	8.23		30.66		19.91		96.4		7.33			1.3		
M6A	26/2/2019	Cloudy	Smooth	10:28	1.8	M	0.9	1	8.16	8.16	30.55	30.55	19.76	19.78	87.9	87.2	6.69	6.64		3.1	3.2	
						M		2	8.16		30.55		19.79		86.5		6.59			3.3		
N1	26/2/2019	Cloudy	Smooth	10:42	9	S	1	1	8.24	8.24	30.61	30.61	19.90	19.90	95.6	95.5	7.27	7.26	7.20	0.3	0.3	0.7
						S		2	8.24		30.61		19.90		95.3		7.25			0.3		
						M	4.5	1	8.24	8.24	30.61	30.61	19.91	19.91	94.2	94.3	7.12	7.14		0.5	0.5	
						M		2	8.24		30.61		19.90		94.3		7.17			0.5		
						B	8	1	8.24	8.24	30.69	30.69	19.98	19.98	90.3	90.2	6.85	6.85		1.2	1.3	
						B		2	8.24		30.69		19.97		90.1		6.84			1.4		
N2	26/2/2019	Cloudy	Smooth	11:05	8	S	1	1	8.20	8.20	30.25	30.24	19.79	19.79	96.5	96.6	7.37	7.38	7.09	0.2	0.2	2.1
						S		2	8.20		30.22		19.78		96.6		7.38			0.2		
						M	4	1	8.21	8.21	30.63	30.63	20.16	20.17	91.6	90.2	6.92	6.81		2.5	2.4	
						M		2	8.21		30.63		20.18		88.7		6.69			2.2		
						B	7	1	8.21	8.21	30.63	30.63	20.17	20.17	85.4	85.4	6.46	6.47		4.1	3.9	
						B		2	8.21		30.62		20.17		85.4		6.47			3.6		
FCZ7	26/2/2019	Cloudy	Smooth	11:22	7	S	1	1	8.19	8.19	30.19	30.19	19.83	19.82	96.4	96.4	7.36	7.36	7.11	0.5	0.5	2.8
						S		2	8.19		30.18		19.81		96.4		7.36			0.5		
						M	3.5	1	8.23	8.23	30.57	30.58	20.18	20.18	91.0	91.0	6.87	6.86		1.6	1.7	
						M		2	8.22		30.59		20.18		90.9		6.84			1.7		
						B	6	1	8.22	8.22	30.61	30.61	20.18	20.18	86.7	86.7	6.56	6.56		6.0	6.2	
						B		2	8.22		30.60		20.18		86.7		6.56			6.4		
FCZ1B	26/2/2019	Cloudy	Smooth	13:10	6.6	S	1	1	8.20	8.20	30.17	30.17	19.79	19.79	99.1	99.2	7.57	7.58	7.52	0.3	0.3	2.1
						S		2	8.20		30.17		19.79		99.3		7.59			0.3		
						M	3.3	1	8.20	8.20	30.19	30.19	19.80	19.80	98.2	97.9	7.49	7.47		0.2	0.2	
						M		2	8.19		30.19		19.80		97.5		7.44			0.2		
						B	5.6	1	8.17	8.17	30.44	30.45	20.13	20.15	90.0	88.2	6.81	6.66		5.1	5.8	
						B		2	8.17		30.45		20.16		86.4		6.50			6.5		
FCZ8	26/2/2019	Cloudy	Smooth	11:47	5.4	S	1	1	8.15	8.15	30.06	30.07	19.82	19.83	91.1	90.8	6.96	6.93	6.93	1.3	1.3	3.2
						S		2	8.14		30.07		19.83		90.5		6.90			1.2		
						B	4.4	1	8.18	8.18	30.48	30.48	20.24	20.25	86.1	84.8	6.50	6.41		4.4	5.1	
						B		2	8.18		30.48		20.25		83.5		6.31			5.7		
H4A	26/2/2019	Cloudy	Smooth	12:07	2.7	M	1.35	1	8.11	8.11	30.07	30.07	19.90	19.90	84.1	83.4	6.40	6.35		2.6	2.7	
						M		2	8.10		30.07		19.90		82.6		6.30			2.7		
FCZ1A	26/2/2019	Cloudy	Smooth	12:15	4.4	S	1	1	8.14	8.14	30.28	30.28	19.88	19.88	85.1	85.0	6.49	6.48	6.48	1.8	2.1	2.4
						S		2	8.14		30.27		19.88		84.8		6.46			2.3		
						B	3.4	1	8.14	8.14	30.28	30.28	19.88	19.88	84.0	84.0	6.40	6.40		2.6	2.7	
						B		2	8.14		30.28		19.88		83.9		6.39			2.7		
H1A	26/2/2019	Cloudy	Smooth	12:32	1.4	M	0.7	1	8.10	8.10	30.23	30.24	19.88	19.88	80.9	80.8	6.16	6.16		4.8	4.7	
						M		2	8.10		30.24		19.88		80.7		6.15			4.6		
M1A	26/2/2019	Cloudy	Smooth	12:52	1.3	M	0.65	1	8.04	8.04	29.81	29.81	19.51	19.51	78.9	78.3	6.05	6.01		6.2	6.1	
						M		2	8.04		29.81		19.51		77.6		5.97			5.9		
SGA	26/2/2019	Cloudy	Smooth	13:04	1.6	M	0.8	1	8.13	8.13	30.23	30.23	19.80	19.80	86.0	85.8	6.55	6.54		3.7	3.7	
						M		2	8.13		30.22		19.80		85.5		6.53			3.6		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190357

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 26/02/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190357/1-54
Temperature	:	3.4°C
Date of receipt of sample	:	26/02/2019
Date test commenced	:	27/02/2019
Date test completed	:	04/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MaterialLab

Report No. : 181172WA190357

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	4.0	<3	<3	<3	<3	3.0	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	4	4	3	3	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.03	0.03	0.03	0.02	0.03	0.03	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	1.0	0.9	1.0	0.8	0.9	0.6	0.1
5. Total nitrogen content, mg/L	0.4	0.4	1.0	0.9	1.0	0.8	0.9	0.6	0.1
6. Ammonical nitrogen content, mg/L	0.07	0.07	0.08	0.10	0.08	0.09	0.09	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.09	0.09	0.11	0.13	0.11	0.11	0.12	0.12	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 26/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 27/02/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 27/3/2019

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

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MaterialLab

Report No. : 181172WA190357

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	2	7	7	5	3	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.03	0.02	0.02	0.03	0.03	0.03	0.02	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.5	0.5	0.6	0.3	0.4	0.3	0.5	0.5	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.6	0.3	0.4	0.3	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.10	0.09	0.11	0.11	0.12	0.11	0.17	0.17	0.02
7. Total Inorganic nitrogen, mg/L	0.12	0.12	0.13	0.13	0.15	0.14	0.20	0.19	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 26/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 27/02/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 27/3/2019

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

FUGRO TECHNICAL SERVICES LIMITED
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Website : www.fugro.com

MaterialLab

Report No. : 181172WA190357

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	3.5	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	3	7	4	4	4	4	3	2
3. Total Oxidized Nitrogen content, mg/L	0.03	0.03	0.03	0.06	0.07	0.07	0.07	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.2	0.2	0.5	0.5	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.2	0.3	0.6	0.6	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.19	0.20	0.19	0.19	0.18	0.18	0.12	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.22	0.23	0.22	0.25	0.25	0.25	0.19	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 26/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 27/02/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 27/3/2019

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MateriaLab

Report No. : 181172WA190357

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	5	4	5	5	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.4	0.2	0.5	0.6	0.5	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.3	0.5	0.3	0.6	0.7	0.6	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.19	0.20	0.17	0.20	0.19	0.20	0.17	0.20	0.02
7. Total Inorganic nitrogen, mg/L	0.24	0.27	0.24	0.27	0.26	0.27	0.23	0.26	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 26/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 27/02/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 27/3/2019

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MateriaLab

Report No. : 181172WA190357

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	11	4	5	6	4	5	6	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.19	0.18	0.18	0.18	0.19	0.18	0.65	0.59	0.02
7. Total Inorganic nitrogen, mg/L	0.26	0.25	0.25	0.25	0.26	0.25	0.73	0.67	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 26/02/2019
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   iii. Date and hour of commencing BOD_5 test : 27/02/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by : _____
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Date : 27/3/2019

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MateriaLab

Report No. : 181172WA190357

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	8	9	9	10	4	5	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.09	0.09	0.08	0.07	0.08	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.3	0.2	0.4	0.4	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.5	0.4	0.4	0.3	0.5	0.5	0.4	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.11	0.11	0.11	0.11	1.8	2.1	1.1	1.1	0.02
7. Total Inorganic nitrogen, mg/L	0.18	0.18	0.2	0.2	1.88	2.17	1.18	1.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
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   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 27/3/2019

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

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Report No. : 181172WA190357

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	8	7	10	8	10	2
3. Total Oxidized Nitrogen content, mg/L	0.08	0.08	0.11	0.11	0.08	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.3	0.3	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.5	0.4	0.4	0.4	0.5	0.1
6. Ammonical nitrogen content, mg/L	1.1	1.1	1.7	1.7	1.2	1.2	0.02
7. Total Inorganic nitrogen, mg/L	1.18	1.21	1.81	1.78	1.28	1.18	0.03

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2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
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   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 27/3/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1906488
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 26-Feb-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 04-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1906488 supersedes any previous reports with this reference. Testing period is from 26-Feb-2019 to 01-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1906488 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 16:25. Microbiological sample(s), in 125mL and 250mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	26-Feb-2019	HK1906488-001	<0.01	3	----	----	----
FCZ2/S/Dup	26-Feb-2019	HK1906488-002	<0.01	3	----	----	----
FCZ2/M	26-Feb-2019	HK1906488-003	<0.01	2	----	----	----
FCZ2/M/Dup	26-Feb-2019	HK1906488-004	0.01	1	----	----	----
FCZ2/B	26-Feb-2019	HK1906488-005	0.01	3	----	----	----
FCZ2/B/Dup	26-Feb-2019	HK1906488-006	0.01	4	----	----	----
C/S	26-Feb-2019	HK1906488-007	0.01	14	----	----	----
C/S/Dup	26-Feb-2019	HK1906488-008	0.01	18	----	----	----
C/M	26-Feb-2019	HK1906488-009	0.01	24	----	----	----
C/M/Dup	26-Feb-2019	HK1906488-010	<0.01	25	----	----	----
C/B	26-Feb-2019	HK1906488-011	<0.01	18	----	----	----
C/B/Dup	26-Feb-2019	HK1906488-012	<0.01	13	----	----	----
M6A/M	26-Feb-2019	HK1906488-013	0.02	19	----	----	----
M6A/M/Dup	26-Feb-2019	HK1906488-014	0.02	21	----	----	----
N1/S	26-Feb-2019	HK1906488-015	0.01	16	----	----	----
N1/S/Dup	26-Feb-2019	HK1906488-016	0.01	20	----	----	----
N1/M	26-Feb-2019	HK1906488-017	0.02	14	----	----	----
N1/M/Dup	26-Feb-2019	HK1906488-018	0.02	21	----	----	----
N1/B	26-Feb-2019	HK1906488-019	0.02	3	----	----	----
N1/B/Dup	26-Feb-2019	HK1906488-020	0.02	5	----	----	----
N2/S	26-Feb-2019	HK1906488-021	0.02	NOT DETECTED	----	----	----
N2/S/Dup	26-Feb-2019	HK1906488-022	0.02	1	----	----	----
N2/M	26-Feb-2019	HK1906488-023	0.02	3	----	----	----
N2/M/Dup	26-Feb-2019	HK1906488-024	0.02	1	----	----	----
N2/B	26-Feb-2019	HK1906488-025	0.02	4	----	----	----
N2/B/Dup	26-Feb-2019	HK1906488-026	0.02	2	----	----	----
FCZ7/S	26-Feb-2019	HK1906488-027	0.02	NOT DETECTED	----	----	----
FCZ7/S/Dup	26-Feb-2019	HK1906488-028	0.02	1	----	----	----
FCZ7/M	26-Feb-2019	HK1906488-029	0.02	NOT DETECTED	----	----	----
FCZ7/M/Dup	26-Feb-2019	HK1906488-030	0.03	1	----	----	----
FCZ7/B	26-Feb-2019	HK1906488-031	0.03	2	----	----	----

Sub-Matrix: **WATER**

Compound	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID / *Client sampling date / time* / *Laboratory sample ID*	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	26-Feb-2019	HK1906488-032	**0.03**	**2**	**----**	**----**	**----**
FCZ1B/S	26-Feb-2019	HK1906488-033	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S/Dup	26-Feb-2019	HK1906488-034	**0.02**	**1**	**----**	**----**	**----**
FCZ1B/M	26-Feb-2019	HK1906488-035	**0.02**	**2**	**----**	**----**	**----**
FCZ1B/M/Dup	26-Feb-2019	HK1906488-036	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/B	26-Feb-2019	HK1906488-037	**0.02**	**1**	**----**	**----**	**----**
FCZ1B/B/Dup	26-Feb-2019	HK1906488-038	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S	26-Feb-2019	HK1906488-039	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S/Dup	26-Feb-2019	HK1906488-040	**0.02**	**1**	**----**	**----**	**----**
FCZ8/B	26-Feb-2019	HK1906488-043	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B/Dup	26-Feb-2019	HK1906488-044	**0.02**	**1**	**----**	**----**	**----**
H4A/M	26-Feb-2019	HK1906488-045	**0.02**	**1**	**----**	**----**	**----**
H4A/M/Dup	26-Feb-2019	HK1906488-046	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S	26-Feb-2019	HK1906488-047	**0.02**	**25**	**----**	**----**	**----**
FCZ1A/S/Dup	26-Feb-2019	HK1906488-048	**0.03**	**29**	**----**	**----**	**----**
FCZ1A/B	26-Feb-2019	HK1906488-051	**0.03**	**2**	**----**	**----**	**----**
FCZ1A/B/Dup	26-Feb-2019	HK1906488-052	**0.02**	**2**	**----**	**----**	**----**
H1A/M	26-Feb-2019	HK1906488-053	**0.03**	**4**	**----**	**----**	**----**
H1A/M/Dup	26-Feb-2019	HK1906488-054	**0.03**	**2**	**----**	**----**	**----**
M1A/M	26-Feb-2019	HK1906488-055	**0.04**	**23**	**----**	**----**	**----**
M1A/M/Dup	26-Feb-2019	HK1906488-056	**0.04**	**20**	**----**	**----**	**----**
SGA/M	26-Feb-2019	HK1906488-057	**0.03**	**NOT DETECTED**	**----**	**----**	**----**
SGA/M/Dup	26-Feb-2019	HK1906488-058	**0.02**	**1**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	28/2/2019	Fine	Smooth	14:09	7.5	S	1	1	8.24	8.25	30.23	30.28	20.57	20.52	118.1	117.3	8.90	8.80	7.84	0.8	0.8	1.5
						S		2	8.26		30.33		20.46		116.4		8.69			0.8		
						M	3.75	1	8.21	8.20	30.67	30.61	19.93	19.90	92.8	93.2	6.90	6.88		1.4	1.3	
						M		2	8.18		30.55		19.87		93.6		6.86			1.2		
						B	6.5	1	8.19	8.18	30.69	30.60	19.88	19.80	87.6	87.0	6.65	6.59		2.2	2.3	
						B		2	8.17		30.51		19.72		86.4		6.53			2.4		
C	28/2/2019	Fine	Smooth	13:16	12	S	1	1	8.24	8.24	30.82	30.80	19.93	19.94	96.4	96.6	7.36	7.37	7.09	0.5	0.5	1.3
						S		2	8.23		30.77		19.94		96.8		7.38			0.4		
						M	6	1	8.21	8.21	30.84	30.85	19.70	19.72	88.8	88.9	6.80	6.81		0.9	0.9	
						M		2	8.20		30.86		19.73		89.0		6.81			0.9		
						B	11	1	8.18	8.19	30.88	30.90	19.60	19.60	85.5	85.6	6.83	6.69		2.4	2.5	
						B		2	8.19		30.91		19.59		85.7		6.54			2.5		
M6A	28/2/2019	Fine	Smooth	13:29	1.5	M	0.75	1	8.17	8.17	30.66	30.65	20.71	20.73	84.7	85.8	6.38	6.48		19.5	20.4	
						M		2	8.16		30.64		20.75		86.8		6.57			21.2		
N1	28/2/2019	Fine	Smooth	13:41	9	S	1	1	8.25	8.25	30.44	30.45	20.34	20.34	109.0	108.6	8.21	8.23	7.39	0.9	0.9	5.2
						S		2	8.24		30.46		20.33		108.1		8.24			0.8		
						M	4.5	1	8.18	8.20	30.79	30.80	19.63	19.68	86.1	86.4	6.58	6.56		1.4	1.5	
						M		2	8.21		30.80		19.72		86.6		6.54			1.6		
						B	8	1	8.18	8.19	30.80	31.00	19.62	19.66	84.6	85.1	6.46	6.49		12.8	13.3	
						B		2	8.20		31.20		19.70		85.6		6.52			13.7		
N2	28/2/2019	Fine	Smooth	13:56	8	S	1	1	8.85	8.72	30.39	30.38	21.06	21.08	112.8	112.9	8.35	8.34	7.94	2.1	2.1	2.4
						S		2	8.59		30.37		21.09		112.9		8.33			2.1		
						M	4	1	8.18	8.19	30.35	30.34	20.49	20.42	100.6	99.8	7.58	7.54		1.2	1.3	
						M		2	8.19		30.33		20.34		99.0		7.49			1.3		
						B	7	1	7.62	7.58	29.88	30.01	19.64	19.76	89.4	90.5	6.86	6.80		3.6	3.9	
						B		2	7.54		30.14		19.87		91.6		6.74			4.2		
FCZ7	28/2/2019	Fine	Smooth	0:00	7	S	1	1	8.19	8.19	30.19	30.19	19.83	19.82	96.4	96.4	7.36	7.36	7.11	0.5	0.5	2.8
						S		2	8.19		30.18		19.81		96.4		7.36			0.5		
						M	3.5	1	8.23	8.23	30.57	30.58	20.18	20.18	91.0	91.0	6.87	6.86		1.6	1.7	
						M		2	8.22		30.59		20.18		90.9		6.84			1.7		
						B	6	1	8.22	8.22	30.61	30.61	20.18	20.18	86.7	86.7	6.56	6.56		6.0	6.2	
						B		2	8.22		30.60		20.18		86.7		6.56			6.4		
FCZ1B	28/2/2019	Fine	Smooth	14:20	7.9	S	1	1	8.22	8.23	30.19	30.17	21.38	21.26	118.6	118.4	8.80	8.79	7.81	0.8	0.8	1.7
						S		2	8.23		30.15		21.14		118.2		8.78			0.8		
						M	3.95	1	8.17	8.18	30.52	30.55	20.11	20.11	93.1	91.5	6.92	6.82		2.1	2.1	
						M		2	8.18		30.58		20.10		89.8		6.72			2.0		
						B	6.9	1	8.16	8.16	30.54	30.46	20.11	20.22	84.8	87.0	6.47	6.68		2.1	2.2	
						B		2	8.15		30.37		20.33		89.2		6.88			2.2		
FCZ8	28/2/2019	Fine	Smooth	12:24	5.3	S	1	1	8.34	8.33	30.17	30.16	21.20	21.17	138.8	136.0	10.34	10.24	10.24	1.8	1.7	5.4
						S		2	8.31		30.14		21.13		133.2		10.13			1.6		
						B	4.3	1	8.13	8.13	30.50	30.40	20.24	20.20	83.2	82.4	6.18	6.14		9.5	9.1	
						B		2	8.13		30.29		20.16		81.6		6.09			8.6		
H4A	28/2/2019	Fine	Smooth	12:36	3	M	1.5	1	8.04	8.10	29.91	29.89	21.27	21.26	88.8	88.2	6.61	6.54		2.8	2.7	
						M		2	8.16		29.86		21.24		87.6		6.47			2.6		
FCZ1A	28/2/2019	Fine	Smooth	12:49	4.5	S	1	1	8.09	8.09	30.11	30.11	20.90	20.91	85.7	85.7	6.41	6.41	6.41	2.8	2.6	5.3
						S		2	8.08		30.10		20.91		85.6		6.40			2.4		
						B	3.5	1	8.07	8.07	30.13	30.12	20.46	20.46	84.4	84.4	6.36	6.34		7.9	8.0	
						B		2	8.06		30.11		20.45		84.3		6.32			8.1		
H1A	28/2/2019	Fine	Smooth	11:45	2	M	1	1	8.08	8.08	30.09	30.08	21.34	21.36	88.4	88.5	6.56	6.52		6.4	6.5	
						M		2	8.07		30.06		21.37		88.6		6.48			6.5		
M1A	28/2/2019	Fine	Smooth	11:59	1.7	M	0.85	1	7.99	8.01	29.74	29.75	22.24	22.18	82.1	82.2	6.02	6.02		4.9	5.2	
						M		2	8.02		29.76		22.11		82.2		6.01			5.5		
SGA	28/2/2019	Fine	Smooth	12:11	2	M	1	1	8.10	8.09	30.13	30.14	20.83	20.99	86.6	86.2	6.45	6.44		3.1	2.9	
						M		2	8.07		30.15		21.15		85.7		6.42			2.7		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190378

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 28/02/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190378/1-54
Temperature	:	3.5°C
Date of receipt of sample	:	28/02/2019
Date test commenced	:	28/02/2019
Date test completed	:	06/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MaterialLab

Report No. : 181172WA190378

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	2	2	2	3	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.04	0.02	0.02	0.02	0.04	0.02	0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.3	0.2	0.2	0.2	0.4	0.4	0.3	0.2	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.13	0.09	0.08	0.08	0.10	0.09	0.07	0.02
7. Total Inorganic nitrogen, mg/L	0.11	0.17	0.11	0.10	0.10	0.14	0.11	0.08	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 01/03/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190378

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	3	3	3	5	5	4	5	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.02	0.02	0.06	0.07	0.02	0.02	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.4	0.5	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.08	0.08	0.09	0.09	0.10	0.09	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.11	0.10	0.10	0.11	0.15	0.17	0.11	0.12	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 01/03/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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Report No. : 181172WA190378

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	4	4	4	5	4	3	4	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.01	0.03	0.03	0.03	0.02	0.02	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.09	0.10	0.11	0.14	0.11	0.12	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.11	0.11	0.11	0.14	0.17	0.13	0.14	0.14	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 01/03/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190378

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	4	2	3	5	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.04	0.04	0.03	0.04	0.03	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.5	0.4	0.4	0.5	0.5	0.5	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.5	0.4	0.4	0.5	0.5	0.5	0.3	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.10	0.10	0.12	0.12	0.12	0.11	0.13	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.12	0.12	0.16	0.16	0.15	0.15	0.16	0.19	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 01/03/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :
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Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	3.0	<3	<3	4.0	5.5	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	7	6	6	4	3	4	5	5	2
3. Total Oxidized Nitrogen content, mg/L	0.03	0.01	0.02	0.06	0.02	0.04	<0.01	<0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.5	0.4	0.4	0.2	0.5	0.5	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.5	0.5	0.4	0.2	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.16	0.15	0.16	0.14	0.13	0.19	0.21	0.02
7. Total Inorganic nitrogen, mg/L	0.15	0.17	0.17	0.22	0.16	0.17	0.19	0.21	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
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   iii. Date and hour of commencing BOD_5 test : 01/03/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by : _____
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Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	5.0	4.5	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	6	7	6	4	5	5	6	2
3. Total Oxidized Nitrogen content, mg/L	<0.01	<0.01	0.14	0.15	0.14	0.14	0.12	0.14	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.6	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.6	0.5	0.6	0.6	0.4	0.4	0.3	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.27	0.17	0.18	0.17	0.15	0.16	0.16	0.16	0.02
7. Total Inorganic nitrogen, mg/L	0.27	0.17	0.32	0.32	0.29	0.31	0.28	0.30	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
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   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by : _____
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Report No. : 181172WA190378

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	7	6	7	4	7	6	2
3. Total Oxidized Nitrogen content, mg/L	0.15	0.15	0.18	0.19	0.14	0.14	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.5	0.5	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.19	0.17	0.19	0.20	0.17	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.34	0.32	0.37	0.39	0.31	0.29	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 28/02/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 01/03/2019 14:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908113
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 28-Feb-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 07-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1908113 supersedes any previous reports with this reference. Testing period is from 28-Feb-2019 to 05-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1908113 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 18:10. Microbiological sample(s), in 250mL and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	28-Feb-2019	HK1908113-001	0.01	NOT DETECTED	----	----	----
FCZ2/S/Dup	28-Feb-2019	HK1908113-002	<0.01	NOT DETECTED	----	----	----
FCZ2/M	28-Feb-2019	HK1908113-003	<0.01	NOT DETECTED	----	----	----
FCZ2/M/Dup	28-Feb-2019	HK1908113-004	<0.01	NOT DETECTED	----	----	----
FCZ2/B	28-Feb-2019	HK1908113-005	0.01	NOT DETECTED	----	----	----
FCZ2/B/Dup	28-Feb-2019	HK1908113-006	0.01	NOT DETECTED	----	----	----
C/S	28-Feb-2019	HK1908113-007	<0.01	NOT DETECTED	----	----	----
C/S/Dup	28-Feb-2019	HK1908113-008	0.01	NOT DETECTED	----	----	----
C/M	28-Feb-2019	HK1908113-009	0.03	NOT DETECTED	----	----	----
C/M/Dup	28-Feb-2019	HK1908113-010	0.01	NOT DETECTED	----	----	----
C/B	28-Feb-2019	HK1908113-011	<0.01	NOT DETECTED	----	----	----
C/B/Dup	28-Feb-2019	HK1908113-012	0.01	NOT DETECTED	----	----	----
M6A/M	28-Feb-2019	HK1908113-013	0.01	2	----	----	----
M6A/M/Dup	28-Feb-2019	HK1908113-014	0.01	NOT DETECTED	----	----	----
N1/S	28-Feb-2019	HK1908113-015	0.01	NOT DETECTED	----	----	----
N1/S/Dup	28-Feb-2019	HK1908113-016	0.01	NOT DETECTED	----	----	----
N1/M	28-Feb-2019	HK1908113-017	0.02	NOT DETECTED	----	----	----
N1/M/Dup	28-Feb-2019	HK1908113-018	0.01	NOT DETECTED	----	----	----
N1/B	28-Feb-2019	HK1908113-019	0.01	NOT DETECTED	----	----	----
N1/B/Dup	28-Feb-2019	HK1908113-020	0.01	NOT DETECTED	----	----	----
N2/S	28-Feb-2019	HK1908113-021	0.02	NOT DETECTED	----	----	----
N2/S/Dup	28-Feb-2019	HK1908113-022	0.02	NOT DETECTED	----	----	----
N2/M	28-Feb-2019	HK1908113-023	0.02	NOT DETECTED	----	----	----
N2/M/Dup	28-Feb-2019	HK1908113-024	0.02	NOT DETECTED	----	----	----
N2/B	28-Feb-2019	HK1908113-025	0.02	NOT DETECTED	----	----	----
N2/B/Dup	28-Feb-2019	HK1908113-026	0.02	NOT DETECTED	----	----	----
FCZ7/S	28-Feb-2019	HK1908113-027	0.01	NOT DETECTED	----	----	----
FCZ7/S/Dup	28-Feb-2019	HK1908113-028	0.01	NOT DETECTED	----	----	----
FCZ7/M	28-Feb-2019	HK1908113-029	0.02	NOT DETECTED	----	----	----
FCZ7/M/Dup	28-Feb-2019	HK1908113-030	0.02	NOT DETECTED	----	----	----
FCZ7/B	28-Feb-2019	HK1908113-031	0.02	NOT DETECTED	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	28-Feb-2019	HK1908113-032		**0.01**	**NOT DETECTED**	----	----	----
FCZ1B/S	28-Feb-2019	HK1908113-033		**0.02**	**NOT DETECTED**	----	----	----
FCZ1B/S/Dup	28-Feb-2019	HK1908113-034		**0.02**	**2**	----	----	----
FCZ1B/M	28-Feb-2019	HK1908113-035		**0.02**	**NOT DETECTED**	----	----	----
FCZ1B/M/Dup	28-Feb-2019	HK1908113-036		**0.02**	**NOT DETECTED**	----	----	----
FCZ1B/B	28-Feb-2019	HK1908113-037		**0.02**	**NOT DETECTED**	----	----	----
FCZ1B/B/Dup	28-Feb-2019	HK1908113-038		**0.02**	**1**	----	----	----
FCZ8/S	28-Feb-2019	HK1908113-039		**0.04**	**NOT DETECTED**	----	----	----
FCZ8/S/Dup	28-Feb-2019	HK1908113-040		**0.03**	**NOT DETECTED**	----	----	----
FCZ8/B	28-Feb-2019	HK1908113-043		**0.04**	**NOT DETECTED**	----	----	----
FCZ8/B/Dup	28-Feb-2019	HK1908113-044		**0.03**	**4**	----	----	----
H4A/M	28-Feb-2019	HK1908113-045		**0.03**	**NOT DETECTED**	----	----	----
H4A/M/Dup	28-Feb-2019	HK1908113-046		**0.03**	**NOT DETECTED**	----	----	----
FCZ1A/S	28-Feb-2019	HK1908113-047		**0.02**	**NOT DETECTED**	----	----	----
FCZ1A/S/Dup	28-Feb-2019	HK1908113-048		**0.02**	**1**	----	----	----
FCZ1A/B	28-Feb-2019	HK1908113-051		**0.02**	**1**	----	----	----
FCZ1A/B/Dup	28-Feb-2019	HK1908113-052		**0.02**	**2**	----	----	----
H1A/M	28-Feb-2019	HK1908113-053		**0.02**	**2**	----	----	----
H1A/M/Dup	28-Feb-2019	HK1908113-054		**0.02**	**NOT DETECTED**	----	----	----
M1A/M	28-Feb-2019	HK1908113-055		**0.04**	**NOT DETECTED**	----	----	----
M1A/M/Dup	28-Feb-2019	HK1908113-056		**0.04**	**2**	----	----	----
SGA/M	28-Feb-2019	HK1908113-057		**0.03**	**3**	----	----	----
SGA/M/Dup	28-Feb-2019	HK1908113-058		**0.02**	**1**	----	----	----

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	2/3/2019	Fine	Moderate	13:30	11	S	1	1	8.06	8.07	28.99	29.08	20.52	20.52	105.9	106.2	8.09	8.08	7.98	0.0	0.0	0.6
						S		2	8.08		29.16		20.51		106.5		8.07			0.0		
						M	5.5	1	8.09	8.09	30.07	30.10	20.43	20.43	103.9	103.9	7.87	7.88		0.0	0.0	
						M		2	8.08		30.13		20.42		103.8		7.88			0.0		
						B	10	1	8.10	8.13	30.65	30.66	20.29	20.30	92.2	92.4	6.97	6.98		2.1	1.9	
						B		2	8.16		30.66		20.31		92.5		6.98			1.7		
C	2/3/2019	Fine	Moderate	13:45	12	S	1	1	8.20	8.20	30.81	30.81	20.59	20.56	106.6	106.5	7.99	7.99	7.90	0.2	0.3	0.9
						S		2	8.19		30.80		20.52		106.4		7.98			0.3		
						M	6	1	8.18	8.18	30.93	30.82	20.30	20.31	103.5	103.7	7.79	7.82		0.6	0.7	
						M		2	8.17		30.70		20.31		103.8		7.84			0.8		
						B	11	1	8.13	8.13	31.07	31.07	19.94	19.90	91.4	91.3	6.91	6.90		1.6	1.7	
						B		2	8.12		31.06		19.86		91.2		6.89			1.8		
M6A	2/3/2019	Fine	Moderate	14:00	2.1	M	1.05	1	8.11	8.12	30.56	30.55	21.05	21.06	96.7	96.7	7.20	7.23		2.9	2.8	
						M		2	8.13		30.54		21.06		96.6		7.25			2.7		
N1	2/3/2019	Fine	Moderate	14:15	8.8	S	1	1	8.22	8.22	30.52	30.53	20.97	20.96	116.1	115.8	8.58	8.55	6.97	0.5	0.5	3.4
						S		2	8.21		30.54		20.94		115.4		8.51			0.4		
						M	4.4	1	8.16	8.15	30.79	30.83	20.08	20.10	80.1	79.8	5.42	5.39		1.8	1.7	
						M		2	8.14		30.86		20.12		79.4		5.36			1.6		
						B	7.8	1	8.05	8.04	30.92	30.93	19.83	19.82	67.2	67.1	5.11	5.10		8.1	8.0	
						B		2	8.02		30.94		19.81		66.9		5.09			7.9		
N2	2/3/2019	Fine	Moderate	14:30	7.1	S	1	1	8.31	8.31	30.36	30.36	21.46	21.46	137.8	137.7	9.89	9.96	9.39	1.0	1.1	2.4
						S		2	8.30		30.35		21.45		137.6		10.03			1.1		
						M	3.55	1	8.19	8.18	30.64	30.65	20.59	20.55	117.2	113.7	8.80	8.82		0.5	0.4	
						M		2	8.16		30.66		20.51		110.1		8.84			0.2		
						B	6.1	1	8.08	8.08	30.85	30.85	20.04	20.04	80.1	79.4	5.98	5.80		5.8	5.9	
						B		2	8.07		30.85		20.03		78.6		5.62			6.0		
FCZ7	2/3/2019	Fine	Moderate	14:45	7.4	S	1	1	8.23	8.23	30.34	30.34	21.48	21.45	122.0	121.9	9.10	9.06	8.15	0.8	0.8	2.8
						S		2	8.22		30.33		21.41		121.9		9.02			0.8		
						M	3.7	1	8.05	8.10	30.80	30.62	20.13	20.57	97.2	97.0	7.21	7.25		1.3	1.4	
						M		2	8.15		30.44		21.00		96.7		7.28			1.5		
						B	6.4	1	8.05	8.05	30.79	30.80	20.15	20.35	70.2	70.0	5.21	5.18		6.4	6.3	
						B		2	8.04		30.80		20.54		69.8		5.14			6.1		
FCZ1B	2/3/2019	Fine	Moderate	16:15	6.3	S	1	1	8.41	8.39	30.37	30.36	21.65	21.61	158.4	157.0	11.71	11.59	9.03	1.6	1.7	3.1
						S		2	8.37		30.35		21.56		155.5		11.46			1.7		
						M	3.15	1	8.07	8.11	30.78	30.57	20.34	20.43	94.2	94.7	6.23	6.47		3.2	3.0	
						M		2	8.14		30.35		20.52		95.1		6.71			2.8		
						B	5.3	1	7..64	7.55	30.41	30.46	20.34	20.35	74.6	74.2	5.51	5.52		4.5	4.7	
						B		2	7.55		30.51		20.35		73.8		5.53			4.8		
FCZ8	2/3/2019	Fine	Moderate	15:00	3.5	S	1	1	8.04	8.03	30.20	30.18	21.68	21.68	95.1	95.0	8.01	7.50	7.50	1.7	1.8	2.8
						S		2	8.02		30.16		21.67		94.9		6.99			1.8		
						B	2.5	1	8.01	8.04	30.19	30.19	21.56	21.57	88.6	88.2	6.49	6.49		3.7	3.9	
						B		2	8.07		30.18		21.57		87.8		6.48			4.0		
H4A	2/3/2019	Fine	Moderate	15:16	2.3	M	1.15	1	7.96	7.96	29.96	29.96	21.84	21.85	86.7	86.7	6.39	6.39		4.8	4.7	
						M		2	7.95		29.95		21.85		86.6		6.38			4.5		
FCZ1A	2/3/2019	Fine	Moderate	15:29	4.7	S	1	1	8.10	8.10	30.16	30.17	21.53	21.52	101.2	101.1	7.48	7.47	7.47	2.1	2.1	6.3
						S		2	8.09		30.18		21.51		100.9		7.46			2.0		
						B	3.7	1	8.05	8.06	30.17	30.18	21.42	21.44	92.8	93.1	6.92	6.93		10.4	10.5	
						B		2	8.06		30.19		21.46		93.4		6.93			10.6		
H1A	2/3/2019	Fine	Moderate	15:42	1.4	M	0.7	1	8.08	8.10	30.17	30.20	21.72	21.73	96.7	96.5	7.12	7.11		4.5	4.7	
						M		2	8.12		30.22		21.73		96.3		7.10			4.8		
M1A	2/3/2019	Fine	Moderate	15:53	1.5	M	0.75	1	8.01	8.03	29.98	30.00	21.89	21.92	86.2	86.2	6.34	6.34		3.5	4.2	
						M		2	8.04		30.01		21.95		86.1		6.33			4.8		
SGA	2/3/2019	Fine	Moderate	16:09	1.8	M	0.9	1	8.14	8.15	30.15	30.18	21.62	21.59	103.2	103.5	7.64	7.66		5.4	5.8	
						M		2	8.15		30.20		21.55		103.7		7.68			6.2		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190393

