PROJECT NO.: TCS/00512/09

DSD CONTRACT NO. DC/2009/13
CONSTRUCTION OF SEWAGE TREATMENT WORKS AT
YUNG SHUE WAN AND SOK KWU WAN

YUNG SHUE WAN PORTION AREA BASELINE MONITORING REPORT VOLUME 2 – WATER QUALITY

PREPARED FOR
LEADER CIVIL ENGINEERING CORPORATION LIMITED

Quality Index

Date	Reference No.	Prepared By	Approved By
1 March 2011	TCS00512/09/600/R00158v2	Nicola Hon Environmental Consultant	T.W. Tam Environmental Team Leader

Version	Date	Description
1	31 January 2011	First Submission
2	1 March 2011	Amended against IEC's comment on 16 February 2011

Scott Wilson CDM Joint Venture

Chief Engineer/Harbour Area Treatment Scheme
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Attention: Mr. C K Au

Your reference:

Our reference: 05117/6/16/347818

Date: 7 March 2011

BY FAX ONLY

Dear Sir

Contract No. DC/2009/13
Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan
Yung Shue Wan Portion Area
Baseline Monitoring Report Volume 2 - Water Quality

We refer to the Environmental Permit (EP-282/2007) and the email from the environmental team, Action United Environmental Services and Consulting (AUES) with the revised baseline monitoring report volume 2 – water quality, dated 1 March 2011 for the captioned project. We do not have further comment and have verified the captioned report.

Yours faithfully
SCOTT WILSON CDM JOINT VENTURE

Rodney Ip

ICWR/KKK/ecwc

cc Leader Civil Engineering (Attn: Mr Vincent Chan)
AUES (Attn: Mr T.W. Tam)
ER/LAMMA (Attn: Mr Neil Wong)
CDM (Attn: Mr Mark Sin)

EXECUTIVE SUMMARY

ES.01. The Leader Civil Engineering Corporation Limited (Leader) has been awarded the *Contract DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan* (the Project) by the Drainage Services Department (DSD) on 4 May 2010.

ES.02. This Project is part of an overall plan approved under a statutory EIA for Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection and Treatment (Register No. AEIAR-075/2003) and Disposal Facilities and Outlying Islands Sewerage Stage 1 Phase 1 Package C – Yung Shue Wan Sewage Treatment Works and Outfall (Register No. EIA-124/BC). The Environmental Permits (No. EP-281/2007/A and EP-282/2007) for the Project have been obtained by the DSD on 29 June 2007 for the relevant construction works.

ES.03. The major works of the Project is to construct a sewage treatment facility at Sok Kwu Wan and Yung Shue Wan with a capacity of 1,430m^3/day and 2,850m^3/day respectively to provide secondary treatment for the sewage generated in Lamma Island. It also involves construction of 2 pumping stations at Sok Kwu Wan and 1 pumping station at Yung Shue Wan, construction of submarine outfall from the coastline and laying of underground sewerage pipes.

ES.04. Action-United Environmental Services and Consulting (AUES) has been commissioned by Leader as the Environmental Team (ET) to implement the relevant EM&A program.

ES.05. For ease of reporting, the proposed EM&A programme for baseline and impact monitoring is spilt to following two stand-alone parts:-

(a) Proposed EM&A Programme for Baseline and Impact Monitoring – Sok Kwu Wan (under EP No. EP-281/2007/A);

(b) Proposed EM&A Programme for Baseline and Impact Monitoring – Yung Shue Wan (under EP No. EP-282/2007)

ES.06. According to the Particular Specification (PS) Section 25 and the Environmental Permit No. EP-282/2007, the scope of monitoring works required at Yung Shue Wan Working Site comprised of air quality, construction noise, water quality and ecology survey as well as the environmental site audit. All the above works should be undertaken by an Environmental Team (ET) in accordance with the Environmental Monitoring and Audit Manual of Yung Shue Wan.

ES.07. Base on the requirements stated in the EM&A Manual of the Project, the baseline water quality monitoring should be carried out for consecutive six months before commencement of any marine works. The baseline monitoring for air quality and noise had been undertaken at the designated locations between **31 July 2010** and **16 August 2010** for 14 consecutive days. The *Baseline Air and Noise Monitoring report (Volume 1)* was submitted to and verified by IEC and endorsed by EPD. The baseline coral survey has been undertaken in mid-December 2010 and the report is under reviewed.

ES.08. This Baseline Monitoring Report Volume 2 - Water Quality addresses the background condition of the marine water quality at Yung Shue Wan Portion Work Site before the construction stage of the submarine outfall. Furthermore, the performance criteria for the operation phase of Yung Shue Wan Sewerage Treatment Plant (STP) are also presented in this report.

ES.09. The baseline marine water quality monitoring had been undertaken at the designated locations for 6 consecutive months from **July 2010** to **December 2010**. During the period of the baseline monitoring, there were no marine works (submarine outfall construction) undertaken or other external influencing factors which significantly concerned.

ES.10. 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 marine water quality based on the baseline data. These A/L Levels will serve as the yardsticks for assessing the acceptability of the environmental impact for the submarine outfall construction phase and the STP operation stage monitoring. They are statistical in nature and derived according to the criteria set out in the EM&A Manual.

ES.11. The derived Action and Limit Levels of water quality during Construction Phase of submarine outfall and STP operation are given in ***Tables ES-1*** and ***ES-2***.

Table ES-1 Action and Limit Levels of Water Quality Monitoring during Construction Phase of Submarine Outfall

Parameter	Performance Criteria	Impact Station		
		WY1	WY2	WY3
DO Concentration (Surface and Middle) (mg/L)	Action Level	3.63	3.53	3.61
	Limit Level	3.32	3.47	3.42
DO Concentration (Bottom) (mg/L)	Action Level	3.33	2.92	3.36
	Limit Level	3.23	2.63	3.14
Turbidity (Depth-Average) (NTU)	Action Level	10.94	14.16	14.99
	Limit Level	17.35	15.20	16.21
Suspended Solids (Depth-Average) (mg/L)	Action Level	17.52	14.23	14.52
	Limit Level	25.62	16.51	16.88

Notes:

- *The proposed Action/Limit Levels of DO are adopted to be used 5%-ile/1%-ile of baseline data;*
- *The proposed Action/Limit Levels of Turbidity and SS are adopted to be used 95%-ile/99%-ile of baseline data; and*
- *All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.*

Table ES-2 Action and Limit Levels of Water Quality Monitoring during Operation Stage of the STP

Parameter	Performance Criteria	Impact Station		
		WY1	WY2	WY3
DO Concentration (Surface and Middle) (mg/L)	Action Level	3.63	3.53	3.61
	Limit Level	3.32	3.47	3.42
DO Concentration (Bottom) (mg/L)	Action Level	3.33	2.92	3.36
	Limit Level	3.23	2.63	3.14
Turbidity (Depth-Average) (NTU)	Action Level	10.94	14.16	14.99
	Limit Level	17.35	15.20	16.21
Suspended Solids (Depth-Average) (mg/L)	Action Level	17.52	14.23	14.52
	Limit Level	25.62	16.51	16.88
Ammonia as N (Depth – Average) (mg/L)	Action Level	0.098	0.090	0.095
	Limit Level	0.104	0.095	0.099
Total Inorganic Nitrogen as N (Depth-Average) (mg/L)	Action Level	0.603	0.578	0.605
	Limit Level	0.673	0.659	0.683
E. coli Depth-Average (1cfu/100ml)	Action Level	28	31	44
	Limit Level	610	610	610

Notes:

- *The proposed Action/Limit Levels of DO are adopted to be used 5%-ile/1%-ile of baseline data;*
- *The proposed Action/Limit Levels of Turbidity, SS, Ammonia and TIN are adopted to be used 95%-ile/99%-ile of baseline data;*
- *E-coli performance criteria of Action and Limit Levels are respectively proposed to use 95%-ile baseline data and 610 cfu/100mL geometric mean; and*
- *All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.*

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1 INTRODUCTION

PROJECT BACKGROUND

1.01 The Leader Civil Engineering Corporation Limited (Leader) has been awarded the *Contract DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan* (the Project) by the Drainage Services Department (DSD) on 4 May 2010. The Project is part of an overall plan approved under a statutory EIA for Outlying Islands Sewerage Stage 1 Phase 2 Package J – Sok Kwu Wan Sewage Collection and Treatment (Register No. AEIAR-075/2003) and Disposal Facilities and Outlying Islands Sewerage Stage 1 Phase 1 Package C – Yung Shue Wan Sewage Treatment Works and Outfall (Register No. EIA-124/BC). The Environmental Permits (No. EP-281/2007/A and EP-282/2007) for the Project have been obtained by the DSD on 29 June 2007 for the relevant construction works.

1.02 The major works of the Project is to construct a sewage treatment facility at Sok Kwu Wan and Yung Shue Wan with a capacity of 1,430m^3/day and 2,850m^3/day respectively to provide secondary treatment for the sewage generated in Lamma Island. It also involves construction of 2 pumping stations at Sok Kwu Wan and 1 pumping station at Yung Shue Wan, construction of submarine outfall from the coastline and laying of underground sewerage pipes. The site layout plan for the captioned work under the Project is showing in ***Appendix A***.

1.03 According to the Particular Specification (PS) and *Appendix 25* of the Project, Leader should establish an Environmental Team (ET) to implement the environmental monitoring and auditing works to fulfill the requirements as stipulated in the Environmental Monitoring and Audit (EM&A) Manuals.

1.04 Action-United Environmental Services and Consulting (AUES) has been commissioned by Leader as the ET to implement the relevant EM&A program. Organization chart of the Environmental Team for the Project is shown in ***Appendix B***. For ease of reporting, the proposed EM&A programme for baseline and impact monitoring is spilt to following two stand-alone parts:-

(a) Proposed EM&A Programme for Baseline and Impact Monitoring – Sok Kwu Wan (under EP No. EP-281/2007/A varied on 23 September 2009)

(b) Proposed EM&A Programme for Baseline and Impact Monitoring – Yung Shue Wan (under EP No. EP-282/2007)

1.05 Base on the requirements stated in the EM&A Manual of the Project, the baseline water quality monitoring should be carried out for consecutive six months before commencement of any marine works. The baseline monitoring for air quality and noise had been undertaken at the designated locations between **31 July 2010** and **16 August 2010** for 14 consecutive days. The *Baseline Air and Noise Monitoring report (Volume 1)* was submitted to and verified by IEC and endorsed by EPD. The baseline coral survey has been undertaken in mid-December 2010 and the report is under reviewed.

1.06 This Baseline Monitoring Report Volume 2 - Water Quality addresses the background condition of the marine water quality at Yung Shue Wan Portion Work Site before the construction stage of the submarine outfall. Furthermore, the performance criteria for the operation phase of Yung Shue Wan Sewerage Treatment Plant (STP) are also presented in this report.

1.07 Currently there is one current project "*DC/2007/18 Yung Shue Wan and Sok Kwu Wan Village Sewerage, Stage 1 Works*" at Yung Shue Wan, but it is not classified as a Designated Project. The construction works for contract DC/2007/18 was commenced in April 2008 and it is still ongoing.

1.08 The baseline marine water quality monitoring had been undertaken at the designated locations for 6 consecutive months from **July 2010** to **December 2010**. During the period of the baseline monitoring, there were no marine works (submarine outfall construction) undertaken or other external influencing factors which significantly concerned.

1.09 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 marine water quality based on the baseline data. These A/L Levels will serve as the yardsticks for assessing the acceptability of the environmental impact for the submarine outfall construction phase and the STP operation stage monitoring. They are statistical in nature and derived according to the criteria set out in the EM&A Manual.

REPORT STRUCTURE

1.10 The "Baseline Monitoring Report Volume 2 – Water Quality" is structured into the following sections:

SECTION 1 **INTRODUCTION**

SECTION 2 **SUMMARY OF BASELINE MONITORING REQUIREMENTS**

SECTION 3 **BASELINE MONITORING METHODOLOGIES**

SECTION 4 **BASELINE WATER QUALITY MONITORING RESULTS**

SECTION 5 **CONCLUSION & RECOMMENDATION**

2 SUMMARY OF BASELINE MONITORING REQUIREMENTS

ENVIRONMENTAL ASPECT

2.01 The EM&A baseline monitoring program cover the following environmental issues:

- Air quality;
- Construction noise;
- Marine Water quality; and
- Ecology survey

2.02 The ET implements the EM&A programme in accordance with the aforementioned requirements. This report only presents the EM&A requirements for the Marine Water Quality monitoring while the scope for air quality, noise and ecology monitoring were presented in another submissions. Detailed EM&A program for marine water quality monitoring are presented in the following sub-sections.

2.03 A summary of the Marine Water monitoring parameters is presented in ***Table 2-1***.

Table 2-1 Summary of the Marine Water monitoring parameters of EM&A Requirements

Measurement	Parameters
In-situ	• Dissolved Oxygen Concentration (mg/L); • Dissolved Oxygen Saturation (%); • Turbidity (NTU); • pH unit; • Salinity (ppt); • Water depth (m); and • Temperature (ºC).
Laboratory Analysis	• Suspended Solids (mg/L) • Ammonia-Nitrogen (mg/L) • Total Inorganic Nitrogen as N (mg/L) • E Coli (cfu/100mL)

MONITORING LOCATIONS

Marine Water Quality

2.04 The marine water quality monitoring stations were adopted as recommended in the *EM&A Manual Section 4.5.1*. Two control stations (CY1 and CY2) were identified at locations representative of the project site in its undisturbed condition. Three impact stations (WY1, WY2 and WY3) were identified in the vicinity of sensitive receivers (the coral colonies in the vicinity of Yung Shue Wan, and secondary contact recreation subzone). It is proposed to monitor the impacts from the construction of the submarine outfall as well as the effluent discharge from the proposed STW on water quality. Details of the marine water monitoring stations are described in ***Table 2-2***. The graphical of marine water quality monitoring stations is shown in ***Appendix C.***

Table 2-2 Location of the Renewed Air Quality Monitoring Station

Monitoring Station	Description	Coordinates	
		Easting	Northing
WY1	Coral Station on seawall at STW Site	829170	809550
WY2	Coral colonies at Shek Kok Tsui	829000	810400
WY3	Coral colonies at O Tsai (headland N of YSW ferry pier)	829200	809850
CY1 (flood)	Control Station	828400	810800
CY2 (ebb)	Control Station	828000	808800

MONITORING FREQUENCY AND PERIOD

2.05 The Baseline monitoring was basically carried out in accordance with the requirements in *EM&A*

Manual Sections 4.6. The marine water quality monitoring requirements are listed as follows:

Marine Water Monitoring

Parameters:	Duplicate in-situ measurements: water depth, temperature, Dissolved Oxygen, pH, turbidity and salinity; HOKLAS-accredited laboratory analysis: Suspended Solids, Ammonia as N (NH_3-N), Total Inorganic Nitrogen (TIN) and *E-coli*.
Frequency:	2 occasions per month (mid-ebb and mid-flood tides)
Sampling Depth	(i.) Three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m. (ii.) If the water depth is between 3m and 6m, two depths: 1m below water surface and 1m above sea bottom. (iii.) If the water depth is less than 3m, 1 sample at mid-depth is taken
Duration:	6 months (cover dry and wet seasons) before commencement of the marine work (submarine outfall construction)

MONITORING EQUIPMENT

Water Quality Monitoring

i. **Dissolved Oxygen and Temperature Measuring Equipment** – The instrument should be a portable and weatherproof dissolved oxygen (DO) measuring instrument complete with cable, sensor and a DC power source. The equipment should be capable of measuring as a DO level in the range of 0 – 20mg L-1 and 0 – 200% saturation; and a temperature of 0 – 45 degree Celsius.

ii. **pH Meter** – The instrument should consist of a potentiometer, a glass electrode, a reference electrode and a temperature-compensating device. It should be readable to 0.1 pH in arrange of 0 to 14.

iii. **Turbidity (NTU) Measuring Equipment** – The instrument should be a portable and weatherproof turbidity measuring instrument using a DC power source. It should have a photoelectric sensor capable of measuring turbidity between 0 - 1000 NTU.

iv. **Water Sampling Equipment** – A water sampler should comprise a transparent PVC cylinder with a capacity not less than 2 litres, which can be effectively sealed with latex cups at both ends. The sampler should have a positive latching system to keep it open and prevent premature closure until released by a messenger when the sampler is at the selected water depth.

v. **Water Depth Detector** – A portable, battery-operated echo sounder should be used for the determination of water depth at each designated monitoring station. This unit can either be hand held or affixed to the bottom of the work boat.

vi. **Salinity Measuring Equipment** – A portable salinometer capable of measuring salinity in the range of 0 - 40 parts per thousand (ppt) should be provided for measuring salinity of the water at each monitoring location.

vii. **Sample Containers and Storage** – Water samples for Suspended Solids should be stored in high density polythene bottles with no preservative added, packed in ice (cooled to 4°C without being frozen).

viii. **Monitoring Position Equipment** - A hand-held or boat-fixed type digital Differential Global Positioning System (DGPS) with way point bearing indication and Radio Technical Commission for maritime (RTCM) Type 16 error message 'screen pop-up' facilities (for real-time auto-display of error messages and DGPS corrections from the Hong Kong Hydrographic Office), or other equipment instrument of similar accuracy, should be provided and used during marine water monitoring to ensure the monitoring vessel is at the correct location before taking measurements.

ix. **Suspended Solids, Ammonia-Nitrogen, Total Inorganic Nitrogen** and ***E.Coli*** **Analysis** – Analysis of those parameters shall be carried out in a HOKLAS or other international accredited laboratory following the analytical methods listed in ***Table 2-3***

Table 2-3 Analytical Methods to be applied to Marine Water Quality Samples.

Determinant	Standard	Detection Limit
SS (mg/L)	APHA 2540D	0.5mg/L
NH3-N (mg/L)	ASTM D3590-89 B(FIA)	0.005mg/L
E-Coli	In-house method, membrane filtration with CHRIMagar Liquid E.coli-coliform culture	1cfu/100mL

DERIVATION OF ACTION/LIMIT (A/L) LEVELS

2.06 The baseline data obtained would be used for determining the environmental acceptance criteria for impact monitoring. A summary of derivation of Action/Limit (A/L) Levels for water quality is shown in ***Table 2-4***.

Table 2-4 Derivation of Action and Limit Levels for Water Quality

Parameters	Action	Limit
DO in mg/L (Surface, Middle and Bottom)	Surface and Middle 5%-ile of baseline data for surface and middle layer Bottom 5%-ile of baseline data for bottom layer	Surface and Middle • For non-FCZ Station - 4 mg/L or 1%-ile of baseline data for surface and middle layer; • For FCZ Station - 5 mg/L or 1%-ile of baseline data for surface and middle layer; Bottom 2 mg/L or 1%-ile of baseline data for bottom layer
Turbidity in NTU (depth-averaged)	95%-ile of baseline data or 120% of upstream and downstream control station's turbidity at the same tide of the same day	99%-ile of baseline data or 130% of upstream and downstream control station's turbidity at the same tide of the same day
SS in mg/ L (depth-averaged)	95%-ile of baseline data or 120% of upstream and downstream control station's SS at the same tide of the same day	99%-ile of baseline data or 130% of upstream and downstream control station's SS at the same tide of the same day
Ammonia as N in mg/L (depth-average)	95%-ile of baseline data or 0.021 mg/L	99%-ile of baseline data or 0.021 mg/L
E.coli in cfu/100mL (depth-average)	95%-ile of baseline data	99%-ile of baseline data or 610 cfu/100mL as geometric mean
TIN in mg/L (depth-average)	95%-ile of baseline data	99%-ile of baseline data

Notes:

- *"Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths;*
- *For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits;*
- *For turbidity, SS, Ammonia as N, TIN as N and E.coli non-compliance of the water quality limits occurs when monitoring result is higher than the limits.*

2.07 These A/L Levels is served as the yardsticks for assessing the acceptability of the environmental impact for the submarine outfall construction phase and the STP operation stage monitoring. They are statistical in nature and derived according to the criteria set out in the EM&A Manual. Should non-compliance of the any parameters criteria occur, the relevant action should be undertaken as stipulated in the EM&A Manual ***Table 4-5*** "*Event/Action Plan (Water Quality)*", which is attached in ***Appendix D***.