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 02/03/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190393/1-54
Temperature	:	3.2°C
Date of receipt of sample	:	02/03/2019
Date test commenced	:	03/03/2019
Date test completed	:	08/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190393

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	4	5	4	3	<2	3	2
3. Total Oxidized Nitrogen content, mg/L	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1
6. Ammonical nitrogen content, mg/L	0.04	0.05	0.06	0.05	0.04	0.05	0.05	0.05	0.02
7. Total Inorganic nitrogen, mg/L	0.05	0.05	0.07	0.06	0.05	0.06	0.05	0.06	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 02/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 03/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190393

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	<2	4	3	4	6	4	4	3	2
3. Total Oxidized Nitrogen content, mg/L	<0.01	<0.01	<0.01	<0.01	0.03	0.04	<0.01	<0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.1
5. Total nitrogen content, mg/L	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.05	0.05	0.04	0.05	0.06	0.07	0.08	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.06	0.05	0.05	0.06	0.09	0.11	0.09	0.09	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 02/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 03/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

FUGRO TECHNICAL SERVICES LIMITED
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MateriaLab

Report No. : 181172WA190393

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	3.0	3.5	3.0	4.5	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	5	10	4	4	4	4	4	2
3. Total Oxidized Nitrogen content, mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.4	0.4	0.4	0.4	0.5	0.6	0.1
6. Ammonical nitrogen content, mg/L	0.11	0.10	0.09	0.08	0.11	0.08	0.08	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.11	0.10	0.09	0.09	0.11	0.10	0.08	0.08	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 02/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 03/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190393

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	3.5	3.5	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	5	2	3	5	4	5	3	2
3. Total Oxidized Nitrogen content, mg/L	0.04	<0.01	0.03	<0.01	0.05	<0.01	<0.01	<0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.2	0.3	0.3	0.4	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.07	0.07	0.09	0.11	0.09	0.11	0.10	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.11	0.07	0.12	0.11	0.14	0.11	0.10	0.10	0.03

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   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
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MateriaLab

Report No. : 181172WA190393

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	6.0	7.0	7.0	8.0	8.0	6.0	6.0	6.0	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	6	11	15	<2	8	6	6	2
3. Total Oxidized Nitrogen content, mg/L	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	0.06	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.8	0.6	0.7	0.6	0.7	0.6	0.7	0.7	0.1
5. Total nitrogen content, mg/L	0.8	0.6	0.7	0.6	0.7	0.6	0.8	0.8	0.1
6. Ammonical nitrogen content, mg/L	0.15	0.09	0.12	0.10	0.12	0.09	0.26	0.35	0.02
7. Total Inorganic nitrogen, mg/L	0.15	0.12	0.12	0.10	0.12	0.09	0.32	0.41	0.03

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   iii. Date and hour of commencing BOD_5 test : 03/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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Report No. : 181172WA190393

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	4.5	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	8	7	3	14	9	18	24	2
3. Total Oxidized Nitrogen content, mg/L	0.09	0.07	0.14	0.14	0.10	0.08	0.10	0.09	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.6	0.2	0.1	0.1	0.2	0.1	0.2	0.1
5. Total nitrogen content, mg/L	0.5	0.6	0.3	0.3	0.2	0.3	0.2	0.2	0.1
6. Ammonical nitrogen content, mg/L	0.14	0.26	0.16	0.09	0.09	0.10	0.11	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.23	0.33	0.30	0.23	0.19	0.18	0.22	0.19	0.03

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3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
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   i. Samples taken by staff of FTS on 02/03/2019
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   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190393

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	15	14	9	7	8	11	2
3. Total Oxidized Nitrogen content, mg/L	0.10	0.11	0.13	0.12	0.09	0.09	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.1	0.1	0.2	0.2	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.3	0.2	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.13	0.08	0.15	0.11	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.23	0.24	0.21	0.27	0.21	0.19	0.03

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3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
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   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908115
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 02-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 07-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1908115 supersedes any previous reports with this reference. Testing period is from 02-Mar-2019 to 07-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1908115 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 19:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER			Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID		ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	02-Mar-2019	HK1908115-001		<0.01	NOT DETECTED	----	----	----
FCZ2/S/Dup	02-Mar-2019	HK1908115-002		<0.01	NOT DETECTED	----	----	----
FCZ2/M	02-Mar-2019	HK1908115-003		<0.01	NOT DETECTED	----	----	----
FCZ2/M/Dup	02-Mar-2019	HK1908115-004		<0.01	NOT DETECTED	----	----	----
FCZ2/B	02-Mar-2019	HK1908115-005		<0.01	NOT DETECTED	----	----	----
FCZ2/B/Dup	02-Mar-2019	HK1908115-006		<0.01	NOT DETECTED	----	----	----
C/S	02-Mar-2019	HK1908115-007		<0.01	3	----	----	----
C/S/Dup	02-Mar-2019	HK1908115-008		<0.01	1	----	----	----
C/M	02-Mar-2019	HK1908115-009		<0.01	2	----	----	----
C/M/Dup	02-Mar-2019	HK1908115-010		<0.01	3	----	----	----
C/B	02-Mar-2019	HK1908115-011		<0.01	1	----	----	----
C/B/Dup	02-Mar-2019	HK1908115-012		<0.01	NOT DETECTED	----	----	----
M6A/M	02-Mar-2019	HK1908115-013		<0.01	1	----	----	----
M6A/M/Dup	02-Mar-2019	HK1908115-014		<0.01	2	----	----	----
N1/S	02-Mar-2019	HK1908115-015		0.02	2	----	----	----
N1/S/Dup	02-Mar-2019	HK1908115-016		0.02	1	----	----	----
N1/M	02-Mar-2019	HK1908115-017		0.02	1	----	----	----
N1/M/Dup	02-Mar-2019	HK1908115-018		0.02	NOT DETECTED	----	----	----
N1/B	02-Mar-2019	HK1908115-019		0.02	1	----	----	----
N1/B/Dup	02-Mar-2019	HK1908115-020		0.02	NOT DETECTED	----	----	----
N2/S	02-Mar-2019	HK1908115-021		0.04	NOT DETECTED	----	----	----
N2/S/Dup	02-Mar-2019	HK1908115-022		0.03	1	----	----	----
N2/M	02-Mar-2019	HK1908115-023		0.04	1	----	----	----
N2/M/Dup	02-Mar-2019	HK1908115-024		0.04	NOT DETECTED	----	----	----
N2/B	02-Mar-2019	HK1908115-025		0.04	1	----	----	----
N2/B/Dup	02-Mar-2019	HK1908115-026		0.04	NOT DETECTED	----	----	----
FCZ7/S	02-Mar-2019	HK1908115-027		0.02	NOT DETECTED	----	----	----
FCZ7/S/Dup	02-Mar-2019	HK1908115-028		0.02	NOT DETECTED	----	----	----
FCZ7/M	02-Mar-2019	HK1908115-029		0.02	NOT DETECTED	----	----	----
FCZ7/M/Dup	02-Mar-2019	HK1908115-030		0.02	NOT DETECTED	----	----	----
FCZ7/B	02-Mar-2019	HK1908115-031		0.02	NOT DETECTED	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	02-Mar-2019	HK1908115-032		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S	02-Mar-2019	HK1908115-033		**0.07**	**23**	**----**	**----**	**----**
FCZ1B/S/Dup	02-Mar-2019	HK1908115-034		**0.07**	**21**	**----**	**----**	**----**
FCZ1B/M	02-Mar-2019	HK1908115-035		**0.08**	**19**	**----**	**----**	**----**
FCZ1B/M/Dup	02-Mar-2019	HK1908115-036		**0.08**	**7**	**----**	**----**	**----**
FCZ1B/B	02-Mar-2019	HK1908115-037		**0.08**	**9**	**----**	**----**	**----**
FCZ1B/B/Dup	02-Mar-2019	HK1908115-038		**0.07**	**11**	**----**	**----**	**----**
FCZ8/S	02-Mar-2019	HK1908115-039		**0.03**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S/Dup	02-Mar-2019	HK1908115-040		**0.04**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B	02-Mar-2019	HK1908115-043		**0.03**	**1**	**----**	**----**	**----**
FCZ8/B/Dup	02-Mar-2019	HK1908115-044		**0.04**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M	02-Mar-2019	HK1908115-045		**0.02**	**2**	**----**	**----**	**----**
H4A/M/Dup	02-Mar-2019	HK1908115-046		**0.03**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S	02-Mar-2019	HK1908115-047		**0.02**	**25**	**----**	**----**	**----**
FCZ1A/S/Dup	02-Mar-2019	HK1908115-048		**0.02**	**16**	**----**	**----**	**----**
FCZ1A/B	02-Mar-2019	HK1908115-051		**0.02**	**28**	**----**	**----**	**----**
FCZ1A/B/Dup	02-Mar-2019	HK1908115-052		**0.03**	**24**	**----**	**----**	**----**
H1A/M	02-Mar-2019	HK1908115-053		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H1A/M/Dup	02-Mar-2019	HK1908115-054		**0.02**	**3**	**----**	**----**	**----**
M1A/M	02-Mar-2019	HK1908115-055		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
M1A/M/Dup	02-Mar-2019	HK1908115-056		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
SGA/M	02-Mar-2019	HK1908115-057		**0.01**	**12**	**----**	**----**	**----**
SGA/M/Dup	02-Mar-2019	HK1908115-058		**0.01**	**19**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	5/3/2019	Rainy	Very Rough	10:00	11	S	1	1	8.01	8.02	27.13	27.14	20.49	20.50	99.9	99.8	7.74	7.73	7.70	0.6	0.7	1.3
								2	8.02		27.14		20.50		99.7		7.71			0.7		
						M	5.5	1	8.09	8.10	28.33	28.34	20.30	20.32	101.7	101.4	7.74	7.68		0.9	1.0	
						M		2	8.10		28.35		20.34		101.1		7.62			1.0		
						B	10	1	8.13	8.14	29.69	29.70	20.48	20.49	100.9	101.6	7.63	7.66		2.4	2.4	
						B		2	8.15		29.71		20.49		102.3		7.69			2.3		
C	5/3/2019	Rainy	Very Rough	10:17	12	S	1	1	8.13	8.13	30.54	30.53	20.44	20.43	100.0	99.7	7.57	7.55	7.31	1.2	1.3	1.7
						S		2	8.12		30.52		20.42		99.3		7.53			1.3		
						M	6	1	8.19	8.20	30.64	30.59	20.35	20.36	96.6	96.2	7.11	7.06		1.7	1.7	
						M		2	8.20		30.53		20.36		95.7		7.01			1.7		
						B	11	1	8.12	8.13	30.74	30.74	20.22	20.22	90.4	90.8	6.82	6.87		2.1	2.2	
						B		2	8.13		30.73		20.21		91.1		6.91			2.2		
M6A	5/3/2019	Rainy	Very Rough	10:29	1.2	M	0.6	1	8.10	8.11	30.11	30.12	20.42	20.43	113.4	113.8	7.92	7.97		1.9	2.0	
						M		2	8.11		30.12		20.44		114.2		8.02			2.1		
N1	5/3/2019	Rainy	Very Rough	10:41	8.7	S	1	1	8.10	8.11	29.94	29.93	21.11	21.13	101.3	101.2	7.61	7.60	7.26	0.9	0.9	1.5
						S		2	8.11		29.92		21.15		101.0		7.58			0.8		
						M	4.35	1	8.14	8.15	30.28	30.29	20.92	20.87	97.3	96.9	7.01	6.93		1.5	1.5	
						M		2	8.15		30.29		20.82		96.5		6.85			1.4		
						B	7.7	1	8.07	8.08	30.59	30.60	20.86	20.88	89.3	89.6	6.65	6.67		2.1	2.1	
						B		2	8.09		30.61		20.89		89.9		6.69			2.0		
N2	5/3/2019	Rainy	Very Rough	10:54	7.7	S	1	1	8.10	8.11	29.42	29.43	21.00	21.05	100.4	100.1	7.54	7.52	7.33	0.8	0.8	1.6
						S		2	8.11		29.43		21.09		99.7		7.49			0.8		
						M	3.85	1	8.12	8.13	29.99	30.00	20.97	20.97	95.5	95.4	7.15	7.14		1.7	1.7	
						M		2	8.13		30.01		20.96		95.2		7.13			1.7		
						B	6.7	1	8.14	8.14	30.41	30.43	20.77	20.78	89.4	89.2	6.81	6.80		2.2	2.3	
						B		2	8.14		30.45		20.79		88.9		6.78			2.4		
FCZ7	5/3/2019	Rainy	Very Rough	11:09	7.3	S	1	1	8.11	8.11	29.56	29.56	21.39	21.40	101.1	105.0	7.57	7.53	7.30	0.9	0.9	1.4
						S		2	8.10		29.55		21.40		108.9		7.49			0.8		
						M	3.65	1	8.09	8.10	29.96	29.95	21.27	21.27	95.4	95.2	7.10	7.06		1.2	1.3	
						M		2	8.10		29.93		21.26		95.0		7.02			1.3		
						B	6.3	1	8.06	8.06	30.16	30.18	21.14	21.16	89.3	89.0	6.88	6.85		2.0	2.0	
						B		2	8.06		30.19		21.17		88.7		6.82			1.9		
FCZ1B	5/3/2019	Rainy	Very Rough	12:49	6.7	S	1	1	8.02	8.03	29.09	29.10	21.43	21.44	92.6	92.9	6.90	6.92	6.68	0.8	0.8	1.5
						S		2	8.04		29.11		21.45		93.2		6.94			0.8		
						M	3.35	1	8.06	8.06	29.29	29.30	21.51	21.52	86.4	86.7	6.42	6.44		1.5	1.5	
						M		2	8.06		29.31		21.53		86.9		6.46			1.5		
						B	5.7	1	8.09	8.10	29.89	29.89	21.46	21.48	77.4	77.7	5.99	5.80		2.1	2.1	
						B		2	8.10		29.88		21.49		77.9		5.61			2.0		
FCZ8	5/3/2019	Rainy	Very Rough	11:21	4	S	1	1	7.99	8.00	29.20	29.21	21.81	21.82	91.8	91.5	6.78	6.76	6.76	0.8	0.8	1.1
						S		2	8.01		29.22		21.83		91.1		6.74			0.8		
						B	3	1	7.96	7.96	29.38	29.37	21.75	21.74	86.2	86.7	6.38	6.41		1.3	1.4	
						B		2	7.96		29.35		21.72		87.2		6.43			1.4		
H4A	5/3/2019	Rainy	Very Rough	11:36	2.1	M	1.05	1	7.98	7.99	27.90	27.91	21.33	21.34	89.7	89.4	6.75	6.72		3.3	3.3	
						M		2	7.99		27.92		21.34		89.1		6.69			3.2		
FCZ1A	5/3/2019	Rainy	Very Rough	11:50	4.1	S	1	1	8.02	8.03	28.52	28.53	21.57	21.58	101.0	101.0	6.79	6.81	6.81	0.6	0.7	1.2
						S		2	8.03		28.54		21.59		101.1		6.82			0.7		
						B	3.1	1	7.99	7.90	29.20	29.22	21.54	21.54	88.0	87.6	6.54	6.53		1.7	1.8	
						B		2	7.80		29.23		21.54		87.2		6.51			1.8		
H1A	5/3/2019	Rainy	Very Rough	12:09	1.5	M	0.75	1	7.98	7.99	28.99	28.98	21.64	21.63	88.2	88.6	6.55	6.57		6.6	6.6	
						M		2	7.99		28.97		21.62		88.9		6.59			6.6		
M1A	5/3/2019	Rainy	Very Rough	12:23	0.8	M	0.4	1	7.94	7.97	27.14	27.17	21.57	21.52	86.4	85.8	6.48	6.43		3.4	3.3	
						M		2	7.99		27.20		21.47		85.2		6.38			3.2		
SGA	5/3/2019	Rainy	Very Rough	12:36	2.1	M	1.05	1	7.93	7.94	27.23	27.27	21.32	21.67	87.4	87.2	6.51	6.49		2.4	2.5	
						M		2	7.94		27.30		22.01		86.9		6.47			2.5		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190412

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 05/03/2019
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190412/1-54
Temperature	:	3.0°C
Date of receipt of sample	:	05/03/2019
Date test commenced	:	05/03/2019
Date test completed	:	11/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190412

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	5	3	4	2	3	2
3. Total Oxidized Nitrogen content, mg/L	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.03	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.4	0.2	0.2	0.2	0.2	0.1
6. Ammonical nitrogen content, mg/L	0.08	0.16	0.07	0.10	0.07	0.08	0.08	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.10	0.18	0.08	0.12	0.08	0.09	0.10	0.11	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 06/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190412

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3.5	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	4	7	6	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.02	0.03	0.04	0.05	<0.01	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.2	0.2	0.3	0.4	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.07	0.06	0.07	0.08	0.08	0.09	0.10	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.09	0.09	0.10	0.10	0.11	0.14	0.10	0.16	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 06/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190412

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	4	3	3	2	3	4	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.07	0.07	0.11	0.72	0.13	0.13	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.2	0.3	0.2	0.3	0.3	0.2	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.3	0.4	0.2	0.4	1.0	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.07	0.09	0.09	0.10	0.11	0.04	0.09	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.14	0.16	0.16	0.17	0.23	0.76	0.22	0.22	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 06/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

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

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Report No. : 181172WA190412

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	6	2	4	3	3	4	5	2
3. Total Oxidized Nitrogen content, mg/L	0.12	0.13	0.15	0.15	0.11	0.10	0.10	0.10	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.10	0.11	0.12	0.10	0.12	0.10	0.11	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.22	0.24	0.27	0.25	0.23	0.20	0.21	0.20	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 06/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by : _____
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Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	4	6	2	4	5	5	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.10	0.12	0.12	0.11	0.11	0.13	0.10	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.2	0.3	0.2	0.4	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.3	0.4	0.3	0.5	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.14	0.14	0.16	0.15	0.13	0.13	0.11	0.14	0.02
7. Total Inorganic nitrogen, mg/L	0.25	0.24	0.28	0.27	0.24	0.24	0.24	0.24	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
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   iii. Date and hour of commencing BOD_5 test : 06/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by : _____
Approved Signatory : HO Kin Man, John
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Date : 3/4/2019

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Report No. : 181172WA190412

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	5	7	7	7	7	7	5	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.10	0.15	0.16	0.13	0.16	0.14	0.12	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.4	0.5	0.5	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.13	0.15	0.19	0.16	0.17	0.14	0.16	0.02
7. Total Inorganic nitrogen, mg/L	0.23	0.23	0.29	0.35	0.29	0.33	0.29	0.28	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
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   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by : _____
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Date : 3/4/2019

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Report No. : 181172WA190412

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	8	6	8	6	2
3. Total Oxidized Nitrogen content, mg/L	0.15	0.14	0.13	0.12	0.16	0.18	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.3	0.2	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.4	0.4	0.6	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.17	0.17	0.16	0.13	0.19	0.21	0.02
7. Total Inorganic nitrogen, mg/L	0.32	0.30	0.29	0.25	0.35	0.39	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 05/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 06/03/2019 11:30
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908493
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 05-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 11-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1908493 supersedes any previous reports with this reference. Testing period is from 05-Mar-2019 to 11-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1908493 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 17:15. Microbiological sample(s), in 250mL and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	05-Mar-2019	HK1908493-001	0.01	NOT DETECTED	----	----	----
FCZ2/S/Dup	05-Mar-2019	HK1908493-002	<0.01	NOT DETECTED	----	----	----
FCZ2/M	05-Mar-2019	HK1908493-003	0.01	NOT DETECTED	----	----	----
FCZ2/M/Dup	05-Mar-2019	HK1908493-004	0.01	NOT DETECTED	----	----	----
FCZ2/B	05-Mar-2019	HK1908493-005	<0.01	1	----	----	----
FCZ2/B/Dup	05-Mar-2019	HK1908493-006	<0.01	5	----	----	----
C/S	05-Mar-2019	HK1908493-007	<0.01	32	----	----	----
C/S/Dup	05-Mar-2019	HK1908493-008	<0.01	37	----	----	----
C/M	05-Mar-2019	HK1908493-009	<0.01	35	----	----	----
C/M/Dup	05-Mar-2019	HK1908493-010	0.01	41	----	----	----
C/B	05-Mar-2019	HK1908493-011	0.01	12	----	----	----
C/B/Dup	05-Mar-2019	HK1908493-012	<0.01	9	----	----	----
M6A/M	05-Mar-2019	HK1908493-013	<0.01	17	----	----	----
M6A/M/Dup	05-Mar-2019	HK1908493-014	0.01	49	----	----	----
N1/S	05-Mar-2019	HK1908493-015	0.02	47	----	----	----
N1/S/Dup	05-Mar-2019	HK1908493-016	0.02	38	----	----	----
N1/M	05-Mar-2019	HK1908493-017	0.02	48	----	----	----
N1/M/Dup	05-Mar-2019	HK1908493-018	0.02	39	----	----	----
N1/B	05-Mar-2019	HK1908493-019	0.02	NOT DETECTED	----	----	----
N1/B/Dup	05-Mar-2019	HK1908493-020	0.02	9	----	----	----
N2/S	05-Mar-2019	HK1908493-021	0.02	37	----	----	----
N2/S/Dup	05-Mar-2019	HK1908493-022	0.01	97	----	----	----
N2/M	05-Mar-2019	HK1908493-023	0.02	33	----	----	----
N2/M/Dup	05-Mar-2019	HK1908493-024	0.02	35	----	----	----
N2/B	05-Mar-2019	HK1908493-025	0.02	22	----	----	----
N2/B/Dup	05-Mar-2019	HK1908493-026	0.01	48	----	----	----
FCZ7/S	05-Mar-2019	HK1908493-027	0.02	39	----	----	----
FCZ7/S/Dup	05-Mar-2019	HK1908493-028	0.02	55	----	----	----
FCZ7/M	05-Mar-2019	HK1908493-029	0.01	48	----	----	----
FCZ7/M/Dup	05-Mar-2019	HK1908493-030	0.02	31	----	----	----
FCZ7/B	05-Mar-2019	HK1908493-031	0.02	61	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	05-Mar-2019	HK1908493-032		**0.02**	**68**	**----**	**----**	**----**
FCZ1B/S	05-Mar-2019	HK1908493-033		**0.02**	**94**	**----**	**----**	**----**
FCZ1B/S/Dup	05-Mar-2019	HK1908493-034		**0.02**	**88**	**----**	**----**	**----**
FCZ1B/M	05-Mar-2019	HK1908493-035		**0.02**	**54**	**----**	**----**	**----**
FCZ1B/M/Dup	05-Mar-2019	HK1908493-036		**0.02**	**55**	**----**	**----**	**----**
FCZ1B/B	05-Mar-2019	HK1908493-037		**0.02**	**62**	**----**	**----**	**----**
FCZ1B/B/Dup	05-Mar-2019	HK1908493-038		**0.02**	**84**	**----**	**----**	**----**
FCZ8/S	05-Mar-2019	HK1908493-039		**0.03**	**32**	**----**	**----**	**----**
FCZ8/S/Dup	05-Mar-2019	HK1908493-040		**0.02**	**24**	**----**	**----**	**----**
FCZ8/B	05-Mar-2019	HK1908493-043		**0.02**	**28**	**----**	**----**	**----**
FCZ8/B/Dup	05-Mar-2019	HK1908493-044		**0.02**	**19**	**----**	**----**	**----**
H4A/M	05-Mar-2019	HK1908493-045		**0.03**	**94**	**----**	**----**	**----**
H4A/M/Dup	05-Mar-2019	HK1908493-046		**0.03**	**79**	**----**	**----**	**----**
FCZ1A/S	05-Mar-2019	HK1908493-047		**0.03**	**31**	**----**	**----**	**----**
FCZ1A/S/Dup	05-Mar-2019	HK1908493-048		**0.02**	**35**	**----**	**----**	**----**
FCZ1A/B	05-Mar-2019	HK1908493-051		**0.02**	**52**	**----**	**----**	**----**
FCZ1A/B/Dup	05-Mar-2019	HK1908493-052		**0.02**	**96**	**----**	**----**	**----**
H1A/M	05-Mar-2019	HK1908493-053		**0.03**	**160**	**----**	**----**	**----**
H1A/M/Dup	05-Mar-2019	HK1908493-054		**0.03**	**130**	**----**	**----**	**----**
M1A/M	05-Mar-2019	HK1908493-055		**0.03**	**1500**	**----**	**----**	**----**
M1A/M/Dup	05-Mar-2019	HK1908493-056		**0.04**	**1000**	**----**	**----**	**----**
SGA/M	05-Mar-2019	HK1908493-057		**0.02**	**110**	**----**	**----**	**----**
SGA/M/Dup	05-Mar-2019	HK1908493-058		**0.02**	**140**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	7/3/2019	Rainy	Rough	11:10	11	S	1	1	8.04	8.05	28.96	28.98	19.61	19.61	106.1	106.0	8.03	8.02	7.93	0.1	0.2	0.7
						S		2	8.05		28.99		19.60		105.8		8.00			0.2		
						M	5.5	1	8.10	8.11	30.10	30.12	19.58	19.58	103.8	103.6	7.88	7.85		0.4	0.5	
						M		2	8.11		30.13		19.57		103.3		7.82			0.5		
						B	10	1	8.12	8.12	30.62	30.64	19.66	19.51	93.1	93.0	7.03	7.02		1.6	1.6	
						B		2	8.12		30.66		19.36		92.8		7.00			1.5		
C	7/3/2019	Rainy	Rough	11:23	12	S	1	1	8.20	8.20	30.58	30.59	19.52	19.54	106.5	106.8	8.07	8.10	7.92	0.2	0.1	0.7
						S		2	8.19		30.59		19.55		107.1		8.12			0.0		
						M	6	1	8.16	8.16	31.14	31.35	19.48	19.48	103.1	103.2	7.74	7.74		0.5	0.6	
						M		2	8.16		31.56		19.47		103.2		7.74			0.6		
						B	11	1	8.12	8.12	31.39	31.37	19.30	19.31	91.3	91.2	6.89	6.88		1.5	1.5	
						B		2	8.12		31.34		19.31		91.1		6.87			1.5		
M6A	7/3/2019	Rainy	Rough	11:40	2.1	M	1.05	1	8.12	8.12	30.65	30.67	19.27	19.25	96.6	96.6	7.26	7.26		2.3	2.4	
						M		2	8.12		30.69		19.23		96.5		7.25			2.5		
N1	7/3/2019	Rainy	Rough	11:47	8.8	S	1	1	8.13	8.15	30.35	30.38	19.43	19.43	118.2	118.1	8.71	8.71	7.04	0.3	0.3	1.4
						S		2	8.16		30.40		19.42		117.9		8.70			0.2		
						M	4.4	1	8.12	8.11	31.62	31.11	19.29	19.30	79.5	79.6	5.37	5.37		1.7	1.6	
						M		2	8.10		30.60		19.31		79.6		5.36			1.5		
						B	7.8	1	8.06	8.06	30.98	30.97	19.24	19.24	66.8	66.7	5.09	5.08		2.3	2.4	
						B		2	8.05		30.95		19.23		66.5		5.06			2.5		
N2	7/3/2019	Rainy	Rough	11:56	7.1	S	1	1	8.12	8.13	30.65	30.66	19.40	19.40	137.9	138.2	9.89	9.93	9.33	0.0	0.2	1.6
						S		2	8.13		30.66		19.40		138.5		9.96			0.3		
						M	3.55	1	8.10	8.11	30.71	30.72	19.28	19.27	11.5	64.2	8.69	8.74		1.6	1.7	
						M		2	8.12		30.72		19.25		116.9		8.78			1.8		
						B	6.1	1	8.03	8.03	31.01	31.02	19.17	19.17	78.5	78.8	5.62	5.67		2.7	2.8	
						B		2	8.03		31.03		19.16		79.1		5.71			2.9		
FCZ7	7/3/2019	Rainy	Rough	12:10	7.4	S	1	1	8.06	8.06	30.31	30.32	19.41	19.42	124.1	122.8	9.21	9.12	8.17	0.2	0.2	1.8
						S		2	8.05		30.32		19.43		121.5		9.03			0.1		
						M	3.7	1	8.06	8.05	30.62	30.64	19.28	19.27	96.2	96.1	7.23	7.22		1.6	1.7	
						M		2	8.04		30.66		19.26		96.0		7.20			1.8		
						B	6.4	1	8.00	8.01	30.98	30.99	19.25	19.24	69.5	69.4	5.13	5.12		3.5	3.6	
						B		2	8.02		30.99		19.23		69.2		5.10			3.7		
FCZ1B	7/3/2019	Rainy	Rough	13:32	6.3	S	1	1	8.16	8.17	30.27	30.28	19.31	19.32	158.2	158.1	11.70	11.69	9.19	0.2	0.3	1.1
						S		2	8.17		30.29		19.32		157.9		11.67			0.3		
						M	3.15	1	8.15	8.14	30.43	30.45	19.27	19.27	95.2	95.1	6.71	6.70		1.1	1.3	
						M		2	8.12		30.46		19.26		95.0		6.69			1.4		
						B	5.3	1	8.00	8.01	30.51	30.52	19.18	19.17	75.1	75.0	5.77	5.65		1.7	1.9	
						B		2	8.01		30.52		19.15		74.8		5.53			2.1		
FCZ8	7/3/2019	Rainy	Rough	12:21	3.5	S	1	1	8.19	8.18	30.16	30.16	19.21	19.22	95.2	95.4	7.03	7.05	7.05	1.7	1.7	2.3
						S		2	8.16		30.15		19.23		95.5		7.06			1.6		
						B	2.5	1	8.14	8.12	30.29	30.32	19.15	19.17	88.9	89.1	6.51	6.52		3.0	2.9	
						B		2	8.10		30.35		19.18		89.2		6.53			2.8		
H4A	7/3/2019	Rainy	Rough	12:34	2.5	M	1.25	1	8.20	8.18	30.41	30.42	19.17	19.17	86.2	86.4	6.36	6.37		1.6	1.9	
						M		2	8.16		30.42		19.16		86.6		6.38			2.1		
FCZ1A	7/3/2019	Rainy	Rough	12:43	4.7	S	1	1	8.17	8.16	30.29	30.25	19.23	19.24	100.8	100.9	7.44	7.45	7.45	0.3	0.3	1.0
						S		2	8.15		30.21		19.25		100.9		7.46			0.2		
						B	3.7	1	8.16	8.16	30.37	30.39	19.18	19.20	93.3	93.2	6.93	6.87		1.7	1.8	
						B		2	8.15		30.41		19.21		93.0		6.80			1.8		
H1A	7/3/2019	Rainy	Rough	12:57	1.4	M	0.7	1	8.11	8.12	30.38	30.37	19.28	24.27	94.5	94.8	7.01	7.05		0.3	0.3	
						M		2	8.12		30.36		29.26		95.1		7.09			0.2		
M1A	7/3/2019	Rainy	Rough	13:08	1.5	M	0.75	1	8.03	8.03	30.33	30.37	19.25	19.24	87.0	86.8	6.41	6.39		1.1	1.2	
						M		2	8.02		30.41		19.23		86.6		6.37			1.3		
SGA	7/3/2019	Rainy	Rough	13:19	1.8	M	0.9	1	8.08	8.09	30.21	30.21	19.27	19.27	103.5	103.3	7.65	7.63		1.2	1.4	
						M		2	8.09		30.21		19.26		103.0		7.61			1.5		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190429

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 07/03/2019 11:10
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190429/1-54
Temperature	:	3.2°C
Date of receipt of sample	:	07/03/2019
Date test commenced	:	07/03/2019
Date test completed	:	13/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190429

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	4	2	3	2	2	2	2
3. Total Oxidized Nitrogen content, mg/L	0.12	0.14	0.11	0.09	0.13	0.10	0.19	0.17	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.5	0.5	0.4	0.3	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.6	0.6	0.5	0.4	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.09	0.08	0.10	0.09	0.08	0.08	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.21	0.23	0.19	0.20	0.22	0.18	0.27	0.25	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 07/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 08/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190429

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	3	2	3	2	2	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.20	0.20	0.20	0.19	0.19	0.19	0.12	0.09	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.08	0.07	0.09	0.08	0.14	0.15	0.13	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.27	0.28	0.29	0.27	0.32	0.35	0.25	0.21	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 07/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 08/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190429

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	2	2	2	2	2	2	3	2
3. Total Oxidized Nitrogen content, mg/L	0.14	0.12	0.11	0.12	0.14	0.11	0.11	0.13	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.13	0.11	0.13	0.10	0.14	0.13	0.15	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.26	0.23	0.23	0.22	0.27	0.24	0.25	0.26	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 07/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 08/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
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E-mail : matlab@fugro.com
Website : www.fugro.com

MateriaLab

Report No. : 181172WA190429

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	2	2	2	3	2	2	2	2
3. Total Oxidized Nitrogen content, mg/L	0.10	0.10	0.11	0.11	0.11	0.11	0.12	0.12	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.13	0.14	0.13	0.13	0.14	0.13	0.15	0.14	0.02
7. Total Inorganic nitrogen, mg/L	0.23	0.24	0.24	0.24	0.25	0.24	0.27	0.26	0.03

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   vi. The samples were incubated at 19-21°C for 5 days

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Date : 3/4/2019

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Website : www.fugro.com

MaterialLab

Report No. : 181172WA190429

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	2	2	2	2	3	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.13	0.14	0.14	0.14	0.13	0.14	0.11	0.13	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.15	0.17	0.15	0.18	0.18	0.16	0.15	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.28	0.31	0.30	0.32	0.32	0.29	0.26	0.28	0.03

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   iii. Date and hour of commencing BOD_5 test : 08/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190429

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	3	4	6	5	6	2
3. Total Oxidized Nitrogen content, mg/L	0.12	0.10	0.15	0.17	0.15	0.17	0.21	0.20	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.1
5. Total nitrogen content, mg/L	0.5	0.4	0.5	0.6	0.5	0.5	0.7	0.6	0.1
6. Ammonical nitrogen content, mg/L	0.15	0.16	0.17	0.16	0.18	0.18	0.23	0.18	0.02
7. Total Inorganic nitrogen, mg/L	0.27	0.27	0.32	0.33	0.32	0.35	0.44	0.37	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
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   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190429

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	5	5	5	6	6	2
3. Total Oxidized Nitrogen content, mg/L	0.18	0.18	0.21	0.22	0.25	0.20	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.5	0.4	0.5	0.4	0.1
5. Total nitrogen content, mg/L	0.6	0.6	0.7	0.7	0.7	0.6	0.1
6. Ammonical nitrogen content, mg/L	0.20	0.21	0.23	0.23	0.24	0.22	0.02
7. Total Inorganic nitrogen, mg/L	0.37	0.39	0.44	0.45	0.49	0.42	0.03

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1908494
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 07-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 13-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1908494 supersedes any previous reports with this reference. Testing period is from 07-Mar-2019 to 13-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1908494 :

Sample(s) were received in ambient condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 15:40. Microbiological sample(s), in 250mL and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER			Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID		ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	07-Mar-2019	HK1908494-001		<0.01	37	----	----	----
FCZ2/S/Dup	07-Mar-2019	HK1908494-002		<0.01	42	----	----	----
FCZ2/M	07-Mar-2019	HK1908494-003		0.01	83	----	----	----
FCZ2/M/Dup	07-Mar-2019	HK1908494-004		<0.01	49	----	----	----
FCZ2/B	07-Mar-2019	HK1908494-005		<0.01	29	----	----	----
FCZ2/B/Dup	07-Mar-2019	HK1908494-006		0.02	22	----	----	----
C/S	07-Mar-2019	HK1908494-007		<0.01	18	----	----	----
C/S/Dup	07-Mar-2019	HK1908494-008		<0.01	13	----	----	----
C/M	07-Mar-2019	HK1908494-009		<0.01	15	----	----	----
C/M/Dup	07-Mar-2019	HK1908494-010		0.01	22	----	----	----
C/B	07-Mar-2019	HK1908494-011		<0.01	17	----	----	----
C/B/Dup	07-Mar-2019	HK1908494-012		<0.01	12	----	----	----
M6A/M	07-Mar-2019	HK1908494-013		0.03	140	----	----	----
M6A/M/Dup	07-Mar-2019	HK1908494-014		0.02	110	----	----	----
N1/S	07-Mar-2019	HK1908494-015		0.02	55	----	----	----
N1/S/Dup	07-Mar-2019	HK1908494-016		0.01	51	----	----	----
N1/M	07-Mar-2019	HK1908494-017		0.02	43	----	----	----
N1/M/Dup	07-Mar-2019	HK1908494-018		0.01	56	----	----	----
N1/B	07-Mar-2019	HK1908494-019		0.01	17	----	----	----
N1/B/Dup	07-Mar-2019	HK1908494-020		0.01	33	----	----	----
N2/S	07-Mar-2019	HK1908494-021		0.02	86	----	----	----
N2/S/Dup	07-Mar-2019	HK1908494-022		0.02	89	----	----	----
N2/M	07-Mar-2019	HK1908494-023		0.02	130	----	----	----
N2/M/Dup	07-Mar-2019	HK1908494-024		0.02	85	----	----	----
N2/B	07-Mar-2019	HK1908494-025		0.02	120	----	----	----
N2/B/Dup	07-Mar-2019	HK1908494-026		0.02	120	----	----	----
FCZ7/S	07-Mar-2019	HK1908494-027		0.02	24	----	----	----
FCZ7/S/Dup	07-Mar-2019	HK1908494-028		0.02	56	----	----	----
FCZ7/M	07-Mar-2019	HK1908494-029		0.02	130	----	----	----
FCZ7/M/Dup	07-Mar-2019	HK1908494-030		0.02	90	----	----	----
FCZ7/B	07-Mar-2019	HK1908494-031		0.02	76	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	07-Mar-2019	HK1908494-032		**0.02**	**84**	**----**	**----**	**----**
FCZ1B/S	07-Mar-2019	HK1908494-033		**0.03**	**14**	**----**	**----**	**----**
FCZ1B/S/Dup	07-Mar-2019	HK1908494-034		**0.03**	**27**	**----**	**----**	**----**
FCZ1B/M	07-Mar-2019	HK1908494-035		**0.02**	**18**	**----**	**----**	**----**
FCZ1B/M/Dup	07-Mar-2019	HK1908494-036		**0.02**	**20**	**----**	**----**	**----**
FCZ1B/B	07-Mar-2019	HK1908494-037		**0.03**	**17**	**----**	**----**	**----**
FCZ1B/B/Dup	07-Mar-2019	HK1908494-038		**0.03**	**29**	**----**	**----**	**----**
FCZ8/S	07-Mar-2019	HK1908494-039		**0.03**	**13**	**----**	**----**	**----**
FCZ8/S/Dup	07-Mar-2019	HK1908494-040		**0.03**	**9**	**----**	**----**	**----**
FCZ8/B	07-Mar-2019	HK1908494-043		**0.03**	**12**	**----**	**----**	**----**
FCZ8/B/Dup	07-Mar-2019	HK1908494-044		**0.03**	**17**	**----**	**----**	**----**
H4A/S	07-Mar-2019	HK1908494-045		**0.04**	**31**	**----**	**----**	**----**
H4A/S/Dup	07-Mar-2019	HK1908494-046		**0.04**	**24**	**----**	**----**	**----**
FCZ1A/S	07-Mar-2019	HK1908494-047		**0.03**	**190**	**----**	**----**	**----**
FCZ1A/S/Dup	07-Mar-2019	HK1908494-048		**0.03**	**130**	**----**	**----**	**----**
FCZ1A/B	07-Mar-2019	HK1908494-051		**0.03**	**77**	**----**	**----**	**----**
FCZ1A/B/Dup	07-Mar-2019	HK1908494-052		**0.04**	**92**	**----**	**----**	**----**
H1A/S	07-Mar-2019	HK1908494-053		**0.04**	**36**	**----**	**----**	**----**
H1A/S/Dup	07-Mar-2019	HK1908494-054		**0.03**	**58**	**----**	**----**	**----**
M1A/S	07-Mar-2019	HK1908494-055		**0.04**	**21**	**----**	**----**	**----**
M1A/S/Dup	07-Mar-2019	HK1908494-056		**0.04**	**46**	**----**	**----**	**----**
SGA/S	07-Mar-2019	HK1908494-057		**0.03**	**82**	**----**	**----**	**----**
SGA/S/Dup	07-Mar-2019	HK1908494-058		**0.04**	**65**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	9/3/2019	Rainy	Rough	12:31	11	S	1	1	8.05	8.06	28.92	28.94	19.45	19.46	106.2	106.4	8.04	8.06	7.96	0.0	0.0	0.6
								2	8.06		28.96		19.47		106.5		8.07			0.0		
						M	5.5	1	8.09	8.10	30.15	30.17	19.31	19.32	103.7	103.6	7.87	7.86		0.2	0.2	
						M		2	8.10		30.19		19.32		103.4		7.84			0.2		
						B	10	1	8.13	8.13	30.67	30.69	19.28	19.28	92.6	92.5	6.99	6.98		1.7	1.6	
						B		2	8.13		30.71		19.27		92.3		6.97			1.5		
C	9/3/2019	Rainy	Rough	12:43	12	S	1	1	8.21	8.21	30.63	30.65	19.41	19.43	106.9	106.8	6.08	6.09	6.91	0.1	0.2	0.8
						S		2	8.20		30.66		19.44		106.7		6.09			0.2		
						M	6	1	8.16	8.16	31.16	31.18	19.38	19.38	103.0	103.0	7.74	7.74		0.7	0.7	
						M		2	8.16		31.19		19.37		102.9		7.74			0.6		
						B	11	1	8.13	8.13	31.31	31.32	19.22	19.23	91.0	91.1	6.87	6.88		1.3	1.5	
						B		2	8.13		31.33		19.23		91.2		6.89			1.6		
M6A	9/3/2019	Rainy	Rough	12:56	2.1	M	1.05	1	8.11	8.12	30.62	30.63	19.26	19.26	96.7	96.6	7.28	7.27		2.6	2.4	
						M		2	8.12		30.63		19.26		96.5		7.26			2.1		
N1	9/3/2019	Rainy	Rough	13:10	8.8	S	1	1	8.16	8.17	30.51	30.52	19.43	19.42	117.9	118.0	8.70	8.70	7.02	0.2	0.3	0.8
						S		2	8.17		30.52		19.41		118.0		8.70			0.4		
						M	4.4	1	8.15	8.15	30.79	30.80	19.32	19.34	79.2	79.1	5.35	5.34		0.6	0.8	
						M		2	8.15		30.81		19.36		79.0		5.33			0.9		
						B	7.8	1	8.08	8.09	30.93	30.95	19.27	19.26	66.6	66.5	5.07	5.06		1.1	1.2	
						B		2	8.09		30.96		19.24		66.4		5.05			1.3		
N2	9/3/2019	Rainy	Rough	13:27	7.1	S	1	1	8.11	8.12	30.55	30.54	19.41	19.42	141.2	140.7	10.12	10.08	9.43	1.2	1.1	1.7
						S		2	8.13		30.52		19.42		140.1		10.03			1.0		
						M	3.55	1	8.08	8.09	30.66	30.67	19.33	19.35	117.5	117.3	8.79	8.78		1.7	1.8	
						M		2	8.09		30.68		19.36		117.0		8.76			1.8		
						B	6.1	1	8.02	8.03	31.02	31.01	19.28	19.27	78.2	78.5	7.60	6.62		2.1	2.2	
						B		2	8.03		31.00		19.26		78.7		5.63			2.3		
FCZ7	9/3/2019	Rainy	Rough	13:37	7.4	S	1	1	8.06	8.06	30.35	30.36	19.40	19.42	123.2	123.5	9.17	9.19	8.22	1.2	1.0	2.1
						S		2	8.05		30.36		19.43		123.8		9.20			0.8		
						M	3.7	1	8.07	8.07	30.61	30.62	19.38	19.37	92.1	94.5	7.27	7.26		1.5	1.6	
						M		2	8.06		30.63		19.36		96.8		7.25			1.7		
						B	6.4	1	8.05	8.03	30.98	30.97	19.25	19.26	69.0	69.2	5.08	5.10		3.9	3.8	
						B		2	8.00		30.96		19.27		69.3		5.11			3.6		
FCZ1B	9/3/2019	Rainy	Rough	14:58	6.3	S	1	1	8.12	8.14	30.19	30.18	19.27	19.27	156.1	156.0	11.50	11.49	8.88	0.0	0.1	1.2
						S		2	8.15		30.16		19.26		155.9		11.48			0.1		
						M	3.15	1	8.10	8.09	30.29	30.29	19.21	19.21	94.2	94.6	6.23	6.27		1.2	1.2	
						M		2	8.09		30.28		19.20		94.9		6.31			1.1		
						B	5.3	1	8.02	8.03	30.45	30.48	19.13	19.14	73.6	73.7	5.50	5.51		2.3	2.4	
						B		2	8.03		30.51		19.15		73.8		5.52			2.5		
FCZ8	9/3/2019	Rainy	Rough	13:48	3.5	S	1	1	8.16	8.17	30.20	30.21	19.23	19.25	94.5	94.6	6.96	6.97	6.97	1.3	1.3	2.0
						S		2	8.17		30.21		19.26		94.7		6.98			1.2		
						B	2.5	1	8.10	8.11	30.48	30.52	19.24	19.24	87.8	87.7	6.48	6.47		2.6	2.8	
						B		2	8.12		30.55		19.23		87.6		6.45			2.9		
H4A	9/3/2019	Rainy	Rough	12:59	2.3	M	1.15	1	8.18	8.18	30.71	30.72	19.20	19.21	87.1	87.0	6.42	6.41		1.7	1.6	
						M		2	8.17		30.72		19.22		86.9		6.40			1.5		
FCZ1A	9/3/2019	Rainy	Rough	14:12	4.7	S	1	1	8.14	8.13	30.48	30.47	19.23	19.25	101.3	101.3	7.51	7.50	7.50	0.0	0.1	1.1
						S		2	8.12		30.46		19.26		101.2		7.49			0.1		
						B	3.7	1	8.08	8.07	30.51	30.52	19.21	19.20	92.5	92.5	6.90	6.90		2.3	2.1	
						B		2	8.06		30.52		19.19		92.4		6.89			1.9		
H1A	9/3/2019	Rainy	Rough	14:22	1.4	M	0.7	1	8.08	8.07	30.38	30.39	19.31	19.32	97.3	97.4	7.20	7.21		0.8	0.9	
						M		2	8.06		30.39		19.32		97.5		7.21			0.9		
M1A	9/3/2019	Rainy	Rough	14:31	1.5	M	0.75	1	8.12	8.11	30.43	30.42	19.38	19.37	86.5	86.4	6.38	6.37		1.9	2.0	
						M		2	8.10		30.41		19.36		86.3		6.35			2.1		
SGA	9/3/2019	Rainy	Rough	14:40	1.8	M	0.9	1	8.11	8.11	30.28	30.29	19.41	19.40	102.8	102.9	7.59	7.61		1.5	1.6	
						M		2	8.10		30.29		19.39		103.0		7.62			1.6		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190444

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 09/03/2019 12:16
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190444/1-54
Temperature	:	3.0°C
Date of receipt of sample	:	09/03/2019
Date test commenced	:	10/03/2019
Date test completed	:	15/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190444

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	2	2	3	2	4	2	3	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.06	0.06	0.06	0.06	0.05	0.08	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.25	0.27	0.14	0.20	0.14	0.12	0.12	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.32	0.34	0.20	0.26	0.20	0.17	0.20	0.18	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190444

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	2	2	2	2	2	3	2	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.08	0.07	0.15	0.16	0.13	0.13	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.2	0.2	0.3	0.4	0.4	0.4	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.13	0.12	0.13	0.12	0.16	0.14	0.19	0.19	0.02
7. Total Inorganic nitrogen, mg/L	0.20	0.19	0.20	0.20	0.31	0.30	0.34	0.32	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190444

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	2	4	2	4	3	3	2	2
3. Total Oxidized Nitrogen content, mg/L	0.13	0.15	0.14	0.12	0.14	0.13	0.13	0.14	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.5	0.4	0.4	0.5	0.5	0.6	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.20	0.22	0.21	0.21	0.21	0.24	0.19	0.21	0.02
7. Total Inorganic nitrogen, mg/L	0.34	0.37	0.36	0.33	0.34	0.37	0.32	0.35	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190444

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	3	4	3	3	4	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.13	0.14	0.14	0.13	0.13	0.13	0.14	0.14	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.23	0.22	0.19	0.22	0.21	0.22	0.20	0.23	0.02
7. Total Inorganic nitrogen, mg/L	0.36	0.37	0.32	0.35	0.34	0.35	0.34	0.37	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190444

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	3	3	4	3	5	6	4	2
3. Total Oxidized Nitrogen content, mg/L	0.16	0.15	0.16	0.17	0.14	0.15	0.15	0.15	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.3	0.3	0.3	0.4	0.4	0.2	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.23	0.23	0.19	0.19	0.21	0.22	0.21	0.24	0.02
7. Total Inorganic nitrogen, mg/L	0.40	0.38	0.35	0.36	0.36	0.36	0.36	0.39	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190444

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	5	5	3	3	5	4	2
3. Total Oxidized Nitrogen content, mg/L	0.17	0.14	0.22	0.20	0.15	0.17	0.20	0.17	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.6	0.1
6. Ammonical nitrogen content, mg/L	0.25	0.24	0.24	0.26	0.29	0.23	0.23	0.25	0.02
7. Total Inorganic nitrogen, mg/L	0.41	0.38	0.60	0.45	0.44	0.41	0.42	0.42	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 31/9/2019

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

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MaterialLab

Report No. : 181172WA190444

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	3	3	3	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.18	0.19	0.20	0.20	0.20	0.21	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.3	0.3	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.5	0.6	0.5	0.5	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.24	0.26	0.23	0.22	0.26	0.25	0.02
7. Total Inorganic nitrogen, mg/L	0.41	0.45	0.43	0.42	0.47	0.46	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 09/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 10/03/2019 11:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909075
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 09-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 18-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1909075 supersedes any previous reports with this reference. Testing period is from 09-Mar-2019 to 15-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1909075 :

Sample(s) were received in ambient condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 19:00. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	09-Mar-2019	HK1909075-001	<0.01	4	----	----	----
FCZ2/S/Dup	09-Mar-2019	HK1909075-002	<0.01	5	----	----	----
FCZ2/M	09-Mar-2019	HK1909075-003	<0.01	8	----	----	----
FCZ2/M/Dup	09-Mar-2019	HK1909075-004	<0.01	9	----	----	----
FCZ2/B	09-Mar-2019	HK1909075-005	<0.01	7	----	----	----
FCZ2/B/Dup	09-Mar-2019	HK1909075-006	<0.01	5	----	----	----
C/S	09-Mar-2019	HK1909075-007	<0.01	11	----	----	----
C/S/Dup	09-Mar-2019	HK1909075-008	<0.01	15	----	----	----
C/M	09-Mar-2019	HK1909075-009	<0.01	23	----	----	----
C/M/Dup	09-Mar-2019	HK1909075-010	<0.01	15	----	----	----
C/B	09-Mar-2019	HK1909075-011	<0.01	12	----	----	----
C/B/Dup	09-Mar-2019	HK1909075-012	<0.01	7	----	----	----
M6A/M	09-Mar-2019	HK1909075-013	<0.01	69	----	----	----
M6A/M/Dup	09-Mar-2019	HK1909075-014	0.01	66	----	----	----
N1/S	09-Mar-2019	HK1909075-015	0.02	620	----	----	----
N1/S/Dup	09-Mar-2019	HK1909075-016	0.02	580	----	----	----
N1/M	09-Mar-2019	HK1909075-017	0.02	690	----	----	----
N1/M/Dup	09-Mar-2019	HK1909075-018	0.02	750	----	----	----
N1/B	09-Mar-2019	HK1909075-019	0.02	470	----	----	----
N1/B/Dup	09-Mar-2019	HK1909075-020	0.02	500	----	----	----
N2/S	09-Mar-2019	HK1909075-021	0.02	500	----	----	----
N2/S/Dup	09-Mar-2019	HK1909075-022	0.02	550	----	----	----
N2/M	09-Mar-2019	HK1909075-023	0.02	490	----	----	----
N2/M/Dup	09-Mar-2019	HK1909075-024	0.02	520	----	----	----
N2/B	09-Mar-2019	HK1909075-025	0.01	480	----	----	----
N2/B/Dup	09-Mar-2019	HK1909075-026	0.01	510	----	----	----
FCZ7/S	09-Mar-2019	HK1909075-027	0.02	32	----	----	----
FCZ7/S/Dup	09-Mar-2019	HK1909075-028	0.02	45	----	----	----
FCZ7/M	09-Mar-2019	HK1909075-029	0.02	32	----	----	----
FCZ7/M/Dup	09-Mar-2019	HK1909075-030	0.02	37	----	----	----
FCZ7/B	09-Mar-2019	HK1909075-031	0.02	46	----	----	----

Sub-Matrix: **WATER**

Compound	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID / *Client sampling date / time* / *Laboratory sample ID*	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup 09-Mar-2019 HK1909075-032	**0.02**	**42**	**----**	**----**	**----**
FCZ1B/S 09-Mar-2019 HK1909075-033	**0.02**	**35**	**----**	**----**	**----**
FCZ1B/S/Dup 09-Mar-2019 HK1909075-034	**0.02**	**32**	**----**	**----**	**----**
FCZ1B/M 09-Mar-2019 HK1909075-035	**0.02**	**47**	**----**	**----**	**----**
FCZ1B/M/Dup 09-Mar-2019 HK1909075-036	**0.02**	**44**	**----**	**----**	**----**
FCZ1B/B 09-Mar-2019 HK1909075-037	**0.02**	**30**	**----**	**----**	**----**
FCZ1B/B/Dup 09-Mar-2019 HK1909075-038	**0.02**	**22**	**----**	**----**	**----**
FCZ8/S 09-Mar-2019 HK1909075-039	**0.02**	**36**	**----**	**----**	**----**
FCZ8/S/Dup 09-Mar-2019 HK1909075-040	**0.02**	**44**	**----**	**----**	**----**
FCZ8/B 09-Mar-2019 HK1909075-043	**0.02**	**41**	**----**	**----**	**----**
FCZ8/B/Dup 09-Mar-2019 HK1909075-044	**0.02**	**52**	**----**	**----**	**----**
H4A/S 09-Mar-2019 HK1909075-045	**0.03**	**64**	**----**	**----**	**----**
H4A/S/Dup 09-Mar-2019 HK1909075-046	**0.03**	**69**	**----**	**----**	**----**
FCZ1A/S 09-Mar-2019 HK1909075-047	**0.02**	**580**	**----**	**----**	**----**
FCZ1A/S/Dup 09-Mar-2019 HK1909075-048	**0.02**	**510**	**----**	**----**	**----**
FCZ1A/B 09-Mar-2019 HK1909075-051	**0.02**	**880**	**----**	**----**	**----**
FCZ1A/B/Dup 09-Mar-2019 HK1909075-052	**0.02**	**790**	**----**	**----**	**----**
H1A/S 09-Mar-2019 HK1909075-053	**0.03**	**28**	**----**	**----**	**----**
H1A/S/Dup 09-Mar-2019 HK1909075-054	**0.03**	**37**	**----**	**----**	**----**
M1A/S 09-Mar-2019 HK1909075-055	**0.02**	**29**	**----**	**----**	**----**
M1A/S/Dup 09-Mar-2019 HK1909075-056	**0.02**	**26**	**----**	**----**	**----**
SGA/S 09-Mar-2019 HK1909075-057	**0.02**	**13**	**----**	**----**	**----**
SGA/S/Dup 09-Mar-2019 HK1909075-058	**0.02**	**15**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	12/3/2019	Fine	Moderate	12:16	10	S	1	1	7.84	7.90	29.49	29.50	19.96	19.92	85.7	85.6	6.56	6.56	6.63	0.9	0.9	2.7
								2	7.95		29.50		19.87		85.5		6.55			0.8		
						M	5	1	7.95	7.95	30.15	30.14	19.89	19.89	74.9	75.1	5.88	6.71		2.2	2.3	
						M		2	7.95		30.13		19.88		75.3		7.53			2.3		
						B	9	1	7.95	7.95	30.34	30.35	19.89	19.89	71.6	71.6	7.46	6.45		4.9	5.0	
						B		2	7.95		30.35		19.89		71.5		5.44			5.1		
C	12/3/2019	Fine	Moderate	12:28	11	S	1	1	7.97	7.96	30.26	30.26	20.00	20.01	84.0	84.0	6.37	6.38	6.22	0.8	0.8	2.2
						S		2	7.95		30.25		20.01		84.0		6.38			0.7		
						M	5.5	1	7.99	7.99	30.77	30.78	19.80	19.81	79.8	79.7	6.07	6.07		1.8	1.8	
						M		2	7.99		30.78		19.81		79.6		6.06			1.7		
						B	10	1	7.96	7.96	30.88	30.87	19.85	19.81	71.4	71.7	5.44	5.46		4.2	4.1	
						B		2	7.96		30.86		19.76		71.9		5.48			4.0		
M6A	12/3/2019	Fine	Moderate	12:41	1.8	M	0.9	1	7.95	7.95	30.61	30.62	20.49	20.49	81.2	81.1	6.10	6.09		0.9	1.1	
						M		2	7.95		30.62		20.48		80.9		6.07			1.2		
N1	12/3/2019	Fine	Moderate	12:55	9	S	1	1	7.94	7.94	29.94	29.95	20.06	20.06	84.1	83.8	6.40	6.38	6.04	1.3	1.3	2.3
						S		2	7.94		29.95		20.06		83.5		6.35			1.2		
						M	4.5	1	7.98	7.98	30.87	30.87	19.86	19.86	75.2	75.1	5.71	5.70		1.8	1.9	
						M		2	7.98		30.86		19.85		74.9		5.69			1.9		
						B	8	1	7.99	7.99	30.92	30.93	19.89	19.38	72.3	72.3	5.50	5.50		3.6	3.7	
						B		2	7.99		30.94		18.86		72.3		5.50			3.7		
N2	12/3/2019	Fine	Moderate	13:12	8	S	1	1	7.94	7.94	29.83	29.83	20.29	20.31	80.5	80.0	6.03	5.97	5.84	1.5	1.4	2.0
						S		2	7.94		29.83		20.32		79.4		5.90			1.3		
						M	4	1	7.99	7.99	30.82	30.83	20.04	20.05	75.5	75.4	5.72	5.71		1.8	1.9	
						M		2	7.99		30.83		20.05		75.3		5.70			1.9		
						B	7	1	7.99	7.99	30.92	30.91	19.95	19.96	73.3	73.2	5.55	5.54		2.5	2.7	
						B		2	7.99		30.89		19.96		73.0		5.53			2.9		
FCZ7	12/3/2019	Fine	Moderate	13:22	7	S	1	1	7.93	7.93	29.92	29.93	20.22	20.23	83.4	83.3	6.32	6.31	6.11	1.4	1.5	1.9
						S		2	7.93		29.93		20.23		83.2		6.30			1.5		
						M	3.5	1	7.95	7.97	30.62	30.63	20.20	20.20	78.2	78.1	5.91	5.91		1.6	1.7	
						M		2	7.98		30.63		20.20		78.0		5.90			1.8		
						B	6	1	8.00	8.00	30.79	30.79	19.97	19.97	75.7	75.7	5.75	5.75		2.4	2.5	
						B		2	8.00		30.78		19.97		75.6		5.74			2.5		
FCZ1B	12/3/2019	Fine	Moderate	14:43	6.6	S	1	1	7.98	7.98	30.05	30.06	20.86	20.87	82.6	82.5	6.19	6.18	5.88	1.3	1.2	1.8
						S		2	7.98		30.06		20.88		82.3		6.17			1.1		
						M	3.3	1	7.98	7.98	30.65	30.66	20.30	20.30	74.6	74.3	5.61	5.59		2.1	2.3	
						M		2	7.98		30.66		20.30		74.0		5.56			2.4		
						B	5.6	1	7.99	8.00	30.75	30.75	20.20	20.20	72.3	72.4	5.47	5.48		2.0	2.0	
						B		2	8.00		30.75		20.20		72.5		5.48			2.0		
FCZ8	12/3/2019	Fine	Moderate	13:33	5.4	S	1	1	7.92	7.93	30.07	30.08	20.77	20.77	78.6	78.5	5.90	5.89	5.89	3.5	3.4	3.2
						S		2	7.93		30.09		20.76		78.4		5.88			3.3		
						B	4.4	1	7.97	7.97	30.70	30.71	20.38	20.37	71.8	71.7	5.41	5.40		3.0	3.0	
						B		2	7.97		30.72		20.36		71.5		5.38			2.9		
H4A	12/3/2019	Fine	Moderate	12:44	2.7	M	1.35	1	7.93	7.93	29.89	29.90	21.23	21.23	79.0	78.9	5.88	5.87		2.4	2.4	
						M		2	7.93		29.91		21.23		78.8		5.86			2.3		
FCZ1A	12/3/2019	Fine	Moderate	13:57	4.4	S	1	1	7.97	7.97	30.00	30.01	20.93	20.93	82.2	82.1	6.15	6.14	6.14	1.3	1.2	1.5
						S		2	7.97		30.01		20.93		82.0		6.13			1.1		
						B	3.4	1	7.94	7.94	30.57	30.59	20.51	20.52	76.0	75.9	5.69	5.68		1.8	1.9	
						B		2	7.94		30.60		20.52		75.7		5.66			1.9		
H1A	12/3/2019	Fine	Moderate	14:07	1.4	M	0.7	1	7.91	7.92	29.97	29.93	21.00	21.00	80.3	80.2	5.99	5.98		3.2	3.3	
						M		2	7.92		29.88		21.00		80.0		5.97			3.3		
M1A	12/3/2019	Fine	Moderate	14:16	1.3	M	0.65	1	7.89	7.89	29.72	29.73	21.19	21.21	74.8	74.5	5.57	5.55		3.0	2.9	
						M		2	7.89		29.73		21.22		74.2		5.53			2.8		
SGA	12/3/2019	Fine	Moderate	14:25	1.6	M	0.8	1	7.99	7.99	30.35	30.36	20.77	20.77	79.0	78.9	5.92	5.91		2.6	2.7	
						M		2	7.99		30.36		20.76		78.8		5.90			2.7		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190465

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 12/03/2019 09:00
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190465/1-54
Temperature	:	3.7°C
Date of receipt of sample	:	12/03/2019
Date test commenced	:	13/03/2019
Date test completed	:	18/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MaterialLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	3.5	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	4	3	3	4	2	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.09	0.08	0.08	0.08	0.09	0.09	0.07	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.3	0.2	0.3	0.2	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.4	0.4	0.3	0.4	0.3	0.3	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.21	0.11	0.11	0.12	0.19	0.13	0.12	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.30	0.19	0.19	0.20	0.28	0.21	0.19	0.20	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 12/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 13/03/2019 08:45
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	5	4	4	5	4	5	2
3. Total Oxidized Nitrogen content, mg/L	0.08	0.08	0.08	0.08	0.06	0.06	0.11	0.11	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.13	0.13	0.12	0.12	0.12	0.16	0.16	0.02
7. Total Inorganic nitrogen, mg/L	0.20	0.21	0.20	0.19	0.17	0.18	0.27	0.27	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 12/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 13/03/2019 08:45
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	6	4	5	2	3	2	3	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.10	0.12	0.13	0.12	0.12	0.12	0.11	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.19	0.19	0.17	0.16	0.16	0.15	0.15	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.30	0.29	0.29	0.29	0.27	0.27	0.27	0.26	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 12/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 13/03/2019 08:45
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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

MateriaLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	4	3	3	3	4	5	3	2
3. Total Oxidized Nitrogen content, mg/L	0.12	0.13	0.10	0.12	0.11	0.13	0.11	0.10	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.16	0.14	0.21	0.15	0.15	0.15	0.13	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.28	0.27	0.31	0.27	0.26	0.28	0.25	0.24	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 12/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 13/03/2019 08:45
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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MateriaLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	3	5	3	4	4	5	4	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.11	0.10	0.12	0.11	0.10	0.11	0.12	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.14	0.14	0.14	0.13	0.15	0.13	0.14	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.24	0.25	0.25	0.25	0.26	0.23	0.25	0.28	0.03

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   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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MateriaLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	4	5	5	5	5	3	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.11	0.12	0.12	0.10	0.10	0.10	0.11	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.14	0.15	0.14	0.13	0.12	0.12	0.12	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.25	0.26	0.26	0.25	0.22	0.23	0.22	0.23	0.03

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Certified by :

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

Date : 3/4/2019

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MaterialLab

Report No. : 181172WA190465

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	6	6	8	8	6	2
3. Total Oxidized Nitrogen content, mg/L	0.12	0.11	0.14	0.14	0.11	0.11	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.13	0.15	0.17	0.15	0.12	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.25	0.27	0.31	0.29	0.23	0.24	0.03

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2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
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   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909077
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 12-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 20-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1909077 supersedes any previous reports with this reference. Testing period is from 12-Mar-2019 to 20-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1909077 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 15:15. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	12-Mar-2019	HK1909077-001	0.01	3	----	----	----
FCZ2/S/Dup	12-Mar-2019	HK1909077-002	<0.01	5	----	----	----
FCZ2/M	12-Mar-2019	HK1909077-003	<0.01	20	----	----	----
FCZ2/M/Dup	12-Mar-2019	HK1909077-004	<0.01	19	----	----	----
FCZ2/B	12-Mar-2019	HK1909077-005	<0.01	9	----	----	----
FCZ2/B/Dup	12-Mar-2019	HK1909077-006	<0.01	13	----	----	----
C/S	12-Mar-2019	HK1909077-007	<0.01	2	----	----	----
C/S/Dup	12-Mar-2019	HK1909077-008	<0.01	1	----	----	----
C/M	12-Mar-2019	HK1909077-009	<0.01	4	----	----	----
C/M/Dup	12-Mar-2019	HK1909077-010	<0.01	2	----	----	----
C/B	12-Mar-2019	HK1909077-011	<0.01	NOT DETECTED	----	----	----
C/B/Dup	12-Mar-2019	HK1909077-012	<0.01	NOT DETECTED	----	----	----
M6A/M	12-Mar-2019	HK1909077-013	0.01	6	----	----	----
M6A/M/Dup	12-Mar-2019	HK1909077-014	0.01	8	----	----	----
N1/S	12-Mar-2019	HK1909077-015	0.02	NOT DETECTED	----	----	----
N1/S/Dup	12-Mar-2019	HK1909077-016	0.02	NOT DETECTED	----	----	----
N1/M	12-Mar-2019	HK1909077-017	0.02	8	----	----	----
N1/M/Dup	12-Mar-2019	HK1909077-018	0.02	5	----	----	----
N1/B	12-Mar-2019	HK1909077-019	0.02	2	----	----	----
N1/B/Dup	12-Mar-2019	HK1909077-020	0.02	3	----	----	----
N2/S	12-Mar-2019	HK1909077-021	0.02	NOT DETECTED	----	----	----
N2/S/Dup	12-Mar-2019	HK1909077-022	0.02	NOT DETECTED	----	----	----
N2/M	12-Mar-2019	HK1909077-023	0.02	1	----	----	----
N2/M/Dup	12-Mar-2019	HK1909077-024	0.02	2	----	----	----
N2/B	12-Mar-2019	HK1909077-025	0.02	NOT DETECTED	----	----	----
N2/B/Dup	12-Mar-2019	HK1909077-026	0.02	NOT DETECTED	----	----	----
FCZ7/S	12-Mar-2019	HK1909077-027	0.02	NOT DETECTED	----	----	----
FCZ7/S/Dup	12-Mar-2019	HK1909077-028	0.02	NOT DETECTED	----	----	----
FCZ7/M	12-Mar-2019	HK1909077-029	0.02	1	----	----	----
FCZ7/M/Dup	12-Mar-2019	HK1909077-030	0.02	2	----	----	----
FCZ7/B	12-Mar-2019	HK1909077-031	0.02	NOT DETECTED	----	----	----