3 BASELINE MONITORING METHODOLOGIES

3.01 The baseline marine water quality monitoring was carried out for consecutive 6 months at the designated locations from July 2010 to December 2010. During the period of the baseline monitoring, there were no marine works (submarine outfall construction) undertaken or other external influencing factors which significantly concerned.

LOCATION OF BASELINE MONITORING

3.02 The baseline marine water quality monitoring has been undertaken at the designated locations as recommended in the *Section 4.5 of EM&A Manual*. The detail information about the monitoring stations could be referred to ***Tables 2-2*** while the graphical of monitoring locations is shown in ***Appendix C***.

MONITORING EQUIPMENT AT BASELINE MONITORING

3.03 The monitoring equipments adopted for the EM&A program was proposed by ET and verified by IEC prior the commencement of monitoring work. The equipments used for baseline monitoring is listed in ***Table 3-1*** as below.

Table 3-1 Monitoring Equipments Used in EM&A Program

Marine Water quality	
A Digital Global Positioning System	GPS12 Garmin
Water Depth Detector	Eagle Sonar
Water Sampler	A 2-litre transparent PVC cylinder with latex cups at both ends
Thermometer & DO meter	YSI Model 6820 Multi-parameter Water Quality Monitoring System or YSI 550A DO Meter
pH meter	YSI Model 6820 Multi-parameter Water Quality Monitoring System or Hanna HI 98128
Turbidimeter	YSI Model 6820 Multi-parameter Water Quality Monitoring System or Hach 2100p
Salinometer	YSI Model 6820 Multi-parameter Water Quality Monitoring System or ATAGO Hand Refractometer.
Sample Container	High density polythene bottles (provided by laboratory)
Storage Container	'Willow' 33-litter plastic cool box with Ice pad
Suspended Solids; Ammonia as N (NH_3-N), Total Inorganic Nitrogen (TIN) and *E-co*li	HOKLAS-accredited laboratory (ALS Technichem (HK) Pty Ltd)

MONITORING PROCEDURES

3.04 The marine water quality monitoring was conducted at the five designated locations at Yung Shue Wan. The sampling procedure including the in-situ monitoring are presented as below:

Sampling Procedure

3.05 A Digital Global Positioning System (GPS) was used to identify the designated monitoring stations prior water sampling. A portable, battery-operated echo sounder was used for the determination of water depth at each station. At each station, marine water samples were collected at three depths: 1m below water surface, 1m above sea bottom and at mid-depth when the water depth exceeds 6m. Samples at 1m below water surface and 1m above sea bottom were collected when the water depth is between 3m and 6m. Only 1 sample at mid-depth was taken when the water depth is below 3m.

3.06 The marine water sampler was lowered into the water body at the predetermined depth. The trigger system of the sampler was activated with a messenger. The opening ends of the sampler then were closed accordingly and water samples were collected.

3.07 The sample container was rinsed with a portion of the water sample. The water sample then was transferred to the high-density polythene bottles as provided by the laboratory, labeled with a unique sample number and sealed with a screw cap.

3.08 Before commencement of the sampling, general information such as the date and time of sampling, weather condition and tidal condition as well as the personnel responsible for the monitoring were be recorded on the monitoring field data sheet.

3.09 A 'Willow' 33-liter plastic cool box packed with ice was used to preserve the collected water samples prior to arrival at the laboratory for chemical determination. The water temperature of the cool box was maintained at a temperature as close to 4^0C as possible without being frozen. Samples collected were delivered to the laboratory upon collection.

In-situ Measurement

Positioning of Monitoring Locations

3.10 A digital Global Positioning System (GPS) was used during marine water monitoring to ensure the monitoring vessel is at the correct location when taking measurement and samples.

Depth, Dissolved Oxygen (DO), Temperature, Turbidity, Salinity and pH value

3.11 The *YSI Model 6820 Multi-parameter Water Quality Monitoring System* was used for marine water in-situ measurement, which automates the measurements and data logging of depth, temperature, dissolved oxygen, dissolved oxygen saturation, turbidity, pH and salinity simultaneously. Before each round of monitoring, the dissolved oxygen probe was calibrated by the wet bulb method and the turbidity and salinity probes checked with distilled water.

3.12 The laboratory has be comprehensive quality assurance and quality control programmes. For QA/QC procedures, one duplicate samples of every batch of 20 samples is analyzed as followed the HOKLAS accredited requirement.

3.13 The Multi-parameter Water Quality Monitoring System was calibrated by HOKLAS accredited laboratory of three month interval. All valid calibration certificates during marine water monitoring period showed in ***Appendix E***.

LABORATORY ANALYSIS

3.14 All water samples were analyzed with various chemical tests as specified in the EM&A Manual by a local HOKLAS-accredited testing laboratory (ALS Technichem (HK) Pty Ltd HOKLAS registration no. 66). Duplicate samples from each independent sampling event are required for all parameters and the samples were mixed and analyzed in one set of laboratory analysis. The mixed process is undertaken by the laboratory. The determination works started within 24 hours after collection of the water samples or within the holding time as advised by the laboratory.

3.15 The detection limits and testing method of each parameter are shown below in ***Table 3-2***. The certification of laboratory with HOKLAS accredited analytical tests are provided in ***Appendix E***.

Table 3-2 Testing Method and Detection limits of the Laboratory

Determinant	Testing Method	Detection Limit
Suspended solid	Determination use HOKLAS accredited analytical methods namely ALS Method EA-025 (based on APHA 2540 D)	0.5mg/L
Total Inorganic Nitrogen	By Calculation (it is the sum of ammonia and total oxidizable nitrogen in sample	0.01mg/L
Total Oxidizable Nitrogen	Determination use HOKLAS accredited analytical methods namely ALS Method EA-059A (based on APHA 4500 NO3:F)	0.01mg/L
Ammonia nitrogen	Determination use HOKLAS accredited Laboratory analytical methods namely ALS Method EK-055A (based on APHA 4500NH_3: G)	0.005 mg/L
**E.coli*	Determination use HOKLAS accredited analytical methods namely ALS Method EM-002 (based on DoE Section 7.8 & 7.9 plus in-situ urease test)	1cfu/100ml

Remarks: (*) water samples were determined within 24 hours by the laboratory upon receipt

3.16 The certification of laboratory with HOKLAS accredited analytical tests are provided in ***Appendix E***.

DATA MANAGEMENT AND DATA QA/QC CONTROL

3.17 The baseline monitoring data were handled by the ET's in-house data recording and management system.

3.18 The monitoring data recorded in the equipment were downloaded directly from the equipment at the end of each monitoring day. The downloaded monitoring data were input into a computerized database properly maintained by the ET. The laboratory results were input directly into the computerized database and checked by personnel other than those who input the data.

3.19 For monitoring parameters that require laboratory analysis, the local laboratory is to follow the QA/QC requirements as set out under the HOKLAS scheme for the relevant laboratory testing.

4 BASELINE WATER QUALITY MONITORING RESULTS

4.01 The baseline marine water quality monitoring was carried out from **29 July 2010** to **28 December 2010** for consecutive six months. The baseline monitoring schedule is presented in ***Appendix F***. For easy reference, the data sheets for water quality monitoring including the in-situ measurements and laboratory analysis results are shown in ***Appendix G*** and full reports of the laboratory results are provided in ***Appendix H***. The monitoring results for all water quality parameters are summarized in ***Tables 4-1***.

Table 4-1 Summary of Water Quality Monitoring Results

Designated Monitoring Station	CY1	CY2	WY1	WY2	WY3
Dissolved Oxygen – Depth Average of Surface & Middle Layers (mg/L)					
5%-ile	3.18	3.26	3.63	3.53	3.61
1%-ile	2.75	3.07	3.32	3.47	3.42
Average	5.37	5.37	6.05	5.76	5.96
Min	2.65	3.02	3.27	3.46	3.40
Max	6.99	7.41	7.77	9.87	9.36
Dissolved Oxygen – Bottom Layer (mg/L)					
5%-ile	1.96	2.00	3.33	2.92	3.36
1%-ile	1.66	1.83	3.23	2.63	3.14
Average	4.33	3.91	5.64	4.93	5.43
Min	1.58	1.79	3.21	2.55	3.09
Max	7.65	6.71	7.65	7.47	7.50
Turbidity – Depth Average (NTU)					
95%-ile	9.78	8.99	10.94	14.16	14.99
99%-ile	10.62	10.24	17.35	15.20	16.21
Average	5.61	5.39	5.92	6.11	7.01
Min	2.00	2.27	2.28	2.03	2.38
Max	10.83	10.57	19.18	15.32	16.30
Suspended Solids – Depth Average (mg/L)					
95%-ile	12.75	10.73	17.52	14.04	14.52
99%-ile	14.94	10.77	25.62	16.51	16.88
Average	7.22	6.53	9.38	7.82	8.07
Min	1.77	2.13	3.05	2.13	2.40
Max	15.50	10.77	27.95	17.17	17.50
Ammonia as N – Depth Average (mg/L)					
95%-ile	0.090	0.090	0.098	0.090	0.095
99%-ile	0.098	0.090	0.104	0.095	0.099
Average	0.029	0.028	0.027	0.026	0.027
Min	0.005	0.005	0.005	0.005	0.005
Max	0.100	0.090	0.105	0.095	0.099
Total Inorganic Nitrogen – Depth Average (mg/L)					
95%-ile	0.590	0.627	0.603	0.578	0.605
99%-ile	0.631	0.649	0.673	0.659	0.683
Average	0.290	0.262	0.273	0.258	0.279
Min	0.047	0.018	0.060	0.060	0.065
Max	0.643	0.653	0.690	0.680	0.705
***E-coli* – Depth Average (cfu/100mL)**					
95%-ile	21	14	28	31	44
99%-ile	29	36	41	41	46
Average	4	4	8	6	13
Min	1	1	1	1	1
Max	30	42	44	43	47
Salinity (ppt)					
Min	28.94	29.91	25.69	26.90	25.70
Max	34.17	34.67	34.03	34.34	34.36
pH value (Unit)					
Min	7.86	7.81	7.23	7.85	7.50
Max	8.38	8.36	8.35	8.40	8.40

4.02 The meteorological data during the baseline water quality monitoring are summarized in ***Appendix I***.

PROPOSED ACTION/LIMIT LEVELS FOR WATER QUALITY

4.03 The proposed Action and Limit Levels for water quality are presented in ***Table 4-2***. The derivation of water quality performance criteria were based on the ***Table 2-4***.

Table 4-2 Action and Limit Levels for Water Quality Monitoring

Parameter	Performance Criteria	Impact Station		
		WY1	WY2	WY3
DO Concentration (Surface and Middle) (mg/L)	Action Level	3.63	3.53	3.61
	Limit Level	3.32	3.47	3.42
DO Concentration (Bottom) (mg/L)	Action Level	3.33	2.92	3.36
	Limit Level	3.23	2.63	3.14
Turbidity (Depth-Average) (NTU)	Action Level	10.94	14.16	14.99
	Limit Level	17.35	15.20	16.21
Suspended Solids (Depth-Average) (mg/L)	Action Level	17.52	14.04	14.52
	Limit Level	25.62	16.51	16.88
Ammonia as N (Depth – Average) (mg/L)	Action Level	0.098	0.090	0.095
	Limit Level	0.104	0.095	0.099
Total Inorganic Nitrogen (Depth-Average) (mg/L)	Action Level	0.603	0.578	0.605
	Limit Level	0.673	0.659	0.683
E. coli Depth-Average (1cfu/100ml)	Action Level	28	31	44
	Limit Level	610	610	610

Notes:

- *The proposed Action/Limit Levels of DO are adopted to be used 5%-ile/1%-ile of baseline data;*
- *The proposed Action/Limit Levels of Turbidity, SS, Ammonia and TIN are adopted to be used 95%-ile/99%-ile of baseline data;*
- *E-coli performance criteria of Action and Limit Levels are respectively proposed to use 95%-ile baseline data and 610 cfu/100mL geometric mean; and*
- *All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.*

DISCUSSION AND RECOMMENDATIONS

4.04 The baseline monitoring data obtained at each monitoring locations reflected the typical water quality of the Project which covered both wet and dry seasons (July to December). The established environmental performance criteria, i.e. Action & Limit Levels, are therefore applicable to the Event and Action Plan during to the commencement of construction activities of the Project in whole period. Similarly, this applies to Yung Shue Wan STP operation stage.

4.05 During the construction phase of the Project, water quality impact due to the dredging work at the seabed, thus induce of suspended solids in the sea body, is the key concern. Since the construction works would not generate chemical like Total Inorganic Nitrogen (TIN), Ammonia Nitrogen (NH_3-N) and *E-coli* concentrations, it is considered those monitoring are not required during the construction phase. Hence, it is important to point out that the Action/Limit Levels of TIN, ammonia nitrogen (NH_3-N) and *E-coli* should be only used during operation stage of Yung Shue Wan STP.

4.06 The environmental performance criteria may need to be re-established if it is evident that the baseline conditions have changed significantly. An updated baseline data should then be sought for re-establishment of the updated environmental performance criteria for the Event and Action Plan to be smoothly implemented as specially in the STP operation.

5 CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

5.01 The baseline marine water quality monitoring program at Yung Shue Wan Portion Work Site was carried out in between **July 2010** and **December 2010** for consecutive six months at the designated monitoring stations in accordance with the EM&A Manual and the approved EM&A Methodology of Yung Shue Wan. During the baseline monitoring, there were no marine work activities such as construction submarine outfall undertaken under this Project. A Master Construction Program of the Project is provided in ***Appendix J***.

RECOMMENDATIONS

5.02 Based on the baseline water quality monitoring results, the recommended environmental performance criteria are summarized as follow the table.

Table 5-1 Recommended Action and Limit Levels of Water Quality Monitoring

Parameter	Performance Criteria	Impact Station		
		WY1	WY2	WY3
DO Concentration (Surface and Middle) (mg/L)	Action Level	3.63	3.53	3.61
	Limit Level	3.32	3.47	3.42
DO Concentration (Bottom) (mg/L)	Action Level	3.33	2.92	3.36
	Limit Level	3.23	2.63	3.14
Turbidity (Depth-Average) (NTU)	Action Level	10.94	14.16	14.99
	Limit Level	17.35	15.20	16.21
Suspended Solids (Depth-Average) (mg/L)	Action Level	17.52	14.23	14.52
	Limit Level	25.62	16.51	16.88
Ammonia as N (Depth – Average) (mg/L)	Action Level	0.098	0.090	0.095
	Limit Level	0.104	0.095	0.099
Total Inorganic Nitrogen (Depth-Average) (mg/L)	Action Level	0.603	0.578	0.605
	Limit Level	0.673	0.659	0.683
E. coli Depth-Average (1cfu/100ml)	Action Level	28	31	44
	Limit Level	610	610	610

Notes:

- *The proposed Action/Limit Levels of DO are adopted to be used 5%-ile/1%-ile of baseline data;*
- *The proposed Action/Limit Levels of Turbidity, SS, Ammonia and TIN are adopted to be used 95%-ile/99%-ile of baseline data;*
- *E-coli performance criteria of Action and Limit Levels are respectively proposed to use 95%-ile baseline data and 610 cfu/100mL geometric mean; and*
- *All the figures given in the table are used for reference only and the EPD may amend the figures whenever it is considered necessary.*

RECOMMENDATIONS

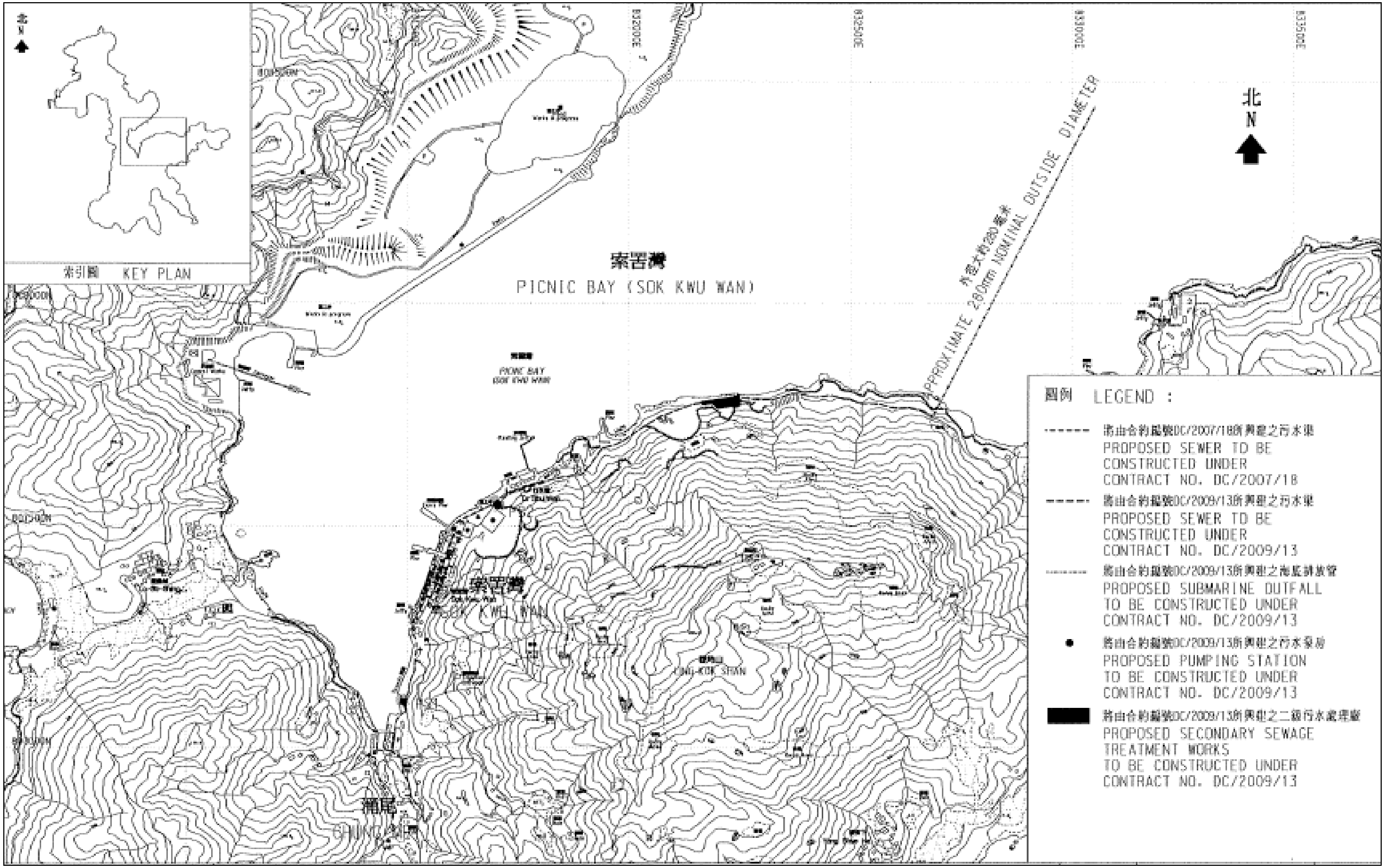
5.03 The baseline monitoring water quality was conducted throughout both wet and dry seasons (July to December) in Hong Kong. The established environmental performance criteria, i.e. Action & Limit Levels, are therefore applicable to the Event and Action Plan during to the commencement of the submarine outfall construction activities of the Project in whole working period. Similarly, this applies to Yung Shue Wan STP operation stage.