Sub-Matrix: **WATER**

Compound	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----

Client sampling date / time	*Laboratory sample ID*					
FCZ7/B/Dup	12-Mar-2019	HK1909077-032	**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S	12-Mar-2019	HK1909077-033	**0.02**	**1**	**----**	**----**	**----**
FCZ1B/S/Dup	12-Mar-2019	HK1909077-034	**0.02**	**1**	**----**	**----**	**----**
FCZ1B/M	12-Mar-2019	HK1909077-035	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/M/Dup	12-Mar-2019	HK1909077-036	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/B	12-Mar-2019	HK1909077-037	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/B/Dup	12-Mar-2019	HK1909077-038	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S	12-Mar-2019	HK1909077-039	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S/Dup	12-Mar-2019	HK1909077-040	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B	12-Mar-2019	HK1909077-043	**0.02**	**1**	**----**	**----**	**----**
FCZ8/B/Dup	12-Mar-2019	HK1909077-044	**0.02**	**2**	**----**	**----**	**----**
H4A/S	12-Mar-2019	HK1909077-045	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H4A/S/Dup	12-Mar-2019	HK1909077-046	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S	12-Mar-2019	HK1909077-047	**0.02**	**1**	**----**	**----**	**----**
FCZ1A/S/Dup	12-Mar-2019	HK1909077-048	**0.02**	**2**	**----**	**----**	**----**
FCZ1A/B	12-Mar-2019	HK1909077-051	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/B/Dup	12-Mar-2019	HK1909077-052	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H1A/S	12-Mar-2019	HK1909077-053	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H1A/S/Dup	12-Mar-2019	HK1909077-054	**0.02**	**NOT DETECTED**	**----**	**----**	**----**
M1A/S	12-Mar-2019	HK1909077-055	**0.02**	**18**	**----**	**----**	**----**
M1A/S/Dup	12-Mar-2019	HK1909077-056	**0.03**	**22**	**----**	**----**	**----**
SGA/S	12-Mar-2019	HK1909077-057	**0.02**	**6**	**----**	**----**	**----**
SGA/S/Dup	12-Mar-2019	HK1909077-058	**0.02**	**9**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	14/3/2019	Rainy	Rough	9:38	12	S	1	1	8.00	8.01	31.12	31.13	19.99	20.01	85.1	85.5	6.44	6.47	6.29	1.2	1.3	1.7
						S		2	8.01		31.13		20.02		85.9		6.49			1.3		
						M	6	1	8.02	8.03	31.19	31.20	19.92	19.92	79.4	79.4	6.12	6.12		1.7	1.7	
						M		2	8.03		31.20		19.91		79.3		6.12			1.7		
						B	11	1	8.06	8.06	31.24	31.25	19.86	19.85	73.4	73.2	5.73	5.71		2.0	2.2	
						B		2	8.06		31.25		19.84		72.9		5.68			2.4		
C	14/3/2019	Rainy	Rough	9:50	13	S	1	1	8.04	8.03	31.10	31.11	20.14	20.15	92.8	92.6	7.00	6.99	6.75	0.6	0.7	1.5
						S		2	8.02		31.11		20.15		92.4		6.97			0.7		
						M	6.5	1	8.05	8.05	31.16	31.17	20.09	20.10	86.4	86.3	6.53	6.52		1.5	1.6	
						M		2	8.04		31.17		20.10		86.1		6.50			1.6		
						B	12	1	8.04	8.06	31.41	31.42	19.84	19.87	78.2	78.6	6.05	6.07		2.4	2.4	
						B		2	8.07		31.42		19.89		78.9		6.09			2.3		
M6A	14/3/2019	Rainy	Rough	10:04	2.3	M	1.15	1	8.04	8.05	30.61	30.62	20.43	20.44	95.3	95.8	7.17	7.21		2.6	2.7	
						M		2	8.05		30.63		20.45		96.2		7.24			2.7		
N1	14/3/2019	Rainy	Rough	10:17	8.6	S	1	1	8.08	8.08	30.89	30.87	20.43	20.42	95.1	94.9	7.15	7.12	6.86	0.9	0.9	1.5
						S		2	8.07		30.85		20.41		94.7		7.09			0.8		
						M	4.3	1	8.06	8.06	31.08	31.06	20.32	20.36	87.3	87.6	6.57	6.60		1.5	1.6	
						M		2	8.06		31.04		20.39		87.9		6.62			1.6		
						B	7.6	1	8.04	8.04	31.38	31.40	19.82	19.83	77.4	77.7	5.78	5.80		2.1	2.1	
						B		2	8.04		31.42		19.84		77.9		5.81			2.0		
N2	14/3/2019	Rainy	Rough	10:29	7.6	S	1	1	8.11	8.11	30.47	30.47	20.88	20.89	107.1	107.5	8.01	8.03	7.54	0.7	0.7	1.2
						S		2	8.10		30.46		20.89		107.9		8.04			0.6		
						M	3.8	1	8.13	8.14	30.52	30.53	20.85	20.86	93.7	94.0	7.01	7.05		1.1	1.2	
						M		2	8.14		30.54		20.87		94.2		7.09			1.2		
						B	6.6	1	8.04	8.05	31.27	31.28	19.80	19.83	79.2	78.8	5.92	5.87		1.9	1.9	
						B		2	8.05		31.28		19.85		78.4		5.81			1.8		
FCZ7	14/3/2019	Rainy	Rough	10:42	8	S	1	1	8.09	8.08	30.44	30.43	20.91	20.93	101.4	101.5	7.57	7.58	7.00	0.6	0.6	1.6
						S		2	8.07		30.42		20.94		101.6		7.59			0.5		
						M	4	1	8.07	8.08	30.82	30.83	20.75	20.77	86.7	86.4	6.43	6.42		1.3	1.4	
						M		2	8.09		30.84		20.79		86.1		6.40			1.4		
						B	7	1	7.85	7.86	31.11	31.13	19.86	19.84	74.5	74.2	5.62	5.58		2.9	2.9	
						B		2	7.86		31.14		19.81		73.9		5.54			2.8		
FCZ1B	14/3/2019	Rainy	Rough	12:24	6.3	S	1	1	8.13	8.12	30.59	30.60	21.01	21.03	100.7	101.1	7.42	7.47	6.93	0.7	0.8	1.7
						S		2	8.11		30.61		21.04		101.4		7.52			0.8		
						M	3.15	1	8.16	8.17	30.82	30.83	20.83	20.87	83.2	82.8	6.41	6.38		1.5	1.6	
						M		2	8.17		30.84		20.91		82.4		6.35			1.6		
						B	5.3	1	8.17	8.18	31.03	31.04	20.62	20.63	71.4	71.7	5.21	5.23		2.7	2.8	
						B		2	8.18		31.05		20.64		71.9		5.24			2.8		
FCZ8	14/3/2019	Rainy	Rough	10:56	3.8	S	1	1	8.05	8.06	30.26	30.27	21.13	21.12	98.7	98.4	7.34	7.32	7.32	0.6	0.7	1.2
						S		2	8.06		30.27		21.10		98.1		7.29			0.7		
						B	2.8	1	7.99	8.00	30.94	30.95	20.49	20.51	77.5	77.9	5.79	5.82		1.6	1.7	
						B		2	8.00		30.96		20.52		78.2		5.84			1.7		
H4A	14/3/2019	Rainy	Rough	11:09	2.1	M	1.05	1	8.06	8.07	30.11	30.12	21.54	21.53	100.3	99.4	7.42	7.39		2.4	2.4	
						M		2	8.07		30.12		21.52		98.4		7.35			2.3		
FCZ1A	14/3/2019	Rainy	Rough	11:21	5	S	1	1	8.09	8.10	30.08	30.09	21.13	21.15	97.5	97.1	7.26	7.19	7.19	0.9	0.9	1.2
						S		2	8.10		30.10		21.16		96.7		7.12			0.8		
						B	4	1	8.06	8.07	30.57	30.58	20.97	20.97	85.5	85.3	6.32	6.31		1.4	1.5	
						B		2	8.07		30.59		20.96		85.1		6.30			1.5		
H1A	14/3/2019	Rainy	Rough	11:45	0.8	M	0.4	1	8.11	8.11	30.33	30.34	20.98	20.95	98.7	98.3	7.37	7.24		2.4	2.5	
						M		2	8.10		30.35		20.91		97.9		7.11			2.5		
M1A	14/3/2019	Rainy	Rough	11:59	1.1	M	0.55	1	7.95	7.96	29.92	29.94	21.06	21.08	84.5	85.1	6.31	6.40		3.5	3.6	
						M		2	7.96		29.96		21.09		85.6		6.49			3.6		
SGA	14/3/2019	Rainy	Rough	12:11	1.9	M	0.95	1	8.03	8.04	30.22	30.24	21.00	21.02	98.8	98.5	7.42	7.40		2.1	2.2	
						M		2	8.05		30.25		21.04		98.1		7.38			2.2		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190482

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 14/03/2019 09:38
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190482/1-54
Temperature	:	3.5°C
Date of receipt of sample	:	14/03/2019
Date test commenced	:	14/03/2019
Date test completed	:	20/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190482

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	5	4	3	5	4	4	3	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.04	0.05	0.04	0.04	0.05	0.04	0.04	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.2	0.2	0.3	0.3	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.23	0.16	0.15	0.16	0.15	0.16	0.14	0.16	0.02
7. Total Inorganic nitrogen, mg/L	0.28	0.20	0.20	0.20	0.19	0.21	0.18	0.20	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190482

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	3	2	4	4	5	4	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.04	0.05	0.04	0.12	0.12	0.08	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.15	0.14	0.15	0.14	0.13	0.13	0.14	0.14	0.02
7. Total Inorganic nitrogen, mg/L	0.20	0.18	0.20	0.17	0.25	0.25	0.22	0.21	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190482

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	3	4	4	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.09	0.08	0.09	0.08	0.04	0.02	0.04	0.04	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.2	0.2	0.3	0.4	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.3	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.13	0.13	0.13	0.09	0.19	0.19	0.18	0.20	0.02
7. Total Inorganic nitrogen, mg/L	0.22	0.21	0.22	0.16	0.23	0.21	0.22	0.24	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date 3/4/2019

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

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MateriaLab

Report No. : 181172WA190482

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	7	3	5	3	2	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.03	0.03	0.07	0.06	0.06	0.07	0.08	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.2	0.2	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.2	0.3	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.20	0.17	0.15	0.14	0.13	0.15	0.14	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.24	0.19	0.22	0.20	0.19	0.21	0.22	0.21	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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MaterialLab

Report No. : 181172WA190482

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	4	4	4	3	4	5	5	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.03	0.01	0.04	0.04	0.01	0.12	0.11	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.5	0.4	0.4	0.5	0.4	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.5	0.5	0.4	0.5	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.19	0.19	0.30	0.18	0.20	0.15	0.16	0.17	0.02
7. Total Inorganic nitrogen, mg/L	0.23	0.22	0.31	0.21	0.23	0.16	0.28	0.28	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
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   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190482

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	4	4	3	5	5	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.10	0.10	0.09	0.09	0.12	0.10	0.09	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.3	0.3	0.6	0.6	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.4	0.4	0.4	0.7	0.7	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.16	0.15	0.17	0.16	0.28	0.28	0.14	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.26	0.24	0.26	0.25	0.40	0.38	0.23	0.23	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190482

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	5	6	5	6	5	2
3. Total Oxidized Nitrogen content, mg/L	0.09	0.09	0.13	0.12	0.12	0.17	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.5	0.5	0.4	0.5	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.20	0.20	0.19	0.20	0.21	0.21	0.02
7. Total Inorganic nitrogen, mg/L	0.29	0.29	0.32	0.32	0.33	0.38	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 14/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 15/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909610
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 14-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 21-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1909610 supersedes any previous reports with this reference. Testing period is from 14-Mar-2019 to 20-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1909610 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 15:50. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER			Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID		ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	14-Mar-2019	HK1909610-001		0.01	NOT DETECTED	----	----	----
FCZ2/S/Dup	14-Mar-2019	HK1909610-002		<0.01	NOT DETECTED	----	----	----
FCZ2/M	14-Mar-2019	HK1909610-003		0.01	NOT DETECTED	----	----	----
FCZ2/M/Dup	14-Mar-2019	HK1909610-004		0.01	NOT DETECTED	----	----	----
FCZ2/B	14-Mar-2019	HK1909610-005		0.01	2	----	----	----
FCZ2/B/Dup	14-Mar-2019	HK1909610-006		0.01	1	----	----	----
C/S	14-Mar-2019	HK1909610-007		0.01	NOT DETECTED	----	----	----
C/S/Dup	14-Mar-2019	HK1909610-008		0.01	NOT DETECTED	----	----	----
C/M	14-Mar-2019	HK1909610-009		0.01	1	----	----	----
C/M/Dup	14-Mar-2019	HK1909610-010		0.01	2	----	----	----
C/B	14-Mar-2019	HK1909610-011		0.01	NOT DETECTED	----	----	----
C/B/Dup	14-Mar-2019	HK1909610-012		0.01	NOT DETECTED	----	----	----
M6A/M	14-Mar-2019	HK1909610-013		0.01	4	----	----	----
M6A/M/Dup	14-Mar-2019	HK1909610-014		0.01	6	----	----	----
N1/S	14-Mar-2019	HK1909610-015		0.01	3	----	----	----
N1/S/Dup	14-Mar-2019	HK1909610-016		0.02	4	----	----	----
N1/M	14-Mar-2019	HK1909610-017		0.02	6	----	----	----
N1/M/Dup	14-Mar-2019	HK1909610-018		0.02	5	----	----	----
N1/B	14-Mar-2019	HK1909610-019		0.01	7	----	----	----
N1/B/Dup	14-Mar-2019	HK1909610-020		0.03	8	----	----	----
N2/S	14-Mar-2019	HK1909610-021		0.03	9	----	----	----
N2/S/Dup	14-Mar-2019	HK1909610-022		0.03	7	----	----	----
N2/M	14-Mar-2019	HK1909610-023		0.03	NOT DETECTED	----	----	----
N2/M/Dup	14-Mar-2019	HK1909610-024		0.03	NOT DETECTED	----	----	----
N2/B	14-Mar-2019	HK1909610-025		0.03	NOT DETECTED	----	----	----
N2/B/Dup	14-Mar-2019	HK1909610-026		0.02	NOT DETECTED	----	----	----
FCZ7/S	14-Mar-2019	HK1909610-027		0.02	1	----	----	----
FCZ7/S/Dup	14-Mar-2019	HK1909610-028		0.02	2	----	----	----
FCZ7/M	14-Mar-2019	HK1909610-029		0.02	2	----	----	----
FCZ7/M/Dup	14-Mar-2019	HK1909610-030		0.02	3	----	----	----
FCZ7/B	14-Mar-2019	HK1909610-031		0.02	2	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	14-Mar-2019	HK1909610-032		**0.02**	**2**	**----**	**----**	**----**
FCZ1B/S	14-Mar-2019	HK1909610-033		**0.02**	**43**	**----**	**----**	**----**
FCZ1B/S/Dup	14-Mar-2019	HK1909610-034		**0.02**	**40**	**----**	**----**	**----**
FCZ1B/M	14-Mar-2019	HK1909610-035		**0.02**	**39**	**----**	**----**	**----**
FCZ1B/M/Dup	14-Mar-2019	HK1909610-036		**0.02**	**41**	**----**	**----**	**----**
FCZ1B/B	14-Mar-2019	HK1909610-037		**0.02**	**38**	**----**	**----**	**----**
FCZ1B/B/Dup	14-Mar-2019	HK1909610-038		**0.02**	**39**	**----**	**----**	**----**
FCZ8/S	14-Mar-2019	HK1909610-039		**0.03**	**4**	**----**	**----**	**----**
FCZ8/S/Dup	14-Mar-2019	HK1909610-040		**0.03**	**3**	**----**	**----**	**----**
FCZ8/B	14-Mar-2019	HK1909610-043		**0.03**	**7**	**----**	**----**	**----**
FCZ8/B/Dup	14-Mar-2019	HK1909610-044		**0.03**	**6**	**----**	**----**	**----**
H4A/M	14-Mar-2019	HK1909610-045		**0.06**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M/Dup	14-Mar-2019	HK1909610-046		**0.06**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S	14-Mar-2019	HK1909610-047		**0.02**	**58**	**----**	**----**	**----**
FCZ1A/S/Dup	14-Mar-2019	HK1909610-048		**0.02**	**60**	**----**	**----**	**----**
FCZ1A/B	14-Mar-2019	HK1909610-051		**0.02**	**110**	**----**	**----**	**----**
FCZ1A/B/Dup	14-Mar-2019	HK1909610-052		**0.02**	**120**	**----**	**----**	**----**
H1A/M	14-Mar-2019	HK1909610-053		**0.03**	**100**	**----**	**----**	**----**
H1A/M/Dup	14-Mar-2019	HK1909610-054		**0.02**	**110**	**----**	**----**	**----**
M1A/M	14-Mar-2019	HK1909610-055		**0.03**	**92**	**----**	**----**	**----**
M1A/M/Dup	14-Mar-2019	HK1909610-056		**0.02**	**95**	**----**	**----**	**----**
SGA/M	14-Mar-2019	HK1909610-057		**0.03**	**120**	**----**	**----**	**----**
SGA/M/Dup	14-Mar-2019	HK1909610-058		**0.02**	**130**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	16/3/2019	Cloudy	Rough	7:06	8.7	S	1	1	8.05	8.06	31.05	31.06	19.76	19.74	95.3	95.1	7.21	7.20	6.95	0.5	0.6	1.6
								2	8.07		31.06		19.71		94.8		7.18			0.6		
						M	4.35	1	8.08	8.09	31.12	31.12	19.96	19.95	87.4	87.2	6.72	6.70		1.5	1.5	
						M		2	8.09		31.11		19.94		86.9		6.68			1.4		
						B	7.7	1	8.07	8.07	31.23	31.24	19.61	19.62	71.7	72.0	5.97	6.00		2.8	2.9	
						B		2	8.06		31.24		19.63		72.3		6.03			2.9		
C	16/3/2019	Cloudy	Rough	7:20	14	S	1	1	8.12	8.13	30.74	30.75	20.14	20.15	105.1	105.5	7.95	7.99	7.55	0.8	0.9	1.6
						S		2	8.13		30.75		20.16		105.9		8.02			0.9		
						M	7	1	8.07	8.08	31.20	31.22	20.05	20.07	95.7	95.7	7.12	7.12		1.6	1.7	
						M		2	8.08		31.24		20.08		95.6		7.12			1.7		
						B	13	1	8.05	8.05	31.41	31.43	20.10	20.12	83.7	83.8	6.56	6.58		2.2	2.3	
						B		2	8.05		31.44		20.13		83.9		6.59			2.3		
M6A	16/3/2019	Cloudy	Rough	7:39	2.3	M	1.15	1	8.04	8.05	30.68	30.69	20.25	20.27	96.4	96.8	7.28	7.31		2.9	3.0	
						M		2	8.05		30.69		20.29		97.2		7.33			3.0		
N1	16/3/2019	Cloudy	Rough	7:49	8.1	S	1	1	8.15	8.15	30.73	30.74	20.73	20.54	107.4	107.2	8.09	8.05	7.56	0.6	0.6	0.9
						S		2	8.14		30.75		20.35		106.9		8.01			0.6		
						M	4.05	1	8.13	8.14	31.04	31.05	20.22	20.23	95.1	94.7	7.11	7.06		0.8	0.8	
						M		2	8.14		31.05		20.24		94.3		7.01			0.7		
						B	7.1	1	8.07	8.08	31.52	31.53	19.91	19.91	75.4	74.8	6.12	6.08		1.4	1.4	
						B		2	8.08		31.53		19.90		74.1		6.03			1.3		
N2	16/3/2019	Cloudy	Rough	8:02	9.3	S	1	1	8.11	8.11	30.46	30.47	20.43	20.45	105.3	105.6	7.95	7.98	7.20	0.8	0.8	1.3
						S		2	8.11		30.47		20.46		105.9		8.01			0.7		
						M	4.65	1	8.07	8.07	31.27	31.29	20.08	20.09	87.5	87.3	6.43	6.42		1.2	1.3	
						M		2	8.06		31.30		20.09		87.1		6.41			1.3		
						B	8.3	1	8.00	7.96	31.35	31.36	20.06	20.00	75.4	76.2	5.65	5.70		2.0	2.0	
						B		2	7.91		31.36		19.94		76.9		5.74			1.9		
FCZ7	16/3/2019	Cloudy	Rough	8:15	7.8	S	1	1	8.12	8.13	30.37	30.37	20.45	20.44	104.8	105.1	7.90	7.96	7.33	0.6	0.7	1.0
						S		2	8.13		30.36		20.43		105.4		8.02			0.7		
						M	3.9	1	8.07	8.07	30.97	30.97	20.15	20.13	91.3	90.7	6.73	6.69		0.9	0.9	
						M		2	8.06		30.96		20.11		90.1		6.65			0.8		
						B	6.8	1	8.01	8.02	31.33	31.34	20.05	20.06	76.2	75.8	5.66	5.58		1.4	1.4	
						B		2	8.02		31.34		20.07		75.4		5.50			1.3		
FCZ1B	16/3/2019	Cloudy	Rough	9:39	6.4	S	1	1	8.17	8.17	30.56	30.54	20.51	20.55	101.6	102.1	7.63	7.67	7.54	1.2	1.3	2.2
						S		2	8.16		30.52		20.59		102.6		7.71			1.3		
						M	3.2	1	8.16	8.17	30.92	30.93	20.49	20.51	96.5	95.9	7.45	7.42		2.1	2.2	
						M		2	8.17		30.94		20.52		95.2		7.38			2.2		
						B	5.4	1	8.13	8.12	31.09	31.11	20.24	20.25	85.4	84.8	6.82	6.79		3.2	3.2	
						B		2	8.11		31.12		20.26		84.2		6.75			3.1		
FCZ8	16/3/2019	Cloudy	Rough	8:29	5.6	S	1	1	8.13	8.13	30.45	30.46	20.60	20.61	108.3	108.6	8.15	8.16	8.16	1.1	1.2	1.6
						S		2	8.12		30.46		20.62		108.9		8.17			1.2		
						B	4.6	1	8.01	8.01	31.13	31.14	20.21	20.23	89.5	87.5	6.51	6.45		1.9	2.0	
						B		2	8.00		31.14		20.25		85.4		6.39			2.1		
H4A	16/3/2019	Cloudy	Rough	8:39	2.9	M	1.45	1	8.14	8.14	30.38	30.35	20.65	20.63	103.7	103.3	7.78	7.75		2.1	2.3	
						M		2	8.13		30.31		20.61		102.8		7.71			2.4		
FCZ1A	16/3/2019	Cloudy	Rough	8:49	5.1	S	1	1	8.08	8.08	30.42	30.43	20.56	20.55	101.5	104.9	7.69	7.61	7.61	0.9	1.0	1.7
						S		2	8.07		30.44		20.53		108.2		7.53			1.0		
						B	4.1	1	8.05	8.04	30.88	30.90	20.34	20.33	86.6	86.2	6.47	6.43		2.5	2.5	
						B		2	8.03		30.92		20.31		85.8		6.39			2.4		
H1A	16/3/2019	Cloudy	Rough	8:59	2.5	M	1.25	1	8.06	8.07	30.51	30.55	20.53	20.56	96.4	95.8	7.19	7.10		2.1	2.3	
						M		2	8.07		30.59		20.59		95.2		7.01			2.4		
M1A	16/3/2019	Cloudy	Rough	9:11	2	M	1	1	8.05	8.06	30.59	30.60	20.59	20.60	97.4	96.8	7.24	7.18		2.2	2.3	
						M		2	8.06		30.61		20.61		96.2		7.11			2.4		
SGA	16/3/2019	Cloudy	Rough	9:24	2.6	M	1.3	1	8.13	8.12	30.79	30.81	20.41	20.45	101.7	101.0	7.65	7.58		2.1	2.0	
						M		2	8.10		30.82		20.49		100.2		7.51			1.9		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190497

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 16/03/2019 07:10
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190497/1-54
Temperature	:	3.6°C
Date of receipt of sample	:	16/03/2019
Date test commenced	:	17/03/2019
Date test completed	:	22/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190497

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	4.0	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	2	4	3	2	2	2	2	4	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.09	0.08	0.07	0.08	0.08	0.07	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.11	0.12	0.10	0.11	0.11	0.10	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.19	0.20	0.20	0.17	0.20	0.20	0.17	0.16	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 16/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 17/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190497

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	3	4	3	3	3	4	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.07	0.07	0.08	0.07	0.05	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.09	0.09	0.09	0.11	0.11	0.10	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.16	0.16	0.17	0.16	0.19	0.18	0.15	0.15	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 16/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 17/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 1/4/2019

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

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MateriaLab

Report No. : 181172WA190497

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	4	2	2	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.3	0.3	0.2	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.09	0.09	0.07	0.10	0.09	0.09	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.15	0.15	0.14	0.14	0.16	0.15	0.15	0.15	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 16/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 17/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190497

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	2	2	2	2	4	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.08	0.07	0.09	0.08	0.08	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.10	0.09	0.09	0.09	0.09	0.08	0.09	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.16	0.16	0.18	0.16	0.18	0.17	0.17	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 16/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 17/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
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E-mail : matlab@fugro.com
Website : www.fugro.com

MateriaLab

Report No. : 181172WA190497

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	4	4	3	3	5	3	5	2
3. Total Oxidized Nitrogen content, mg/L	0.10	0.07	0.07	0.07	0.07	0.07	0.06	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.3	0.4	0.4	0.3	0.3	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.10	0.08	0.09	0.10	0.09	0.09	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.19	0.17	0.15	0.16	0.17	0.16	0.14	0.16	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
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3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 16/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 17/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Website : www.fugro.com

MateriaLab

Report No. : 181172WA190497

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	5	4	4	3	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.04	0.05	0.07	007	0.08	0.09	0.08	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.10	0.09	0.10	0.11	0.09	0.11	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.16	0.15	0.16	0.16	0.19	0.18	0.19	0.18	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
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   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190497

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	3	5	4	5	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.07	0.09	0.11	0.08	0.08	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.2	0.3	0.2	0.2	0.2	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.4	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.15	0.14	0.13	0.15	0.11	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.26	0.21	0.22	0.26	0.19	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
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   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1909611
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 16-Mar-2019
Order number	:	—	Quote number	:	HKE/1312b/2019	Date of issue	: 25-Mar-2019
C-O-C number	:	—				No. of samples	- Received : 54
Site	:	0118/18					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1909611 supersedes any previous reports with this reference. Testing period is from 16-Mar-2019 to 25-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1909611 :

Sample(s) were received in ambient condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 13:30. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER			Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID		ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	16-Mar-2019	HK1909611-001		0.01	4	----	----	----
FCZ2/S/Dup	16-Mar-2019	HK1909611-002		0.02	3	----	----	----
FCZ2/M	16-Mar-2019	HK1909611-003		0.01	2	----	----	----
FCZ2/M/Dup	16-Mar-2019	HK1909611-004		0.01	2	----	----	----
FCZ2/B	16-Mar-2019	HK1909611-005		0.01	2	----	----	----
FCZ2/B/Dup	16-Mar-2019	HK1909611-006		0.02	4	----	----	----
C/S	16-Mar-2019	HK1909611-007		0.02	NOT DETECTED	----	----	----
C/S/Dup	16-Mar-2019	HK1909611-008		0.02	NOT DETECTED	----	----	----
C/M	16-Mar-2019	HK1909611-009		0.01	2	----	----	----
C/M/Dup	16-Mar-2019	HK1909611-010		<0.01	1	----	----	----
C/B	16-Mar-2019	HK1909611-011		0.02	4	----	----	----
C/B/Dup	16-Mar-2019	HK1909611-012		0.01	5	----	----	----
M6A/M	16-Mar-2019	HK1909611-013		0.01	3	----	----	----
M6A/M/Dup	16-Mar-2019	HK1909611-014		0.01	2	----	----	----
N1/S	16-Mar-2019	HK1909611-015		0.02	5	----	----	----
N1/S/Dup	16-Mar-2019	HK1909611-016		0.02	7	----	----	----
N1/M	16-Mar-2019	HK1909611-017		0.02	8	----	----	----
N1/M/Dup	16-Mar-2019	HK1909611-018		0.02	7	----	----	----
N1/B	16-Mar-2019	HK1909611-019		0.02	10	----	----	----
N1/B/Dup	16-Mar-2019	HK1909611-020		0.02	5	----	----	----
N2/S	16-Mar-2019	HK1909611-021		0.02	7	----	----	----
N2/S/Dup	16-Mar-2019	HK1909611-022		0.02	NOT DETECTED	----	----	----
N2/M	16-Mar-2019	HK1909611-023		0.02	NOT DETECTED	----	----	----
N2/M/Dup	16-Mar-2019	HK1909611-024		0.02	3	----	----	----
N2/B	16-Mar-2019	HK1909611-025		0.02	5	----	----	----
N2/B/Dup	16-Mar-2019	HK1909611-026		0.02	NOT DETECTED	----	----	----
FCZ7/S	16-Mar-2019	HK1909611-027		0.01	NOT DETECTED	----	----	----
FCZ7/S/Dup	16-Mar-2019	HK1909611-028		0.02	NOT DETECTED	----	----	----
FCZ7/M	16-Mar-2019	HK1909611-029		0.02	NOT DETECTED	----	----	----
FCZ7/M/Dup	16-Mar-2019	HK1909611-030		0.02	2	----	----	----
FCZ7/B	16-Mar-2019	HK1909611-031		0.01	1	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	16-Mar-2019	HK1909611-032		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S	16-Mar-2019	HK1909611-033		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S/Dup	16-Mar-2019	HK1909611-034		**0.02**	**4**	**----**	**----**	**----**
FCZ1B/M	16-Mar-2019	HK1909611-035		**0.02**	**6**	**----**	**----**	**----**
FCZ1B/M/Dup	16-Mar-2019	HK1909611-036		**0.02**	**1**	**----**	**----**	**----**
FCZ1B/B	16-Mar-2019	HK1909611-037		**0.02**	**1**	**----**	**----**	**----**
FCZ1B/B/Dup	16-Mar-2019	HK1909611-038		**0.02**	**2**	**----**	**----**	**----**
FCZ8/S	16-Mar-2019	HK1909611-039		**0.02**	**3**	**----**	**----**	**----**
FCZ8/S/Dup	16-Mar-2019	HK1909611-040		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B	16-Mar-2019	HK1909611-043		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B/Dup	16-Mar-2019	HK1909611-044		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M	16-Mar-2019	HK1909611-045		**0.03**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M/Dup	16-Mar-2019	HK1909611-046		**0.03**	**2**	**----**	**----**	**----**
FCZ1A/S	16-Mar-2019	HK1909611-047		**0.02**	**4**	**----**	**----**	**----**
FCZ1A/S/Dup	16-Mar-2019	HK1909611-048		**0.02**	**5**	**----**	**----**	**----**
FCZ1A/B	16-Mar-2019	HK1909611-051		**0.02**	**3**	**----**	**----**	**----**
FCZ1A/B/Dup	16-Mar-2019	HK1909611-052		**0.02**	**9**	**----**	**----**	**----**
H1A/M	16-Mar-2019	HK1909611-053		**0.02**	**1**	**----**	**----**	**----**
H1A/M/Dup	16-Mar-2019	HK1909611-054		**0.02**	**2**	**----**	**----**	**----**
M1A/M	16-Mar-2019	HK1909611-055		**0.02**	**13**	**----**	**----**	**----**
M1A/M/Dup	16-Mar-2019	HK1909611-056		**0.02**	**16**	**----**	**----**	**----**
SGA/M	16-Mar-2019	HK1909611-057		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
SGA/M/Dup	16-Mar-2019	HK1909611-058		**0.02**	**NOT DETECTED**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	19/3/2019	Fine	Moderate	6:51	10	S	1	1	8.17	8.17	31.50	31.51	20.49	20.50	109.9	110.1	8.22	8.23	8.10	0.1	0.2	1.2
								2	8.17		31.51		20.50		110.3		8.23			0.2		
						M	5	1	8.14	8.15	31.61	31.62	20.35	20.36	107.0	106.8	8.00	7.98		1.2	1.3	
						M		2	8.15		31.62		20.36		106.5		7.95			1.3		
						B	9	1	8.12	8.12	31.69	31.69	20.23	20.24	100.6	100.3	7.55	7.53		2.1	2.1	
						B		2	8.12		31.68		20.24		100.0		7.50			2.0		
C	19/3/2019	Fine	Moderate	7:05	11	S	1	1	8.15	8.15	31.32	31.33	20.65	20.65	102.6	102.9	7.66	7.68	7.82	0.2	0.4	1.7
						S		2	8.15		31.33		20.64		103.2		7.69			0.5		
						M	5.5	1	8.11	8.11	31.69	31.69	20.25	20.26	106.1	106.2	7.96	7.97		1.5	1.6	
						M		2	8.10		31.69		20.26		106.2		7.97			1.6		
						B	10	1	8.08	8.08	31.88	31.88	20.17	20.17	86.8	86.7	6.52	6.52		3.1	3.2	
						B		2	8.08		31.88		20.16		86.6		6.51			3.2		
M6A	19/3/2019	Fine	Moderate	7:24	1.8	M	0.9	1	8.11	8.11	30.57	30.59	21.97	21.98	106.5	106.7	7.80	7.82		0.5	0.6	
						M		2	8.11		30.61		21.98		106.8		7.83			0.7		
N1	19/3/2019	Fine	Moderate	7:34	9	S	1	1	8.14	8.14	30.53	30.54	21.72	21.71	112.3	112.5	8.26	8.28	7.75	0.2	0.3	1.3
						S		2	8.14		30.55		21.70		112.6		8.29			0.3		
						M	4.5	1	8.12	8.12	31.42	31.41	20.54	20.51	96.6	96.5	7.24	7.23		1.2	1.3	
						M		2	8.12		31.40		20.48		96.4		7.22			1.4		
						B	8	1	8.06	8.06	31.82	31.83	20.24	20.25	79.2	78.9	5.94	5.90		2.1	2.2	
						B		2	8.06		31.83		20.25		78.5		5.86			2.3		
N2	19/3/2019	Fine	Moderate	7:47	8	S	1	1	8.11	8.11	30.43	30.44	22.02	22.03	113.8	113.9	8.34	8.35	7.36	0.5	0.6	1.5
						S		2	8.11		30.44		22.03		113.9		8.35			0.6		
						M	4	1	8.11	8.11	31.49	31.49	20.52	20.53	92.5	92.4	6.39	6.38		1.4	1.4	
						M		2	8.11		31.48		20.53		92.3		6.37			1.3		
						B	7	1	8.04	8.04	31.76	31.75	20.25	20.26	78.2	78.3	5.86	5.87		2.7	2.6	
						B		2	8.03		31.73		20.26		78.4		5.88			2.5		
FCZ7	19/3/2019	Fine	Moderate	8:00	7	S	1	1	8.12	8.12	30.77	30.77	21.37	21.37	116.0	116.3	8.86	8.89	8.45	0.2	0.3	1.4
						S		2	8.12		30.76		21.36		116.5		8.91			0.3		
						M	3.5	1	8.14	8.14	31.49	31.47	20.44	20.44	107.0	107.0	8.01	8.01		1.5	1.6	
						M		2	8.14		31.46		20.43		106.9		8.00			1.7		
						B	6	1	8.04	8.04	31.73	31.75	20.26	20.26	75.4	75.4	5.66	5.66		2.3	2.5	
						B		2	8.04		31.77		20.25		75.4		5.65			2.6		
FCZ1B	19/3/2019	Fine	Moderate	9:24	6.6	S	1	1	8.10	8.10	30.37	30.37	22.10	22.09	101.6	101.8	7.46	7.47	7.35	0.3	0.4	2.2
						S		2	8.10		30.36		22.08		101.9		7.48			0.4		
						M	3.3	1	8.12	8.12	30.89	30.89	20.93	20.93	97.3	97.3	7.23	7.23		2.1	2.2	
						M		2	8.12		30.88		20.93		97.2		7.22			2.3		
						B	5.6	1	8.13	8.13	31.23	31.28	20.81	50.82	90.9	90.8	6.78	6.77		4.1	4.2	
						B		2	8.13		31.33		80.82		90.6		6.76			4.2		
FCZ8	19/3/2019	Fine	Moderate	8:14	5.4	S	1	1	8.14	8.15	30.70	30.71	21.32	21.31	10.8	10.8	7.96	7.99	7.99	0.3	0.4	1.3
						S		2	8.15		30.72		21.29		10.8		8.01			0.4		
						B	4.4	1	8.02	8.03	31.52	31.52	20.43	20.43	73.60	73.6	5.50	5.50		2.1	2.2	
						B		2	8.03		31.51		20.43		73.50		5.49			2.3		
H4A	19/3/2019	Fine	Moderate	8:24	2.7	M	1.35	1	8.06	8.06	30.19	30.19	22.34	21.34	108.5	108.4	7.55	7.55		0.2	0.2	
						M		2	8.06		30.18		20.33		108.3		7.54			0.2		
FCZ1A	19/3/2019	Fine	Moderate	8:34	4.4	S	1	1	8.10	8.11	30.26	30.26	22.14	22.16	115.4	115.6	7.71	7.72	7.72	0.1	0.2	0.8
						S		2	8.11		30.25		22.17		115.7		7.73			0.2		
						B	3.4	1	8.00	8.00	31.05	31.08	20.78	20.77	81.0	81.0	6.03	6.03		1.3	1.4	
						B		2	8.00		31.11		20.75		81.0		6.02			1.4		
H1A	19/3/2019	Fine	Moderate	8:44	1.4	M	0.7	1	8.06	8.06	30.27	30.28	22.35	22.36	76.0	76.0	6.99	7.00		0.3	0.4	
						M		2	8.05		30.29		22.36		76.0		7.01			0.5		
M1A	19/3/2019	Fine	Moderate	8:56	1.3	M	0.65	1	8.03	8.03	30.23	30.27	22.69	22.69	97.3	97.4	7.12	7.13		1.7	1.7	
						M		2	8.03		30.31		22.68		97.4		7.13			1.6		
SGA	19/3/2019	Fine	Moderate	9:09	1.6	M	0.8	1	8.00	8.00	30.98	30.97	21.20	21.15	95.0	95.2	7.12	7.14		1.3	1.5	
						M		2	8.00		30.96		21.10		95.4		7.16			1.6		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190526