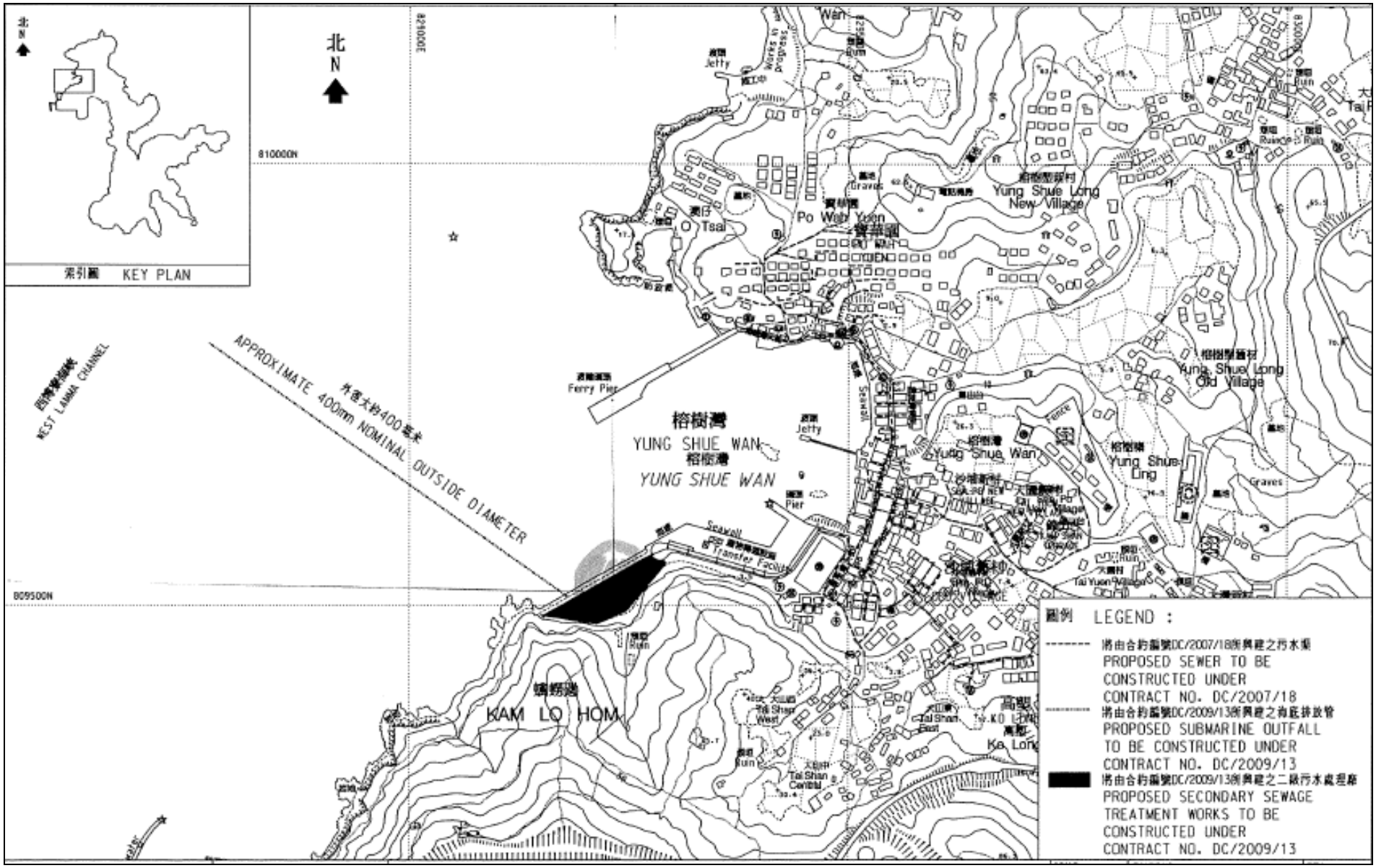
5.04 During the construction phase of the Project, water quality impact due to the dredging work at the seabed, thus induce of suspended solids in the sea body, is the key concern. Since the construction works would not generate chemical like Total Inorganic Nitrogen (TIN), Ammonia Nitrogen (NH_3-N) and *E-coli* concentrations, Hence, those monitoring are not required during the construction phase.

5.05 Review of the baseline conditions may need to be conducted regularly if the changes in baseline conditions be evident, the environmental performance criteria should be re-established by agreement of the ER and IEC and submitted for EPD endorsement.

Appendix A

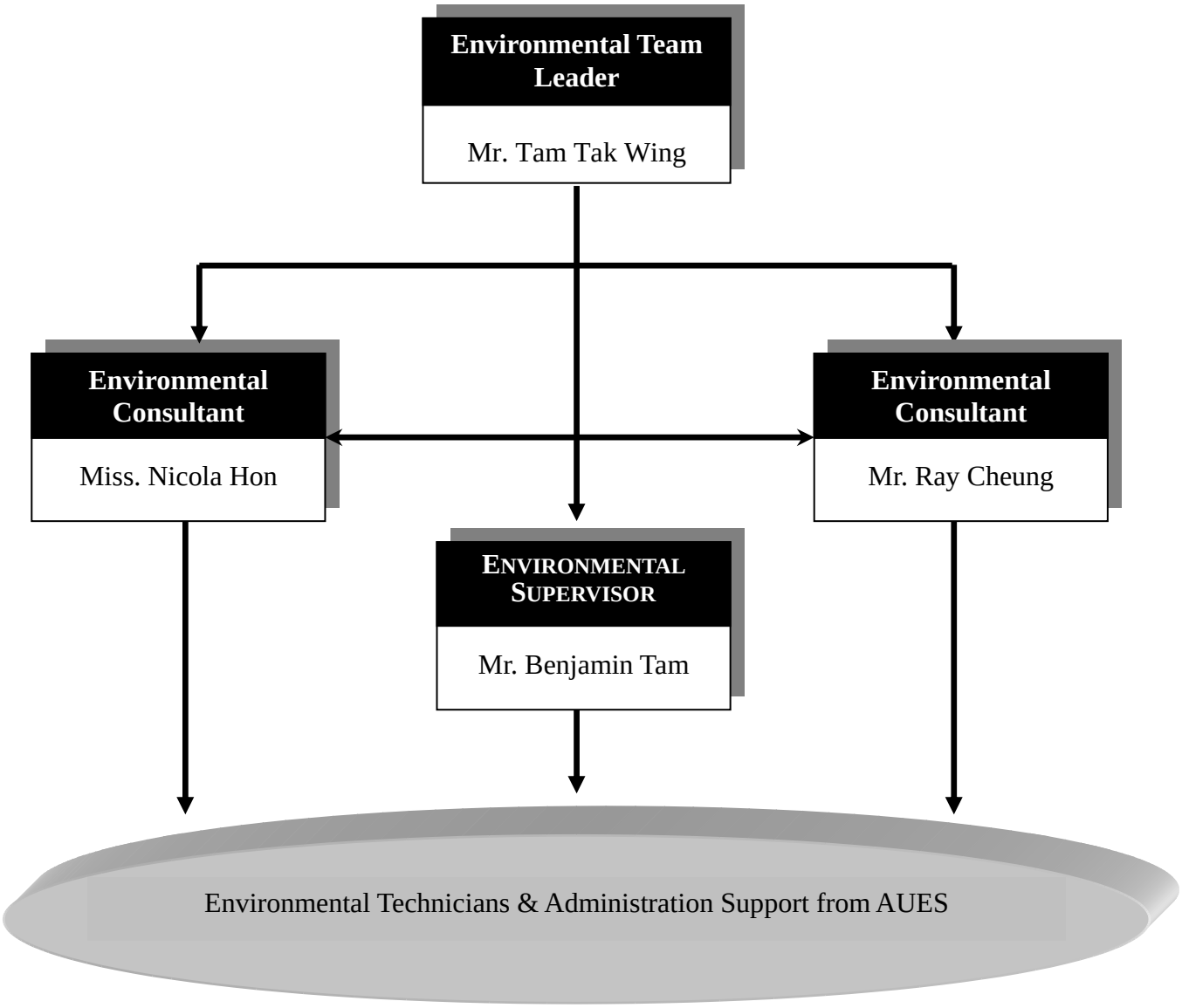
Project Site Layout Plan


索引圖 KEY PLAN
北
N
索罟灣
PICNIC BAY (SOK KWU WAN)
外徑大約280毫米
APPROXIMATE 280mm NOMINAL OUTSIDE DIAMETER
索罟灣
SOK KWU WAN
榕樹塱
SHUNG KWU SHAN
圖例 LEGEND :
將由合約編號DC/2007/18所興建之污水渠
PROPOSED SEWER TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2007/18
將由合約編號DC/2009/13所興建之污水渠
PROPOSED SEWER TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2009/13
將由合約編號DC/2009/13所興建之海底排放管
PROPOSED SUBMARINE OUTFALL TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2009/13
將由合約編號DC/2009/13所興建之污水泵房
PROPOSED PUMPING STATION TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2009/13
將由合約編號DC/2009/13所興建之二級污水處理廠
PROPOSED SECONDARY SEWAGE TREATMENT WORKS TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2009/13


索引圖 KEY PLAN
北
N
810000N
809500N
APPROXIMATE 400mm NOMINAL OUTSIDE DIAMETER
外徑大約400毫米
榕樹灣
YUNG SHUE WAN
YUNG SHUE WAN
KAM LO HOM
Yung Shue Long New Village
Yung Shue Long Old Village
Po Wah Yuen
O Tsai
Ferry Pier
Jetty
Pier
Seawall
Transfer Facility
Graves
Ruins
圖例 LEGEND :
將由合約編號DC/2007/18所興建之污水渠
PROPOSED SEWER TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2007/18
將由合約編號DC/2009/13所興建之海底排放管
PROPOSED SUBMARINE OUTFALL TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2009/13
將由合約編號DC/2009/13所興建之二級污水處理廠
PROPOSED SECONDARY SEWAGE TREATMENT WORKS TO BE CONSTRUCTED UNDER CONTRACT NO. DC/2009/13

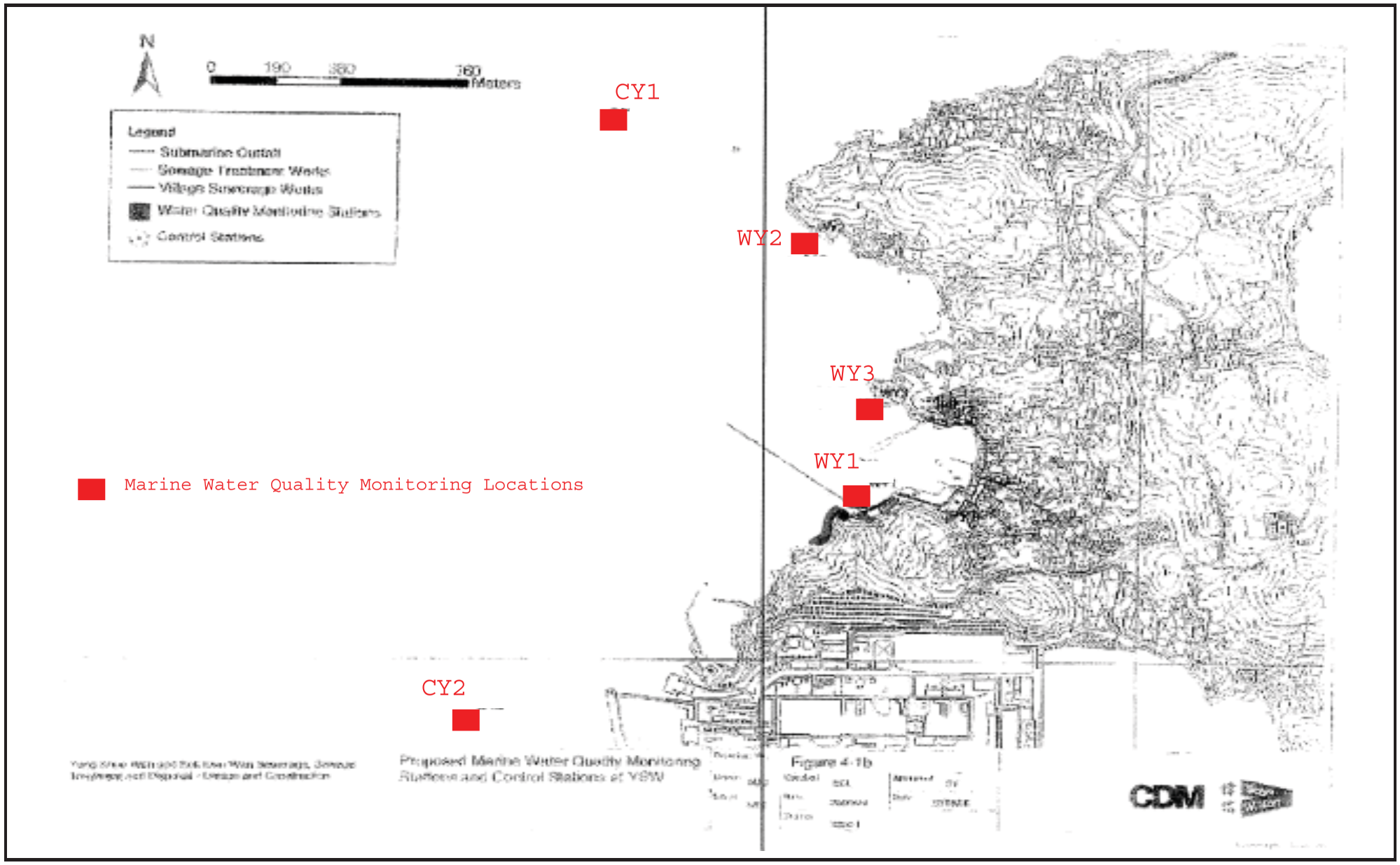
Appendix B

Organization Chart of Environmental Team


Environmental Team Leader
Mr. Tam Tak Wing
Environmental Consultant
Miss. Nicola Hon
Environmental Consultant
Mr. Ray Cheung
ENVIRONMENTAL SUPERVISOR
Mr. Benjamin Tam
Environmental Technicians & Administration Support from AUES

Appendix C

Marine Water Quality monitoring stations


N
0
190
380
760
Meters
Legend
Submarine Outfall
Sewage Treatment Works
Village Sewerage Works
Water Quality Monitoring Stations
Control Stations
CY1
WY2
WY3
WY1
CY2
Marine Water Quality Monitoring Locations
Proposed Marine Water Quality Monitoring
Stations and Control Stations at YSW
Figure 4-1b
CDM

Appendix D

Event/Action Plan

EVENT	ACTION			
	ET	IC(E)	ER	CONTRACTOR
ACTION LEVEL				
1. Exceedance for one sampling day	1. Repeat in-situ measurement on the next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform ICE, Contractor, ER, EPD and AFCD; and 4. Check monitoring data, all plant, equipment and Contractor's working methods.	1. Check monitoring data submitted by ET and Contractor's working methods	1. Confirm receipt of notification of non-compliance in writing; and 2. Notify Contractor	1. Information the ER and confirm notification of the non-compliance in writing; 2. Rectify unacceptable practice; and 3. Amend working methods if appropriate
2. Exceedance for two or more consecutive sampling days	1. Same as the above; 2. Inform ICE, Contractor, ER, EPD and AFCD; 3. Discuss mitigation measures with IC(E), RE and Contractor; 4. Ensure well implementation of mitigation measures; and 5. Increase the monitoring frequency to daily until no exceedance of Action Level	1. Same as the above; 2. Discuss with ET and Contractor on possible remedial actions; 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly; and 4. Supervise the implementation of mitigation measures.	1. Discuss with IC(E) on the proposed mitigation measures; 2. Ensure well implementation of mitigation measures; and 3. Assess the effectiveness of the implemented mitigation measures	1. Same as the above; 2. Check all plant and equipment and consider changes of working methods; 3. Submit proposal of additional mitigation measures to ER within 3 working days of notification and discuss with ET, IC(E), and ER; and 4. Implement the agreed mitigation measures
LIMIT LEVEL				
1. Exceedance for one sampling day	1. Repeat in-situ measurement on the next day of exceedance to confirm findings; 2. Identify source(s) of impact; 3. Inform ICE, Contractor, ER, EPD and AFCD; 4. Check monitoring data, all plant, equipment and Contractor's working methods; and 5. Discuss mitigation measures with IC(E), RE and Contractor	1. Check monitoring data submitted by ET and Contractor's working method 2. Discuss with ER and Contractor on possible remedial actions; and 3. Review the proposed mitigation measures submitted by Contractor and advise the ER accordingly	1. Confirm receipt of notification failure in writing; and 2. Discuss with IC(E), ET and 3. Contractor on the proposed mitigation measures; and 4. Request Contractor to review the working methods	1. Inform the ER and confirm notification of the failure in writing; 2. Rectify unacceptable practice; 3. Check all plant and equipment and consider changes of working methods; and 4. Submit proposal of mitigation measures to ER within 3 working days of notification and discuss with ET and ER
2. Exceedance for two or more consecutive sampling days	1. Same as the above; 2. Ensure mitigation measures are implemented; and 3. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days	1. Same as the above; and 2. Supervise the Implementation of mitigation measures	1. Same as the above; 2. Ensure well implementation of mitigation measures 3. Make agreement on the mitigation measures to be implemented; and 4. Consider and instruct, if necessary, the Contractor to stow down or to stop all or part of the construction activities until no exceedance of limit level	1. Same as the above; 2. Take immediate action to avoid further exceedance; 3. Implement the agreed mitigation measures; 4. Resubmit proposals of mitigation measures if problem still not under control; and 5. As directed by the Engineer, to slow down or to stop all or part of the construction activities until to no exceedance of Limit Level.

Appendix E

Calibration Certificates

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

ALS TECHNICHEM (HK) Pty Ltd
Environmental Division

CERTIFICATE OF ANALYSIS

CONTACT:	MR BEN TAM	**Batch:**	HK1016920
CLIENT:	ACTION UNITED ENVIRO SERVICES	**LABORATORY:**	HONG KONG
ADDRESS:	RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG., HONG KONG.	**DATE RECEIVED:**	27/07/2010
		DATE OF ISSUE:	02/08/2010
		SAMPLE TYPE:	EQUIPMENT
ORDER No.:		**No. of SAMPLES:**	1
PROJECT:			

COMMENTS

The calibration procedure used for the analysis has been applied for the calibration of the above instrument.

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd
11/F
Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA		*AMERICAS*
Brisbane	*Hong Kong*	*Vancouver*
Melbourne	*Singapore*	*Santiago*
Sydney	*Kuala Lumpur*	*Amtofagasta*
Newcastle	*Bogor*	*Lima*

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

CERTIFICATE OF ANALYSIS

Batch: HK1016920
Date of Issue: 02/08/2010
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Mulitimeter

Item : YSI SONDE Model No.: YSI 8520
ALS Lab ID: HK1016920 -001 Equipment No.: NA
Date of Calibration: 27 July, 2010 Serial No.: 02J0912(Sonde)02K0788AA(Data Locker)

Testing Results :

pH

Expected Reading	Recording Reading
4.00	3.87
7.00	7.08
10.00	9.98
Allowing Deviation	± 0.2 unit

Testing Method:
APHA (20th edition), 4500-H^+B

Conductivity

Expected Reading	Recording Reading
146.9 uS/cm	155 uS/cm
6667 uS/cm	6545 uS/cm
12890 uS/cm	12680 uS/cm
58670 uS/cm	56581 uS/cm
Allowing Deviation	± 10%

Testing Method:
APHA (20th edition), 2510B

Temperature

Expected Reading	Recording Reading
12.5 °C	12.21 °C
22.5 °C	22.91 °C
36.0 °C	36.00 °C
Allowing Deviation	±2.0°C

Testing Method:
In-House Method

Salinity

Expected Reading	Recording Reading
0 g/L	0.00 g/L
10 g/L	10.46 g/L
20 g/L	20.88 g/L
30 g/L	31.47 g/L
Allowing Deviation	± 10%

Testing Method:
APHA (20th edition), 2520 A and B

DO

Expected Reading	Recording Reading
7.30 mg/L	7.40 mg/L
5.97 mg/L	5.93 mg/L
4.84 mg/L	4.87 mg/L
Allowing Deviation	± 0.2 mg/L

Testing Method:
APHA (20th edition), 4500-OC & G

Turbidity

Expected Reading	Recording Reading
0 NTU	0.4 NTU
4 NTU	4.2 NTU
10 NTU	10.0 NTU
20 NTU	21.3 NTU
50 NTU	51.6 NTU
100 NTU	100.7 NTU
Allowing Deviation	± 10%

Testing Method:
APHA (19th edition), 2130B

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

ALS Technichem (HK) Pty Ltd

CERTIFICATE OF ANALYSIS

CONTACT:	MR BEN TAM	**Work Order:**	HK1025194
CLIENT:	ACTION UNITED ENVIRO SERVICES	**Amendment :**	1
ADDRESS:	RM A 20/F., GOLDEN KING IND BLDG,	**LABORATORY:**	HONG KONG
	NO. 35-41 TAI LIN PAI ROAD,	**DATE RECEIVED:**	26/10/2010
	KWAI CHUNG,	**DATE OF ISSUE:**	17/01/2011
	N.T., HONG KONG.	**SAMPLE TYPE:**	EQUIPMENT
		No. of SAMPLES:	1

COMMENTS

The calibration procedure used for the analysis has been applied for the calibration of the above instrument.

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: HONG KONG

Address

ALS Technichem (HK) Pty Ltd

11/F
Chung Shun Knitting Centre
1-3 Wing Yip Street
Kwai Chung
HONG KONG

Phone: 852-2610 1044
Fax: 852-2610 2021
Email: hongkong@alsenviro.com

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Other ALS Environmental Laboratories

AUSTRALIA		*AMERICAS*
Brisbane	*Hong Kong*	*Vancouver*
Melbourne	*Singapore*	*Santiago*
Sydney	*Kuala Lumpur*	*Amtofagasta*
Newcastle	*Bogor*	*Lima*

Abbreviations: *% SPK REC denotes percentage spike recovery*
CHK denotes duplicate check sample
LOR denotes limit of reporting
LCS % REC denotes Laboratory Control Sample percentage recovery

CERTIFICATE OF ANALYSIS

Work Order: HK1025194
Amendment: 1
Date of Issue: 17/01/2011
Client: ACTION UNITED ENVIRO SERVICES
Client Reference:

Calibration of Multimeter

Item : YSI Sonde
ALS Lab ID: HK1025194-001
Date of Calibration: 28 October, 2010

Model No.: YSI 6820
Equipment No. N/A
Serial No.: 02J0912 (Sonde) 02K0788AA (Data Locker)

Testing Results :

pH

Expected Reading	Recording Reading
4.00	4.08
7.00	7.13
10.0	10.1
Allowing Deviation	± 0.2 unit

Testing Method:

APHA (20th edition), 4500-H^+B

Temperature

Expected Reading	Recording Reading
15.0 °C	15.0 °C
22.0 °C	22.0 °C
33.0 °C	32.9 °C
Allowing Deviation	±2.0^{0}C

Testing Method:

In-House Method

Salinity

Expected Reading	Recording Reading
10.0 g/L	10.4 g/L
20.0 g/L	20.7 g/L
30.0 g/L	31.2 g/L
Allowing Deviation	± 10%

Testing Method:

APHA (20th edition), 2520 A and B

Dissolved Oxygen

Expected Reading	Recording Reading
5.83 mg/L	5.66 mg/L
6.55 mg/L	6.41 mg/L
7.88 mg/L	7.82 mg/L
Allowing Deviation	± 0.2 mg/L

Testing Method:

APHA (20th edition), 4500-OC & G

Mr Chan Kwok Fai, Godfrey
Laboratory Manager - Hong Kong

Hong Kong Accreditation Service
香港認可處

Certificate of Accreditation
認可證書

This is to certify that
特此證明

ALS TECHNICHEM (HK) PTY LIMITED

11/F., Chung Shun Knitting Centre, 1-3 Wing Yip Street, Kwai Chung, New Territories, Hong Kong
香港新界葵涌永業街1-3號忠信針織中心11樓

has been accepted by the HKAS Executive, on the recommendation of the Accreditation Advisory Board, as a
為香港認可處執行機關根據認可諮詢委員會建議而接受的

HOKLAS Accredited Laboratory
「香港實驗所認可計劃」認可實驗所

This laboratory meets the requirements of ISO / IEC 17025 : 2005 – General requirements for the competence of testing and calibration laboratories and it has been accredited for performing specific tests or calibrations as listed in the HOKLAS Directory of Accredited Laboratories within the test category of
此實驗所符合ISO / IEC 17025 : 2005 –《測試及校正實驗所能力的通用規定》所訂的要求，獲認可進行載於香港實驗所認可計劃《認可實驗所名冊》內下述測試類別中的指定測試或校正工作

Environmental Testing
環境測試

This laboratory is accredited in accordance with the recognised International Standard ISO / IEC 17025 : 2005.
本實驗所乃根據公認的國際標準 ISO / IEC 17025 : 2005 獲得認可。
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (see joint IAF-ILAC-ISO Communiqué).
這項認可資格演示在指定範疇所需的技術能力及實驗所質量管理體系的運作（見國際認可論壇、國際實驗所認可合作組織及國際標準化組織的聯合公報）。

The common seal of the Hong Kong Accreditation Service is affixed hereto by the authority of the HKAS Executive
香港認可處根據認可處執行機關的權限在此蓋上通用印章

CHAN Sing Sing, Terence, Executive Administrator
執行幹事 陳成城
Issue Date : 5 May 2009
簽發日期：二零零九年五月五日

Registration Number : HOKLAS 066
註冊號碼：

Date of First Registration : 15 September 1995
首次註冊日期：一九九五年九月十五日

This certificate is issued subject to the terms and conditions laid down by HKAS
本證書按照香港認可處訂立的條款及條件發出

L 000552

Appendix F

Scheduled Baseline Monitoring

Baseline Water Quality Monitoring Schedule – Yung ShueWan

Scheduled Monitoring Day		Scheduled Time for Measurements	
		Mid-Flood	Mid-Ebb
Thursday	29-July-10	20:00	14:12
Saturday	31-July-10	09:00	15:05
*Monday	23-August-10	18:00	11:48
*Friday	27-August-10	18:00	13:45
Monday	13-Sep-10	10:06	15:52
Friday	24-Sep-10	18:53	12:50
Thursday	7-Oct-10	17:50	11:47
*Thursday	26-Oct-10	8:36	13:53
Thursday	18-Nov-10	15:48	9:38
Tuesday	23-Nov-10	17:47	12:53
Tuesday	21-Dec-10	16:54	11:55
Thursday	28-Dec-10	12:11	18:45

***** Due to safety precaution, the subsequent monitoring time at the most early will be 8:00 and the latest will be 17:00