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 19/03/2019 09:10
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190526/1-54
Temperature	:	3.2°C
Date of receipt of sample	:	19/03/2019
Date test commenced	:	20/03/2019
Date test completed	:	25/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	4	2	4	4	4	5	4	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.01	0.02	0.02	0.02	0.03	0.02	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.2	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.2	0.2	0.3	0.4	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.08	0.09	0.08	0.08	0.07	0.12	0.07	0.02
7. Total Inorganic nitrogen, mg/L	0.12	0.10	0.10	0.10	0.09	0.09	0.15	0.09	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	5	5	4	3	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.02	0.02	0.02	0.02	0.04	0.05	0.03	0.03	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.07	0.08	0.11	0.07	0.07	0.07	0.08	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.09	0.09	0.13	0.09	0.11	0.12	0.11	0.11	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	6	4	4	4	4	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.03	0.03	0.03	0.02	0.01	0.01	0.02	0.03	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.4	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.07	0.08	0.08	0.08	0.09	0.08	0.08	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.10	0.11	0.11	0.09	0.10	0.09	0.09	0.11	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	4	4	5	5	5	5	4	2
3. Total Oxidized Nitrogen content, mg/L	0.01	0.03	0.05	0.06	0.06	0.06	0.03	0.05	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.08	0.08	0.09	0.08	0.09	0.08	0.08	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.09	0.11	0.14	0.13	0.14	0.14	0.11	0.13	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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MateriaLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	5	4	3	3	3	5	2
3. Total Oxidized Nitrogen content, mg/L	0.09	0.09	0.08	0.09	0.09	0.09	0.08	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.3	0.2	0.3	0.3	0.3	0.4	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.09	0.09	0.09	0.10	0.10	0.09	0.09	0.09	0.02
7. Total Inorganic nitrogen, mg/L	0.18	0.18	0.17	0.19	0.19	0.18	0.16	0.16	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
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   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	6	4	4	4	5	3	6	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.10	0.09	0.08	0.08	0.07	0.09	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.10	0.09	0.09	0.08	0.09	0.07	0.09	0.08	0.02
7. Total Inorganic nitrogen, mg/L	0.17	0.15	0.18	0.17	0.16	0.16	0.16	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190526

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	4	3	4	6	6	2
3. Total Oxidized Nitrogen content, mg/L	0.11	0.11	0.18	0.18	0.09	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.5	0.5	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.11	0.14	0.13	0.10	0.10	0.02
7. Total Inorganic nitrogen, mg/L	0.24	0.22	0.31	0.32	0.19	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 19/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 20/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: **HK1910489**
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 19-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 23-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1910489 supersedes any previous reports with this reference. Testing period is from 19-Mar-2019 to 22-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1910489 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 15:00. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER			Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID		ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	19-Mar-2019	HK1910489-001		0.01	NOT DETECTED	----	----	----
FCZ2/S/Dup	19-Mar-2019	HK1910489-002		0.01	NOT DETECTED	----	----	----
FCZ2/M	19-Mar-2019	HK1910489-003		0.01	1	----	----	----
FCZ2/M/Dup	19-Mar-2019	HK1910489-004		0.01	2	----	----	----
FCZ2/B	19-Mar-2019	HK1910489-005		0.01	NOT DETECTED	----	----	----
FCZ2/B/Dup	19-Mar-2019	HK1910489-006		0.01	NOT DETECTED	----	----	----
C/S	19-Mar-2019	HK1910489-007		0.01	NOT DETECTED	----	----	----
C/S/Dup	19-Mar-2019	HK1910489-008		0.01	NOT DETECTED	----	----	----
C/M	19-Mar-2019	HK1910489-009		0.01	NOT DETECTED	----	----	----
C/M/Dup	19-Mar-2019	HK1910489-010		0.01	NOT DETECTED	----	----	----
C/B	19-Mar-2019	HK1910489-011		0.01	1	----	----	----
C/B/Dup	19-Mar-2019	HK1910489-012		0.01	1	----	----	----
M6A/M	19-Mar-2019	HK1910489-013		0.01	2	----	----	----
M6A/M/Dup	19-Mar-2019	HK1910489-014		0.02	3	----	----	----
N1/S	19-Mar-2019	HK1910489-015		0.02	NOT DETECTED	----	----	----
N1/S/Dup	19-Mar-2019	HK1910489-016		0.01	NOT DETECTED	----	----	----
N1/M	19-Mar-2019	HK1910489-017		0.02	NOT DETECTED	----	----	----
N1/M/Dup	19-Mar-2019	HK1910489-018		0.02	NOT DETECTED	----	----	----
N1/B	19-Mar-2019	HK1910489-019		0.02	NOT DETECTED	----	----	----
N1/B/Dup	19-Mar-2019	HK1910489-020		0.02	NOT DETECTED	----	----	----
N2/S	19-Mar-2019	HK1910489-021		0.02	NOT DETECTED	----	----	----
N2/S/Dup	19-Mar-2019	HK1910489-022		0.02	NOT DETECTED	----	----	----
N2/M	19-Mar-2019	HK1910489-023		0.02	NOT DETECTED	----	----	----
N2/M/Dup	19-Mar-2019	HK1910489-024		0.02	NOT DETECTED	----	----	----
N2/B	19-Mar-2019	HK1910489-025		0.02	NOT DETECTED	----	----	----
N2/B/Dup	19-Mar-2019	HK1910489-026		0.02	NOT DETECTED	----	----	----
FCZ7/S	19-Mar-2019	HK1910489-027		0.02	NOT DETECTED	----	----	----
FCZ7/S/Dup	19-Mar-2019	HK1910489-028		0.02	NOT DETECTED	----	----	----
FCZ7/M	19-Mar-2019	HK1910489-029		0.02	NOT DETECTED	----	----	----
FCZ7/M/Dup	19-Mar-2019	HK1910489-030		0.02	NOT DETECTED	----	----	----
FCZ7/B	19-Mar-2019	HK1910489-031		0.02	NOT DETECTED	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	19-Mar-2019	HK1910489-032		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S	19-Mar-2019	HK1910489-033		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S/Dup	19-Mar-2019	HK1910489-034		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/M	19-Mar-2019	HK1910489-035		**0.02**	**3**	**----**	**----**	**----**
FCZ1B/M/Dup	19-Mar-2019	HK1910489-036		**0.02**	**2**	**----**	**----**	**----**
FCZ1B/B	19-Mar-2019	HK1910489-037		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/B/Dup	19-Mar-2019	HK1910489-038		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S	19-Mar-2019	HK1910489-039		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S/Dup	19-Mar-2019	HK1910489-040		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B	19-Mar-2019	HK1910489-043		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B/Dup	19-Mar-2019	HK1910489-044		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M	19-Mar-2019	HK1910489-045		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M/Dup	19-Mar-2019	HK1910489-046		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S	19-Mar-2019	HK1910489-047		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S/Dup	19-Mar-2019	HK1910489-048		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/B	19-Mar-2019	HK1910489-051		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/B/Dup	19-Mar-2019	HK1910489-052		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H1A/M	19-Mar-2019	HK1910489-053		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
H1A/M/Dup	19-Mar-2019	HK1910489-054		**0.03**	**NOT DETECTED**	**----**	**----**	**----**
M1A/M	19-Mar-2019	HK1910489-055		**0.04**	**16**	**----**	**----**	**----**
M1A/M/Dup	19-Mar-2019	HK1910489-056		**0.03**	**18**	**----**	**----**	**----**
SGA/M	19-Mar-2019	HK1910489-057		**0.02**	**3**	**----**	**----**	**----**
SGA/M/Dup	19-Mar-2019	HK1910489-058		**0.02**	**5**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	21/3/2019	Fine	Clam	10:51	11	S	1	1	8.05	8.06	30.19	30.22	21.43	21.40	104.8	106.2	8.02	8.04	7.93	0.1	0.1	0.8
								2	8.07		30.25		21.36		107.6		8.05			0.1		
						M	5.5	1	8.08	8.08	30.31	30.30	20.57	20.60	102.3	102.4	7.81	7.82		0.2	0.3	
						M		2	8.08		30.29		20.62		102.5		7.83			0.3		
						B	10	1	8.14	8.16	30.68	30.66	20.18	20.18	91.8	92.2	6.94	6.95		2.2	1.9	
						B		2	8.17		30.64		20.17		92.6		6.95			1.6		
C	21/3/2019	Fine	Clam	11:16	11	S	1	1	8.21	8.22	30.76	30.77	21.52	21.49	105.4	105.6	7.88	7.87	7.83	0.2	0.2	0.7
						S		2	8.23		30.77		21.46		105.7		7.86			0.2		
						M	5.5	1	8.18	8.19	30.92	30.93	20.52	20.47	103.6	103.5	7.81	7.80		0.5	0.6	
						M		2	8.19		30.93		20.42		103.4		7.78			0.6		
						B	10	1	8.11	8.12	31.05	31.06	20.04	20.03	91.3	91.2	6.89	6.89		1.5	1.5	
						B		2	8.12		31.07		20.02		91.1		6.88			1.4		
M6A	21/3/2019	Fine	Clam	11:30	1.3	M	0.65	1	8.15	8.15	30.67	30.66	21.53	21.56	96.6	96.5	7.18	7.17		2.7	2.6	
						M		2	8.14		30.64		21.58		96.3		7.15			2.5		
N1	21/3/2019	Fine	Clam	11:41	7.6	S	1	1	8.48	8.48	30.69	30.69	21.82	21.85	108.4	108.1	8.12	8.13	7.74	0.4	0.4	2.8
						S		2	8.48		30.68		21.87		107.8		8.13			0.3		
						M	3.8	1	8.32	8.32	31.44	31.44	20.42	20.45	97.5	97.5	7.33	7.35		1.3	1.3	
						M		2	8.32		31.43		20.47		97.4		7.36			1.2		
						B	6.6	1	8.08	8.10	31.57	31.60	20.33	20.35	80.8	81.7	6.04	6.06		6.3	6.7	
						B		2	8.12		31.62		20.37		82.6		6.08			7.1		
N2	21/3/2019	Fine	Clam	11:50	6	S	1	1	8.33	8.32	30.46	30.45	21.64	21.61	116.4	116.3	9.68	9.68	9.07	1.1	1.1	2.3
						S		2	8.31		30.43		21.58		116.2		9.67			1.1		
						M	3	1	8.28	8.27	30.63	30.64	20.68	20.70	104.7	105.4	8.48	8.46		0.3	0.3	
						M		2	8.26		30.65		20.72		106.1		8.44			0.3		
						B	5	1	8.16	8.17	30.81	30.81	20.05	20.09	81.5	82.1	6.12	6.13		5.6	5.5	
						B		2	8.18		30.80		20.13		82.7		6.14			5.3		
FCZ7	21/3/2019	Fine	Clam	12:11	6.1	S	1	1	8.26	8.27	30.41	30.40	21.69	21.71	113.1	112.4	8.81	8.80	7.97	0.7	0.7	2.6
						S		2	8.28		30.39		21.72		111.6		8.79			0.7		
						M	3.05	1	8.15	8.16	30.71	30.74	20.41	20.45	92.2	92.9	7.14	7.13		1.4	1.4	
						M		2	8.17		30.76		20.49		93.6		7.12			1.4		
						B	5.1	1	8.08	8.07	30.83	30.85	20.11	20.13	74.3	75.6	5.67	5.71		5.8	5.8	
						B		2	8.05		30.86		20.14		76.8		5.74			5.7		
FCZ1B	21/3/2019	Fine	Clam	13:58	6	S	1	1	8.39	8.41	30.84	30.86	21.83	21.84	112.7	113.5	10.52	10.50	8.38	1.5	1.5	2.9
						S		2	8.43		30.87		21.85		114.2		10.48			1.4		
						M	3	1	8.06	8.09	30.53	30.60	20.83	20.64	93.1	93.7	6.32	6.26		2.9	2.8	
						M		2	8.11		30.66		20.45		94.2		6.19			2.7		
						B	5	1	7.94	7.91	30.61	30.59	20.31	20.34	76.4	76.9	5.84	5.82		4.1	4.4	
						B		2	7.87		30.56		20.37		77.3		5.79			4.6		
FCZ8	21/3/2019	Fine	Clam	12:28	4.2	S	1	1	8.16	8.17	30.72	30.75	21.69	21.79	108.5	107.9	7.99	7.91	7.91	0.3	0.3	1.9
						S		2	8.18		30.77		21.89		107.2		7.83			0.3		
						B	3.2	1	8.07	8.08	31.67	31.70	20.89	20.92	6.9	6.9	3.50	3.45		3.5	3.5	
						B		2	8.09		31.72		20.94		6.8		3.40			3.4		
H4A	21/3/2019	Fine	Clam	12:43	1.9	M	0.95	1	7.97	7.98	29.98	29.98	21.88	21.88	87.6	87.3	6.41	6.42		4.4	4.6	
						M		2	7.98		29.97		21.87		86.9		6.43			4.7		
FCZ1A	21/3/2019	Fine	Clam	13:05	3.3	S	1	1	8.11	8.13	30.22	30.24	21.63	21.62	101.3	101.4	7.51	7.52	7.52	2.0	2.0	3.7
						S		2	8.15		30.26		21.61		101.4		7.52			1.9		
						B	2.3	1	8.07	8.06	30.21	30.20	21.56	21.54	92.4	93.0	6.91	6.92		5.3	5.5	
						B		2	8.04		30.19		21.51		93.6		6.93			5.7		
H1A	21/3/2019	Fine	Clam	13:19	1	M	0.5	1	8.07	8.09	30.26	30.25	21.68	21.66	97.8	97.7	7.08	7.09		4.3	4.5	
						M		2	8.11		30.24		21.63		97.6		7.09			4.6		
M1A	21/3/2019	Fine	Clam	13:35	1	M	0.5	1	8.02	8.03	30.05	30.05	21.76	21.80	85.7	85.8	6.28	6.30		3.7	4.0	
						M		2	8.03		30.04		21.84		85.9		6.31			4.3		
SGA	21/3/2019	Fine	Clam	13:45	1.2	M	0.6	1	8.17	8.17	30.19	30.21	21.97	21.98	104.6	104.7	7.72	7.75		5.3	5.7	
						M		2	8.16		30.22		21.98		104.7		7.78			6.1		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190566

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 21/03/2019 10:39
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190566/1-54
Temperature	:	3.6°C
Date of receipt of sample	:	21/03/2019
Date test commenced	:	22/03/2019
Date test completed	:	27/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MateriaLab

Report No. : 181172WA190566

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	3.0	<3	3.5	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	5	3	3	4	3	4	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.03	0.07	0.03	0.03	0.03	0.03	0.04	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.5	0.4	0.3	0.4	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.3	0.5	0.4	0.4	0.4	0.3	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.23	0.11	0.19	0.10	0.11	0.11	0.13	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.28	0.14	0.26	0.13	0.14	0.14	0.16	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 21/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 22/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190566

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	3.0	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	3	5	3	4	5	5	4	2
3. Total Oxidized Nitrogen content, mg/L	0.04	0.04	0.05	0.05	0.07	0.03	0.04	0.05	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.4	0.4	0.5	0.3	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.5	0.4	0.5	0.6	0.4	0.3	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.11	0.13	0.12	0.13	0.15	0.12	0.11	0.14	0.02
7. Total Inorganic nitrogen, mg/L	0.14	0.17	0.17	0.18	0.22	0.15	0.15	0.19	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 21/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 22/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190566

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	3.0	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	5	4	5	4	3	5	5	3	2
3. Total Oxidized Nitrogen content, mg/L	0.03	0.07	0.04	0.03	0.04	0.05	0.05	0.04	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.4	0.3	0.2	0.3	0.3	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.3	0.5	0.3	0.3	0.3	0.4	0.3	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.11	0.20	0.12	0.10	0.12	0.13	0.12	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.14	0.27	0.17	0.13	0.16	0.17	0.17	0.16	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 21/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 22/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190566

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	5	4	5	6	4	3	4	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.05	0.04	0.04	0.05	0.05	0.04	0.04	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.4	0.3	0.4	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.4	0.4	0.3	0.4	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.12	0.12	0.11	0.11	0.13	0.11	0.10	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.16	0.17	0.15	0.15	0.18	0.16	0.14	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 21/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 22/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

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

FUGRO TECHNICAL SERVICES LIMITED
Fugro Development Centre,
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Hong Kong.

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

MateriaLab

Report No. : 181172WA190566

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	3.5	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	4	5	5	3	4	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.08	0.07	0.06	0.07	0.06	0.06	0.06	0.05	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.17	0.16	0.14	0.15	0.13	0.13	0.12	0.12	0.02
7. Total Inorganic nitrogen, mg/L	0.25	0.23	0.20	0.22	0.19	0.19	0.18	0.17	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 21/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 22/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

Approved Signatory : HO Kin Man, John
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Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190566

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	5	4	2	4	4	4	4	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.05	0.06	0.05	0.08	0.08	0.07	0.09	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.5	0.4	0.4	0.4	0.3	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.11	0.10	0.11	0.12	0.13	0.12	0.12	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.15	0.15	0.17	0.17	0.21	0.20	0.19	0.22	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
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   iii. Date and hour of commencing BOD_5 test : 22/03/2019 07:00
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190566

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	3.0	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	6	6	6	6	6	7	2
3. Total Oxidized Nitrogen content, mg/L	0.10	0.09	0.11	0.11	0.08	0.10	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.6	0.6	0.4	0.4	0.4	0.5	0.1
5. Total nitrogen content, mg/L	0.7	0.7	0.6	0.5	0.5	0.6	0.1
6. Ammonical nitrogen content, mg/L	0.20	0.15	0.20	0.20	0.16	0.16	0.02
7. Total Inorganic nitrogen, mg/L	0.30	0.24	0.31	0.30	0.25	0.26	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
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   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by :

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1910492
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 21-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 28-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology EN

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1910492 supersedes any previous reports with this reference. Testing period is from 21-Mar-2019 to 26-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1910492 :

Sample(s) were received in ambient condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 16:50. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	21-Mar-2019	HK1910492-001	**0.01**	**NOT DETECTED**	----	----	----
FCZ2/S/Dup	21-Mar-2019	HK1910492-002	<0.01	**NOT DETECTED**	----	----	----
FCZ2/M	21-Mar-2019	HK1910492-003	**0.01**	**NOT DETECTED**	----	----	----
FCZ2/M/Dup	21-Mar-2019	HK1910492-004	**0.01**	**NOT DETECTED**	----	----	----
FCZ2/B	21-Mar-2019	HK1910492-005	**0.01**	**NOT DETECTED**	----	----	----
FCZ2/B/Dup	21-Mar-2019	HK1910492-006	<0.01	**NOT DETECTED**	----	----	----
C/S	21-Mar-2019	HK1910492-007	<0.01	**9**	----	----	----
C/S/Dup	21-Mar-2019	HK1910492-008	<0.01	**7**	----	----	----
C/M	21-Mar-2019	HK1910492-009	<0.01	**3**	----	----	----
C/M/Dup	21-Mar-2019	HK1910492-010	<0.01	**5**	----	----	----
C/B	21-Mar-2019	HK1910492-011	<0.01	**1**	----	----	----
C/B/Dup	21-Mar-2019	HK1910492-012	<0.01	**1**	----	----	----
M6A/M	21-Mar-2019	HK1910492-013	<0.01	**8**	----	----	----
M6A/M/Dup	21-Mar-2019	HK1910492-014	<0.01	**6**	----	----	----
N1/S	21-Mar-2019	HK1910492-015	**0.01**	**2**	----	----	----
N1/S/Dup	21-Mar-2019	HK1910492-016	<0.01	**4**	----	----	----
N1/M	21-Mar-2019	HK1910492-017	<0.01	**3**	----	----	----
N1/M/Dup	21-Mar-2019	HK1910492-018	<0.01	**2**	----	----	----
N1/B	21-Mar-2019	HK1910492-019	<0.01	**5**	----	----	----
N1/B/Dup	21-Mar-2019	HK1910492-020	<0.01	**7**	----	----	----
N2/S	21-Mar-2019	HK1910492-021	**0.01**	**NOT DETECTED**	----	----	----
N2/S/Dup	21-Mar-2019	HK1910492-022	**0.01**	**NOT DETECTED**	----	----	----
N2/M	21-Mar-2019	HK1910492-023	**0.01**	**NOT DETECTED**	----	----	----
N2/M/Dup	21-Mar-2019	HK1910492-024	**0.02**	**NOT DETECTED**	----	----	----
N2/B	21-Mar-2019	HK1910492-025	**0.01**	**NOT DETECTED**	----	----	----
N2/B/Dup	21-Mar-2019	HK1910492-026	**0.02**	**NOT DETECTED**	----	----	----
FCZ7/S	21-Mar-2019	HK1910492-027	<0.01	**2**	----	----	----
FCZ7/S/Dup	21-Mar-2019	HK1910492-028	<0.01	**3**	----	----	----
FCZ7/M	21-Mar-2019	HK1910492-029	**0.01**	**NOT DETECTED**	----	----	----
FCZ7/M/Dup	21-Mar-2019	HK1910492-030	<0.01	**NOT DETECTED**	----	----	----
FCZ7/B	21-Mar-2019	HK1910492-031	<0.01	**NOT DETECTED**	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	21-Mar-2019	HK1910492-032		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1B/S	21-Mar-2019	HK1910492-033		**0.01**	**2**	**----**	**----**	**----**
FCZ1B/S/Dup	21-Mar-2019	HK1910492-034		**0.01**	**3**	**----**	**----**	**----**
FCZ1B/M	21-Mar-2019	HK1910492-035		**0.01**	**2**	**----**	**----**	**----**
FCZ1B/M/Dup	21-Mar-2019	HK1910492-036		**0.01**	**2**	**----**	**----**	**----**
FCZ1B/B	21-Mar-2019	HK1910492-037		**0.01**	**1**	**----**	**----**	**----**
FCZ1B/B/Dup	21-Mar-2019	HK1910492-038		**0.01**	**2**	**----**	**----**	**----**
FCZ8/S	21-Mar-2019	HK1910492-039		<0.01	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/S/Dup	21-Mar-2019	HK1910492-040		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B	21-Mar-2019	HK1910492-043		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ8/B/Dup	21-Mar-2019	HK1910492-044		<0.01	**NOT DETECTED**	**----**	**----**	**----**
H4A/M	21-Mar-2019	HK1910492-045		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
H4A/M/Dup	21-Mar-2019	HK1910492-046		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S	21-Mar-2019	HK1910492-047		**0.02**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/S/Dup	21-Mar-2019	HK1910492-048		**0.01**	**NOT DETECTED**	**----**	**----**	**----**
FCZ1A/B	21-Mar-2019	HK1910492-051		**0.01**	**2**	**----**	**----**	**----**
FCZ1A/B/Dup	21-Mar-2019	HK1910492-052		**0.01**	**2**	**----**	**----**	**----**
H1A/M	21-Mar-2019	HK1910492-053		**0.02**	**9**	**----**	**----**	**----**
H1A/M/Dup	21-Mar-2019	HK1910492-054		**0.02**	**11**	**----**	**----**	**----**
M1A/M	21-Mar-2019	HK1910492-055		**0.03**	**19**	**----**	**----**	**----**
M1A/M/Dup	21-Mar-2019	HK1910492-056		**0.03**	**21**	**----**	**----**	**----**
SGA/M	21-Mar-2019	HK1910492-057		**0.03**	**23**	**----**	**----**	**----**
SGA/M/Dup	21-Mar-2019	HK1910492-058		**0.03**	**25**	**----**	**----**	**----**

Monitoring Location	Date	Weather	Sea Condition	Time	Water Depth (m)	Monitoring Level	Monitoring Level (m)	Replicate	In-situ Measurement													
									pH		Salinity (ppt)		Temperature (degree C)		DO Saturation (%)		DO (mg/L)			Turbidity (NTU)		
									Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	Value	Ave.	S & M Ave.	Value	Ave.	Depth Ave.
FCZ2	23/3/2019	Cloudy	Moderate	11:23	9.2	S	1	1	8.15	8.16	30.01	30.02	20.12	20.13	101.4	102.5	7.81	7.87	7.47	0.2	0.3	1.2
								2	8.16		30.03		20.13		103.6		7.92			0.3		
						M	4.6	1	8.20	8.20	30.11	30.11	20.22	20.23	102.4	102.8	7.12	7.07		1.1	1.2	
						M		2	8.19		30.10		20.24		103.1		7.01			1.2		
						B	8.2	1	8.16	8.16	30.42	30.43	20.02	20.02	94.5	93.9	6.94	6.88		2.2	2.3	
						B		2	8.16		30.43		20.01		93.2		6.81			2.4		
C	23/3/2019	Cloudy	Moderate	11:43	12	S	1	1	8.13	8.14	30.11	30.12	19.79	19.82	104.1	103.7	7.12	7.13	7.19	0.6	0.6	1.1
						S		2	8.15		30.13		19.84		103.2		7.14			0.5		
						M	6	1	8.21	8.20	30.51	30.60	20.01	20.07	97.4	95.0	7.21	7.26		0.8	0.8	
						M		2	8.18		30.69		20.12		92.5		7.30			0.7		
						B	11	1	8.19	8.18	30.78	30.78	19.88	19.85	90.6	91.5	6.81	6.84		1.8	1.9	
						B		2	8.16		30.77		19.82		92.3		6.87			1.9		
M6A	23/3/2019	Cloudy	Moderate	12:05	1.5	M	0.75	1	8.10	8.11	30.62	30.64	19.95	19.91	88.3	86.9	6.97	6.92		1.5	1.6	
						M		2	8.12		30.65		19.87		85.4		6.86			1.6		
N1	23/3/2019	Cloudy	Moderate	12:18	7.3	S	1	1	8.13	8.13	30.24	30.26	20.31	20.28	102.7	102.3	7.14	7.18	7.19	0.4	0.5	1.3
						S		2	8.12		30.27		20.24		101.8		7.21			0.5		
						M	3.65	1	8.09	8.08	30.28	30.30	20.17	20.17	81.5	82.9	7.18	7.20		1.5	1.5	
						M		2	8.07		30.31		20.16		84.2		7.22			1.4		
						B	6.3	1	8.10	8.11	30.12	30.13	20.11	20.11	69.7	69.6	6.89	6.91		1.9	2.0	
						B		2	8.11		30.14		20.10		69.4		6.93			2.1		
N2	23/3/2019	Cloudy	Moderate	12:38	6.4	S	1	1	8.14	8.12	30.24	30.26	20.12	20.15	98.1	97.3	7.92	7.94	7.82	1.2	1.1	1.4
						S		2	8.10		30.28		20.17		96.5		7.96			1.0		
						M	3.2	1	8.08	8.07	30.17	30.17	20.15	20.14	101.2	100.8	7.72	7.70		0.9	0.8	
						M		2	8.06		30.16		20.13		100.4		7.68			0.7		
						B	5.4	1	8.07	8.09	30.42	30.44	20.01	20.04	97.4	96.7	7.13	7.14		2.1	2.2	
						B		2	8.11		30.45		20.07		95.9		7.14			2.2		
FCZ7	23/3/2019	Cloudy	Moderate	13:04	6.2	S	1	1	8.17	8.17	30.62	30.61	20.44	20.46	113.4	112.1	8.72	8.75	8.42	0.6	0.7	1.4
						S		2	8.16		30.59		20.47		110.7		8.77			0.8		
						M	3.1	1	8.21	8.20	30.74	30.78	20.46	20.47	103.5	103.2	8.12	8.09		1.3	1.3	
						M		2	8.19		30.81		20.48		102.8		8.06			1.2		
						B	5.2	1	8.16	8.16	30.52	30.51	20.32	20.30	94.6	96.2	7.87	7.90		2.3	2.4	
						B		2	8.15		30.49		20.28		97.7		7.92			2.4		
FCZ1B	23/3/2019	Cloudy	Moderate	15:02	6.2	S	1	1	8.21	8.21	30.19	30.20	21.47	21.45	97.8	98.1	7.12	7.18	7.08	0.90	1.1	2.4
						S		2	8.20		30.21		21.42		98.4		7.24			1.20		
						M	3.1	1	8.17	8.18	30.07	30.10	21.21	21.23	98.2	97.9	6.94	6.98		2.10	2.3	
						M		2	8.19		30.12		21.24		97.6		7.01			2.40		
						B	5.2	1	8.22	8.23	30.34	30.32	20.98	20.97	84.5	85.6	6.88	6.81		3.80	4.0	
						B		2	8.23		30.29		20.96		86.7		6.74			4.10		
FCZ8	23/3/2019	Cloudy	Moderate	13:30	4.2	S	1	1	8.17	8.19	30.62	30.66	21.30	21.28	121.4	119.9	10.12	10.10	10.10	0.4	0.5	1.7
						S		2	8.21		30.69		21.25		118.3		10.08			0.5		
						B	3.2	1	8.19	8.17	30.17	30.22	21.11	21.09	86.7	86.1	6.72	6.73		3.1	3.0	
						B		2	8.14		30.26		21.07		85.4		6.74			2.9		
H4A	23/3/2019	Cloudy	Moderate	13:48	1.9	M	0.95	1	8.02	8.03	30.04	30.01	20.97	20.96	94.3	94.8	6.77	6.73		0.7	0.8	
						M		2	8.04		29.97		20.94		95.2		6.69			0.9		
FCZ1A	23/3/2019	Cloudy	Moderate	14:03	3.5	S	1	1	8.12	8.10	30.18	30.16	21.31	21.29	105.6	104.5	7.32	7.30	7.30	2.1	2.3	2.8
						S		2	8.08		30.14		21.27		103.3		7.28			2.4		
						B	2.5	1	8.04	8.06	30.42	30.41	21.20	21.20	87.4	86.9	6.57	6.62		3.1	3.3	
						B		2	8.07		30.39		21.19		86.3		6.66			3.4		
H1A	23/3/2019	Cloudy	Moderate	14:19	1	M	0.5	1	8.13	8.11	30.16	30.20	21.04	21.08	98.4	98.8	7.13	7.17		3.1	3.3	
						M		2	8.08		30.23		21.11		99.1		7.21			3.4		
M1A	23/3/2019	Cloudy	Moderate	14:32	1	M	0.5	1	8.05	8.03	30.01	30.03	21.24	21.21	90.4	90.4	6.93	6.97		2.6	2.8	
						M		2	8.01		30.04		21.18		90.3		7.01			2.9		
SGA	23/3/2019	Cloudy	Moderate	14:49	1.1	M	0.55	1	8.12	8.13	30.16	30.12	21.31	21.35	99.4	98.9	7.24	7.21		2.4	2.6	
						M		2	8.14		30.08		21.39		98.3		7.17			2.7		

Note: 1. Depth Ave.: (Except E.coli) "Depth-averaged" is calculated by taking the means for the reading of the surface, middle and bottom depths
2. ND: Not Detected
3. Depth Averaged of E.coli is calculated by taking geometric mean of the of the surface, middle and bottom, all ND sample results (<1) for E.coli is 1 in calculating the geometric mean.