Appendix G

Water quality monitoring data sheet

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 29-Jul-10

Date / Time	Location	Tide	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
07/29/10 14:49:04	WY1	ME	829166	809540	5.2	1.096	28.44	6.04	89.6	1.9	25.56	7.99	5.3	0.103	0.69	<1
07/29/10 14:49:18						1.047	28.48	5.98	88.8	1.9	25.53	8.00				
07/29/10 14:49:58						3.935	28.25	5.65	83.7	4.5	25.82	7.96	3.2	0.099	0.69	<1
07/29/10 14:50:08						4.267	28.26	5.58	82.7	4.5	25.86	7.95				
07/29/10 14:18:48	WY2	ME	828994	810411	7.9	1.119	28.27	5.85	86.6	1.9	25.61	8.00	2.8	0.094	0.69	<1
07/29/10 14:19:06						1.027	28.26	5.74	85.0	2.0	25.62	7.99				
07/29/10 14:19:38						3.973	28.10	5.47	80.9	1.8	26.00	7.98	1.8	0.091	0.67	<1
07/29/10 14:19:49						4.026	28.10	5.42	80.2	1.9	25.98	7.98				
07/29/10 14:20:22						6.772	27.58	4.24	64.1	8.0	31.61	7.98	1.8	0.101	0.68	<1
07/29/10 14:20:31						6.953	27.56	4.11	62.1	11.6	31.70	7.97				
07/29/10 14:38:09	WY3	ME	829189	809852	5.1	1.039	28.39	5.62	83.3	2.2	25.59	7.99	3	0.099	0.7	<1
07/29/10 14:38:23						1.072	28.43	5.60	83.1	2.3	25.58	7.99				
07/29/10 14:38:56						4.191	28.24	5.32	78.8	4.5	25.81	7.96	1.8	0.097	0.71	2
07/29/10 14:39:16						4.173	28.24	5.26	77.8	4.1	25.82	7.95				
07/29/10 14:01:47	CY1	ME	828381	810787	12.2	1.117	28.09	5.44	80.4	2.8	26.09	7.90	3.4	0.104	0.66	<1
07/29/10 14:01:59						1.117	28.10	5.34	79.0	2.3	26.09	7.89				
07/29/10 14:03:11						6.034	27.95	5.24	77.7	1.5	27.08	7.90	4.8	0.101	0.63	<1
07/29/10 14:03:28						6.015	27.95	5.29	78.4	1.5	27.06	7.91				
07/29/10 14:04:14						10.993	26.70	3.14	47.3	12.8	33.64	7.82	6.5	0.096	0.64	<1
07/29/10 14:04:23						11.141	26.68	3.04	45.8	13.0	33.67	7.82				
07/29/10 13:37:38	CY2	ME	828010	808792	16.7	1.079	28.24	5.92	87.3	1.3	24.99	7.90	5	0.088	0.65	<1
07/29/10 13:37:48						0.952	28.24	5.85	86.2	1.4	25.00	7.90				
07/29/10 13:38:26						8.083	27.90	4.81	72.8	2.2	30.88	7.93	2	0.088	0.65	<1
07/29/10 13:38:40						8.228	27.72	4.63	70.2	2.5	31.68	7.92				
07/29/10 13:39:35						15.627	26.49	3.09	46.4	14.5	33.49	7.83	5	0.095	0.66	<1
07/29/10 13:39:43						15.246	26.55	3.06	46.0	13.9	33.44	7.84				
07/29/10 19:39:14	WY1	MF	829166	809547	5.3	1.100	27.72	5.43	79.8	2.0	25.99	8.02	2.4	0.095	0.66	17
07/29/10 19:39:29						0.916	27.71	5.17	75.9	2.1	26.00	8.02				
07/29/10 19:43:05						4.217	28.19	4.99	74.3	2.4	26.95	8.01	18	0.054	0.41	12
07/29/10 19:43:31						4.271	28.24	4.97	74.1	2.6	27.00	8.01				
07/29/10 20:21:01	WY2	MF	828988	810407	8.4	1.105	27.89	5.54	81.7	2.2	26.37	8.02	0.7	0.096	0.61	5
07/29/10 20:21:24						1.087	27.87	5.37	79.3	2.1	26.31	8.02				
07/29/10 20:22:13						4.296	28.35	4.98	75.1	2.6	28.74	8.04	6.5	0.078	0.53	8
07/29/10 20:22:52						4.182	28.40	4.70	70.8	3.4	28.49	8.04				
07/29/10 20:34:01						7.456	26.89	3.06	46.3	19.4	33.84	8.00	11	0.039	0.22	7
07/29/10 20:34:17						7.328	27.10	3.13	47.5	17.3	33.32	8.01				
07/29/10 20:07:25	WY3	MF	829197	809856	4.1	1.054	27.82	5.60	82.8	2.1	26.86	8.03	3.2	0.084	0.63	4
07/29/10 20:07:52						0.988	27.82	5.20	76.8	2.1	26.87	8.02				
07/29/10 20:08:21						4.024	27.98	4.87	73.7	3.6	30.74	8.04	7.8	0.073	0.52	12
07/29/10 20:08:35						3.973	27.89	4.61	69.8	4.9	30.97	8.04				
07/29/10 20:45:26	CY1	MF	828421	810814	11.8	1.140	27.72	5.41	79.3	2.2	25.58	8.02	3.3	0.082	0.62	40
07/29/10 20:45:37						1.043	27.72	5.27	77.2	2.1	25.56	8.02				
07/29/10 20:46:26						6.280	27.79	4.25	64.1	2.2	30.74	8.09	9	0.045	0.39	29
07/29/10 20:46:49						6.184	27.78	4.60	69.6	2.0	31.14	8.09				
07/29/10 20:48:55						10.798	26.19	3.67	55.2	9.2	34.58	8.00	10.3	0.074	0.48	22
07/29/10 20:49:14						10.708	26.14	3.29	49.4	10.6	34.62	8.00				
07/29/10 19:05:53	CY2	MF	828006	808805	14.2	0.950	27.67	5.05	74.2	2.3	26.07	8.02	5.4	0.12	0.68	30
07/29/10 19:06:18						1.014	27.67	5.07	74.5	2.2	26.06	8.02				
07/29/10 19:12:08						7.041	27.84	4.45	66.9	4.0	29.70	8.04	8.8	0.082	0.46	13
07/29/10 19:12:24						7.094	27.68	4.18	62.8	4.4	29.85	8.03				
07/29/10 19:12:54						13.185	26.92	3.28	49.7	7.7	33.97	8.02	4.3	0.064	0.28	4
07/29/10 19:13:10						13.500	26.68	2.95	44.6	9.6	34.22	8.01				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 31-Jul-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
07/31/10 14:09:45	WY1	ME	829184	809545	5.2	1.128	29.50	7.62	115.5	1.8	26.25	7.37	4.2	0.105	0.62	4
07/31/10 14:10:00						1.152	29.44	7.45	112.8	1.8	26.28	7.35				
07/31/10 14:10:46						4.353	28.76	7.35	110.3	4.9	26.54	7.22	3.1	0.104	0.61	4
07/31/10 14:10:59						4.274	28.79	7.22	108.3	4.2	26.51	7.22				
07/31/10 15:15:46	WY2	ME	829013	810413	6.3	1.086	30.24	10.36	159.1	1.7	26.50	8.29	3.7	0.028	0.41	<1
07/31/10 15:16:04						1.146	30.13	10.27	157.5	1.7	26.52	8.27				
07/31/10 15:16:51						3.338	29.59	9.44	143.7	1.7	26.75	8.21	3.8	0.025	0.42	<1
07/31/10 15:17:06						3.341	29.52	9.39	142.9	1.8	26.80	8.19				
07/31/10 15:18:17						5.252	28.92	7.02	106.1	2.7	27.43	8.02	4.4	0.021	0.4	<1
07/31/10 15:18:40						5.317	28.99	6.88	104.0	2.6	27.38	8.04				
07/31/10 14:20:04	WY3	ME	829188	809849	5.2	0.979	30.31	9.30	142.8	1.9	26.27	7.77	3.9	0.022	0.42	<1
07/31/10 14:20:21						1.001	30.39	9.41	144.7	1.8	26.21	7.81				
07/31/10 14:21:05						4.326	28.87	7.50	112.8	2.8	26.84	7.65	3.8	0.02	0.42	<1
07/31/10 14:21:24						4.297	28.84	7.49	112.7	3.0	26.86	7.64				
07/31/10 15:02:13	CY1	ME	828400	810814	11.2	1.116	28.14	8.03	118.9	1.7	26.21	7.95	3	0.067	0.61	2
07/31/10 15:02:34						1.026	28.16	7.80	115.6	1.9	26.20	7.95				
07/31/10 15:03:43						5.713	27.92	5.74	86.1	1.8	29.07	7.88	1.5	0.059	0.53	2
07/31/10 15:03:57						5.709	27.93	5.65	84.8	1.8	29.14	7.88				
07/31/10 15:06:19						10.202	25.47	2.79	41.5	6.5	35.01	7.75	2.8	0.044	0.54	8
07/31/10 15:06:31						10.131	25.53	2.78	41.3	6.5	34.97	7.75				
07/31/10 14:38:28	CY2	ME	827996	808820	17.4	1.040	29.31	10.26	154.9	1.5	26.05	8.06	4.6	0.024	0.42	<1
07/31/10 14:38:43						0.960	29.43	10.01	151.3	1.6	26.00	8.07				
07/31/10 14:40:02						8.777	27.30	4.40	67.0	2.3	33.74	7.78	4.3	0.02	0.45	<1
07/31/10 14:40:28						8.845	27.43	4.45	67.9	2.0	33.61	7.78				
07/31/10 14:41:31						16.178	24.82	2.70	39.8	11.3	35.23	7.59	4.9	0.034	0.43	<1
07/31/10 14:41:51						16.149	24.72	2.62	38.5	11.8	35.29	7.59				
07/31/10 09:21:36	WY1	MF	829192	809552	5.4	0.948	28.38	6.21	92.5	2.2	26.44	8.01	2.9	0.02	0.47	<1
07/31/10 09:21:57						0.991	28.36	6.09	90.6	2.4	26.46	8.00				
07/31/10 09:22:50						4.432	28.50	5.74	85.8	3.8	26.69	7.98	3.2	0.026	0.48	1
07/31/10 09:23:19						4.469	28.51	5.71	85.4	3.3	26.71	7.98				
07/31/10 09:47:08	WY2	MF	829014	810408	7.1	1.065	28.43	5.99	89.3	1.9	26.52	8.01	3.1	0.094	0.6	2
07/31/10 09:47:17						1.044	28.44	5.89	87.9	2.4	26.52	8.01				
07/31/10 09:47:57						3.565	27.97	5.56	82.3	3.5	26.56	8.00	2.6	0.092	0.6	2
07/31/10 09:48:08						3.563	28.00	5.52	81.8	3.7	26.61	8.00				
07/31/10 09:48:49						6.126	27.87	4.93	73.4	12.0	28.12	7.98	4.3	0.091	0.57	6
07/31/10 09:49:03						6.121	27.87	4.85	72.3	13.9	28.17	7.98				
07/31/10 09:34:40	WY3	MF	829181	809849	5.7	1.142	28.41	6.01	89.6	1.9	26.52	8.00	2.4	0.095	0.6	8
07/31/10 09:34:57						1.127	28.52	5.96	89.0	2.1	26.53	8.00				
07/31/10 09:35:49						4.733	28.04	5.58	82.6	4.0	26.58	7.98	2.9	0.103	0.62	11
07/31/10 09:36:03						4.839	28.02	5.53	82.0	3.9	26.57	7.98				
07/31/10 08:26:32	CY1	MF	828392	810778	12.2	1.046	28.57	5.87	87.4	1.7	25.92	8.01	1.3	0.088	0.59	6
07/31/10 08:27:03						1.066	28.57	5.83	86.9	1.6	25.98	8.01				
07/31/10 08:28:02						6.165	27.97	4.99	74.2	2.8	27.26	7.99	2.2	0.083	0.54	17
07/31/10 08:28:37						6.125	27.82	4.77	70.9	2.9	27.51	7.99				
07/31/10 08:30:03						11.003	25.16	1.95	28.7	13.5	34.39	7.89	1.8	0.1	0.64	15
07/31/10 08:30:16						11.036	25.02	1.93	28.4	11.6	34.48	7.89				
07/31/10 08:57:12	CY2	MF	828976	808822	19	1.075	28.84	7.15	107.5	1.3	26.85	8.09	1.6	0.062	0.52	<1
07/31/10 08:57:29						1.144	28.84	7.00	105.3	1.3	26.84	8.09				
07/31/10 08:58:39						9.604	26.27	3.50	52.5	5.8	34.12	7.98	6.4	0.021	0.16	2
07/31/10 08:58:59						9.623	26.29	3.45	51.9	5.8	34.10	7.98				
07/31/10 09:00:02						17.407	24.62	2.28	33.5	14.5	35.09	7.89	6	0.021	0.19	<1
07/31/10 09:00:15						17.490	24.62	2.23	32.8	14.3	35.09	7.89				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 23-Aug-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
08/23/10 11:09:19	WY1	ME	829180	809540	3.4	1.105	28.44	6.33	95.9	5.5	29.16	8.18	10.9	0.04	0.22	12
08/23/10 11:09:31						1.096	28.44	6.34	95.9	5.4	29.16	8.20				
08/23/10 11:10:20						2.392	28.41	6.46	97.7	5.3	29.21	8.21	10.4	0.034	0.21	12
08/23/10 11:10:34						2.390	28.43	6.46	97.7	4.8	29.19	8.21				
08/23/10 12:12:50	WY2	ME	828993	810412	6.8	1.112	28.93	6.44	98.7	3.2	29.92	8.28	10.5	0.02	0.2	1
08/23/10 12:13:05						1.135	28.90	6.36	97.4	3.2	29.94	8.28				
08/23/10 12:13:58						3.417	28.30	5.98	90.8	7.3	30.23	8.26	7.8	0.02	0.2	<1
08/23/10 12:14:18						3.233	28.30	5.95	90.4	7.4	30.23	8.26				
08/23/10 12:15:46						5.818	28.22	5.66	85.9	11.8	30.28	8.24	19.4	0.018	0.2	<1
08/23/10 12:15:57						5.849	28.22	5.65	85.8	12.0	30.28	8.24				
08/23/10 12:33:00	WY3	ME	829205	809849	4.8	1.100	28.74	6.41	98.0	4.7	30.10	8.26	7.4	0.024	0.2	8
08/23/10 12:33:14						1.095	28.72	6.43	98.2	5.1	30.11	8.25				
08/23/10 12:33:52						3.840	28.59	6.34	96.7	5.5	30.17	8.26	11.8	0.007	0.18	15
08/23/10 12:34:19						3.735	28.55	6.34	96.7	6.4	30.20	8.25				
08/23/10 11:56:04	CY1	ME	828406	810795	13.2	1.068	28.59	7.37	112.0	2.4	29.41	8.37	5.5	0.005	0.18	<1
08/23/10 11:56:12						1.017	28.61	7.43	112.9	2.5	29.41	8.37				
08/23/10 11:57:31						6.705	28.39	6.58	99.9	2.9	29.68	8.31	5.9	0.026	0.23	<1
08/23/10 11:57:41						6.557	28.44	6.59	100.1	2.7	29.64	8.31				
08/23/10 11:59:09						12.302	27.38	4.18	62.8	16.1	30.87	8.10	7.1	0.027	0.23	4
08/23/10 11:59:25						12.177	27.41	4.22	63.3	14.4	30.69	8.11				
08/23/10 11:25:38	CY2	ME	827998	808809	18.9	1.008	28.83	7.23	110.3	1.3	29.49	8.31	4.8	0.013	0.017	<1
08/23/10 11:25:50						1.061	28.83	7.20	109.9	1.3	29.49	8.31				
08/23/10 11:27:06						9.291	28.53	6.50	98.9	5.5	29.78	8.29	5.7	0.02	0.018	1
08/23/10 11:27:33						9.150	28.53	6.45	98.2	5.3	29.78	8.29				
08/23/10 11:32:55						17.775	24.98	2.35	34.6	13.6	34.42	7.82	13	0.029	0.019	<1
08/23/10 11:33:03						17.798	24.87	1.90	27.9	12.9	34.53	7.81				
08/23/10 17:35:28	WY1	MF	829156	809571	3.7	1.010	28.09	6.13	92.7	18.5	29.93	8.21	28	0.03	0.27	7
08/23/10 17:35:43						1.003	28.09	6.08	91.9	18.4	29.93	8.21				
08/23/10 17:36:49						2.706	27.89	5.98	90.2	20.2	29.99	8.19	27.9	0.036	0.28	4
08/23/10 17:37:08						2.727	27.91	5.91	89.1	19.6	29.99	8.19				
08/23/10 17:49:37	WY2	MF	829011	810400	6.4	1.177	28.40	6.36	96.7	7.3	30.04	8.26	17.2	0.028	0.25	2
08/23/10 17:49:44						1.145	28.46	6.41	97.5	7.4	30.02	8.26				
08/23/10 17:50:29						3.479	28.11	6.05	91.5	9.2	30.05	8.23	12.2	0.024	0.23	<1
08/23/10 17:50:40						3.254	28.11	5.99	90.7	9.6	30.08	8.24				
08/23/10 17:51:12						5.480	27.73	5.67	85.2	14.6	30.05	8.18	13.5	0.031	0.25	<1
08/23/10 17:51:21						5.455	27.73	5.61	84.3	14.6	30.05	8.18				
08/23/10 17:42:24	WY3	MF	829208	809830	4.3	0.927	27.66	6.34	95.2	11.3	30.03	8.16	14.6	0.033	0.25	2
08/23/10 17:42:35						1.117	27.60	6.00	90.0	12.5	30.10	8.17				
08/23/10 17:43:28						3.451	27.37	5.50	82.3	20.6	30.27	8.16	20.4	0.045	0.3	7
08/23/10 17:43:37						3.332	27.36	5.48	81.9	20.8	30.27	8.15				
08/23/10 17:57:56	CY1	MF	828392	810794	11.9	1.163	29.17	6.15	94.7	6.3	30.10	8.26	10	0.015	0.24	2
08/23/10 17:58:03						1.146	29.17	6.24	94.8	6.2	27.65	8.26				
08/23/10 18:00:35						5.897	27.84	6.32	95.2	7.9	30.23	8.24	9.8	0.022	0.24	<1
08/23/10 18:00:42						5.914	27.84	6.28	94.6	7.2	30.23	8.24				
08/23/10 18:01:30						10.502	26.91	5.39	80.3	16.5	30.70	8.14	10.5	0.022	0.24	2
08/23/10 18:01:38						10.428	26.91	5.36	79.7	15.3	30.70	8.14				
08/23/10 17:04:21	CY2	MF	827994	808814	16.2	1.077	28.36	6.84	103.3	4.2	29.07	8.06	8.9	0.02	0.22	<1
08/23/10 17:04:36						1.074	28.37	6.78	102.5	4.3	29.08	8.06				
08/23/10 17:05:48						8.114	27.47	5.92	88.2	9.7	29.40	7.97	11.9	0.029	0.25	2
08/23/10 17:06:01						8.185	27.43	5.93	88.4	9.7	29.42	7.96				
08/23/10 17:20:20						15.433	26.04	2.81	41.6	8.4	32.69	7.91	11.5	0.026	0.25	8
08/23/10 17:20:38						15.037	26.05	2.80	41.5	9.1	32.66	7.91				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 27-Aug-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
08/27/10 14:33:15	WY1	ME	829199	809576	4.5	1.072	29.55	7.21	111.6	5.6	29.91	8.29	6.8	0.089	0.42	<1
08/27/10 14:33:24						1.058	29.50	7.65	118.4	4.7	29.93	8.29				
08/27/10 14:33:58						3.487	28.76	5.72	87.5	14.2	30.19	8.13	6.8	0.075	0.42	<1
08/27/10 14:34:10						3.462	28.77	5.68	87.0	12.1	30.15	8.14				
08/27/10 14:07:00	WY2	ME	828994	810378	6.5	1.232	29.54	8.36	129.2	2.8	29.67	8.36	5.3	0.073	0.33	<1
08/27/10 14:07:15						1.166	29.55	8.64	133.6	2.5	29.71	8.36				
08/27/10 14:07:38						3.138	28.34	5.91	89.7	4.3	30.00	8.29	5.6	0.084	0.33	<1
08/27/10 14:08:10						3.221	28.55	7.73	117.7	3.1	29.89	8.30				
08/27/10 14:08:38						5.685	27.60	4.68	71.0	7.6	32.07	8.14	5.3	0.07	0.33	<1
08/27/10 14:08:58						5.313	27.69	4.74	71.9	6.2	31.63	8.16				
08/27/10 14:23:29	WY3	ME	829203	809846	3.9	1.027	29.63	6.38	98.9	4.6	29.82	8.19	5.9	0.056	0.34	<1
08/27/10 14:23:40						1.064	29.67	6.42	99.5	3.9	29.82	8.20				
08/27/10 14:24:11						2.856	28.78	5.81	88.8	10.6	30.10	8.17	12.9	0.057	0.33	<1
08/27/10 14:24:20						3.011	28.96	5.94	91.1	9.0	30.01	8.17				
08/27/10 13:30:01	CY1	ME	828400	810842	11.5	0.908	28.85	5.80	88.5	3.4	29.52	8.24	5.5	0.074	0.34	<1
08/27/10 13:30:12						0.987	28.91	6.57	100.4	2.9	29.48	8.24				
08/27/10 13:30:49						5.377	27.39	4.35	65.2	6.4	30.65	8.09	6.2	0.082	0.34	<1
08/27/10 13:31:05						5.772	27.39	4.51	67.7	6.2	30.73	8.09				
08/27/10 13:31:41						10.483	27.19	3.19	48.4	5.7	33.14	8.11	6.2	0.078	0.35	<1
08/27/10 13:31:51						10.474	27.10	3.63	55.0	4.2	33.21	8.10				
08/27/10 12:46:41	CY2	ME	827969	808851	14.9	1.110	29.53	8.14	125.9	2.6	29.85	8.32	7.2	0.072	0.3	<1
08/27/10 12:47:02						1.158	29.58	8.16	126.4	2.6	29.86	8.33				
08/27/10 12:48:41						7.186	28.09	7.28	111.1	3.2	31.63	8.19	8.4	0.08	0.3	<1
08/27/10 12:48:51						7.369	28.08	6.06	92.5	3.2	31.69	8.18				
08/27/10 12:50:10						13.581	26.85	3.31	49.9	4.5	33.32	8.06	6.1	0.068	0.33	<1
08/27/10 12:50:19						13.545	26.93	3.50	52.9	3.4	33.27	8.07				
08/27/10 17:20:46	WY1	MF	829161	809564	4.4	1.034	28.43	7.14	108.5	4.3	29.85	8.28	12.6	0.058	0.33	<1
08/27/10 17:20:55						1.011	28.43	7.35	111.7	4.2	29.84	8.28				
08/27/10 17:21:17						3.762	27.98	7.00	105.8	6.4	30.20	8.21	9.1	0.066	0.35	<1
08/27/10 17:21:24						3.389	28.04	6.73	101.7	5.6	30.15	8.22				
08/27/10 17:32:24	WY2	MF	828871	810430	7.2	1.086	29.33	8.04	124.0	4.2	29.80	8.32	13.4	0.054	0.3	<1
08/27/10 17:32:38						1.076	29.28	8.12	125.1	4.0	29.80	8.32				
08/27/10 17:33:02						3.655	28.74	7.08	108.2	6.7	30.03	8.30	8.3	0.082	0.31	<1
08/27/10 17:33:10						3.630	28.72	7.45	113.8	6.3	30.04	8.30				
08/27/10 17:33:48						6.167	28.45	6.58	100.3	8.5	30.25	8.25	6.8	0.065	0.34	<1
08/27/10 17:33:59						6.162	28.46	7.04	107.3	8.4	30.27	8.23				
08/27/10 17:24:02	WY3	MF	829185	809839	4.1	1.050	28.47	7.05	107.1	8.5	29.84	8.25	15.9	0.048	0.35	<1
08/27/10 17:24:12						1.064	28.43	7.10	107.9	8.4	29.82	8.25				
08/27/10 17:24:51						3.236	28.55	6.81	103.8	11.4	30.07	8.23	13.7	0.051	0.35	<1
08/27/10 17:25:15						3.227	28.54	6.81	103.7	10.9	30.05	8.24				
08/27/10 17:44:16	CY1	MF	828440	818819	11.9	1.177	28.51	6.92	104.9	2.9	29.33	8.24	6.3	0.085	0.44	<1
08/27/10 17:44:25						1.143	28.52	6.97	105.7	3.0	29.30	8.24				
08/27/10 17:44:52						6.090	27.78	5.78	86.9	7.3	30.05	8.16	5.9	0.074	0.42	<1
08/27/10 17:45:01						6.066	27.77	5.78	87.0	6.5	30.05	8.16				
08/27/10 17:45:48						10.461	27.72	5.81	87.4	14.9	30.31	8.16	14.9	0.097	0.45	<1
08/27/10 17:46:07						11.028	27.72	5.80	87.3	14.0	30.32	8.16				
08/27/10 17:10:48	CY2	MF	828031	808785	15.2	1.104	29.01	6.91	105.8	3.2	29.46	8.25	6.8	0.062	0.44	<1
08/27/10 17:10:57						1.055	29.03	7.04	107.8	3.0	29.44	8.25				
08/27/10 17:11:45						7.575	27.71	5.20	78.4	6.3	30.74	8.14	8	0.076	0.47	<1
08/27/10 17:11:53						7.606	27.74	5.39	81.3	6.2	30.72	8.14				
08/27/10 17:12:26						14.107	26.36	2.87	43.1	8.3	33.96	7.98	12.5	0.067	0.44	<1
08/27/10 17:12:31						14.153	26.28	2.85	42.7	8.8	34.08	7.98				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 13-Sep-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
09/13/10 14:51:56	WY1	ME	829190	809556	4.8	1.100	28.62	4.21	65.2	3.7	32.76	7.67	4.2	<0.005	0.45	11
09/13/10 14:52:27						1.110	28.58	4.43	67.8	3.2	30.87	7.67				
09/13/10 14:52:48						3.886	27.12	3.35	50.8	5.4	33.56	7.60	3.3	<0.005	0.44	9
09/13/10 14:52:55						3.895	27.21	3.85	58.5	5.1	33.46	7.62				
09/13/10 15:17:39	WY2	ME	829015	810428	7.1	1.103	28.27	4.72	72.2	3.3	31.50	7.87	3.5	<0.005	0.46	1
09/13/10 15:17:49						1.251	28.21	4.78	73.1	3.3	31.60	7.86				
09/13/10 15:18:31						3.531	27.30	3.70	56.4	2.7	33.96	7.85	3.6	<0.005	0.44	2
09/13/10 15:18:53						3.587	27.26	3.89	59.3	2.4	33.95	7.86				
09/13/10 15:19:32						6.135	26.73	3.51	53.1	6.9	34.53	7.82	2.8	<0.005	0.45	1
09/13/10 15:19:39						6.209	26.72	3.45	51.7	5.4	32.45	7.82				
09/13/10 15:09:23	WY3	ME	829170	809870	5.6	1.067	28.03	4.23	63.9	5.0	30.31	7.76	4.2	<0.005	0.44	19
09/13/10 15:09:36						1.023	28.10	4.28	65.4	4.7	32.14	7.77				
09/13/10 15:10:07						4.754	27.29	3.80	58.0	9.4	34.23	7.74	4.3	<0.005	0.43	8
09/13/10 15:10:13						4.852	27.09	3.65	55.7	9.0	34.50	7.73				
09/13/10 15:29:43	CY1	ME	828381	810822	11.5	1.106	27.64	4.65	69.7	1.9	29.92	7.88	1.6	<0.005	0.59	12
09/13/10 15:29:52						1.115	27.63	4.68	70.2	1.8	30.01	7.88				
09/13/10 15:30:24						5.445	27.01	2.95	44.4	2.0	32.72	7.89	1.9	<0.005	0.57	3
09/13/10 15:30:32						5.397	27.10	3.39	50.6	1.9	30.65	7.89				
09/13/10 15:31:23						10.530	25.27	2.20	32.9	3.8	36.41	7.85	1.8	<0.005	0.58	1
09/13/10 15:31:42						10.585	25.24	2.18	32.6	3.5	36.42	7.85				
09/13/10 15:45:28	CY2	ME	828017	810822	11.1	1.266	27.58	4.15	62.2	2.3	30.04	7.89	2.3	<0.005	0.59	<1
09/13/10 15:45:54						1.129	27.56	4.53	68.0	2.0	30.11	7.89				
09/13/10 15:46:33						5.479	27.07	3.28	49.4	1.9	32.37	7.91	1.5	<0.005	0.6	<1
09/13/10 15:46:45						5.685	27.09	3.72	56.1	1.9	32.47	7.91				
09/13/10 15:47:10						10.201	25.29	2.58	38.6	2.7	36.37	7.86	2.6	<0.005	0.58	4
09/13/10 15:47:29						10.162	25.38	2.21	33.0	2.8	36.27	7.86				
09/13/10 09:13:40	WY1	MF	829195	809535	5.2	1.012	28.37	5.39	79.6	3.1	25.19	7.89	3.4	<0.005	0.48	3
09/13/10 09:13:48						1.001	28.36	5.37	79.3	3.2	25.17	7.89				
09/13/10 09:14:18						4.166	27.18	4.39	64.9	5.6	28.60	7.87	3.6	<0.005	0.48	22
09/13/10 09:14:26						4.071	27.17	4.34	64.5	5.8	28.90	7.86				
09/13/10 10:15:18	WY2	MF	829020	810431	7.2	1.130	27.39	3.97	58.3	5.9	27.07	7.92	6.6	<0.005	0.49	41
09/13/10 10:15:24						1.125	27.50	4.39	65.5	5.8	29.36	7.93				
09/13/10 10:15:48						3.489	26.40	2.70	40.1	18.2	31.75	7.92	6	<0.005	0.49	14
09/13/10 10:15:54						3.487	26.41	2.77	41.1	16.9	31.76	7.92				
09/13/10 10:16:19						5.830	26.18	2.55	37.9	21.5	32.74	7.93	7.9	<0.005	0.47	29
09/13/10 10:16:33						5.760	26.18	2.54	37.8	20.6	32.74	7.93				
09/13/10 10:26:17	WY3	MF	829178	809865	5	1.031	28.02	4.63	69.7	4.0	29.43	7.94	3.4	<0.005	0.5	14
09/13/10 10:26:22						1.171	28.06	4.73	71.3	3.7	29.40	7.94				
09/13/10 10:26:52						4.066	26.97	3.50	52.3	10.9	31.21	7.93	4.8	<0.005	0.49	24
09/13/10 10:26:56						4.100	27.00	3.58	53.6	9.5	31.20	7.94				
09/13/10 10:01:29	CY1	MF	828407	810808	11.2	1.026	27.17	3.64	53.4	4.8	27.42	7.91	1.7	<0.005	0.69	3
09/13/10 10:01:33						1.011	27.19	3.71	54.4	3.8	27.41	7.91				
09/13/10 10:02:14						5.484	26.25	2.43	36.1	8.6	32.66	7.96	3.7	<0.005	0.68	24
09/13/10 10:02:20						5.631	26.13	2.58	38.4	8.2	32.80	7.95				
09/13/10 10:02:39						10.080	25.81	2.24	33.3	19.8	33.87	7.95	17.3	<0.005	0.39	41
09/13/10 10:02:45						10.168	25.81	2.18	32.4	19.8	33.87	7.95				
09/13/10 09:33:28	CY2	MF	828019	808810	14.8	1.216	27.10	3.91	57.6	3.6	28.06	7.91	3	<0.005	0.64	35
09/13/10 09:33:41						1.250	27.10	3.95	58.0	3.6	28.05	7.91				
09/13/10 09:34:55						7.027	26.35	2.44	36.5	3.1	33.01	7.95	3.5	<0.005	0.62	55
09/13/10 09:35:11						7.065	26.26	2.62	38.4	3.2	30.18	7.95				
09/13/10 09:35:39						13.338	25.46	1.76	26.1	7.5	33.88	7.91	3.6	<0.005	0.64	36
09/13/10 09:35:44						12.959	25.49	1.81	26.8	8.5	33.84	7.91				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 24-Sep-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
09/24/10 11:45:06	WY1	ME	829153	809561	5.3	1.116	26.77	3.22	47.2	2.7	28.81	7.94	5.1	0.041	0.51	<1
09/24/10 11:45:15						1.142	26.74	3.31	48.6	2.4	28.83	7.95				
09/24/10 11:45:45						4.276	26.14	3.30	48.1	5.2	29.18	7.92	7.7	0.048	0.51	<1
09/24/10 11:45:53						4.293	26.16	3.26	47.6	4.1	29.20	7.92				
09/24/10 12:09:30	WY2	ME	829010	810378	6.5	0.942	27.00	3.73	55.0	2.1	28.99	8.03	4.4	0.038	0.52	<1
09/24/10 12:09:39						1.296	27.12	4.10	60.2	1.6	27.70	8.04				
09/24/10 12:09:59						3.325	26.30	3.09	45.2	4.6	29.38	7.98	6.6	0.045	0.5	<1
09/24/10 12:10:09						3.409	26.48	3.36	49.3	4.3	29.41	7.98				
09/24/10 12:10:29						5.576	25.57	2.99	43.5	9.9	30.62	7.95	5.7	0.036	0.5	<1
09/24/10 12:10:40						5.585	25.56	2.94	42.7	9.4	30.66	7.95				
09/24/10 11:53:27	WY3	ME	829202	809844	5.4	1.072	27.09	3.48	51.3	2.4	28.76	7.97	10	0.056	0.56	2
09/24/10 11:53:34						1.135	27.12	3.51	51.9	2.1	28.75	7.97				
09/24/10 11:54:06						4.317	26.15	3.34	48.7	7.5	29.41	7.92	11.6	0.051	0.52	4
09/24/10 11:54:14						4.416	26.15	3.31	48.3	6.7	29.42	7.92				
09/24/10 12:26:06	CY1	ME	828403	810792	11.6	1.228	27.16	4.06	60.0	1.1	28.73	8.10	7.1	0.024	0.47	1
09/24/10 12:26:12						1.133	27.12	4.29	63.3	1.0	28.72	8.10				
09/24/10 12:26:59						5.613	25.61	3.15	45.3	2.4	28.33	7.99	3.2	0.039	0.5	<1
09/24/10 12:27:07						5.863	25.63	3.19	46.4	2.3	30.39	7.99				
09/24/10 12:27:47						10.586	23.98	2.09	30.3	5.0	34.30	7.96	10.2	0.037	0.5	<1
09/24/10 12:27:54						10.728	23.98	1.99	28.8	5.0	34.38	7.96				
09/24/10 12:48:47	CY2	ME	827998	808791	16.5	1.148	27.05	4.11	60.8	1.1	29.07	8.11	6.5	0.02	0.49	1
09/24/10 12:49:00						1.029	27.06	4.20	60.9	1.0	25.47	8.11				
09/24/10 12:49:34						8.334	25.55	2.72	39.8	4.0	31.34	8.04	3.3	0.017	0.47	<1
09/24/10 12:49:43						8.401	25.72	2.69	39.3	3.6	31.22	8.05				
09/24/10 12:50:43						15.608	24.11	1.94	28.1	11.2	34.48	7.98	8.5	0.015	0.42	2
09/24/10 12:50:53						15.592	24.11	2.01	29.1	10.1	34.53	7.98				
09/24/10 17:19:24	WY1	MF	829178	809541	4.5	0.984	26.83	3.54	51.3	2.9	26.14	7.87	4.9	0.015	0.44	<1
09/24/10 17:20:07						1.093	26.83	3.48	51.5	2.7	29.99	7.88				
09/24/10 17:20:34						3.585	26.61	3.20	47.4	4.9	30.52	7.84	13.9	0.018	0.45	<1
09/24/10 17:20:40						3.496	26.36	3.22	47.4	4.6	30.57	7.83				
09/24/10 17:42:31	WY2	MF	829018	810385	7.5	0.983	27.41	3.53	52.5	1.8	29.39	8.06	5.4	0.044	0.49	<1
09/24/10 17:42:38						0.982	27.57	3.77	55.0	1.5	25.28	8.07				
09/24/10 17:43:04						3.628	26.28	3.41	50.1	2.4	30.30	7.99	5.4	0.043	0.5	1
09/24/10 17:43:12						3.637	26.27	3.37	49.5	2.4	30.31	7.98				
09/24/10 17:43:30						6.559	25.90	2.91	42.9	7.7	31.63	7.97	7	0.047	0.52	1
09/24/10 17:43:37						6.590	25.85	2.95	43.3	7.8	31.69	7.98				
09/24/10 17:29:16	WY3	MF	829179	809839	5.5	1.174	27.18	3.44	51.2	5.2	29.81	7.93	7.7	0.062	0.51	2
09/24/10 17:29:22						1.123	27.21	3.35	49.8	4.2	29.68	7.94				
09/24/10 17:29:40						4.723	26.35	3.02	44.4	6.8	30.62	7.93	4	0.062	0.54	2
09/24/10 17:29:49						4.587	26.36	3.15	45.5	6.8	26.78	7.92				
09/24/10 17:57:24	CY1	MF	828389	810795	11.8	1.052	26.52	2.85	42.0	1.8	29.85	7.99	9.5	0.073	0.57	1
09/24/10 17:57:34						1.366	26.53	2.84	41.9	1.7	29.96	7.99				
09/24/10 17:58:04						6.183	26.23	2.41	35.3	4.9	30.43	7.95	6.2	0.072	0.57	<1
09/24/10 17:58:08						6.284	26.27	2.48	36.5	4.1	30.42	7.96				
09/24/10 17:59:04						10.828	24.58	1.53	22.3	13.3	34.12	7.96	4.2	0.073	0.57	<1
09/24/10 17:59:12						10.805	24.54	1.62	23.6	13.1	34.20	7.96				
09/24/10 18:18:48	CY2	MF	827990	808814	12.1	1.265	26.60	3.25	47.8	2.7	29.63	7.99	6.6	0.078	0.57	<1
09/24/10 18:18:56						1.155	26.62	3.29	48.4	2.4	29.54	8.00				
09/24/10 18:19:26						6.145	25.75	2.74	40.0	5.4	30.51	7.99	5.4	0.08	0.58	2
09/24/10 18:19:30						5.982	25.76	2.79	40.7	4.6	30.50	7.99				
09/24/10 18:19:59						10.890	24.70	2.34	34.1	14.3	33.46	7.99	4.3	0.073	0.57	1
09/24/10 18:20:11						10.957	24.61	2.17	31.6	14.4	33.76	7.99				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 7-Oct-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
2010/10/7 11:02:46	WY1	ME	829159	809534	5.3	0.973	27.39	5.78	86.7	7.2	30.79	8.20	8.7	<0.005	0.08	1
2010/10/7 11:03:12						1.041	27.39	5.69	85.2	7.4	30.84	8.23				
2010/10/7 11:04:15						4.259	27.42	5.41	82.4	7.6	30.90	8.24	7.8	<0.005	0.08	2
2010/10/7 11:04:35						4.192	27.41	5.50	83.6	8.8	30.88	8.23				
2010/10/7 11:22:05	WY2	ME	828980	810399	6.9	1.014	27.44	5.75	86.5	7.2	31.10	8.31	8.9	<0.005	0.06	25
2010/10/7 11:22:37						1.083	27.43	5.99	90.2	7.2	31.06	8.31				
2010/10/7 11:23:08						3.454	27.44	4.83	72.7	6.8	31.16	8.31	7.9	<0.005	0.06	24
2010/10/7 11:23:31						3.386	27.45	4.62	67.4	7.0	31.10	8.32				
2010/10/7 11:23:56						5.910	27.48	4.70	70.5	7.8	30.38	8.33	10	<0.005	0.06	45
2010/10/7 11:24:15						5.807	27.48	4.77	71.8	8.0	31.22	8.33				
2010/10/7 11:10:10	WY3	ME	829202	809851	4.7	0.925	27.33	4.95	74.2	9.5	30.87	8.21	8.3	<0.005	0.1	7
2010/10/7 11:11:28						1.040	27.36	5.02	75.3	9.6	30.89	8.24				
2010/10/7 11:11:59						3.615	27.45	4.79	72.1	9.8	31.03	8.28	9.2	<0.005	0.1	<1
2010/10/7 11:12:29						3.708	27.45	4.67	70.3	9.3	31.00	8.28				
2010/10/7 11:41:31	CY1	ME	828411	810817	11.7	1.012	26.97	4.33	64.6	6.7	30.90	8.24	8.2	<0.005	0.14	<1
2010/10/7 11:42:11						1.006	26.98	3.68	55.0	6.4	31.02	8.23				
2010/10/7 11:42:39						5.789	26.99	3.76	55.9	7.1	30.06	8.23	9.4	<0.005	0.14	<1
2010/10/7 11:43:29						5.805	27.05	4.10	61.4	7.8	31.17	8.25				
2010/10/7 11:44:02						10.740	27.06	3.45	51.6	8.6	31.26	8.25	11.7	<0.005	0.14	2
2010/10/7 11:44:43						10.644	27.07	3.25	48.6	9.2	31.29	8.25				
2010/10/7 12:04:26	CY2	ME	827981	808824	17.8	0.955	26.89	5.33	79.7	6.3	31.15	8.29	6.4	<0.005	0.13	1
2010/10/7 12:04:59						1.073	26.87	5.36	80.0	6.1	31.16	8.26				
2010/10/7 12:07:07						8.929	26.87	5.03	75.1	6.4	31.37	8.26	7.4	<0.005	0.14	<1
2010/10/7 12:07:55						8.828	26.86	5.08	76.1	6.0	31.31	8.27				
2010/10/7 12:08:18						16.755	27.34	4.48	67.3	9.0	31.79	8.35	6.6	<0.005	0.14	<1
2010/10/7 12:09:06						16.859	27.32	4.41	66.5	9.8	31.71	8.34				
2010/10/7 17:02:38	WY1	MF	829162	809562	5	1.041	27.45	4.62	71.2	7.2	30.85	8.25	9.7	<0.005	0.08	3
2010/10/7 17:03:15						1.046	27.48	4.53	68.2	7.9	30.88	8.25				
2010/10/7 17:03:38						3.990	27.50	4.06	61.1	9.4	31.01	8.29	10	<0.005	0.08	7
2010/10/7 17:04:15						4.043	27.50	4.08	61.5	10.0	30.97	8.28				
2010/10/7 17:14:42	WY2	MF	828997	810403	7	1.085	27.52	4.77	74.6	4.8	31.09	8.30	8	<0.005	0.1	1
2010/10/7 17:15:06						1.056	27.44	4.83	75.7	5.2	31.06	8.31				
2010/10/7 17:15:46						3.493	27.45	3.40	52.4	4.8	31.10	8.31	7.6	<0.005	0.07	4
2010/10/7 17:16:14						3.458	27.43	3.30	49.7	4.8	31.09	8.30				
2010/10/7 17:16:57						5.948	27.49	2.97	44.7	8.2	31.18	8.32	9.5	<0.005	0.1	<1
2010/10/7 17:17:28						6.068	27.49	2.87	42.9	8.7	31.21	8.33				
2010/10/7 17:07:41	WY3	MF	829200	809864	4.5	0.975	27.43	4.32	65.0	8.9	30.90	8.25	6.4	<0.005	0.06	38
2010/10/7 17:07:56						1.063	27.44	4.56	69.2	9.1	30.89	8.25				
2010/10/7 17:08:29						3.510	27.46	3.75	60.3	10.0	31.02	8.28	6.5	<0.005	0.07	33
2010/10/7 17:08:48						3.496	27.47	3.85	58.0	9.6	31.03	8.28				
2010/10/7 17:39:51	CY1	MF	828396	810818	11.1	1.013	27.15	4.43	67.1	7.8	31.14	8.27	9.5	<0.005	0.22	3
2010/10/7 17:40:43						1.064	27.15	4.34	65.0	7.7	31.24	8.27				
2010/10/7 17:42:00						6.016	27.15	4.78	61.5	8.1	31.36	8.27	13.6	<0.005	0.12	1
2010/10/7 17:42:40						6.082	27.15	4.86	63.4	8.7	30.45	8.27				
2010/10/7 17:43:17						10.046	27.16	4.06	61.0	11.3	31.38	8.27	9.7	<0.005	0.12	5
2010/10/7 17:43:39						10.070	27.16	4.02	60.4	11.1	31.41	8.26				
2010/10/7 17:57:45	CY2	MF	827994	808813	16.5	1.050	27.16	3.79	56.4	8.9	30.48	8.26	9.6	<0.005	0.12	1
2010/10/7 17:58:15						0.972	27.16	3.62	54.2	9.3	31.23	8.26				
2010/10/7 17:58:52						8.167	27.16	3.52	52.8	9.8	31.36	8.26	12.4	<0.005	0.11	<1
2010/10/7 17:59:32						8.290	27.16	3.50	52.3	10.5	31.39	8.26				
2010/10/7 18:00:09						15.500	27.16	3.64	54.6	12.3	31.43	8.26	9.6	<0.005	0.11	<1
2010/10/7 18:01:48						15.444	27.16	3.63	54.3	12.6	31.39	8.26				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 26-Oct-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
2010/10/26 14:28:01	WY1	ME	829166	809563	5.8	1.077	25.92	4.65	69.0	6.4	33.10	8.32	9.8	<0.005	0.09	49
2010/10/26 14:28:04						0.997	25.93	4.65	69.0	6.3	33.09	8.32				
2010/10/26 14:28:48						4.777	25.94	4.45	66.2	5.9	33.30	8.32	10.2	<0.005	0.09	39
2010/10/26 14:28:53						4.818	25.93	4.46	66.3	5.8	33.28	8.32				
2010/10/26 14:10:28	WY2	ME	829002	810402	7.5	1.006	26.05	4.95	73.6	5.1	33.19	8.31	12.3	<0.005	0.08	35
2010/10/26 14:10:43						1.044	26.06	4.79	71.3	5.1	33.18	8.31				
2010/10/26 14:10:59						3.759	26.04	4.58	68.1	5.7	33.33	8.32	11.6	<0.005	0.08	43
2010/10/26 14:11:07						3.786	26.03	4.59	68.3	5.9	33.36	8.32				
2010/10/26 14:11:35						6.436	26.03	4.50	67.0	6.0	33.47	8.32	12	<0.005	0.08	52
2010/10/26 14:11:52						6.432	26.04	4.50	67.0	6.0	33.48	8.32				
2010/10/26 14:18:50	WY3	ME	829185	809875	5.7	0.958	25.90	4.74	70.2	5.7	33.07	8.32	8.9	<0.005	0.1	15
2010/10/26 14:18:54						1.064	25.89	4.74	70.3	5.8	33.08	8.32				
2010/10/26 14:19:45						4.750	25.90	4.49	66.7	6.0	33.30	8.32	8.7	<0.005	0.1	24
2010/10/26 14:20:15						4.785	25.92	4.49	66.6	5.9	33.32	8.32				
2010/10/26 13:47:43	CY1	ME	828411	810788	12	0.929	26.07	4.93	72.6	5.6	31.53	8.33	8.7	<0.005	0.08	1
2010/10/26 13:47:48						0.986	26.06	4.87	72.5	5.5	33.21	8.33				
2010/10/26 13:48:33						6.079	26.00	4.65	69.2	5.8	33.47	8.33	6.6	<0.005	0.08	<1
2010/10/26 13:48:55						6.072	26.00	4.70	69.4	5.9	32.04	8.33				
2010/10/26 13:52:10						10.934	26.07	4.49	67.1	7.1	33.69	8.34	4.2	<0.005	0.08	<1