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MateriaLab

Report No. : 181172WA190576

Test Report on Analysis of Water

Information Supplied by Client

Client	:	Drainage Services Department
Client's address	:	28/F, Devon House, Taikoo Place, 979 King's Road, Hong Kong
Project	:	CM8/2018 – Water Analysis in Sha Tau Kok STW
Sample description	:	Fifty four samples of water taken by the staff of FTS on 23/03/2019 11:25
Client sample ID	:	Refer to result pages
Tests required	:	Biochemical oxygen demand Total suspended solids dried at 103°C - 105°C Total Oxidized Nitrogen content Total Kjeldahl nitrogen content Total nitrogen content Ammonical nitrogen content Total Inorganic nitrogen

Laboratory Information

Lab. Sample ID	:	WA190576/1-54
Temperature	:	3.6°C
Date of receipt of sample	:	23/03/2019
Date test commenced	:	24/03/2019
Date test completed	:	29/03/2019
Containers used	:	3L plastic bottle
Test methods used	:	Biochemical oxygen demand *BS 6068: Section 2.14: 1990* Total suspended solids dried at 103°C - 105°C *APHA 17th ed. 2540D* Total Oxidized Nitrogen content *APHA 20th ed. 4500-NO_3^- E & F* Total Kjeldahl nitrogen content *In house method E-T-037 & APHA 18ed. 4500-N_{org} B & 4500-NH_3 E* Total nitrogen content *By Calculation* Ammonical nitrogen content *In house method E-T-095 Segmented flow-salicylate method* Total Inorganic nitrogen *By Calculation*

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

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MaterialLab

Report No. : 181172WA190576

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ2/S	FCZ2/S/Dup	FCZ2/M	FCZ2/M/Dup	FCZ2/B	FCZ2/B/Dup	C/S	C/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	3	3	4	3	4	3	2
3. Total Oxidized Nitrogen content, mg/L	0.01	<0.01	0.03	0.01	0.04	0.06	0.02	0.01	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.3	0.4	0.4	0.3	0.4	0.3	0.3	0.3	0.1
6. Ammonical nitrogen content, mg/L	0.16	0.17	0.13	0.15	0.15	0.12	0.18	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.17	0.18	0.16	0.17	0.19	0.18	0.19	0.15	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190576

Results :

Test parameters	Sample identification								Reporting Limit
	C/M	C/M/Dup	C/B	C/B/Dup	M6A/M	M6A/M/Dup	N1/S	N1/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	3	3	2	4	5	4	2	2
3. Total Oxidized Nitrogen content, mg/L	0.01	0.02	0.02	0.02	0.04	0.04	0.05	0.05	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.4	0.3	0.3	0.3	0.3	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.3	0.4	0.3	0.3	0.3	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.15	0.14	0.16	0.12	0.12	0.14	0.17	0.14	0.02
7. Total Inorganic nitrogen, mg/L	0.16	0.16	0.18	0.14	0.17	0.18	0.22	0.18	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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MaterialLab

Report No. : 181172WA190576

Results :

Test parameters	Sample identification								Reporting Limit
	N1/M	N1/M/Dup	N1/B	N1/B/Dup	N2/S	N2/S/Dup	N2/M	N2/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	2	3	3	4	4	4	3	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.05	0.05	0.04	0.05	0.06	0.05	0.05	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.3	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.3	0.4	0.4	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.13	0.17	0.15	0.12	0.17	0.11	0.15	0.13	0.02
7. Total Inorganic nitrogen, mg/L	0.18	0.23	0.20	0.16	0.22	0.17	0.20	0.18	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by

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

Date : 3/4/2019

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

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MateriaLab

Report No. : 181172WA190576

Results :

Test parameters	Sample identification								Reporting Limit
	N2/B	N2/B/Dup	FCZ7/S	FCZ7/S/Dup	FCZ7/M	FCZ7/M/Dup	FCZ7/B	FCZ7/B/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	2	4	3	3	3	4	2	2
3. Total Oxidized Nitrogen content, mg/L	0.05	0.05	0.06	0.06	0.06	0.06	0.06	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.4	0.3	0.3	0.5	0.4	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.3	0.5	0.5	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.30	0.15	0.15	0.15	0.22	0.15	0.20	0.15	0.02
7. Total Inorganic nitrogen, mg/L	0.35	0.20	0.21	0.22	0.29	0.21	0.26	0.22	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
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   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

Certified by

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MateriaLab

Report No. : 181172WA190576

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ1B/S	FCZ1B/S/ Dup	FCZ1B/M	FCZ1B/M/ Dup	FCZ1B/B	FCZ1B/B/ Dup	FCZ8/S	FCZ8/S/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	3	2	4	4	3	3	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.07	0.07	0.07	0.07	0.06	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.5	0.3	0.4	0.4	0.5	0.4	0.3	0.3	0.1
5. Total nitrogen content, mg/L	0.5	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.23	0.17	0.16	0.14	0.17	0.13	0.16	0.16	0.02
7. Total Inorganic nitrogen, mg/L	0.30	0.24	0.22	0.21	0.23	0.20	0.23	0.23	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190576

Results :

Test parameters	Sample identification								Reporting Limit
	FCZ8/B	FCZ8/B/Dup	H4A/M	H4A/M/Dup	FCZ1A/S	FCZ1A/S/ Dup	FCZ1A/B	FCZ1A/B/ Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	4	3	3	3	3	3	3	3	2
3. Total Oxidized Nitrogen content, mg/L	0.07	0.07	0.06	0.06	0.06	0.06	0.07	0.06	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.4	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.1
5. Total nitrogen content, mg/L	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.1
6. Ammonical nitrogen content, mg/L	0.16	0.13	0.18	0.17	0.17	0.13	0.19	0.14	0.02
7. Total Inorganic nitrogen, mg/L	0.23	0.20	0.23	0.23	0.23	0.19	0.26	0.21	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

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

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Report No. : 181172WA190576

Results :

Test parameters	Sample identification						Reporting Limit
	H1A/M	H1A/M/Dup	M1A/M	M1A/M/Dup	SGA/M	SGA/M/Dup	
1. Biochemical oxygen demand, mg/L	<3	<3	<3	<3	<3	<3	3
2. Total suspended solids dried at 103°C - 105°C, mg/L	<2	<2	5	6	4	4	2
3. Total Oxidized Nitrogen content, mg/L	2.4	2.4	0.07	0.07	0.07	0.07	0.01
4. Total Kjeldahl nitrogen content, mg/L	0.2	0.2	0.4	0.4	0.4	0.4	0.1
5. Total nitrogen content, mg/L	2.6	2.6	0.5	0.4	0.5	0.5	0.1
6. Ammonical nitrogen content, mg/L	0.05	0.05	0.27	0.26	0.15	0.15	0.02
7. Total Inorganic nitrogen, mg/L	2.5	2.5	0.33	0.33	0.22	0.22	0.03

Remark: 1. Disclaimer: Sampling is out of scope of accreditation.
2. Total nitrogen is the sum of Total Kjeldahl nitrogen content and total oxidized nitrogen content.
3. Total Inorganic nitrogen is the sum of Ammonical nitrogen content and total oxidized nitrogen content.
4. Detailed information for BOD_5 test :
   i. Samples taken by staff of FTS on 23/03/2019
   ii. Samples stored at 0-4°C refrigerator prior to testing.
   iii. Date and hour of commencing BOD_5 test : 24/03/2019 08:50
   iv. The BOD_5 test was conducted without suppression of nitrification by ATU.
   v. Type of seeding water used was Polyseed BOD_5 seeding water.
   vi. The samples were incubated at 19-21°C for 5 days

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

Date : 3/4/2019

** End of Report **

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

CERTIFICATE OF ANALYSIS

Client	:	FUGRO TECHNICAL SERVICES LIMITED	Laboratory	:	ALS Technichem (HK) Pty Ltd	Page	: 1 of 5
Contact	:	MR ANDY CHOI	Contact	:	Richard Fung	Work Order	: HK1911340
Address	:	ROOM 723 - 726, 7/F, BLOCK B, PROFIT INDUSTRIAL BUILDING, 1-15 KWAI FONG CRESCENT, KWAI FONG, HONG KONG	Address	:	11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong		
E-mail	:	a.choi@fugro.com	E-mail	:	richard.fung@alsglobal.com		
Telephone	:	+852 3565 4374	Telephone	:	+852 2610 1044		
Facsimile	:	----	Facsimile	:	+852 2610 2021		
Project	:	CM8/2018 - WATER ANALYSIS IN SHA TAU KOK STW				Date received	: 23-Mar-2019
Order number	:	0118/18	Quote number	:	HKE/1312b/2019	Date of issue	: 28-Mar-2019
C-O-C number	:	---				No. of samples	- Received : 54
Site	:	---					- Analysed : 54

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

Signatory	Position	Authorised results for:
Fung Lim Chee, Richard	General Manager	Inorganics
Ng Sin Kou, May	Assistant Laboratory Manager	Microbiology EN

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1911340 supersedes any previous reports with this reference. Testing period is from 23-Mar-2019 to 28-Mar-2019. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific Comments for Work Order HK1911340 :

Sample(s) were received in chilled condition.

Water sample(s) analysed and reported on as received basis.

Sample(s) arrived in the laboratory at 15:30. Microbiological sample(s), in 250ml and 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution.

NOT DETECTED denotes result(s) is (are) less than the Limit of Report (LOR).

Analytical Results

Sub-Matrix: WATER		Compound	EK067P: Total Phosphorus as P	EM002: E. coli	----	----	----
		LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
Client sample ID	Client sampling date / time	Laboratory sample ID	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ2/S	23-Mar-2019	HK1911340-001	<0.01	NOT DETECTED	----	----	----
FCZ2/S/Dup	23-Mar-2019	HK1911340-002	<0.01	NOT DETECTED	----	----	----
FCZ2/M	23-Mar-2019	HK1911340-003	<0.01	NOT DETECTED	----	----	----
FCZ2/M/Dup	23-Mar-2019	HK1911340-004	<0.01	NOT DETECTED	----	----	----
FCZ2/B	23-Mar-2019	HK1911340-005	<0.01	NOT DETECTED	----	----	----
FCZ2/B/Dup	23-Mar-2019	HK1911340-006	<0.01	NOT DETECTED	----	----	----
C/S	23-Mar-2019	HK1911340-007	<0.01	NOT DETECTED	----	----	----
C/S/Dup	23-Mar-2019	HK1911340-008	<0.01	NOT DETECTED	----	----	----
C/M	23-Mar-2019	HK1911340-009	<0.01	1	----	----	----
C/M/Dup	23-Mar-2019	HK1911340-010	<0.01	2	----	----	----
C/B	23-Mar-2019	HK1911340-011	<0.01	NOT DETECTED	----	----	----
C/B/Dup	23-Mar-2019	HK1911340-012	<0.01	NOT DETECTED	----	----	----
M6A/M	23-Mar-2019	HK1911340-013	<0.01	3	----	----	----
M6A/M/Dup	23-Mar-2019	HK1911340-014	<0.01	1	----	----	----
N1/S	23-Mar-2019	HK1911340-015	<0.01	6	----	----	----
N1/S/Dup	23-Mar-2019	HK1911340-016	<0.01	8	----	----	----
N1/M	23-Mar-2019	HK1911340-017	<0.01	4	----	----	----
N1/M/Dup	23-Mar-2019	HK1911340-018	<0.01	3	----	----	----
N1/B	23-Mar-2019	HK1911340-019	<0.01	3	----	----	----
N1/B/Dup	23-Mar-2019	HK1911340-020	<0.01	3	----	----	----
N2/S	23-Mar-2019	HK1911340-021	<0.01	9	----	----	----
N2/S/Dup	23-Mar-2019	HK1911340-022	<0.01	7	----	----	----
N2/M	23-Mar-2019	HK1911340-023	<0.01	17	----	----	----
N2/M/Dup	23-Mar-2019	HK1911340-024	<0.01	19	----	----	----
N2/B	23-Mar-2019	HK1911340-025	<0.01	10	----	----	----
N2/B/Dup	23-Mar-2019	HK1911340-026	<0.01	12	----	----	----
FCZ7/S	23-Mar-2019	HK1911340-027	<0.01	11	----	----	----
FCZ7/S/Dup	23-Mar-2019	HK1911340-028	<0.01	13	----	----	----
FCZ7/M	23-Mar-2019	HK1911340-029	<0.01	5	----	----	----
FCZ7/M/Dup	23-Mar-2019	HK1911340-030	<0.01	9	----	----	----
FCZ7/B	23-Mar-2019	HK1911340-031	<0.01	4	----	----	----

Sub-Matrix: **WATER**

Client sample ID	*Client sampling date / time*	*Laboratory sample ID*	*Compound*	**EK067P: Total Phosphorus as P**	**EM002: E. coli**	**----**	**----**	**----**
			LOR Unit	0.01 mg/L	1 CFU/100mL	----	----	----
				ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing	----	----	----
FCZ7/B/Dup	23-Mar-2019	HK1911340-032		<0.01	**3**	----	----	----
FCZ1B/S	23-Mar-2019	HK1911340-033		<0.01	**16**	----	----	----
FCZ1B/S/Dup	23-Mar-2019	HK1911340-034		<0.01	**20**	----	----	----
FCZ1B/M	23-Mar-2019	HK1911340-035		<0.01	**11**	----	----	----
FCZ1B/M/Dup	23-Mar-2019	HK1911340-036		<0.01	**13**	----	----	----
FCZ1B/B	23-Mar-2019	HK1911340-037		<0.01	**17**	----	----	----
FCZ1B/B/Dup	23-Mar-2019	HK1911340-038		<0.01	**19**	----	----	----
FCZ8/S	23-Mar-2019	HK1911340-039		<0.01	**10**	----	----	----
FCZ8/S/Dup	23-Mar-2019	HK1911340-040		<0.01	**15**	----	----	----
FCZ8/B	23-Mar-2019	HK1911340-043		<0.01	**9**	----	----	----
FCZ8/B/Dup	23-Mar-2019	HK1911340-044		<0.01	**6**	----	----	----
H4A/M	23-Mar-2019	HK1911340-045		**0.01**	**3**	----	----	----
H4A/M/Dup	23-Mar-2019	HK1911340-046		<0.01	**1**	----	----	----
FCZ1A/S	23-Mar-2019	HK1911340-047		<0.01	**11**	----	----	----
FCZ1A/S/Dup	23-Mar-2019	HK1911340-048		<0.01	**14**	----	----	----
FCZ1A/B	23-Mar-2019	HK1911340-051		<0.01	**15**	----	----	----
FCZ1A/B/Dup	23-Mar-2019	HK1911340-052		<0.01	**13**	----	----	----
H1A/M	23-Mar-2019	HK1911340-053		<0.01	**17**	----	----	----
H1A/M/Dup	23-Mar-2019	HK1911340-054		<0.01	**20**	----	----	----
M1A/M	23-Mar-2019	HK1911340-055		**0.02**	**71**	----	----	----
M1A/M/Dup	23-Mar-2019	HK1911340-056		**0.02**	**79**	----	----	----
SGA/M	23-Mar-2019	HK1911340-057		<0.01	**19**	----	----	----
SGA/M/Dup	23-Mar-2019	HK1911340-058		<0.01	**25**	----	----	----

FUGRO TECHNICAL SERVICES LIMITED

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Appendix E

Weather Condition during the Baseline Monitoring Period

FUGRO TECHNICAL SERVICES LIMITED

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Website : www.fugro.com

Date	Mean Pressure (hPa)	Air Temperature			Mean Relative Humidity (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)		
February 2019						
26	1017.6	19.7	18.7	17.6	88	Trace
28	1014.7	26.7	22.8	20.6	85	0.0
March 2019						
02	1012.7	23.9	21.5	19.9	89	0.4
05	1012.1	26.7	22.2	17.7	88	30.3
07	1015.8	20.5	17.9	15.5	93	29.6
09	1012.2	18.7	17.8	17.0	95	14.5
12	1016.4	24.2	20.1	17.4	77	0.0
14	1018.3	21.5	20.4	19.8	83	6.4
16	1020.0	22.8	20.2	18.8	65	0.0
19	1014.8	27.4	23.4	20.7	84	0.0
21	1011.4	27.2	25.3	23.4	81	0.0
23	1017.1	25.0	20.0	17.4	89	3.3

Source: Hong Kong Observatory

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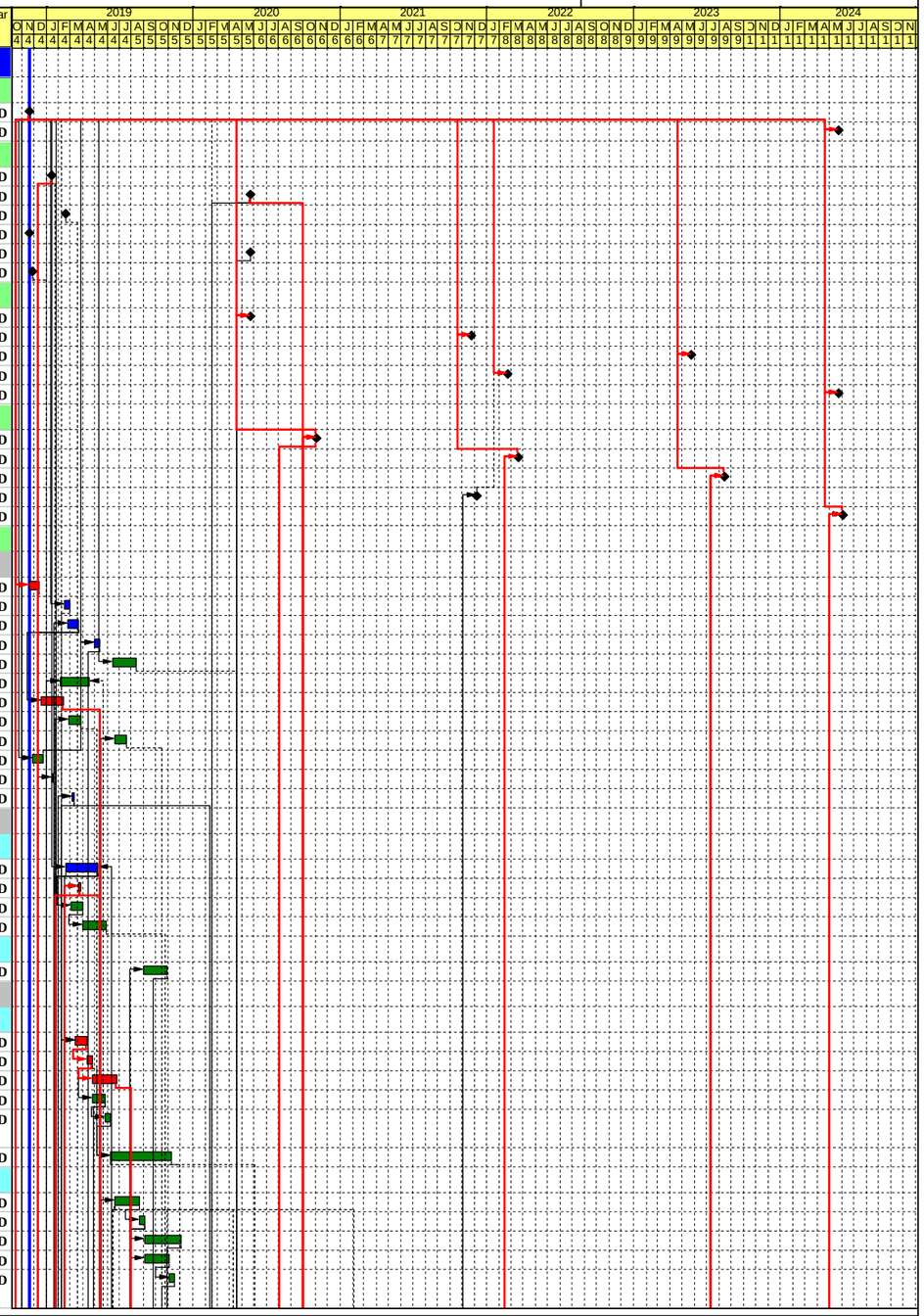
Appendix F

Construction Programme

EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

BLACK & VEATCH

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Time Risk Allowano	Major Resource	Calendar
Monthly Update (2019-05)_Final								
1.0 Project Commencement and Completion								
KD1000	Project Starting Date (SD)	0	21-Nov-18*		-140			CD
KD1010	Project Completion Date	0		25-May-24*	0			CD
2.0 Access Date								
KDA1000	Portion W1 (within 90 days from Starting Date)	0	14-Jan-19*		0			CD
KDA1010	Portion W2 (within 549 days from Starting Date)	0	22-May-20*		0			CD
KDA1020	Portion W3 (within 90 days from Starting Date)	0	18-Feb-19*		0			CD
KDA1030	Portion W4 (Starting Date)	0	21-Nov-18*		0			CD
KDA1040	Portion W5 (within 549 days from Starting Date)	0	22-May-20*		0			CD
KDA1050	Works Area for Site Accommodation (within 90 days from Starting Date)	0	27-Nov-18*		0			CD
3.0 Sectional Commpletion Date								
KSSC1000	Section 1 Commissioning of Temporary Sewage Treatmetnt Plant	0		22-May-20*	0			CD
KSSC1010	Section 2 Completion of Submarine Outfall	0		22-Nov-21*	0			CD
KSSC1020	Section 3 Commissioning of Sha Tau Kok Sewage Treatment Works	0		25-May-23*	0			CD
KSSC1030	Section 4 Completion of Tong To Village Sewerage Works	0		22-Feb-22*	0			CD
KSSC1040	Section 5 Whole of the Works excluding Section 1 to 4	0		25-May-24*	0			CD
4.0 Planned Setional Completion of the Works								
KDPC1000	Section 1 Commissioning of Temporary Sewage Treatmetnt Plant	0		04-Nov-20	-165			CD
KDPC1010	Section 2 Completion of Submarine Outfall	0		19-Mar-22	-117			CD
KDPC1020	Section 3 Commissioning of Sha Tau Kok Sewage Treatment Works	0		14-Aug-23	-81			CD
KDPC1030	Section 4 Completion of Tong To Village Sewerage Works	0		07-Dec-21	77			CD
KDPC1040	Section 5 Whole of the Works excluding Section 1 to 4	0		04-Jun-24	-10			CD
5.0 Preliminaries, Submission, Contractor's Design Submission and Approval								
5.1 Preliminaries								
SAP1000	Initial Survey	24	21-Nov-18	14-Dec-18	-88	1d		CD
SAP1010	Tree Survey	24	16-Feb-19 A	01-Mar-19 A		2d		CD
SAP1030	Environmental Baseline Monitoring (ET employed by the Employer)	7	25-Feb-19 A	23-Mar-19 A		1d		CD
SAP1040	Condition Survey (except Tong To)	60	30-Apr-19 A	14-May-19 A		2d		CD
SAP1045	Condition Survey (Tong To)	60	15-Jun-19*	13-Aug-19	490			CD
SAP1050	Erection of Project Manager's and Contractor's Site Office	60	04-Feb-19	18-Apr-19*	7	2d		WD
SAP1070	Setup Website for EM&A Report (ET employed by the Employer)	56	19-Dec-18	12-Feb-19	-50	2d		CD
SAP1080	Liaison with CLP for Power Supply to TSTP	30	27-Feb-19	28-Mar-19	77	2d		CD
SAP1090	Liaison with CLP for Power Supply to STK STW	30	21-Jun-19	20-Jul-19	604	2d		CD
SAP1100	Application and Approval of Closed Area Permit by HKP	28	28-Nov-18	25-Dec-18	674	2d		CD
SAP1110	Pre-test Crude Sewage Characterisation Work	3	14-Jan-19 A	16-Jan-19 A		1d		CD
SAP1120	Crude Sewage Characterisation and on-site Bioassay Batch Tests	8	06-Mar-19 A	13-Mar-19 A		1d		CD
5.2 Contractor's Design Submission and Approval (Civil)								
5.2.1 TSTP								
SADCTST1000	AIP Submission and Approval for Foundation Design	30	18-Feb-19 A	10-May-19 A		2d		CD
SADCTST1010	DDA Submission for Foundation Design	7	21-Mar-19	27-Mar-19	-93	2d		CD
SADCTST1020	AIP Submission and Approval for Substructure and Superstructure Design	30	03-Mar-19	01-Apr-19	47	2d		CD
SADCTST1030	DDA Submission for Substructure and Superstructure Design	60	02-Apr-19	31-May-19	47	2d		CD
5.2.2 STK STW								
SADCSTW1000	Submission and Approval of Proposed HDD Profile	60	30-Aug-19	28-Oct-19	276	2d		CD
5.3 Contractor's Design Submission and Approval (E&M)								
5.3.1 TSTP								
SADETST1000	AIP Submission (Process Design, Hydraulic Design, MBBR System)	30	13-Mar-19	11-Apr-19	-5	2d		CD
SADETST1005	Approval of AIP Submission (Process Design, Hydraulic Design, MBBR System)	15	12-Apr-19	26-Apr-19	-5	0d		CD
SADETST1006	DDA Submission (Process Design, Hydraulic Design, MBBR System)	60	27-Apr-19	25-Jun-19	-5	2d		CD
SADETST1007	AIP Submission (Mechanical, Electrial BS Installation & Builder's Works Requirement)	30	27-Apr-19	26-May-19	3	2d		CD
SADETST1008	Approval of AIP Submission (Mechanical, Electrial BS Installation & Builder's Works Requirement)	15	27-May-19	10-Jun-19	3	0d		CD
SADETST1010	DDA Submission (Mechanical, Electrial BS Installation & Builder's Works Requirement)	150	11-Jun-19	07-Nov-19	3	2d		CD
5.3.2 STK STW								
SADESTW1000	AIP Submission (Process Design, Hydraulic Design, MBR System)	60	21-Jun-19	19-Aug-19	66	2d		CD
SADESTW1005	Approval of AIP Submission (Process Design, Hydraulic Design, MBR System)	15	20-Aug-19	03-Sep-19	387	0d		CD
SADESTW1006	DDA Submission (Process Design, Hydraulic Design, MBR System)	90	04-Sep-19	02-Dec-19	387	2d		CD
SADESTW1007	AIP Submission (Mechanical, Electrial BS Installation & Builder's Works Requirement)	60	04-Sep-19	02-Nov-19	484	2d		CD
SADESTW1008	Approval of AIP Submission (Mechanical, Electrial BS Installation & Builder's Works Requirement)	15	03-Nov-19	17-Nov-19	484	2d		CD



BUILD KING - KUM SHING JV

Milestone
Critical Activity
Non-Critical Activity
Remaining Level of Effort
Actual Work

EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

Data Date: 21-Nov-18 **Run Date: 22-May-19**

Project ID :Mth Update_201905
Layout : Layout_Update _1

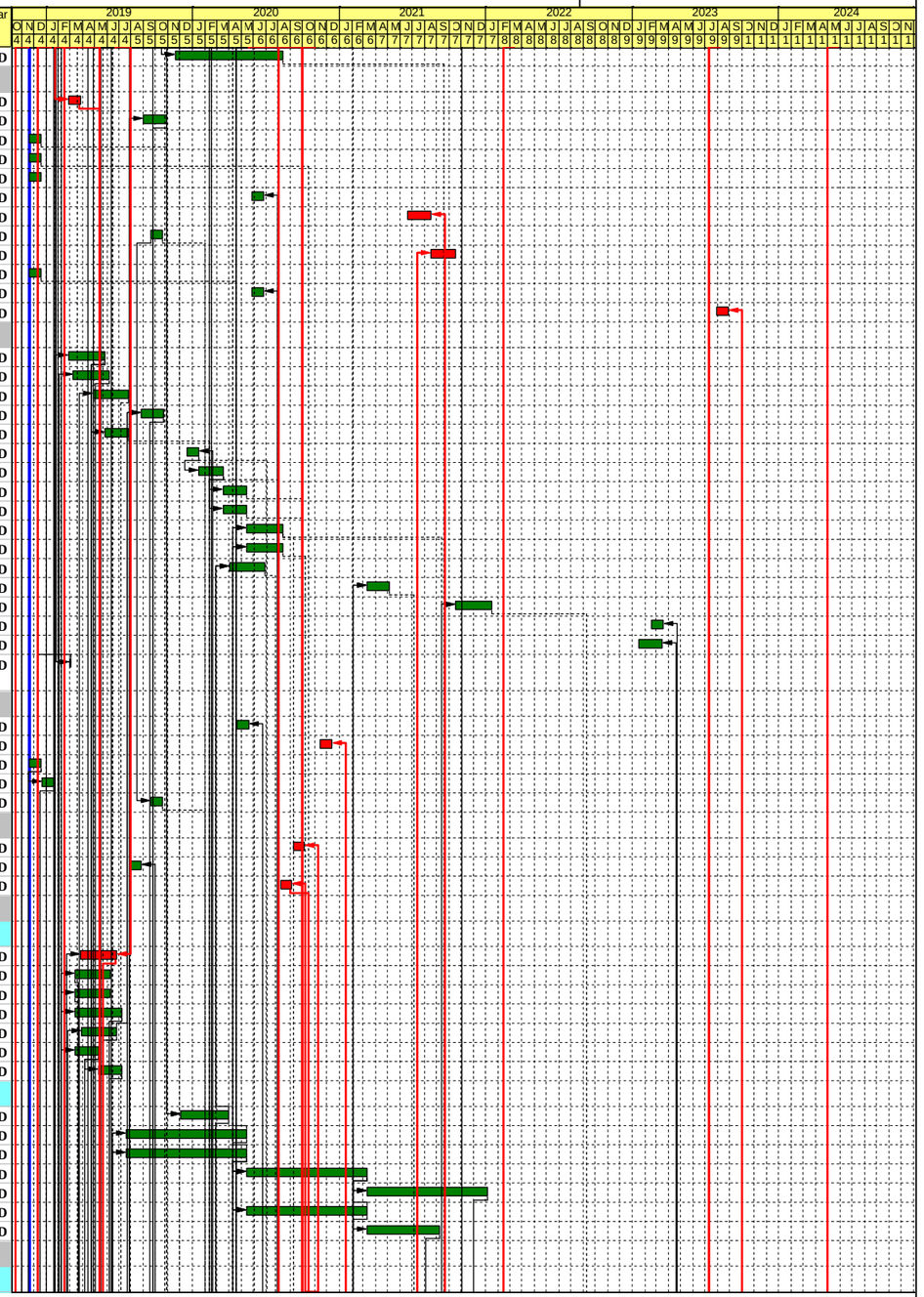
Monthly Revised Programme (2019-04)

Date	Revision	Checked	Approved
20-Apr-19	Rev 0	Justin ...	Ron Hung

EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

BLACK & VEATCH

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Time Risk Allowano	Major Resource	Calendar
SADESTW1010	DDA Submission (Mechanical, Electrial BS Installation & Builder's Works Requirement)	270	18-Nov-19	13-Aug-20	484	2d		CD
5.4 Major Construciton Method Statement and Test Plan (Civil)								
SAMSC1000	Submission & Approval of MS of Pre-Bored H-Pile Construction for TSTP	30	26-Feb-19	27-Mar-19	-93	2d		CD
SAMSC1010	Submission & Approval of MS of Horzontal Directional Drilling Works	60	30-Aug-19	28-Oct-19	129	2d		CD
SAMSC1020	Submission & Approval of MS of Receing Pit Construction for HDD Works	30	21-Nov-18	20-Dec-18	481	2d		CD
SAMSC1030	Submission & Approval of MS of Pre-Bored H-Pile Construction for STK STW	30	21-Nov-18	20-Dec-18	580	2d		CD
SAMSC1040	Submission & Approval of MS of TSTP Sub-structure and Super-structure Construction	30	21-Nov-18	20-Dec-18*	122	2d		CD
SAMSC1050	Submission & Approval of MS of Exacation and Lateral Support for STK STW	30	27-May-20	25-Jun-20*	33	2d		CD
SAMSC1060	Submission & Approval of MS of Outfall Diffuser Construction	60	19-Jun-21	17-Aug-21*	-65	2d		CD
SAMSC1070	Submission & Approval of MS of Trenchless Works	30	19-Sep-19*	18-Oct-19	673	2d		CD
SAMSC1080	Submission & Approval of Sediment Sampling and Test Plan	60	18-Aug-21	16-Oct-21*	-77	2d		CD
SAMSC1090	Submission & Approval of MS of Laying Sewage Pipe by Open Trench	30	21-Nov-18	20-Dec-18	520	2d		CD
SAMSC1100	Demolition Noise Mitigation Measures Plan for existing STK STW	30	28-May-20	26-Jun-20*	15	2d		CD
SAMSC1110	Demolition Noise Mitigation Measures Plan for existing STK PS	30	30-Jul-23	28-Aug-23*	-66	2d		CD
5.5 Major Test Plan (E&M)								
SATPE1000	TSTP- Submission & Approval of FAT Plan for Mechanical Plant	90	27-Feb-19	27-May-19	4	2d		CD
SATPE1001	TSTP- Submission & Approval of FAT Plan for Electrical Plant	90	09-Mar-19	06-Jun-19	6	2d		CD
SATPE1002	TSTP- Submission & Approval of FAT Plan for MBBR System	90	28-Apr-19	26-Jul-19	9	2d		CD
SATPE1005	TSTP- Submission & Approval of FAT Plan for SCADA	56	26-Aug-19	20-Oct-19	31	2d		CD
SATPE1010	TSTP- Submission & Approval of SAT Plan	60	28-May-19	26-Jul-19	109	2d		CD
SATPE1020	TSTP- Submission & Approval of System Commissioning Plan	30	18-Dec-19	16-Jan-20	7	2d		CD
SATPE1030	TSTP- Submission & Approval of Plant Commissioning Plan	60	17-Jan-20	16-Mar-20	7	2d		CD
SATPE1035	TSTP- Submission & Approval of O&M Plan	60	17-Mar-20	15-May-20	7	2d		CD
SATPE1036	TSTP- Submission & Approval of Contingency Plan during O&M period	60	17-Mar-20	15-May-20	7	2d		CD
SATPE1040	STK STW- Submission & Approval of FAT Plan for Mechanical Plant	90	16-May-20	13-Aug-20	116	2d		CD
SATPE1041	STK STW- Submission & Approval of FAT Plan for Electrical Plant	90	16-May-20	13-Aug-20	193	2d		CD
SATPE1042	STK STW- Submission & Approval of FAT Plan for MBR Plant	90	01-Apr-20	29-Jun-20	447	2d		CD
SATPE1045	STK STW- Submission & Approval of FAT Plan for SCADA	56	12-Mar-21	06-May-21	353	2d		CD
SATPE1050	STK STW- Submission & Approval of SAT Plan	90	17-Oct-21	14-Jan-22	190	2d		CD
SATPE1060	STK STW- Submission & Approval of System Commissioning Plan	30	18-Feb-23	19-Mar-23	443	2d		CD
SATPE1070	STK STW- Submission & Approval of Plant Commissioning Plan	60	17-Jan-23	17-Mar-23	445	2d		CD
SATPE1080	STK STW- Submission & Approval of Crude Sewage Characterisation Work and on-site Bioassays Batch Tests	5	01-Mar-19 A	05-Mar-19 A		2d		CD
5.6 Major Temporary Work Design								
SATW1000	Submission & Approval of ELS for STK STW	30	22-Apr-20	21-May-20*	15	2d		CD
SATW1010	Submission & Approval of Footing Design of Tower Crane	30	14-Nov-20	13-Dec-20*	-119	2d		CD
SATW1020	Submission & Approval of Receiving Pit Design for HDD Works	30	21-Nov-18	20-Dec-18	425	2d		CD
SATW1030	Submission & Approval of Entry Pit Design for HDD Works	30	21-Dec-18	19-Jan-19*	484	2d		CD
SATW1040	Submission & Approval of Temporary Works Design for Trenchless Works	30	19-Sep-19	18-Oct-19	673	2d		CD
5.7 Civil Equipment/ Materials								
SAMC1000	Submission & Approval of HDPE Pipe for Submarine Outfall	28	08-Sep-20	05-Oct-20*	-21	2d		CD
SAMC1010	Submission & Approval of Sewerage Pipes for Tong To	28	30-Jul-19	26-Aug-19*	60	2d		CD
SAMC1020	Submission & Approval of H-Pile for Permanent STK STW	28	08-Aug-20	04-Sep-20	-44	2d		CD
5.8 E&M Plant								
5.8.1 TSTP								
SAMCTST1000	Submission & Approval of MBBR System	90	28-Mar-19	25-Jun-19	-5	2d		CD
SAMCTST1010	Submission & Approval of Mechanical Plant	90	13-Mar-19	10-Jun-19	7	2d		CD
SAMCTST1020	Submission & Approval of Electrical Plant	90	13-Mar-19	10-Jun-19	19	2d		CD
SAMCTST1030	Submission & Approval of Instrumentation Plant	120	13-Mar-19	10-Jul-19	28	2d		CD
SAMCTST1040	Submission & Approval of SCADA System	90	29-Mar-19	26-Jun-19	31	2d		CD
SAMCTST1050	Submission & Approval of LV Switchboards and MCC Panels	60	13-Mar-19	11-May-19	11	2d		CD
SAMCTST1060	Submission & Approval of BS Works	60	12-May-19	10-Jul-19	1731	2d		CD
5.8.2 STK STW								
SAMCSTW1000	Submission & Approval of MBR System	120	03-Dec-19	31-Mar-20	387	2d		CD
SAMCSTW1010	Submission & Approval of Mechanical Plant	300	21-Jul-19	15-May-20	56	2d		CD
SAMCSTW1020	Submission & Approval of Electrical Plant	300	21-Jul-19	15-May-20	36	2d		CD
SAMCSTW1030	Submission & Approval of Instrumentation Plant	300	16-May-20	11-Mar-21	36	2d		CD
SAMCSTW1040	Submission & Approval of BS Plant (except Elevator)	300	12-Mar-21	05-Jan-22	36	2d		CD
SAMCSTW1050	Submission & Approval of SCADA System	300	16-May-20	11-Mar-21	259	2d		CD
SAMCSTW1060	Submission & Approval of Elevator	180	12-Mar-21	07-Sep-21	205	2d		CD
5.9 Procurement of Materials & Plant								
5.9.1 Civil								



BUILD KING - KUM SHING JV

- Milestone
- Critical Activity
- Non-Critical Activity
- Remaining Level of Effort
- Actual Work

EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

Data Date: 21-Nov-18 **Run Date: 22-May-19**

Project ID :Mth Update_201905
Layout : Layout_Update _1

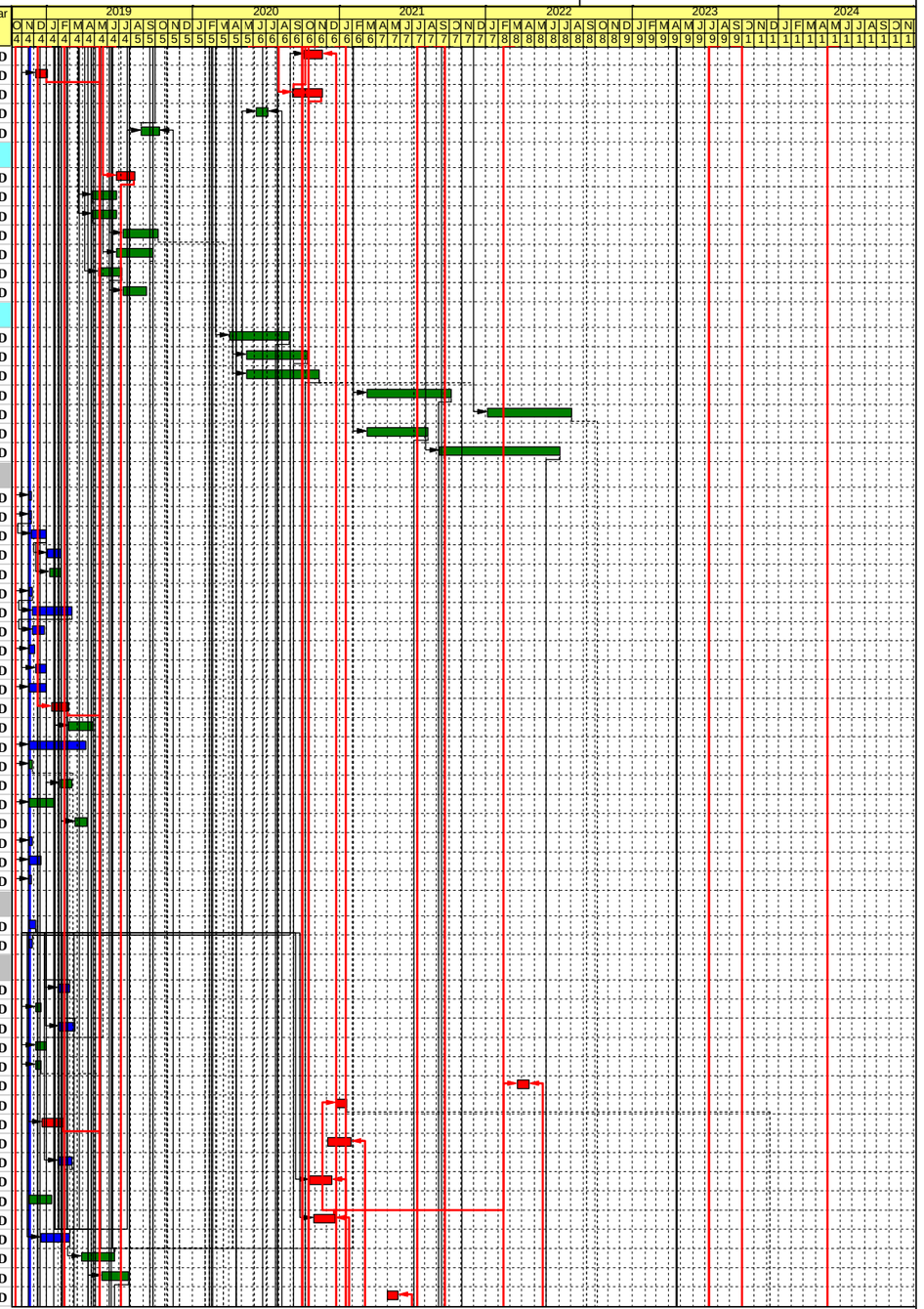
Monthly Revised Programme (2019-04)

Date	Revision	Checked	Approved
20-Apr-19	Rev 0	Justin ...	Ron Hung

EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

BLACK & VEATCH

Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Time Risk Allowano	Major Resource	Calendar
SAPRC1000	HDPE Pipe for Submarine Outfall	45	06-Oct-20	19-Nov-20*	-49	2d		CD
SAPRC1010	Steel H Piles for Pre-bored Socket H-piles (TSTP)	30	05-Dec-18	03-Jan-19	-10	2d		CD
SAPRC1015	Steel H Piles for Pre-bored Socket H-piles (STK STW)	75	05-Sep-20	18-Nov-20	-119	2d		CD
SAPRC1020	ELS Structural Steel	30	08-Jun-20	07-Jul-20*	12	2d		CD
SAPRC1030	Sewerage Pipes for Tong To	45	27-Aug-19	10-Oct-19*	3	2d		CD
5.9.2 E&M (TSTP)- by E&M Subcontractor								
SAMETST1000	MBBR System	45	26-Jun-19	09-Aug-19	-5	2d		CD
SAMETST1010	Mechanical Plant	60	27-Apr-19	25-Jun-19	7	2d		CD
SAMETST1020	Electrical Plant	60	27-Apr-19	25-Jun-19	19	2d		CD
SAMETST1030	Instrumentation Plant	90	11-Jul-19	08-Oct-19	28	2d		CD
SAMETST1040	SCADA System	90	27-Jun-19	24-Sep-19	57	2d		CD
SAMETST1050	LV Switchboards and MCC Panels	60	12-May-19	10-Jul-19	11	2d		CD
SAMETST1060	BS related equipment	60	11-Jul-19	08-Sep-19	1731	2d		CD
5.9.3 E&M (STK STW)- by E&M Subcontractor								
SAMESTW1000	MBR System	150	01-Apr-20	28-Aug-20	387	2d		CD
SAMESTW1010	Mechanical Plant	150	16-May-20	12-Oct-20	56	2d		CD
SAMESTW1020	Electrical Plant	180	16-May-20	11-Nov-20	103	2d		CD
SAMESTW1030	Instrumentation Plant	210	12-Mar-21	07-Oct-21	207	2d		CD
SAMESTW1040	BS Plant	210	06-Jan-22	03-Aug-22	36	2d		CD
SAMESTW1050	SCADA System	150	12-Mar-21	08-Aug-21	259	2d		CD
SAMESTW1060	Elevator	300	08-Sep-21	04-Jul-22	205	2d		CD
5.10 General Submission								
SAG1000	Prepare/ Submit Organization Chart	14	21-Nov-18 A	27-Nov-18 A		2d		CD
SAG1010	Prepare/ Submit The First Programme	7	21-Nov-18 A	26-Nov-18 A		2d		CD
SAG1020	Acceptace of the First Programme	42	27-Nov-18 A	03-Jan-19 A		2d		CD
SAG1030	Prepare/ Submit the first Revised Programme	30	04-Jan-19 A	08-Feb-19 A		2d		CD
SAG1040	Prepare/ Submit the first Three Month Rolling Programme	30	09-Jan-19	07-Feb-19*	21	2d		CD
SAG1050	Prepare/ Submit Draft Safey Plan	7	21-Nov-18 A	28-Nov-18 A		2d		CD
SAG1055	Acceptance of Draft Safety Plan	14	29-Nov-18 A	07-Mar-19 A		2d		CD
SAG1060	Prepare/ Submit Safety Plan	28	29-Nov-18 A	28-Dec-18 A		2d		CD
SAG1070	Prepare/ Submit Draft Environmental Management Plan	14	21-Nov-18 A	05-Dec-18 A		2d		CD
SAG1080	Prepare/ Submit Envrironment Management Plan	38	06-Dec-18 A	03-Jan-19 A		2d		CD
SAG1100	Prepare/ Submit SMP for Trip Ticket System	45	21-Nov-18 A	02-Jan-19 A		2d		CD
SAG1110	Prepare/ Submit Temporary Drainage Management Plan	45	14-Jan-19	27-Feb-19	-79	2d		CD
SAG1130	Prepare/ Submit Interface Management Plan	60	27-Feb-19	27-Apr-19*	30	2d		CD
SAG1140	Prepare/ Submit Subcontractor Management Plan	30	21-Nov-18 A	10-Apr-19 A		2d		CD
SAG1150	Prepare/ Submit Patrol Unit	7	21-Nov-18	27-Nov-18	318	2d		CD
SAG1160	Prepare/ Submit Contractor PII Policy	30	05-Feb-19	06-Mar-19*	86	2d		CD
SAG1170	Prepare/ Submit ICE PII Policy	60	21-Nov-18	19-Jan-19*	132	2d		CD
SAG1180	Prepare/ Submit Designer PII Policy	30	13-Mar-19	11-Apr-19*	14	2d		CD
SAG1200	Prepare/ Submit PM's Office Layout	14	21-Nov-18 A	29-Nov-18 A		2d		CD
SAG1210	Prepare/ Submit Details of NEC Initial Partnering and Collaborative Workshop	14	21-Nov-18 A	19-Dec-18 A		2d		CD
SAG1220	Prepare/ Submit Contractor's Management Staff	7	21-Nov-18 A	27-Nov-18 A		2d		CD
5.11 Commercial Submission								
SAC1000	Subcontacting Procedures	14	21-Nov-18 A	06-Dec-18 A		0d		CD
SAC1010	Procurement Procedures	14	21-Nov-18 A	28-Nov-18 A		0d		CD
5.12 Subletting Package								
SASP1000	Project Manager and Contractor's Site Office	60	01-Feb-19 A	01-Mar-19 A		3d		CD
SASP1010	Hoarding for PM's Site Office	14	05-Dec-18	18-Dec-18*	174	1d		CD
SASP1030	Independent Checking Engineer Services	14	04-Feb-19 A	15-Mar-19 A		3d		CD
SASP1040	Site Security Guard	28	05-Dec-18	01-Jan-19	119	1d		CD
SASP1050	Temporary Power and Water Supply Construction	14	05-Dec-18	18-Dec-18	6	3d		CD
SASP1060	Landscaping Works	28	21-Mar-22	17-Apr-22*	-110	3d		CD
SASP1070	Structural Works for Retaining Wall	28	23-Dec-20	19-Jan-21*	-103	3d		CD
SASP1080	Pre-bored Socket H-Piling (TSTP)	56	23-Dec-18	16-Feb-19	-42	3d		CD
SASP1085	Pre-bored Socket H-Piling (STK STW)	60	02-Dec-20	30-Jan-21*	-106	3d		CD
SASP1090	Pre-Drilling Works	39	01-Feb-19 A	06-Mar-19 A		3d		CD
SASP1100	Excvavation, Lateral Support Installation and Backfilling Works for STK STW	56	19-Oct-20	13-Dec-20*	-102	3d		CD
SASP1120	Structural Works for TSTP	56	21-Nov-18	15-Jan-19*	117	3d		CD
SASP1130	Strutural Work for STK STW	56	28-Oct-20	22-Dec-20	-103	3d		CD
SASP1140	E&M Works for TSTP	84	19-Dec-18 A	01-Mar-19 A		3d		CD
SASP1145	E&M Works for STK STW	84	29-Mar-19	20-Jun-19	36	3d		CD
SASP1150	HDD Works	68	19-May-19	25-Jul-19	125	3d		CD
SASP1160	Connection of HDPE Pipe	28	29-Apr-21	26-May-21*	-65	3d		CD



BUILD KING - KUM SHING JV

Milestone
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EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

Data Date: 21-Nov-18 **Run Date: 22-May-19**

Project ID :Mth Update_201905
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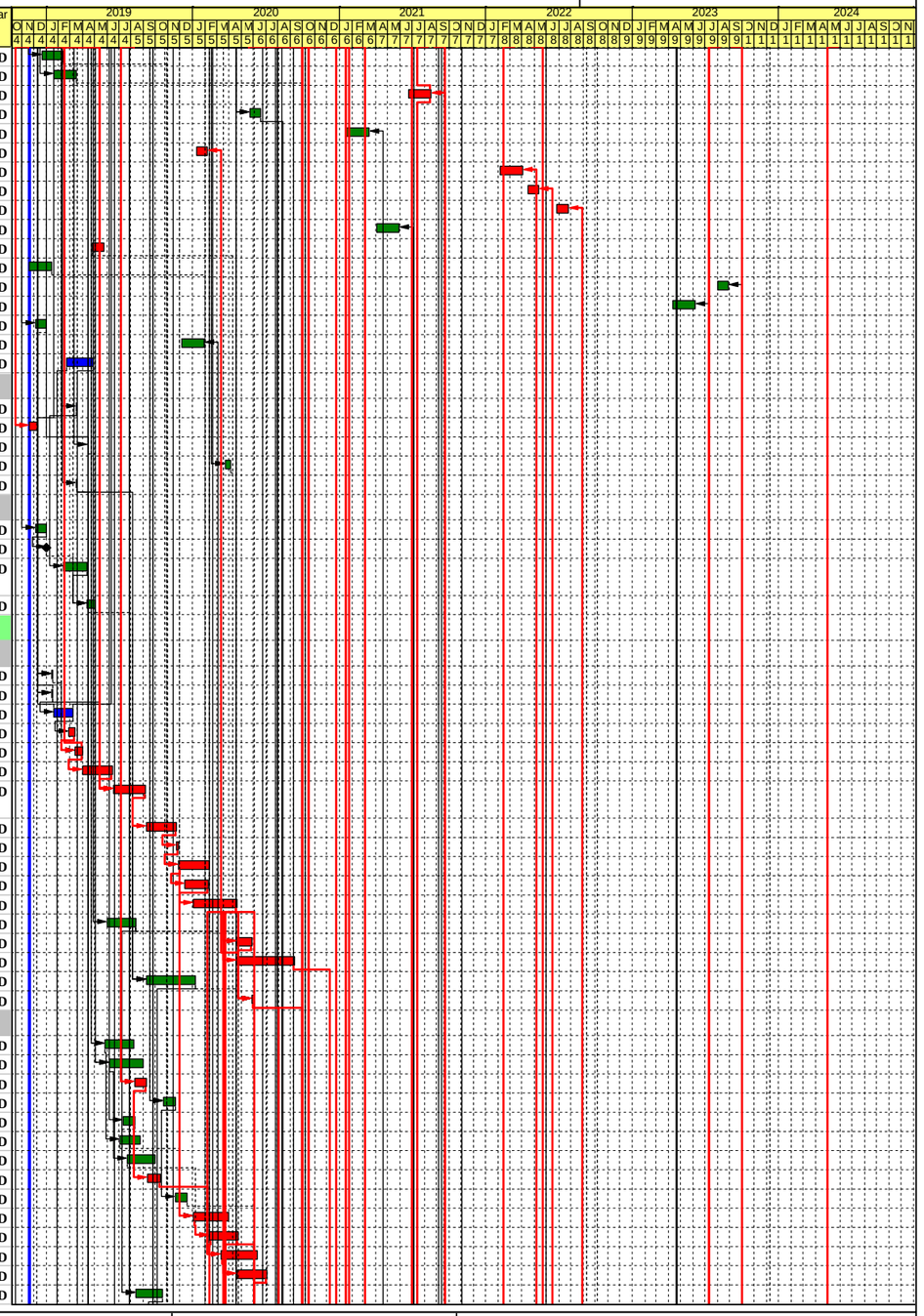
Activity ID	Activity Name	Original Duration	Start	Finish	Total Float	Time Risk Allowance	Major Resource	Calendar
SASP1170	Supply, Install and Removal of Temporary Steel Cofferdam for HDD Receiving Pit	56	21-Dec-18	14-Feb-19	425	3d		CD
SASP1180	Supply, Install and Removal of Temporary Steel Cofferdam for HDD Entry Pit	56	20-Jan-19	16-Mar-19	484	3d		CD
SASP1190	Dredging and Installation of Outfall Diffuser	56	23-Jun-21	17-Aug-21	-77	3d		CD
SASP1200	Fabrication of Outfall Diffuser Unit	28	22-May-20	18-Jun-20	176	3d		CD
SASP1210	ABWF Works for STK STW	56	19-Jan-21	15-Mar-21*	32	3d		CD
SASP1220	Railing and Steel Staircase of TSTP	28	10-Jan-20	06-Feb-20*	-158	3d		CD
SASP1230	Flooring and Railing for STK STW	56	05-Feb-22	01-Apr-22*	-56	3d		CD
SASP1240	Waterproofing	28	15-Apr-22	12-May-22*	-111	3d		CD
SASP1250	Plumbing Works	28	27-Jun-22	24-Jul-22*	-59	3d		CD
SASP1260	Steel Door, Louver and Skylight	56	05-Apr-21	30-May-21*	31	3d		CD
SASP1270	Drainage and Sewerage Works	30	26-Apr-19	25-May-19*	0	3d		CD
SASP1280	Trenchless Works	56	21-Nov-18	15-Jan-19	919	3d		CD
SASP1290	Demolition Works (STK STW & STK PS)	28	01-Aug-23	28-Aug-23	281	3d		CD
SASP1300	Road Works	56	13-Apr-23	07-Jun-23	363	3d		CD
SASP1310	Hydrographic Survey	28	05-Dec-18	01-Jan-19	562	3d		CD
SASP1320	Sewerage Works in Tong To	56	06-Dec-19	30-Jan-20*	30	3d		CD
SASP1330	Marine GI (CNE-001)	60	22-Feb-19 A	29-Apr-19 A		3d		CD
5.13 Specialist Consultant/ Professional Services								
SAPS1000	Nominate/ Submit Traffic Consultant	1	18-Mar-19 A	18-Mar-19 A		2d		CD
SAPS1010	Nominate/ Submit Environmental Team (by the Employer)	21	21-Nov-18	11-Dec-18	-140	2d		CD
SAPS1020	Nominate/ Submit ICE	21	15-Apr-19 A	15-Apr-19 A		2d		CD
SAPS1030	Nominate/ Submit BIM Specialist	14	23-Mar-20	05-Apr-20	51	2d		CD
SAPS1040	Nominate/ Submit Condition Survey	21	18-Mar-19 A	18-Mar-19 A		2d		CD
5.14 XP and Temporary Traffic Arrangement Scheme								
SATTA1000	Application of XP (by Employer)	28	05-Dec-18	01-Jan-19	283	0d		CD
SATTA1010	Issurance of XP for Exacavation in Shun Hing St and STKSTW access road	0		01-Jan-19	283	0d		CD
SATTA1020	Design, Submission and Approval of TTA for Sewerage Work in STK Town and STKSTW access road	60	12-Feb-19	12-Apr-19	182	2d		CD
SATTA1030	Implementation of TTA Scheme (Road Works Advice)	21	13-Apr-19	03-May-19	182	2d		CD
6.0 Section 1 Temporary Sewage Treatment Plant								
6.1 Civil Works								
S1TSTC1000	Site Clearance	8	14-Jan-19 A	19-Jan-19 A		0.5d		WD
S1TSTC1005	Site Gate and Barriers	20	14-Jan-19 A	19-Jan-19 A		1d		WD
S1TSTC1006	Trial pit	14	21-Jan-19 A	10-Mar-19 A		2d		WD
S1TSTC1009	Late Commencement of Pre-drilling work due to shortage of labour/ equipment (EW-009)	15	26-Feb-19	14-Mar-19	-136	0d		WD
S1TSTC1010	Ground Investigation (Pre-drilling 8 nos.)	15	15-Mar-19	01-Apr-19	-136	1d	1 no. of pre-drilling rig	WD
S1TSTC1011	Extra Ground Investigation Works due to unexpected ground condition (EW-010)	58	02-Apr-19	15-Jun-19	-136	1d		WD
S1TSTC1020	Piling (22nos.H pile @ 80m deep from GL)	70	17-Jun-19	06-Sep-19	-136	3d	1 no. of pre-bored H piling rig	WD
S1TSTC1025	Extra Piling Works due to unexpected ground condition (EW-010 & CNE-003)	62	07-Sep-19	21-Nov-19	-136	3d		WD
S1TSTC1026	Loading Test	5	22-Nov-19	27-Nov-19	-136	0.5d		WD
S1TSTC1030	Substructure (Footing/pilecap/ column)	59	28-Nov-19	11-Feb-20	-136	3d	1 no. Mobile Crane (25t)	WD
S1TSTC1040	Superstructure (G.L. 1 to 5) (Floor Slab/Water Tanks)	45	13-Dec-19	10-Feb-20	-117	3d	1 no. Mobile Crane (25t)	WD
S1TSTC1050	Superstructure (G.L. 5 to 7) (Floor Slab/Water Tanks)	88	02-Jan-20	21-Apr-20*	-136	3d	1 no. Mobile Crane (25t)	WD
S1TSTC1055	Inlet Pumping Station (IPS)	60	01-Jun-19	12-Aug-19	7	4d	1 no. Mobile Crane (25t)	WD
S1TSTC1056	Piping Connection between IPS and TSTP	30	22-Apr-20	28-May-20	-54	4d		WD
S1TSTC1060	Staircases & Handrails	120	22-Apr-20	12-Sep-20	-127	4d		WD
S1TSTC1070	Rising Main for Sewage Diversion to IPS	100	07-Sep-19	08-Jan-20	45	4d	1 no. Backhoe (max. 14t)	WD
S1TSTC1080	Diversion of Sewage to IPS via new Rising Main	3	29-May-20	01-Jun-20	-54	1d	1 no. Backhoe (max. 14t)	WD
6.2 E&M Works								
S1TSTE1000	FAT of Mechanical Plant	60	28-May-19	07-Aug-19	4	3d		WD
S1TSTE1010	FAT of Electrical Plant	72	08-Jun-19	31-Aug-19	4	3d		WD
S1TSTE1015	FAT of MBBR System	26	10-Aug-19	09-Sep-19	-5	1d		WD
S1TSTE1016	FAT of SCADA System	26	21-Oct-19	19-Nov-19	27	1d		WD
S1TSTE1017	FAT of LV Switch Boards and control (MCC) panels	26	11-Jul-19	09-Aug-19	9	1d		WD
S1TSTE1020	Delivery of Mechanical Plant	45	04-Jul-19	24-Aug-19	4	2d		WD
S1TSTE1030	Delivery of Electrical Plant	60	22-Jul-19	30-Sep-19	4	3d		WD
S1TSTE1035	Delivery of MBBR System	26	10-Sep-19	12-Oct-19	-5	1d		WD
S1TSTE1036	Delivery of SCADA System Plant	26	20-Nov-19	19-Dec-19	27	1d		WD
S1TSTE1040	Mechanical Engineering Works (GL 1 to 5)	72	03-Jan-20	30-Mar-20	-117	3d		WD
S1TSTE1050	Electrical Engineering Works (GL 1 to 5)	60	11-Feb-20	24-Apr-20	-117	3d		WD
S1TSTE1055	Mechanical Engineering Works (GL 5 to 7 & IPS)	72	13-Mar-20	11-Jun-20	-129	3d		WD
S1TSTE1060	Electrical Engineering Works (GL 5 to 7 & LVSR & IPS)	60	22-Apr-20	04-Jul-20	-129	3d		WD
S1TSTE1070	Electrical Engineering Works in LV Swith Room	55	13-Aug-19	18-Oct-19	7	3d		WD



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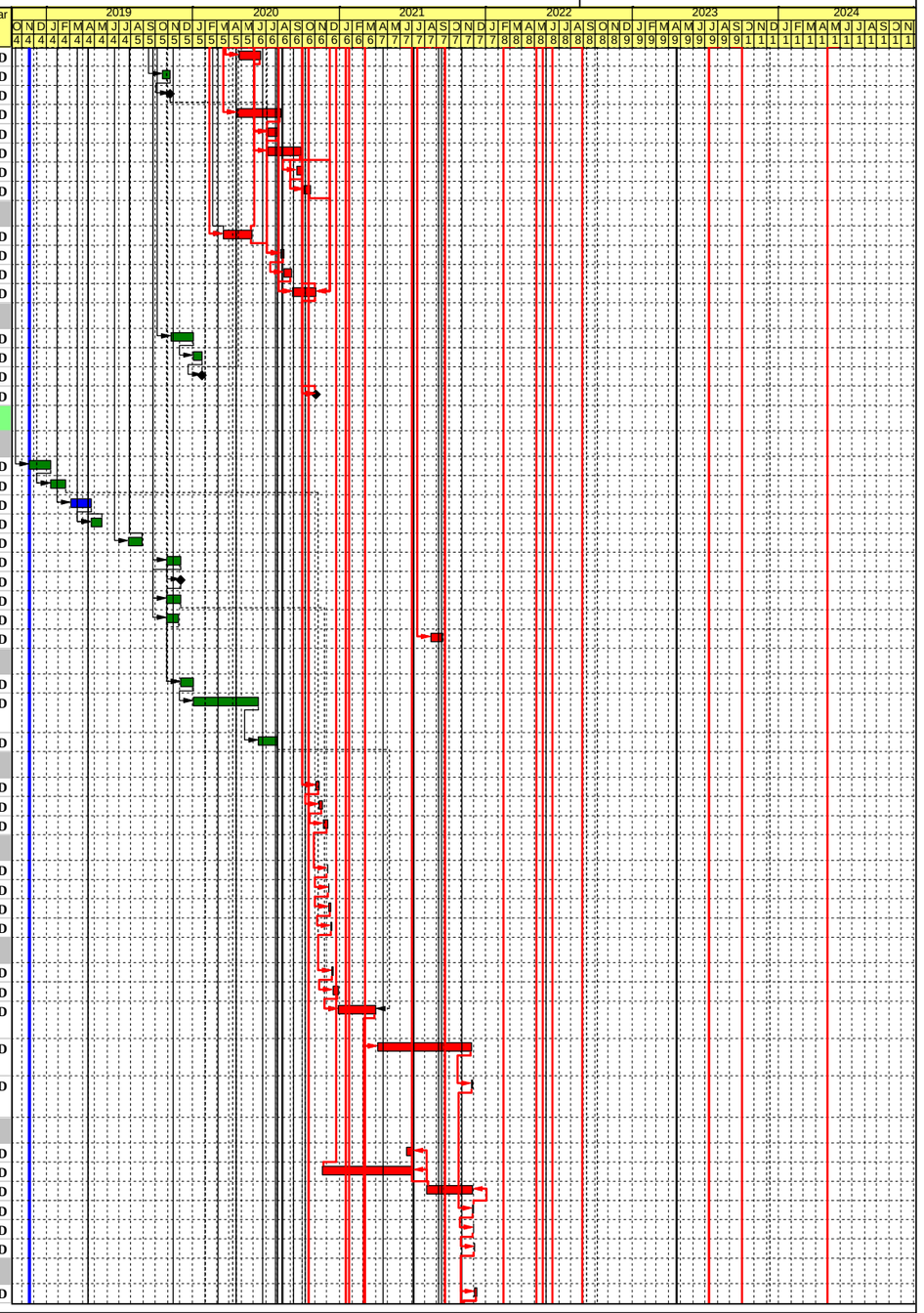
S1TSTE1075	Electrical Works of Container MCC and Central Control Room	45	25-Apr-20	18-Jun-20	-117	2d		WD
S1TSTE1076	Handover to CLP and E&M Works by CLP	14	19-Oct-19	04-Nov-19	7	0d		WD
S1TSTE1080	Energization	0		04-Nov-19	7	0d		WD
S1TSTE1090	Instrumentation Works	90	22-Apr-20	08-Aug-20	-134	3d		WD
S1TSTE1100	SCADA System	25	06-Jul-20	03-Aug-20	-129	1d		WD
S1TSTE1110	BS Works and Fire Service Installation Works	72	06-Jul-20	26-Sep-20	-125	3d		WD
S1TSTE1115	WSD Inspection	14	16-Sep-20	03-Oct-20	-125	1d		WD
S1TSTE1120	FSD Inspection	14	05-Oct-20	20-Oct-20	-125	1d		WD
6.3 T&C								
S1TSTTC1000	Pre-commissioning Phase (SATs)	72	17-Mar-20	27-May-20	-125	3d		CD
S1TSTTC1010	System Commissioning Phase (test + record submit)	7	09-Aug-20	15-Aug-20	-165	1d		CD
S1TSTTC1020	MBBR System Process Start Up (test + Lab result)	20	16-Aug-20	04-Sep-20	-165	1d		CD
S1TSTTC1030	Plant Commissioning Phase (notification + test + lab result)	60	05-Sep-20	03-Nov-20	-165	0d		CD
6.4 Handover of Existing STK STW and Operation Period								
S1TSTOP1000	Pre-Handover Period	56	08-Nov-19	02-Jan-20	56	0d		CD
S1TSTOP1010	Transition Period	21	03-Jan-20	23-Jan-20	56	0d		CD
S1TSTOP1020	Handover of Existing STK STW and Start of STK STW Operation Period	0		23-Jan-20	56	0d		CD
S1TSTOP1030	Start of TSTP Operation Period	0	04-Nov-20		-165	0d		CD
7.0 Section 2 Submarine Outfall								
7.1 Preparation Works								
S2HDDP1000	Coordination with owner of STK Fish Culture Zone	52	21-Nov-18	11-Jan-19	552	0d		CD
S2HDDP1010	Hydrographic Survey at Diffuser Location (Initial)	30	12-Jan-19	19-Feb-19	445	3d		WD
S2HDDP1015	Application and Approval of Marine Department Notice (Marine GI)	28	05-Mar-19 A	23-Apr-19 A		0d		CD
S2HDDP1020	Additional Marine GI (CNE-001)	21	23-Apr-19	18-May-19	104	5d		WD
S2HDDP1025	Design of HDD Profile	30	26-Jul-19	29-Aug-19	104	2d		WD
S2HDDP1030	Application of Marine Department Notice (HDD Works)	30	29-Oct-19	02-Dec-19	105	0d		WD
S2HDDP1040	Approval of Marine Department Notice (HDD Works)	0		02-Dec-19	105	0d		WD
S2HDDP1050	Setting up Guidance System (sea coil)	30	29-Oct-19	02-Dec-19	223	6d		WD
S2HDDP1060	Notification to EPD	30	29-Oct-19	27-Nov-19	139	0d		CD
S2HDDP1070	Application of Marine Dumping Permit	30	18-Aug-21	16-Sep-21*	-47	0d		CD
7.2 Receiving Pit at Sea Side								
S2HDDRP1000	Installation of Slit Curtain for Marine Sheetpiling Works	24	03-Dec-19	02-Jan-20	105	1d		WD
S2HDDRP1010	Construction of Sheetpile Cofferdam	130	03-Jan-20	12-Jun-20	105	7d	1 set of Barge with Crane and vibro hammer	WD
S2HDDRP1020	Installation of Wailings and Structs	40	13-Jun-20	31-Jul-20	105	3.5d		WD
7.3 Entry Pit								
S2HDDEP1000	Site Clearance	6	04-Nov-20	10-Nov-20	-95	0.5d		WD
S2HDDEP1010	Construction of Sheetpile Cofferdam	9	11-Nov-20	20-Nov-20	-95	1d		WD
S2HDDEP1020	Excavation and Installation of Wailing & Strut	9	21-Nov-20	01-Dec-20	-95	1d		WD
7.4 Installation of Temporary Casing at Land Side								
S2HDDTC1000	Mobilization of DTH Rig	2	02-Dec-20	03-Dec-20	-95	0.5d		WD
S2HDDTC1010	Setting Up of Rig and Equipment	1	04-Dec-20	04-Dec-20	-95	0.5d		WD
S2HDDTC1020	Drilling and Installation of Temporary Casing	5	05-Dec-20	10-Dec-20	-95	1d	1 no. of DTH Rig	WD
S2HDDTC1030	Demobilization of DTH Rig	2	11-Dec-20	12-Dec-20	-95	0.5d		WD
7.5 Horizontal Directional Drilling								
S2HDDD1000	Mobilization of HDD Plant and Equipment	3	14-Dec-20	16-Dec-20	-95	0.5d		WD
S2HDDD1010	Establishment of HDD Plant and Equipment	9	17-Dec-20	29-Dec-20	-95	1d		WD
S2HDDD1020	Drill Pilot Hole	76	30-Dec-20	01-Apr-21	-95	1d	1 no. of HDD Drilling Rig, 1 no. of Mobile	WD
S2HDDD1030	Back Reaming HDD Hole	194	06-Apr-21	25-Nov-21	-95	3d	1 no. of HDD Drilling Rig, 1 no. of Mobile	WD
S2HDDD1040	Final HDD Hole Cleaning	2	26-Nov-21	27-Nov-21	-95	0.5d	1 no. of HDD Drilling Rig, 1 no. of Mobile	WD
7.6 HDPE Pipe Connection and Pipe Pulling								
S2HDDPP1000	Setup Temporary Platform for HDPE Pipe Connection	14	16-Jun-21	02-Jul-21*	-78	2d		WD
S2HDDPP1005	Fabrication and Delivery of HDPE Pipe	180	20-Nov-20	02-Jul-21	-40	7d		WD
S2HDDPP1010	Connection of HDPE Pipe	94	07-Aug-21	27-Nov-21	-78	3d		WD
S2HDDPP1020	Preparation Works for Pipe Pulling	2	29-Nov-21	30-Nov-21	-95	0.5d		WD
S2HDDPP1030	Pulling HDPE Pipe	2	01-Dec-21	02-Dec-21	-95	0.5d		WD
S2HDDPP1040	Final Cleaning HDPE Pipe and Demobilization of HDD Plant at Sea Side	1	03-Dec-21	03-Dec-21	-95	0d		WD
7.7 Demobilization and Dismantling of HDD Works								
S2HDDDM1000	Demobilization of HDD Plant and Equipment	6	04-Dec-21	10-Dec-21	-65	0.5d		WD



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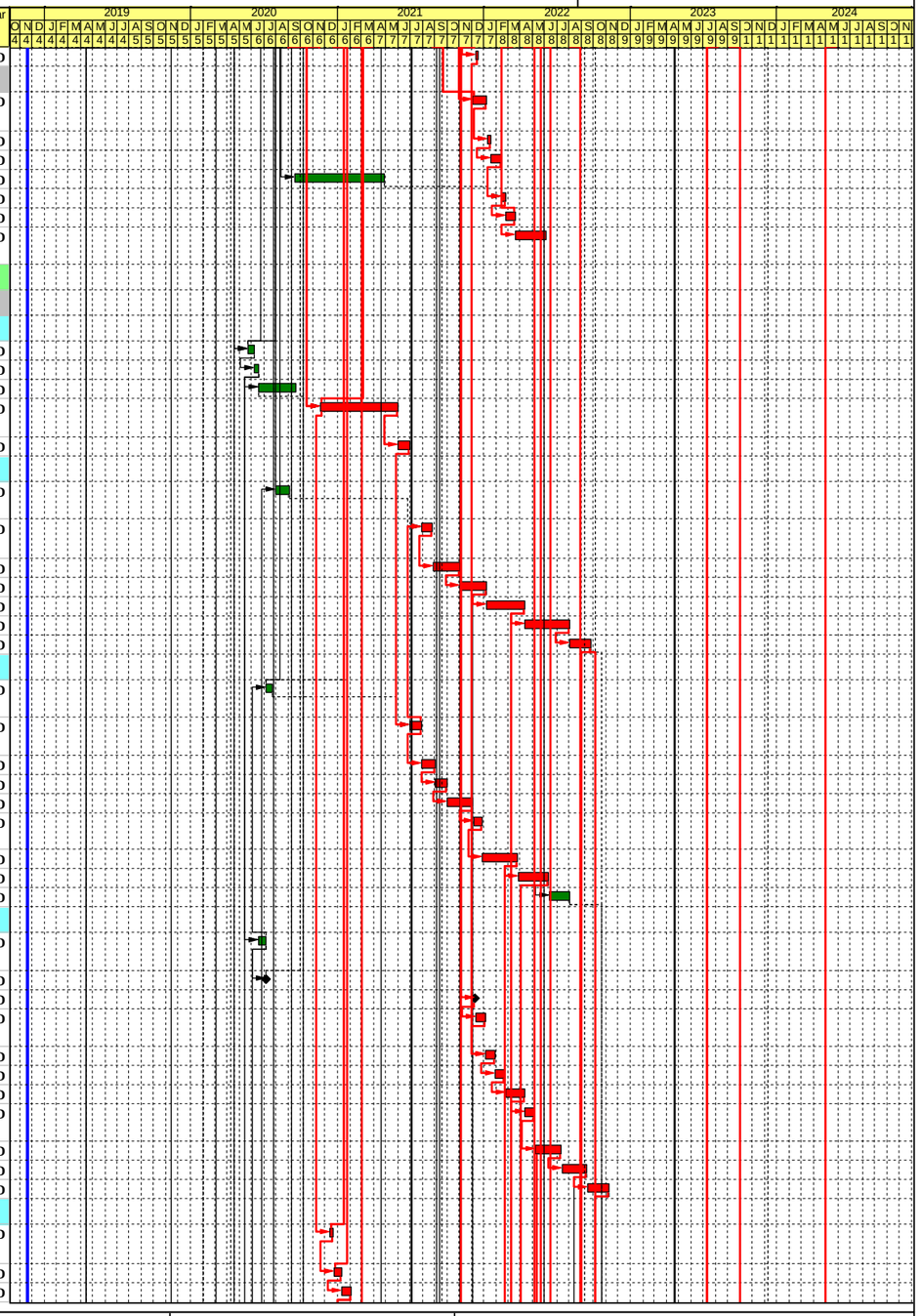
S2HDDDM1010	Removal of Temporary Cofferdam for Entry Pit	7	11-Dec-21	18-Dec-21	-54	0.5d		WD
7.8 Outfall Diffuser								
S2HDDOD1000	Dredging of Marine Deposit for Diffuser	28	04-Dec-21	08-Jan-22	-95	5d	1 no. of Derrick Barge, 1 no. Split Hopper Barge	WD
S2HDDOD1010	Hydrographic Survey of Diffuser Formation Profile and Approval	7	10-Jan-22	17-Jan-22	-95	1d		WD
S2HDDOD1020	Backfilling Work (up to invert of Diffuser)	21	18-Jan-22	14-Feb-22	-95	1d	1 no. of Derrick Barge	WD
S2HDDOD1025	Fabrication of Diffuser	180	17-Sep-20	28-Apr-21	142	7d	1 no. of Derrick Barge	WD
S2HDDOD1030	Installation of Diffuser	8	15-Feb-22	23-Feb-22	-95	1d	1 no. of Derrick Barge	WD
S2HDDOD1040	Backfilling Works (up to existing seabed level)	21	24-Feb-22	19-Mar-22	-95	1d	1 no. of Derrick Barge	WD
S2HDDOD1050	Removal of Temporary Cofferdam for Receiving Pit	60	21-Mar-22	04-Jun-22*	-53	3d	1set of Barge with Crane and vibro hammer	WD
8.0 Section 3 Sha Tau Kok Sewage Treatment Plant								
8.1 Civil Works								
8.1.1 Ground Investigation and Piling								
S3STWCP1000	Site Clearance and Demolition of Existing STW	14	22-May-20	06-Jun-20	4	1d		WD
S3STWCP1005	Site Formation and Mobilization of Piling Equipment	10	08-Jun-20	18-Jun-20	4	1d		WD
S3STWCP1010	Ground Investigation	78	19-Jun-20	19-Sep-20	13	5d	2 nos. of pre-drilling rig	WD
S3STWCP1020	Piling Works	156	19-Nov-20	01-Jun-21	-99	8d	2 nos. of pre-bored H piling rig	WD
S3STWCP1030	Loading Test	28	02-Jun-21	29-Jun-21	-109	1d		CD
8.1.2 Area A (GL4-7/A-C) Structural Construction								
S3STWCA1010	Sheetpiling Works@Area A (North)	30	01-Aug-20	04-Sep-20	27	1d	1 no. of Backhoe with vibro hammer	WD
S3STWCA1015	Excavation to Founding Level	25	29-Jul-21	26-Aug-21	-87	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCA1040	1st Basement Floor- Base Slab	54	27-Aug-21	01-Nov-21	-87	3d		WD
S3STWCA1050	1st Basement Floor- Wall Sem	54	02-Nov-21	06-Jan-22	-87	3d		WD
S3STWCA1070	Ground Floor- Base Slab & Wall Stem	78	07-Jan-22	12-Apr-22	-87	3d		WD
S3STWCA1080	1st Floor- Base Slab & Wall Stem	90	13-Apr-22	02-Aug-22	-87	3d		WD
S3STWCA1090	Roof Floor- Base Slab and Upstand Wall	45	03-Aug-22	24-Sep-22	-87	2d		WD
8.1.3 Area B (GL1-4/A-C) Structural Construction								
S3STWCB1005	Sheetpiling Works@Area B (West)	14	08-Jul-20	23-Jul-20	10	1d	1 no. of Backhoe with vibro hammer	WD
S3STWCB1006	Excavation to Founding Level	24	30-Jun-21	28-Jul-21	-87	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCB1010	1st Basement Floor- Base Slab	30	29-Jul-21	01-Sep-21	-67	1d		WD
S3STWCB1015	Installation of Raking Struts	24	02-Sep-21	30-Sep-21	-67	1d		WD
S3STWCB1020	1st Basement Floor- Remaining Base Slab & Wall Stem	54	02-Oct-21	04-Dec-21	-67	3d		WD
S3STWCB1030	Backfill and Remove ELS	18	06-Dec-21	28-Dec-21	-67	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCB1040	Ground Floor- Base Slab & Wall Stem	72	29-Dec-21	26-Mar-22	-67	3d		WD
S3STWCB1050	1st Floor- Base Slab & Wall Stem	60	28-Mar-22	11-Jun-22	-67	3d		WD
S3STWCB1060	Roof Floor- Base Slab and Upstand Wall	42	13-Jun-22	01-Aug-22	33	2d		WD
8.1.4 Area C (GL 1-4//C-G) Structural Construction								
S3STWCC1005	Sheetpiling Works@Area C(West)	14	19-Jun-20	07-Jul-20	4	1d	1 no. of Backhoe with vibro hammer	WD
S3STWCC1006	Handover to HDD Subcontractor	0		07-Jul-20	4	0d		WD
S3STWCC1007	HDD Subcontractor Handover to Contractor after HDD Works	0		10-Dec-21	-65	0d		WD
S3STWCC1008	Excavation to Founding Level	18	11-Dec-21	04-Jan-22	-65	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCC1010	1st Basement Floor- Base Slab	21	05-Jan-22	28-Jan-22	-65	1d		WD
S3STWCC1015	Installation of Raking Struts	18	29-Jan-22	22-Feb-22	-65	1d		WD
S3STWCC1020	1st Basement Floor- Remaining Base Slab & Wall Stem	42	23-Feb-22	13-Apr-22	-65	2d		WD
S3STWCC1030	Backfill and Remove ELS	18	14-Apr-22	07-May-22	-65	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCC1040	Ground Floor- Base Slab & Wall Stem	54	10-May-22	13-Jul-22	-65	3d		WD
S3STWCC1050	1st Floor- Base Slab & Wall Stem	54	14-Jul-22	15-Sep-22	-50	3d		WD
S3STWCC1060	Roof Floor- Base Slab and Upstand Wall	45	16-Sep-22	09-Nov-22	-50	2d		WD
8.1.5 Area D (GL 4-7/ C-G) Structural Construction								
S3STWCD1010	Excavation to Founding Level of Aerobic Tank no. 4 & 5	8	14-Dec-20	22-Dec-20	-99	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCD1020	Aerboic Tanks no. 4 & 5- Base Slab	14	23-Dec-20	11-Jan-21	-95	1d		WD
S3STWCD1030	Aerboic Tanks no. 5- Wall Stem	21	12-Jan-21	04-Feb-21	-95	1d		WD



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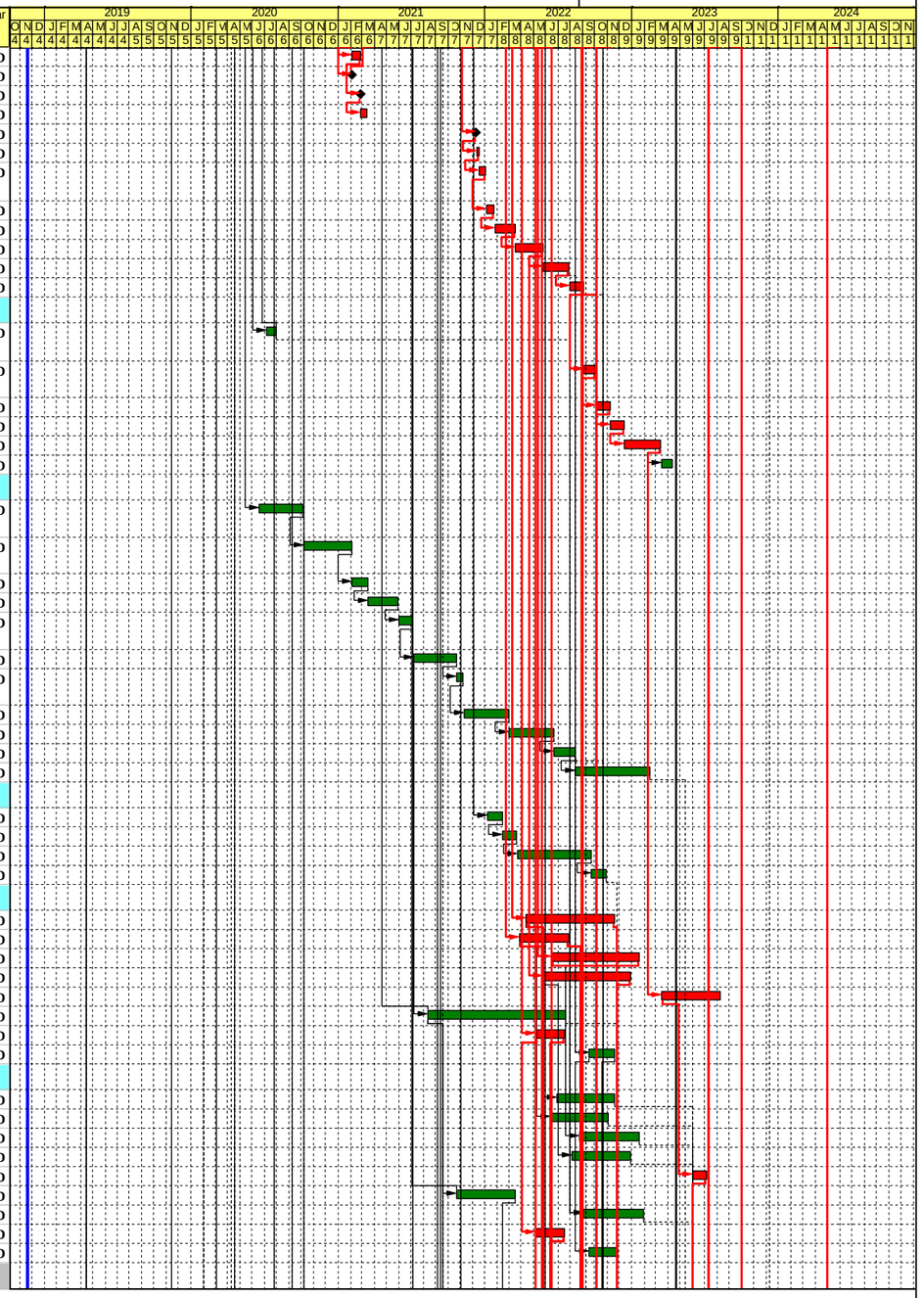
S3STWCD1040	Aerboic Tanks no. 4- Wall Stem	14	05-Feb-21	24-Feb-21	-95	1d		WD
S3STWCD1050	Handover Aerboic Tank no. 5 to HDD Subcontactor for Temp Water Tank	0		04-Feb-21	-50	0d		WD
S3STWCD1060	Handover Aerboic Tanks no. 4 to Tower Crane Subcontractor	0		24-Feb-21	-95	0d		WD
S3STWCD1070	Erection of Tower Crane (TC-01)	14	25-Feb-21	12-Mar-21*	-95	1d		WD
S3STWCD1080	HDD Subcontractor Handover to Contractor after HDD Works	0		10-Dec-21	-57	0d		WD
S3STWCD1090	Dismantling of Tower Crane	5	11-Dec-21	16-Dec-21	-57	0.5d		WD
S3STWCD1100	Excavation to Founding Level (Remaining Structure in 1st Basement Floor)	12	17-Dec-21	03-Jan-22	-57	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCD1110	1st Basement Floor- Base Slab	18	04-Jan-22	24-Jan-22	-57	1d		WD
S3STWCD1120	1st Basement Floor- Wall Stem	42	25-Jan-22	17-Mar-22	-57	2d		WD
S3STWCD1140	Ground Floor- Base Slab & Wall Stem	54	18-Mar-22	25-May-22	-57	3d		WD
S3STWCD1150	1st Floor- Base Slab & Wall Stem	54	26-May-22	29-Jul-22	-57	3d		WD
S3STWCD1160	Roof- Base Slab and Upstand Wall	30	30-Jul-22	02-Sep-22	-57	1d		WD
8.1.6 Area E (GL 4-8/ FS Tanks) Structural Construction								
S3STWCE1000	Sheetpiling Works@Area E (South)	21	08-Jul-20	31-Jul-20	27	1d	1 no. of Backhoe with vibro hammer	WD
S3STWCE1005	Excavation to Founding Level	24	03-Sep-22	03-Oct-22	-57	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCE1010	1st Basement Floor- Base Slab	30	05-Oct-22	08-Nov-22	-57	1d		WD
S3STWCE1015	Installation of Raking Struts	30	09-Nov-22	13-Dec-22	-57	1d		WD
S3STWCE1020	1st Basement Floor- Remaining Base Slab, Wall Stem & Ceilng	72	14-Dec-22	14-Mar-23	-57	3d		WD
S3STWCE1030	Backfill and Remove ELS	21	15-Mar-23	12-Apr-23	341	1d		WD
8.1.7 Area F (GL 7-9/A-F) Structural Construction								
S3STWCF1010	Sheetpiling Works	90	19-Jun-20	06-Oct-20	23	3d	1 no. of Backhoe with vibro hammer	WD
S3STWCF1011	ELS (6 layer of struts)	100	07-Oct-20	04-Feb-21	23	3d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCF1012	2nd Basement Floor- Base Slab	30	05-Feb-21	15-Mar-21	23	1d		WD
S3STWCF1015	2nd Basement Floor- Wall Stem	60	16-Mar-21	29-May-21	23	3d		WD
S3STWCF1016	Backfill and Remove ELS (3th to 6th Layers)	30	31-May-21	06-Jul-21	23	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCF1020	1st Basement Floor- Base Slab & Wall Stem	90	07-Jul-21	22-Oct-21	23	3d		WD
S3STWCF1030	Backfill and Remove ELS (1st to 2nd Layers)	14	23-Oct-21	08-Nov-21	23	1d	1 no. of Backhoe (20t), 1 no. of Backhoe (14t)	WD
S3STWCF1040	Ground Floor- Base Slab & Wall Stem	90	09-Nov-21	28-Feb-22	23	3d		WD
S3STWCF1050	1st Floor- Base Slab & Wall Stem	90	01-Mar-22	20-Jun-22	23	3d		WD
S3STWCF1060	Roof- Base Slab and Upstand Wall	45	21-Jun-22	12-Aug-22	23	2d		WD
S3STWCF1070	Construction of Emergency Discharge Chamber and Safety Bypass	150	13-Aug-22	14-Feb-23	34	5d		WD
8.1.8 Pipe Gallery Structural Construction								
S3STWCPG1000	Installation of Raking Struts	30	07-Jan-22	14-Feb-22	55	1d		WD
S3STWCPG1010	Excavation to Founding Level	30	15-Feb-22	21-Mar-22	55	1d	1 no. of Backhoe (20t)	WD
S3STWCPG1020	Pipe Gallery- Base Slab and Wall Stem	150	22-Mar-22	21-Sep-22	55	5d		WD
S3STWCPG1030	Backfill and Remove ELS	30	22-Sep-22	28-Oct-22	55	1d	1 no. of Backhoe (20t)	WD
8.1.9 ABWF Works								
S3STWCAD1000	ABWF Works for Area A	180	13-Apr-22	18-Nov-22	-46	10d		WD
S3STWCAD1010	ABWF Works for Area B	100	28-Mar-22	29-Jul-22	-33	6d		WD
S3STWCAD1020	ABWF Works for Area C	180	15-Jun-22	18-Jan-23	-65	10d		WD
S3STWCAD1030	ABWF Works for Area D	180	26-May-22	29-Dec-22	-56	10d		WD
S3STWCAD1040	ABWF Works for Area E	120	15-Mar-23	09-Aug-23	-57	6d		WD
S3STWCAD1050	ABWF Works for Area F	280	11-Aug-21	21-Jul-22	25	14d		WD
S3STWCAD1060	ABWF Works for Transformer Room A and LV Main Switch Room	60	06-May-22	18-Jul-22	-67	3d		WD
S3STWCAD1070	ABWF Works for Transformer Room B	54	16-Sep-22	19-Nov-22	6	3d		WD
8.1.10 Door, Louver & Skylight								
S3STWCDL1000	Door and Louver in Area A	120	28-Jun-22	18-Nov-22	126	6d		WD
S3STWCDL1010	Door and Louver in Area B	120	13-Jun-22	03-Nov-22	139	6d		WD
S3STWCDL1020	Door and Louver in Area C	120	25-Aug-22	18-Jan-23	77	6d		WD
S3STWCDL1030	Door and Louver in Area D	120	06-Aug-22	29-Dec-22	93	6d		WD
S3STWCDL1040	Door and Louver in Area E	30	31-May-23	05-Jul-23	-57	1d		WD
S3STWCDL1050	Door and Louver in Area F	120	23-Oct-21	18-Mar-22	26	6d		WD
S3STWCDL1060	Skylight (2 nos.)	120	03-Sep-22	31-Jan-23	69	6d		WD
S3STWCDL1070	Door and Louver in Transformer Room A and LV Main Switch Room	60	06-May-22	18-Jul-22	-67	3d		WD
S3STWCDL1080	Door and Louver in Transformer Room B	60	16-Sep-22	26-Nov-22	30	3d		WD
8.2 E&M Works								



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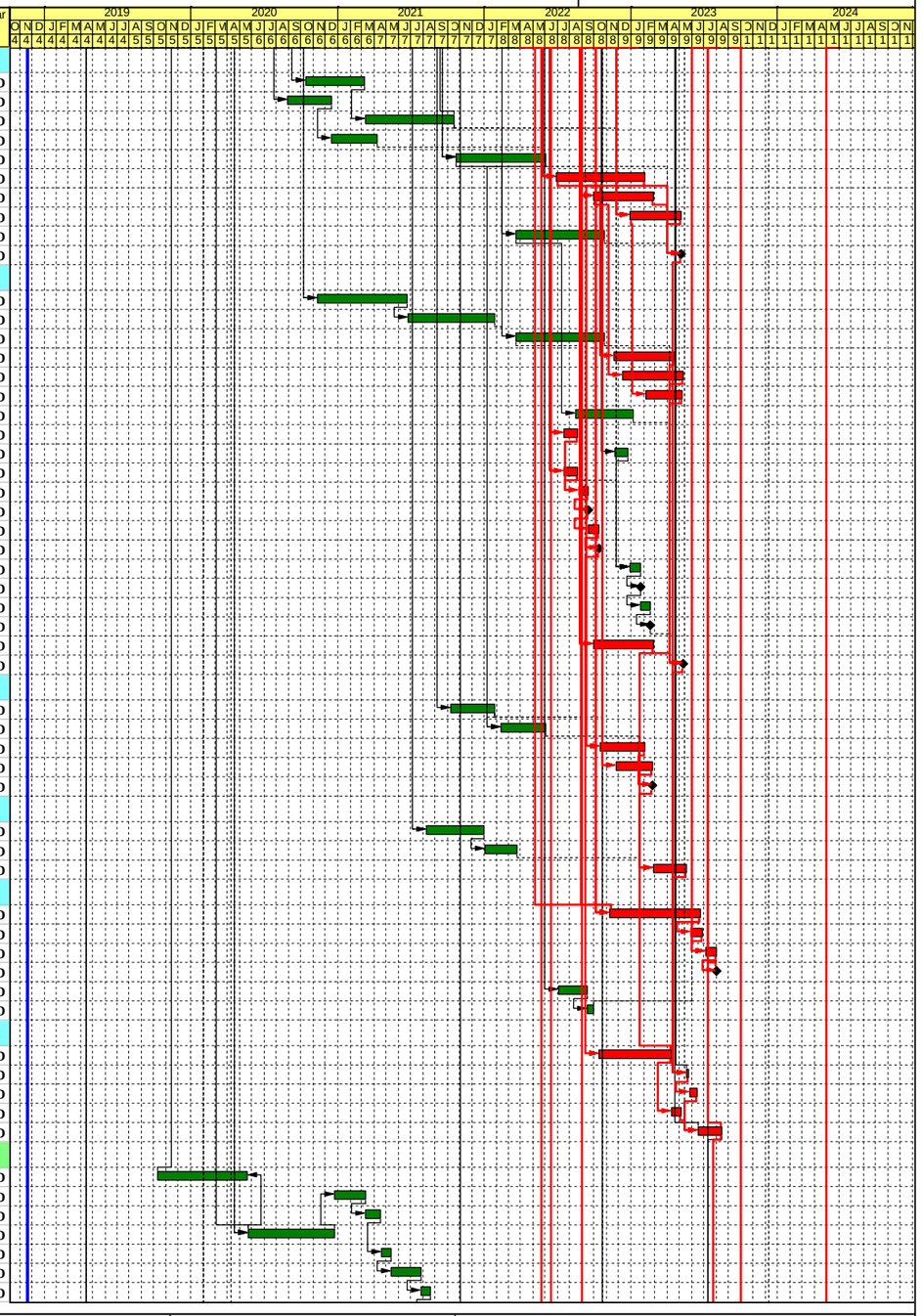
8.2.1 Mechanical Engineering Works								
S3STWEM1001	FAT of Major Mechanical Plant	120	13-Oct-20	09-Mar-21	47	5d		WD
S3STWEM1002	FAT of MBR System	90	29-Aug-20	15-Dec-20	315	5d		WD
S3STWEM1003	Delivery of Major Mechanical Plant	180	10-Mar-21	16-Oct-21	47	14d		WD
S3STWEM1004	Delivery of MBR System	90	16-Dec-20	09-Apr-21	315	5d		WD
S3STWEM1009	Mechanical Works in Screening Area (GL 7 to 9)	180	23-Oct-21	02-Jun-22	42	7d		WD
S3STWEM1010	Mechanical Works in MBR Tanks Area (GL 3 to 7)	180	28-Jun-22	03-Feb-23	-46	7d		WD
S3STWEM1020	Mechanical Works in Permeate Pump Area (GL 1 to 3)	120	30-Sep-22	25-Feb-23	-62	6d		WD
S3STWEM1030	Mechanical Works in Air Blower and Odor Control Room (GL 4 to 8)	100	30-Dec-22	05-May-23	-56	5d		WD
S3STWEM1040	Mechanical Works in Sludge Treatment Area (GL 4 to 7, G/F)	180	19-Mar-22	26-Oct-22	39	7d		WD
S3STWEM1050	Completion of Mechanical Engineering Works	0		05-May-23	-54	0d		WD
8.2.2 Electrical Engineering Works								
S3STWEE1001	FAT of Electrical Plant	180	12-Nov-20	23-Jun-21	82	7d		WD
S3STWEE1002	Delivery of Electrical Plant	180	24-Jun-21	27-Jan-22	82	14d		WD
S3STWEE1009	Electrical Works in Screening Area (GL 7 to 9)	180	19-Mar-22	26-Oct-22	42	7d		WD
S3STWEE1010	Electrical Works in MBR Tanks Area (GL 3 to 7)	120	19-Nov-22	19-Apr-23	-41	6d		WD
S3STWEE1020	Electrical Works in Permeate Pump Area (GL 1 to 3)	120	12-Dec-22	12-May-23	-60	6d		WD
S3STWEE1030	Electrical Works in Air Blower and Odor Control Room (GL 4 to 8)	72	08-Feb-23	08-May-23	-56	3d		WD
S3STWEE1040	Electrical Works in Sludge Treatment Area (GL 4 to 7, G/F)	120	15-Aug-22	07-Jan-23	39	6d		WD
S3STWEE1050	Electrical Works in Transformer Room A	30	19-Jul-22	22-Aug-22	-67	1d		WD
S3STWEE1051	Electrical Works in Transformer Room B	30	21-Nov-22	24-Dec-22	6	1d		WD
S3STWEE1060	Electrical Works in LV Main Switch Room	30	19-Jul-22	22-Aug-22	-67	1d		WD
S3STWEE1061	CLP Handover Inspection for Transformer Room A	21	23-Aug-22	16-Sep-22	-67	1d		WD
S3STWEE1062	Handover of Transformer Room A to CLP	0		16-Sep-22	-67	0d		WD
S3STWEE1063	Transformer A Installation and E&M Works by CLP	21	17-Sep-22	13-Oct-22	-67	0d		WD
S3STWEE1064	Energization of Transformer Room A	0		13-Oct-22	-67	0d		WD
S3STWEE1065	CLP Handover Inspection for Transformer Room B	21	28-Dec-22	25-Jan-23	6	1d		WD
S3STWEE1066	Handover of Transformer Room B to CLP	0		25-Jan-23	6	0d		WD
S3STWEE1067	Transformer B Installation and E&M Works by CLP	21	26-Jan-23	18-Feb-23	6	0d		WD
S3STWEE1068	Energization of Transformer Room B	0		18-Feb-23	6	0d		WD
S3STWEE1070	Electrical Works in MCC Room and Central Control Room	120	30-Sep-22	25-Feb-23	-65	6d		WD
S3STWEE1080	Completion of Electical Engineering Works	0		12-May-23	-60	0d		WD
8.2.3 Instrumentation Works								
S3STWEI1000	Delivery of Instrumentation Plant	90	08-Oct-21	25-Jan-22	166	7d		WD
S3STWEI1005	Instrumentation Works in Screening Area (GL 7 to 9)	90	12-Feb-22	02-Jun-22	154	3d		WD
S3STWEI1010	Instrumentation Works in MBR Tanks Area (GL 3 to 7)	90	15-Oct-22	03-Feb-23	-46	3d		WD
S3STWEI1020	Instrumentation Works in Post MBR Treatment Area (GL 1 to 3)	72	24-Nov-22	22-Feb-23	-62	3d		WD
S3STWEI1030	Completion of Instrumentation Works	0		22-Feb-23	-62	0d		WD
8.2.4 SCADA System								
S3STWES1000	FAT of SCADA System	120	09-Aug-21	31-Dec-21	210	6d		WD
S3STWES1010	Delivery of SCADA System	66	03-Jan-22	23-Mar-22	210	3d		WD
S3STWES1020	Installation and Setup of SCADA System	65	27-Feb-23	18-May-23	-65	3d		WD
8.2.5 BS Works								
S3STWEBS1000	BS Works in STK STW	180	10-Nov-22	21-Jun-23	-50	7d		WD
S3STWEBS1005	WSD Inspection	24	30-May-23	27-Jun-23	-50			WD
S3STWEBS1010	FSD Inspection	24	06-Jul-23	02-Aug-23	-57	1d		WD
S3STWEBS1020	Acceptance of FSD	0		02-Aug-23	-57	0		WD
S3STWEBS1030	Delivery and Installation of Elevator	60	05-Jul-22	13-Sep-22	167	3d		WD
S3STWEBS1040	Inspection of Elevator	14	14-Sep-22	29-Sep-22	167	2d		WD
8.2.6 Testing and Commissioning								
S3STWTC1000	Pre-Commissioning Phase (SAT)	180	14-Oct-22	11-Apr-23	-82	7d		CD
S3STWTC1010	System Commissioning Phase	7	19-May-23	25-May-23	-81	3d		CD
S3STWTC1020	MBR System Process Start Up	21	26-May-23	15-Jun-23	-81	14d		CD
S3STWTC1025	O&M Training and Attachment Training	21	12-Apr-23	06-May-23	-31	0.5d		WD
S3STWTC1030	Plant Commissioning	60	16-Jun-23	14-Aug-23	-81	14d		CD
9.0 Section 4 Tong To Village Sewerage Works								
S4TTS1005	Fabrication and Delivery of PE Pipe	180	11-Oct-19	21-May-20	2	7d		WD
S4TTS1006	Branch 1 Sewerage Pipe	60	24-Dec-20	10-Mar-21	60	3d	Backhoe (max. 7t)	WD
S4TTS1010	Branch 2 Sewerage Pipe	30	11-Mar-21	17-Apr-21	60	1d	Backhoe (max. 7t)	WD
S4TTS1020	Branch 3 Sewerage Pipe	180	22-May-20	23-Dec-20	2	7d	Backhoe (max. 7t)	WD
S4TTS1030	Branch 4 Sewerage Pipe	21	19-Apr-21	13-May-21	60	1d	Backhoe (max. 7t)	WD
S4TTS1040	Branch 5 Sewerage Pipe	60	14-May-21	26-Jul-21	60	3d	Backhoe (max. 7t)	WD
S4TTS1050	Branch 6 Sewerage Pipe	21	27-Jul-21	19-Aug-21	60	1d	Backhoe (max. 7t)	WD



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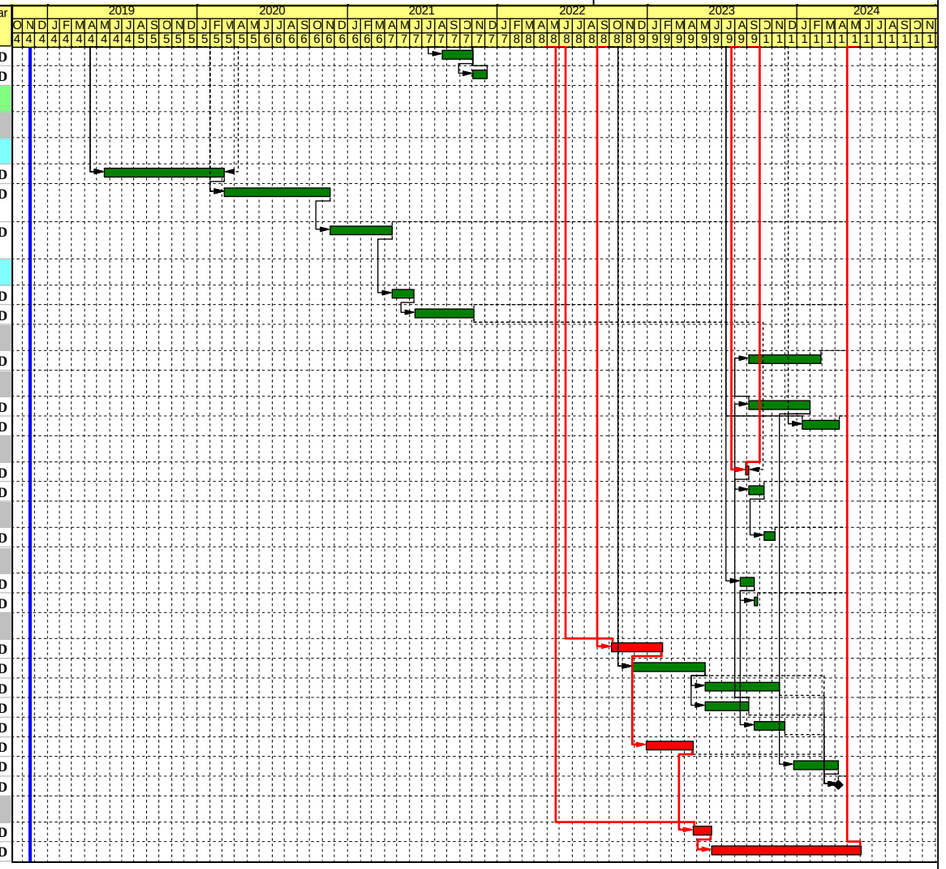
S4TTS1060	Branch 7 Sewerage Pipe	60	20-Aug-21	01-Nov-21	60	3d	Backhoe (max. 7t)	WD
S4TTS1070	Branch 8 Sewerage Pipe	31	02-Nov-21	07-Dec-21	60	1d	Backhoe (max. 7t)	WD
10.0 Whole of the Works excluding the Works in Section 1 to 4								
10.1 Sewerage Works in STK Town								
10.1.1 Stream 1								
S5OWS1000	Open Trench DN355 PE (STKSTW1002 to STKSTW1007, 225m)	240	20-May-19	06-Mar-20	481	14d	1 no. of Backhoe (max. 2	WD
S5OWS1010	Trenchless DN355 PE (STKSTW1007 to STKSTW1009, 130m)	210	07-Mar-20	19-Nov-20	481	10d	1set of Trenchless Plant and equipment	WD
S5OWS1020	Trenchless DN500 PE (STKSTW1009 to Emergency Discharge Chamber)	120	20-Nov-20	19-Apr-21	481	6d	1set of Trenchless Plant and equipment	WD
10.1.2 Stream 2								
S5OWS1030	Open Trench DN500 PE (STKSTW1102 to STKSTW1009, 32m)	45	20-Apr-21	12-Jun-21	481	3d	1 no. of Backhoe (max. 1	WD
S5OWS1040	Open Trench DN500 PE (Existing STK3022 to STKSTW1102, 80m)	120	15-Jun-21	05-Nov-21	481	6d	1 no. of Backhoe (max. 1	WD
10.2 Retaining Wall RW1								
S5OWRW1000	Retaining Wall RW1 (4 bays)	140	06-Sep-23	26-Feb-24	71	6d	1 no. of Backhoe (max. 1	WD
10.3 Road & Drainage Works in STK STW								
S5OWRD1000	Drainage Works in EVA	120	06-Sep-23	30-Jan-24	35	6d	1 no. of Backhoe (max. 1	WD
S5OWRD1010	Road Works of EVA	72	12-Jan-24	12-Apr-24	35	3d	1 no. of Backhoe (max. 1	WD
10.4 Demolition of STK PS								
S5OWDPS1000	Decommissioning of STK PS	7	29-Aug-23	05-Sep-23	-56	0.5d		WD
S5OWDPS1010	Demolition of STK PS	30	06-Sep-23	12-Oct-23	160	1d		WD
10.5 Decommissioning of Existing Rising Main in STK Town								
S5OWDRM1000	Grouting of Existing Rising Main	21	13-Oct-23	07-Nov-23	160	0.5d		WD
10.6 Decommissioning of TSTP & Existing Submarine Outfall								
S5OWDSO1000	Dismantling of TSTP	30	15-Aug-23	18-Sep-23	140	1d		WD
S5OWDSO1010	Grouting of Existing Submarine Outfall	7	19-Sep-23	26-Sep-23	193	0.5d		WD
10.7 Architectural Works of STK STW								
S5OWA1000	Waterproofing	100	06-Oct-22	06-Feb-23	-87	5d		WD
S5OWA1005	External Wall Tiles (STK STW)	140	26-Nov-22	20-May-23	35	5d		WD
S5OWA1010	Artificial Wood Finish (STK STW)	150	22-May-23	17-Nov-23	151	7d		WD
S5OWA1020	Aluminum Ceiling Cladding (STK STW)	90	22-May-23	05-Sep-23	35	3d		WD
S5OWA1030	Artificial Granite Tile (TSTP area)	60	19-Sep-23	30-Nov-23	140	3d		WD
S5OWA1040	Artificial Granite Tile (STK STW)	90	29-Dec-22	21-Apr-23	-87	3d		WD
S5OWA1050	Fence and Gate for STK STW	84	23-Dec-23	10-Apr-24	37	3d		WD
S5OWA1060	Completion of all Architectural Works	0		10-Apr-24	37	0d		WD
10.8 Landscaping Works								
S5OWL1000	Landscaping Softworks at STW STW Roof and Wall	36	22-Apr-23	05-Jun-23	-87	1d		WD
S5OWL1020	Establishment Works	365	06-Jun-23	04-Jun-24	-10	0d		CD



BUILD KING - KUM SHING JV

- Milestone
- Critical Activity
- Non-Critical Activity
- Remaining Level of Effort
- Actual Work

EXPANSION OF SHA TAU KOK SEWAGE TREATMENT WORKS PHASE 1 AND VILLAGE SEWERAGE IN TONG TO

Data Date: 21-Nov-18 **Run Date: 22-May-19**

Project ID :Mth Update_201905
Layout : Layout_Update _1

Monthly Revised Programme (2019-04)

Date	Revision	Checked	Approved
20-Apr-19	Rev 0	Justin ...	Ron Hung