2010/10/26 13:52:14						10.996	26.07	4.51	67.3	6.9	33.68	8.34				
2010/10/26 13:03:34	CY2	ME	827983	808799	12.7	1.083	25.94	4.98	74.1	15.0	33.34	8.34	7.4	<0.005	0.08	<1
2010/10/26 13:03:38						1.088	25.95	4.92	73.2	14.0	33.38	8.34				
2010/10/26 13:04:23						6.878	26.01	4.47	66.7	6.6	33.74	8.35	6.9	<0.005	0.07	1
2010/10/26 13:04:29						6.825	26.01	4.48	66.8	6.5	33.74	8.35				
2010/10/26 13:06:48						11.753	26.09	4.49	66.6	6.2	32.55	8.36	6.6	<0.005	0.08	<1
2010/10/26 13:08:10						11.674	26.03	4.47	66.8	6.6	33.79	8.36				
2010/10/26 09:18:08	WY1	MF	829171	809548	5.3	0.936	26.10	6.22	92.7	9.9	33.40	8.36	16.8	<0.005	0.09	22
2010/10/26 09:18:14						0.960	26.11	6.12	91.3	9.9	33.40	8.35				
2010/10/26 09:18:45						4.270	26.11	5.73	85.6	12.2	33.68	8.34	13.4	<0.005	0.08	5
2010/10/26 09:18:50						4.280	26.11	5.72	85.5	13.0	33.69	8.34				
2010/10/26 09:02:28	WY2	MF	829012	810386	7.4	0.977	26.03	6.16	91.9	14.6	33.79	8.36	9	<0.005	0.08	3
2010/10/26 09:02:40						0.963	26.03	6.05	89.4	15.7	31.95	8.35				
2010/10/26 09:03:03						3.625	26.05	5.68	85.0	12.7	34.07	8.35	6	<0.005	0.08	1
2010/10/26 09:03:06						3.683	26.05	5.67	84.8	13.4	34.08	8.35				
2010/10/26 09:03:34						6.370	26.04	5.47	81.8	17.0	34.21	8.36	12.1	<0.005	0.08	1
2010/10/26 09:03:39						6.454	26.04	5.44	81.4	18.5	34.21	8.36				
2010/10/26 09:12:00	WY3	MF	829207	809850	5.4	1.097	26.11	8.36	124.7	8.4	33.44	8.36	6	<0.005	0.08	<1
2010/10/26 09:12:08						1.017	26.11	7.65	114.1	8.4	33.41	8.34				
2010/10/26 09:12:27						4.392	26.10	5.76	85.2	23.7	32.17	8.33	9.7	<0.005	0.08	1
2010/10/26 09:12:34						4.382	26.10	5.67	84.7	23.1	33.74	8.33				
2010/10/26 08:52:46	CY1	MF	828394	810813	11.9	0.968	26.17	6.21	93.0	5.3	33.99	8.38	11	<0.005	0.08	1
2010/10/26 08:52:49						0.956	26.17	6.30	93.2	5.3	31.68	8.38				
2010/10/26 08:53:26						5.948	26.12	5.67	84.9	5.7	34.34	8.38	18.7	<0.005	0.08	1
2010/10/26 08:53:56						6.075	26.07	5.63	84.4	5.6	34.33	8.38				
2010/10/26 08:54:39						10.990	26.00	5.48	82.0	9.7	34.51	8.37	9.5	<0.005	0.08	4
2010/10/26 08:54:50						10.907	26.00	5.47	81.9	9.6	34.49	8.37				
2010/10/26 08:23:01	CY2	MF	827996	808813	14.2	0.904	28.37	6.78	105.4	6.6	34.35	8.38	8.8	<0.005	0.08	2
2010/10/26 08:23:18						0.920	28.21	6.52	101.3	7.1	34.37	8.36				
2010/10/26 08:24:22						6.993	26.00	5.70	85.6	7.7	34.92	8.33	8.9	<0.005	0.08	2
2010/10/26 08:24:26						7.072	26.00	5.70	85.6	7.6	34.90	8.33				
2010/10/26 08:25:09						13.017	26.00	5.52	82.9	9.6	35.14	8.32	6	<0.005	0.08	2
2010/10/26 08:25:12						13.114	26.00	5.55	82.8	9.9	33.80	8.32				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 18-Nov-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
11/18/10 10:00:24	WY1	ME	829174	809548	5	1.042	22.55	6.68	93.8	5.4	33.59	8.32	15.4	<0.005	0.16	25
11/18/10 10:00:32						1.034	22.55	6.75	94.8	5.4	33.54	8.32				
11/18/10 10:00:56						4.052	22.54	5.03	70.9	5.9	34.04	8.32	16.5	<0.005	0.16	35
11/18/10 10:01:04						4.043	22.54	5.01	70.5	6.1	34.02	8.32				
11/18/10 10:30:41	WY2	ME	829011	810402	6.6	1.029	22.61	4.21	58.2	3.6	30.67	8.31	10.5	<0.005	0.15	2
11/18/10 10:30:47						1.025	22.60	4.02	56.4	3.5	33.60	8.31				
11/18/10 10:31:08						3.295	22.44	3.86	54.1	4.3	33.89	8.31	11.0	<0.005	0.15	<1
11/18/10 10:31:16						3.294	22.43	3.85	54.0	4.7	33.92	8.31				
11/18/10 10:31:39						5.640	22.38	3.75	52.6	6.4	34.02	8.31	10.7	<0.005	0.14	<1
11/18/10 10:31:46						5.630	22.38	3.73	52.4	6.6	34.02	8.31				
11/18/10 10:12:31	WY3	ME	829197	809855	4	1.025	22.56	4.44	62.3	6.0	33.66	8.30	11	<0.005	0.16	4
11/18/10 10:12:39						1.044	22.57	4.32	60.7	6.6	33.64	8.30				
11/18/10 10:13:30						2.962	22.55	4.05	57.0	7.4	33.93	8.29	11.9	<0.005	0.16	<1
11/18/10 10:13:37						3.089	22.55	4.06	56.2	7.8	31.12	8.29				
11/18/10 08:36:48	CY1	ME	828404	810803	10.2	0.972	22.56	5.21	72.9	5.4	32.88	8.14	8	<0.005	0.14	<1
11/18/10 08:36:56						1.098	22.56	5.46	76.3	4.5	32.89	8.15				
11/18/10 08:38:05						5.054	22.53	7.31	102.2	3.1	33.07	8.19	6.7	<0.005	0.14	3
11/18/10 08:38:12						5.070	22.53	7.36	103.0	3.2	33.06	8.19				
11/18/10 08:38:50						9.127	22.48	7.58	106.0	3.3	33.12	8.21	14.8	<0.005	0.15	<1
11/18/10 08:38:57						9.138	22.48	7.71	107.8	3.4	33.10	8.21				
11/18/10 09:39:01	CY2	ME	828006	808797	11.8	0.963	23.99	4.95	71.2	3.2	33.56	8.33	7.3	<0.005	0.14	<1
11/18/10 09:39:10						1.041	24.02	4.90	70.6	3.2	33.54	8.35				
11/18/10 09:39:47						5.887	22.41	4.08	57.2	3.2	33.90	8.35	4.5	<0.005	0.14	<1
11/18/10 09:39:54						5.778	22.41	4.02	56.4	3.2	33.89	8.35				
11/18/10 09:44:29						10.690	22.38	3.72	52.2	3.6	34.07	8.35	10.8	<0.005	0.14	<1
11/18/10 09:44:37						10.719	22.36	3.71	52.1	3.6	34.06	8.34				
11/18/10 14:49:34	WY1	MF	829160	809543	4.8	0.975	23.37	7.10	101.0	3.7	33.53	8.29	7.5	<0.005	0.14	7
11/18/10 14:49:53						1.024	23.42	6.65	94.8	3.4	33.62	8.28				
11/18/10 14:50:59						3.845	22.73	6.67	94.0	8.1	33.75	8.23	11.1	<0.005	0.14	1
11/18/10 14:51:06						3.782	22.72	6.53	92.0	8.0	33.76	8.23				
11/18/10 15:11:37	WY2	MF	828983	810411	7	1.022	23.47	5.04	72.1	2.7	33.93	8.28	8.5	<0.005	0.14	<1
11/18/10 15:11:51						1.011	23.51	5.01	71.7	2.8	33.93	8.28				
11/18/10 15:12:31						3.531	23.34	5.75	82.2	2.7	34.07	8.28	11.3	<0.005	0.14	<1
11/18/10 15:12:38						3.458	23.34	5.74	81.9	2.9	34.08	8.28				
11/18/10 15:13:13						6.041	23.19	4.33	61.7	4.0	34.12	8.28	6	<0.005	0.14	3
11/18/10 15:13:21						5.998	23.23	4.33	61.7	3.9	34.14	8.28				
11/18/10 15:00:21	WY3	MF	829202	809850	5.4	0.993	23.10	6.46	91.8	7.2	33.91	8.23	5.8	<0.005	0.14	9
11/18/10 15:00:28						1.053	23.10	6.27	89.0	5.7	33.89	8.23				
11/18/10 15:00:55						4.420	22.95	5.95	84.3	4.8	33.97	8.23	4.1	<0.005	0.14	3
11/18/10 15:01:02						4.407	22.76	6.12	84.7	5.5	30.41	8.23				
11/18/10 15:29:48	CY1	MF	828414	810792	11.6	1.045	23.72	4.01	57.6	2.7	33.94	8.31	4.3	<0.005	0.14	<1
11/18/10 15:29:55						1.000	23.76	4.11	59.0	2.7	33.80	8.30				
11/18/10 15:30:53						6.361	22.50	4.04	56.9	3.9	34.09	8.28	6.1	<0.005	0.14	<1
11/18/10 15:31:05						6.350	22.46	4.04	56.8	4.3	34.10	8.28				
11/18/10 15:34:28						10.603	22.45	3.88	54.5	7.7	34.28	8.27	6.3	<0.005	0.14	<1
11/18/10 15:34:35						10.538	22.45	3.88	54.6	7.6	34.27	8.27				
11/18/10 15:53:58	CY2	MF	808002	808783	13.8	1.023	23.03	4.02	56.1	2.5	30.83	8.31	4.8	<0.005	0.14	<1
11/18/10 15:54:11						0.954	23.07	3.97	56.3	2.5	33.82	8.31				
11/18/10 15:54:42						6.910	22.33	3.89	54.5	2.6	34.06	8.29	8.3	<0.005	0.14	<1
11/18/10 15:54:50						6.853	22.31	3.88	54.4	2.6	34.12	8.29				
11/18/10 15:55:31						12.835	22.25	3.76	52.7	3.7	34.35	8.28	4.1	<0.005	0.14	<1
11/18/10 15:55:38						12.761	22.25	3.76	52.7	3.4	34.35	8.28				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 23-Nov-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
2010/11/23 11:44:11	WY1	ME	829150	809565	5	0.987	22.87	7.71	108.4	3.6	32.82	8.31	12.6	<0.005	0.07	2
2010/11/23 11:44:18						1.112	22.87	7.72	108.6	3.6	32.82	8.31				
2010/11/23 11:44:56						3.534	22.86	7.31	102.8	4.2	32.86	8.31	23	<0.005	0.08	3
2010/11/23 11:45:08						3.546	22.85	7.22	101.4	4.4	32.87	8.31				
2010/11/23 12:13:37	WY2	ME	829014	810411	7	1.054	22.51	6.94	97.3	5.0	33.50	8.32	15.5	<0.005	0.07	<1
2010/11/23 12:13:42						1.180	22.51	6.90	96.7	4.9	33.49	8.32				
2010/11/23 12:13:55						3.614	22.43	6.57	92.0	4.6	33.51	8.31	23.2	<0.005	0.08	5
2010/11/23 12:14:00						3.540	22.43	6.51	91.2	4.5	33.52	8.31				
2010/11/23 12:14:26						6.108	22.32	6.47	90.5	6.1	33.56	8.30	12.8	<0.005	0.06	4
2010/11/23 12:14:31						6.301	22.32	6.41	89.7	6.4	33.56	8.30				
2010/11/23 11:56:40	WY3	ME	829212	809860	4.5	1.152	22.92	7.85	109.3	5.2	31.03	8.32	13.4	<0.005	0.1	4
2010/11/23 11:56:48						1.145	22.92	7.71	107.3	5.1	30.98	8.31				
2010/11/23 11:57:13						4.159	22.75	7.20	101.3	5.3	33.21	8.30	8.3	0.006	0.17	14
2010/11/23 11:57:20						4.121	22.75	7.17	100.7	5.4	33.22	8.30				
2010/11/23 12:27:10	CY1	ME	828402	810823	12.1	1.092	22.87	6.02	85.2	2.9	33.82	8.37	12.1	<0.005	0.03	<1
2010/11/23 12:27:13						1.107	22.85	6.14	86.8	2.8	33.83	8.36				
2010/11/23 12:27:35						6.157	22.30	6.60	92.3	3.0	33.85	8.30	8.2	<0.005	0.08	<1
2010/11/23 12:27:38						6.205	22.28	6.60	92.4	3.2	33.87	8.29				
2010/11/23 12:39:22						11.005	22.28	5.85	81.8	3.0	33.89	8.27	26.2	<0.005	0.03	<1
2010/11/23 12:39:25						10.896	22.27	5.90	82.6	3.2	33.89	8.26				
2010/11/23 13:03:33	CY2	ME	828015	808816	13	0.994	23.86	5.85	84.4	2.8	34.36	8.38	9.6	<0.005	0.05	<1
2010/11/23 13:03:38						1.139	23.64	6.07	87.3	2.7	34.40	8.39				
2010/11/23 13:04:01						6.410	22.56	6.95	98.2	2.1	34.66	8.38	8.2	<0.005	0.04	<1
2010/11/23 13:04:07						6.514	22.49	7.00	98.8	2.0	34.74	8.37				
2010/11/23 13:04:35						12.034	22.23	6.36	89.4	3.1	34.92	8.25	14.5	<0.005	0.03	<1
2010/11/23 13:04:38						12.271	22.23	6.23	87.6	3.2	34.92	8.24				
2010/11/23 17:01:15	WY1	MF	829184	809539	5.2	1.097	23.08	5.96	84.6	4.1	33.95	8.05	10.5	<0.005	0.08	2
2010/11/23 17:01:18						1.190	23.07	5.93	84.2	4.1	33.95	8.05				
2010/11/23 17:02:04						3.636	22.72	5.76	81.3	8.7	34.09	7.95	17	<0.005	0.08	<1
2010/11/23 17:02:11						3.649	22.69	5.79	81.8	7.2	34.11	7.94				
2010/11/23 17:25:43	WY2	MF	829011	810424	7.2	1.071	23.73	5.79	83.1	2.3	33.77	8.30	6.6	<0.005	0.04	<1
2010/11/23 17:25:51						1.032	23.92	5.89	84.8	2.1	33.70	8.30				
2010/11/23 17:26:11						3.730	23.10	6.07	86.1	2.9	33.68	8.27	17.2	<0.005	0.06	<1
2010/11/23 17:26:18						3.599	22.87	6.09	86.2	3.1	33.88	8.26				
2010/11/23 17:26:44						6.272	22.41	5.85	82.1	5.0	33.93	8.18	12.8	<0.005	0.08	1
2010/11/23 17:26:50						6.195	22.41	5.78	81.1	4.9	33.93	8.18				
2010/11/23 17:12:51	WY3	MF	829221	809867	4.8	1.030	23.17	5.81	82.5	4.8	33.85	8.18	13.4	<0.005	0.14	5
2010/11/23 17:13:00						1.034	23.45	5.96	84.2	4.6	31.90	8.17				
2010/11/23 17:14:07						3.866	22.84	5.82	82.3	7.2	33.92	8.11	12.5	<0.005	0.11	4
2010/11/23 17:14:11						3.948	22.84	5.82	82.3	7.4	33.93	8.10				
2010/11/23 17:41:07	CY1	MF	828401	810819	12.5	1.138	23.01	5.34	75.6	2.3	33.53	8.32	5.2	0.008	0.13	1
2010/11/23 17:41:15						1.081	23.02	5.55	78.6	2.2	33.50	8.31				
2010/11/23 17:42:01						6.002	22.58	6.00	84.4	2.7	33.86	8.32	9	0.01	0.12	<1
2010/11/23 17:42:10						6.105	22.65	5.95	83.8	2.6	33.79	8.32				
2010/11/23 17:43:33						11.641	22.26	5.27	73.7	6.0	33.94	8.25	13.7	<0.005	0.11	<1
2010/11/23 17:43:43						11.442	22.26	5.21	73.0	6.3	33.94	8.25				
2010/11/23 18:11:11	CY2	MF	828015	808813	13.3	0.784	23.03	5.66	79.4	2.2	31.79	8.36	7.4	<0.005	0.13	<1
2010/11/23 18:11:15						1.399	23.04	5.73	81.1	2.1	33.44	8.35				
2010/11/23 18:11:41						6.803	22.89	6.00	84.8	2.3	33.72	8.39	10.2	<0.005	0.13	2
2010/11/23 18:11:48						6.745	22.87	6.03	85.2	2.4	33.74	8.39				
2010/11/23 18:12:11						12.161	22.47	6.11	85.1	4.8	32.28	8.34	8.2	<0.005	0.1	2
2010/11/23 18:12:15						12.244	22.46	5.97	83.8	4.3	33.89	8.34				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 21-Dec-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
2010/12/21 10:59:58	WY1	ME	829172	809568	5.1	1.027	20.10	7.18	96.6	6.9	33.87	8.34	9.9	<0.005	0.07	16
2010/12/21 11:00:09						0.999	20.10	7.00	94.3	5.9	33.88	8.34				
2010/12/21 11:00:55						4.112	20.01	6.77	91.1	11.0	33.94	8.33	9.2	<0.005	0.06	6
2010/12/21 11:01:05						4.122	20.00	6.74	90.5	12.3	33.94	8.33				
2010/12/21 11:48:37	WY2	ME	829011	810400	6.3	1.031	20.01	7.76	104.5	7.0	34.24	8.42	11	<0.005	0.06	<1
2010/12/21 11:48:47						1.013	20.02	7.52	101.3	5.3	34.24	8.41				
2010/12/21 11:49:17						3.109	19.97	7.10	95.5	6.3	34.26	8.40	9.8	<0.005	0.06	<1
2010/12/21 11:49:25						3.122	19.96	7.05	94.8	6.8	34.26	8.39				
2010/12/21 11:49:53						5.228	19.95	6.94	93.4	7.4	34.27	8.39	7.4	<0.005	0.06	<1
2010/12/21 11:49:58						5.245	19.94	6.94	93.2	7.7	34.27	8.39				
2010/12/21 11:58:44	WY3	ME	829190	809868	4.3	1.009	20.23	7.88	106.5	6.6	34.28	8.41	9.6	<0.005	0.07	31
2010/12/21 11:58:54						1.048	20.23	7.54	102.0	6.8	34.27	8.40				
2010/12/21 11:59:14						3.313	20.10	7.23	97.5	7.1	34.27	8.39	9.8	<0.005	0.06	62
2010/12/21 11:59:27						3.300	20.08	7.10	95.7	7.5	34.28	8.38				
2010/12/21 11:36:15	CY1	ME	828390	810821	11.1	0.994	19.83	6.77	90.9	5.2	34.20	8.36	7.8	<0.005	0.06	<1
2010/12/21 11:36:20						1.045	19.83	6.77	90.8	5.2	34.20	8.36				
2010/12/21 11:36:58						5.609	19.47	6.77	90.1	8.8	34.13	8.35	7.7	<0.005	0.06	<1
2010/12/21 11:37:02						5.615	19.46	6.76	90.1	9.2	34.13	8.35				
2010/12/21 11:37:46						10.395	19.41	6.73	89.6	9.5	34.13	8.35	5.8	<0.005	0.06	<1
2010/12/21 11:38:03						10.310	19.42	6.72	89.4	9.7	34.13	8.35				
2010/12/21 11:15:46	CY2	ME	827984	808779	17	1.000	20.91	6.79	92.8	3.9	34.12	8.36	5.3	<0.005	0.05	<1
2010/12/21 11:15:53						0.966	20.90	6.78	92.7	3.7	34.13	8.35				
2010/12/21 11:17:25						8.516	19.39	6.76	89.9	3.1	34.03	8.34	5	<0.005	0.06	1
2010/12/21 11:17:33						8.565	19.39	6.75	89.8	3.2	34.03	8.34				
2010/12/21 11:18:00						16.059	19.31	6.71	89.1	5.8	34.05	8.34	4.5	<0.005	0.06	<1
2010/12/21 11:18:03						15.992	19.31	6.70	88.9	5.9	34.05	8.34				
2010/12/21 16:13:52	WY1	MF	829165	809564	5.2	0.995	20.44	7.02	95.2	4.1	33.98	7.88	7.3	<0.005	0.06	1
2010/12/21 16:14:50						0.987	20.41	6.82	92.4	4.1	34.02	7.80				
2010/12/21 16:15:32						4.281	20.08	6.79	91.3	6.5	34.04	7.77	5.8	<0.005	0.06	2
2010/12/21 16:15:47						4.163	20.08	6.76	91.0	6.8	34.05	7.77				
2010/12/21 18:30:45	WY2	MF	829002	810413	6.3	1.023	20.83	7.69	105.2	3.0	34.34	8.41	4.5	<0.005	0.06	<1
2010/12/21 18:30:59						1.074	20.80	7.60	103.8	3.0	34.34	8.40				
2010/12/21 18:31:29						3.207	20.21	7.53	101.9	4.9	34.35	8.38	4	<0.005	0.06	<1
2010/12/21 18:31:38						3.225	20.21	7.50	101.5	5.2	34.35	8.38				
2010/12/21 18:31:57						5.379	19.86	7.48	100.5	6.6	34.34	8.37	7.4	<0.005	0.06	<1
2010/12/21 18:32:08						5.355	19.74	7.45	99.9	8.0	34.33	8.36				
2010/12/21 18:18:24	WY3	MF	829201	809857	4.8	0.975	20.36	7.63	103.5	6.4	34.36	8.28	8.4	<0.005	0.07	22
2010/12/21 18:18:32						1.002	20.37	7.46	101.1	6.5	34.35	8.28				
2010/12/21 18:19:01						3.832	20.15	7.26	98.0	7.5	34.37	8.29	9.9	<0.005	0.06	21
2010/12/21 18:19:08						3.751	20.13	7.26	98.0	8.4	34.37	8.30				
2010/12/21 17:56:56	CY1	MF	828388	810803	11.6	1.021	20.57	6.74	91.7	4.8	34.17	8.16	7.8	<0.005	0.06	<1
2010/12/21 17:57:06						1.072	20.56	6.75	91.8	4.9	34.20	8.16				
2010/12/21 17:58:15						5.899	19.50	6.70	89.3	3.9	34.16	8.15	6.7	<0.005	0.05	<1
2010/12/21 17:58:23						5.849	19.50	6.69	89.2	3.5	34.16	8.15				
2010/12/21 17:59:07						10.851	19.35	6.64	88.2	5.8	34.15	8.15	5.5	<0.005	0.06	<1
2010/12/21 17:59:17						10.782	19.35	6.62	88.0	6.2	34.15	8.15				
2010/12/21 16:27:43	CY2	MF	827009	808812	14.4	0.973	20.86	6.75	92.3	5.0	34.20	8.11	7	<0.005	0.05	<1
2010/12/21 16:27:53						0.960	20.67	6.76	92.2	5.0	34.24	8.11				
2010/12/21 16:28:42						7.152	19.40	6.79	90.4	4.0	34.15	8.08	6.3	<0.005	0.06	<1
2010/12/21 16:28:51						7.148	19.40	6.76	90.0	4.0	34.15	8.07				
2010/12/21 16:29:45						13.279	19.36	6.63	88.1	6.4	34.15	8.07	10.1	<0.005	0.05	<1
2010/12/21 16:29:54						13.362	19.36	6.62	88.0	6.5	34.14	8.07				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Contract No. DC/2009/13

Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwn Wan

AUES

Yung Shue Wan

Baseline Data 28-Dec-10

Date / Time	Location	Tide*	Co-ordinates		Water Depth	Sampling Depth	Temp	DO Conc	DO Saturation	Turbidity	Salinity	pH	SS	Ammonia N	TIN	E.coli
			East	North	m	m	℃	mg/L	%	NTU	ppt	unit	mg/l	mg/l	mg/l	1CFU/100ml
2010/12/28 17:30:58	WY1	ME	829162	809561	3.6	1.091	19.58	7.80	104.0	2.8	33.93	7.22	3	<0.005	0.11	7
2010/12/28 17:31:04						1.061	19.57	7.73	103.0	2.7	33.95	7.23				
2010/12/28 17:31:24						2.532	19.39	7.68	102.1	2.9	33.99	7.23	6	<0.005	0.1	15
2010/12/28 17:31:28						2.461	19.44	7.62	101.4	2.9	33.99	7.24				
2010/12/28 17:47:16	WY2	ME	829011	810412	6.8	1.180	19.86	6.56	88.1	4.4	34.22	8.02	4	<0.005	0.1	<1
2010/12/28 17:47:22						1.258	19.94	6.52	87.6	3.7	34.16	8.01				
2010/12/28 17:47:38						3.417	19.50	6.56	87.5	3.2	34.24	8.01	3	<0.005	0.09	<1
2010/12/28 17:47:47						3.453	19.54	6.56	87.5	3.1	34.20	8.01				
2010/12/28 17:48:00						5.799	19.19	6.54	86.7	3.6	34.17	7.99	3	<0.005	0.1	2
2010/12/28 17:48:03						5.831	19.13	6.54	86.6	3.8	34.22	7.99				
2010/12/28 17:36:28	WY3	ME	829220	809838	3.8	1.063	19.51	6.74	89.8	6.1	34.06	7.48	6	<0.005	0.1	62
2010/12/28 17:36:35						1.200	19.50	6.85	89.5	6.0	30.91	7.49				
2010/12/28 17:36:44						2.595	19.46	6.69	89.0	6.2	34.06	7.50	10	<0.005	0.09	28
2010/12/28 17:36:48						2.633	19.44	6.68	88.9	6.5	34.08	7.51				
2010/12/28 17:59:46	CY1	ME	828405	810813	11.9	1.162	19.50	6.72	87.8	2.5	30.70	8.28	3	<0.005	0.1	<1
2010/12/28 17:59:52						1.056	19.46	6.58	87.6	2.5	34.16	8.28				
2010/12/28 18:02:01						5.503	18.83	6.31	83.2	3.5	34.29	8.23	4	<0.005	0.09	<1
2010/12/28 18:02:06						6.009	18.84	6.33	83.4	3.4	34.29	8.24				
2010/12/28 18:02:26						10.860	18.82	6.27	82.7	3.5	34.36	8.24	4	<0.005	0.1	<1
2010/12/28 18:02:31						10.956	18.82	6.27	82.6	3.5	34.36	8.24				
2010/12/28 18:21:24	CY2	ME	828014	808809	16.6	1.235	19.17	6.18	80.3	2.7	30.65	8.35	4	<0.005	0.1	<1
2010/12/28 18:21:29						1.061	19.20	5.93	78.5	2.8	34.03	8.35				
2010/12/28 18:22:09						8.584	18.96	5.92	78.2	3.3	34.21	8.35	4	<0.005	0.1	<1
2010/12/28 18:22:20						8.325	18.95	6.02	77.9	3.3	30.91	8.34				
2010/12/28 18:23:02						15.896	18.94	5.85	77.3	4.3	34.27	8.35	3	<0.005	0.1	1
2010/12/28 18:23:07						15.577	18.94	5.84	77.1	4.3	34.27	8.34				
2010/12/28 11:21:58	WY1	MF	829165	809538	4.6	1.187	20.05	6.56	88.0	2.8	33.69	8.30	5	<0.005	0.09	<1
2010/12/28 11:22:05						0.967	20.17	6.56	88.3	2.7	33.69	8.30				
2010/12/28 11:22:42						3.669	18.94	6.72	88.4	3.7	33.69	8.28	3	<0.005	0.09	<1
2010/12/28 11:22:49						3.624	18.92	6.65	87.6	3.7	33.70	8.27				
2010/12/28 12:10:53	WY2	MF	828978	810413	7	1.102	19.95	5.60	75.2	3.0	34.06	8.37	3	<0.005	0.09	<1
2010/12/28 12:10:59						1.016	20.05	5.63	75.7	2.7	33.98	8.36				
2010/12/28 12:11:15						3.526	19.55	5.80	75.7	2.6	30.53	8.36	4	<0.005	0.09	<1
2010/12/28 12:11:23						3.543	19.43	5.69	75.6	2.6	33.93	8.36				
2010/12/28 12:11:33						6.125	19.34	5.70	75.7	2.8	33.94	8.35	4	<0.005	0.1	1
2010/12/28 12:11:37						6.180	19.30	5.70	75.6	2.8	33.95	8.35				
2010/12/28 12:18:05	WY3	MF	829219	809832	5.2	1.100	19.69	6.15	80.6	16.3	30.49	8.38	4	<0.005	0.1	<1
2010/12/28 12:18:16						1.045	19.74	6.01	80.4	8.1	33.95	8.38				
2010/12/28 12:18:34						2.658	19.23	6.07	80.3	4.6	33.92	8.37	4	<0.005	0.1	80
2010/12/28 12:18:41						2.640	19.18	6.17	80.0	4.2	30.49	8.37				
2010/12/28 11:58:29	CY1	MF	828387	810816	11.2	1.064	18.99	6.58	86.7	4.4	33.97	8.40	4	<0.005	0.1	<1
2010/12/28 11:58:33						1.020	19.08	6.54	86.3	3.9	33.93	8.38				
2010/12/28 11:58:52						7.330	18.97	6.46	83.5	3.3	30.57	8.36	7	<0.005	0.1	<1
2010/12/28 11:58:57						7.107	19.00	6.30	83.1	3.1	33.94	8.36				
2010/12/28 12:00:06						10.269	18.89	6.18	81.4	9.9	33.99	8.34	3	<0.005	0.1	<1
2010/12/28 12:00:09						10.248	18.88	6.14	80.7	8.5	33.99	8.34				
2010/12/28 11:35:15	CY2	MF	828019	808784	16.2	0.969	19.12	5.93	78.4	2.7	33.80	8.33	4	<0.005	0.1	<1
2010/12/28 11:35:20						0.857	19.11	5.97	78.9	2.6	33.79	8.33				
2010/12/28 11:35:54						8.430	18.76	6.00	78.7	3.3	33.85	8.32	4	<0.005	0.1	<1
2010/12/28 11:36:02						8.362	18.76	5.97	78.4	3.1	33.85	8.32				
2010/12/28 11:36:33						14.894	18.74	5.90	77.4	4.0	33.88	8.32	4	<0.005	0.1	<1
2010/12/28 11:36:36						15.301	18.74	5.96	78.1	4.1	33.90	8.32				

Remarks: MF - Middle Flood tida
ME - Middle Ebb tida

Appendix H

Laboratory Results Report

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MS JAN KWOK**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1016967**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Jankwok@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **30-JUL-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **12-AUG-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1016967 supersedes any previous reports with this reference. The completion date of analysis is 04-AUG-2010. 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 HK1016967 :

The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.
Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 18:00. Microbiological sample(s), in 250mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 30/07/2010 (18:30) - 01/08/2010.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1/S/EBB	[29-JUL-2010]	HK1016967-001		**5.3**	**0.103**	**0.59**	**0.69**	<1
WY1/B/EBB	[29-JUL-2010]	HK1016967-003		**3.2**	**0.099**	**0.59**	**0.69**	<1
WY2/S /EBB	[29-JUL-2010]	HK1016967-004		**2.8**	**0.094**	**0.59**	**0.69**	<1
WY2/M/EBB	[29-JUL-2010]	HK1016967-005		**1.8**	**0.091**	**0.58**	**0.67**	<1
WY2/B/EBB	[29-JUL-2010]	HK1016967-006		**1.8**	**0.101**	**0.58**	**0.68**	<1
WY3/S /EBB	[29-JUL-2010]	HK1016967-007		**3.0**	**0.099**	**0.60**	**0.70**	<1
WY3/B/EBB	[29-JUL-2010]	HK1016967-009		**1.8**	**0.097**	**0.62**	**0.71**	**2**
CY1/S /EBB	[29-JUL-2010]	HK1016967-010		**3.4**	**0.104**	**0.56**	**0.66**	<1
CY1/M/EBB	[29-JUL-2010]	HK1016967-011		**4.8**	**0.101**	**0.53**	**0.63**	<1
CY1/B/EBB	[29-JUL-2010]	HK1016967-012		**6.5**	**0.096**	**0.54**	**0.64**	<1
CY2/S /EBB	[29-JUL-2010]	HK1016967-013		**5.0**	**0.088**	**0.56**	**0.65**	<1
CY2/M/EBB	[29-JUL-2010]	HK1016967-014		**2.0**	**0.088**	**0.56**	**0.65**	<1
CY2/B/EBB	[29-JUL-2010]	HK1016967-015		**5.0**	**0.095**	**0.57**	**0.66**	<1
WY1 /S /FLOOD	[29-JUL-2010]	HK1016967-016		**2.4**	**0.095**	**0.56**	**0.66**	**17**
WY1/B/FLOOD	[29-JUL-2010]	HK1016967-018		**18.0**	**0.054**	**0.36**	**0.41**	**12**
WY2/S /FLOOD	[29-JUL-2010]	HK1016967-019		**0.7**	**0.096**	**0.52**	**0.61**	**5**
WY2/M/FLOOD	[29-JUL-2010]	HK1016967-020		**6.5**	**0.078**	**0.45**	**0.53**	**8**
WY2/B/FLOOD	[29-JUL-2010]	HK1016967-021		**11.0**	**0.039**	**0.18**	**0.22**	**7**
WY3/S /FLOOD	[29-JUL-2010]	HK1016967-022		**3.2**	**0.084**	**0.54**	**0.63**	**4**
WY3/B/FLOOD	[29-JUL-2010]	HK1016967-024		**7.8**	**0.073**	**0.45**	**0.52**	**12**
CY1/S /FLOOD	29-JUL-2010 15:00	HK1016967-025		**3.3**	**0.082**	**0.54**	**0.62**	**40**
CY1/M/FLOOD	[29-JUL-2010]	HK1016967-026		**9.0**	**0.045**	**0.35**	**0.39**	**29**
CY1/B/FLOOD	29-JUL-2010 15:00	HK1016967-027		**10.3**	**0.074**	**0.40**	**0.48**	**22**
CY2/S /FLOOD	[29-JUL-2010]	HK1016967-028		**5.4**	**0.120**	**0.56**	**0.68**	**30**
CY2/M/FLOOD	[29-JUL-2010]	HK1016967-029		**8.8**	**0.082**	**0.38**	**0.46**	**13**
CY2/B/FLOOD	[29-JUL-2010]	HK1016967-030		**4.3**	**0.064**	**0.22**	**0.28**	**4**

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1436930)								
HK1016967-001	WY1/S/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	5.3	6.3	17.1
HK1016967-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	5.0	6.0	17.5
EA/ED: Physical and Aggregate Properties (QC Lot: 1436931)								
HK1016967-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.3	3.9	15.8
HK1017100-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1436240)								
HK1016967-001	WY1/S/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.103	0.102	1.0
HK1016967-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.101	0.103	2.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1436241)								
HK1017017-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.18	0.18	0.0
HK1017244-012	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.25	1.28	2.4
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1436447)								
HK1016967-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.59	0.57	2.8
HK1016967-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.53	0.51	3.1
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1436448)								
HK1016967-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.18	0.18	0.0
HK1017287-017	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1436930)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	107	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1436931)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436240)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	96.9	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436241)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	96.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436447)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	103	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436448)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	102	----	85	115	----	----

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

Matrix: **WATER**

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436240)										
HK1016967-001	WY1/S/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	101	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436241)										
HK1017017-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	112	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436447)										
HK1016967-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	107	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1436448)										
HK1016967-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	113	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MS JAN KWOK**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1017012**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Jankwok@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **31-JUL-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **12-AUG-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

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Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1017012 supersedes any previous reports with this reference. The completion date of analysis is 05-AUG-2010. 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 HK1017012 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.
Sample(s) were arrived in the laboratory at 17:30, Microbiological sample(s), in 250mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 01/08/2010 (10:00) - 03/08/2010.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1/S/EBB	[31-JUL-2010]	HK1017012-001		**4.2**	**0.105**	**0.51**	**0.62**	**4**
WY1/B/EBB	[31-JUL-2010]	HK1017012-003		**3.1**	**0.104**	**0.51**	**0.61**	**4**
WY2/S/EBB	[31-JUL-2010]	HK1017012-004		**3.7**	**0.028**	**0.38**	**0.41**	<1
WY2/M/EBB	[31-JUL-2010]	HK1017012-005		**3.8**	**0.025**	**0.39**	**0.42**	<1
WY2/B/EBB	[31-JUL-2010]	HK1017012-006		**4.4**	**0.021**	**0.38**	**0.40**	<1
WY3/S/EBB	[31-JUL-2010]	HK1017012-007		**3.9**	**0.022**	**0.40**	**0.42**	<1
WY3/B/EBB	[31-JUL-2010]	HK1017012-009		**3.8**	**0.020**	**0.40**	**0.42**	<1
CY1/S/EBB	[31-JUL-2010]	HK1017012-010		**3.0**	**0.067**	**0.54**	**0.61**	**2**
CY1/M/EBB	[31-JUL-2010]	HK1017012-011		**1.5**	**0.059**	**0.47**	**0.53**	**2**
CY1/B/EBB	[31-JUL-2010]	HK1017012-012		**2.8**	**0.044**	**0.50**	**0.54**	**8**
CY2/S/EBB	[31-JUL-2010]	HK1017012-013		**4.6**	**0.024**	**0.40**	**0.42**	<1
CY2/M/EBB	[31-JUL-2010]	HK1017012-014		**4.3**	**0.020**	**0.43**	**0.45**	<1
CY2/B/EBB	[31-JUL-2010]	HK1017012-015		**4.9**	**0.034**	**0.40**	**0.43**	<1
WY1/S/FLOOD	[31-JUL-2010]	HK1017012-016		**2.9**	**0.020**	**0.45**	**0.47**	<1
WY1/B/FLOOD	[31-JUL-2010]	HK1017012-018		**3.2**	**0.026**	**0.45**	**0.48**	**1**
WY2/S/FLOOD	[31-JUL-2010]	HK1017012-019		**3.1**	**0.094**	**0.51**	**0.60**	**2**
WY2/M/FLOOD	[31-JUL-2010]	HK1017012-020		**2.6**	**0.092**	**0.51**	**0.60**	**2**
WY2/B/FLOOD	[31-JUL-2010]	HK1017012-021		**4.3**	**0.091**	**0.48**	**0.57**	**6**
WY3/S/FLOOD	[31-JUL-2010]	HK1017012-022		**2.4**	**0.095**	**0.51**	**0.60**	**8**
WY3/B/FLOOD	[31-JUL-2010]	HK1017012-024		**2.9**	**0.103**	**0.52**	**0.62**	**11**
CY1/S/FLOOD	[31-JUL-2010]	HK1017012-025		**1.3**	**0.088**	**0.50**	**0.59**	**6**
CY1/M/FLOOD	[31-JUL-2010]	HK1017012-026		**2.2**	**0.083**	**0.46**	**0.54**	**17**
CY1/B/FLOOD	[31-JUL-2010]	HK1017012-027		**1.8**	**0.100**	**0.54**	**0.64**	**15**
CY2/S/FLOOD	[31-JUL-2010]	HK1017012-028		**1.6**	**0.062**	**0.46**	**0.52**	<1
CY2/M/FLOOD	[31-JUL-2010]	HK1017012-029		**6.4**	**0.021**	**0.14**	**0.16**	**2**
CY2/B/FLOOD	[31-JUL-2010]	HK1017012-030		**6.0**	**0.021**	**0.17**	**0.19**	<1

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1438298)								
HK1017012-003	WY1/B/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.1	2.6	15.6
HK1017012-007	WY3/S/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	3.9	3.0	25.3
EA/ED: Physical and Aggregate Properties (QC Lot: 1438299)								
HK1017012-016	WY1/S/FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.9	3.2	10.5
HK1017334-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1437422)								
HK1017012-001	WY1/S/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.105	0.103	1.9
HK1017012-012	CY1/B/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.044	0.044	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1437423)								
HK1017012-030	CY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.021	0.021	0.0
HK1017012-026	CY1/M/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.083	0.085	2.4
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1438306)								
HK1017385-015	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	2.27	2.26	0.4
HK1017385-010	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	1.96	1.92	2.1
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1438307)								
HK1017012-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.51	0.53	3.8
HK1017012-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.47	0.47	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1438298)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	87.5	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1438299)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	97.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1437422)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	96.0	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1437423)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	96.4	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1438306)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	102	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1438307)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	99.6	----	85	115	----	----

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

Matrix: **WATER**

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1437422)										
HK1017012-001	WY1/S/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	91.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1437423)										
HK1017012-013	CY2/S/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	102	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1438306)										
HK1017385-010	Anonymous	EK059A: Nitrite + Nitrate as N	----	10 mg/L	105	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1438307)										
HK1017385-015	Anonymous	EK059A: Nitrite + Nitrate as N	----	10 mg/L	106	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1018969**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
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Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **24-AUG-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **02-SEP-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1018969 supersedes any previous reports with this reference. The completion date of analysis is 01-SEP-2010. 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 HK1018969 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan .
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 13:00. Microbiological sample(s), in 250mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 25/08/2010 (09:45) - 27/08/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[23-AUG-2010]	HK1018969-001		**10.9**	**0.040**	**0.18**	**0.22**	**12**
WY1/B/EBB	[23-AUG-2010]	HK1018969-003		**10.4**	**0.034**	**0.18**	**0.21**	**12**
WY2/S /EBB	[23-AUG-2010]	HK1018969-004		**10.5**	**0.020**	**0.18**	**0.20**	**1**
WY2/M/EBB	[23-AUG-2010]	HK1018969-005		**7.8**	**0.020**	**0.18**	**0.20**	<1
WY2/B/EBB	[23-AUG-2010]	HK1018969-006		**19.4**	**0.018**	**0.18**	**0.20**	<1
WY3/S /EBB	[23-AUG-2010]	HK1018969-007		**7.4**	**0.024**	**0.18**	**0.20**	**8**
WY3/B/EBB	[23-AUG-2010]	HK1018969-009		**11.8**	**0.007**	**0.18**	**0.18**	**15**
CY1/S /EBB	[23-AUG-2010]	HK1018969-010		**5.5**	**0.005**	**0.18**	**0.18**	<1
CY1/M/EBB	[23-AUG-2010]	HK1018969-011		**5.9**	**0.026**	**0.20**	**0.23**	<1
CY1/B/EBB	[23-AUG-2010]	HK1018969-012		**7.1**	**0.027**	**0.20**	**0.23**	**4**
CY2/S /EBB	[23-AUG-2010]	HK1018969-013		**4.8**	**0.013**	**0.16**	**0.17**	<1
CY2/M/EBB	[23-AUG-2010]	HK1018969-014		**5.7**	**0.020**	**0.16**	**0.18**	**1**
CY2/B/EBB	[23-AUG-2010]	HK1018969-015		**13.0**	**0.029**	**0.16**	**0.19**	<1
WY1 /S /FLOOD	[23-AUG-2010]	HK1018969-016		**28.0**	**0.030**	**0.24**	**0.27**	**7**
WY1/B/FLOOD	[23-AUG-2010]	HK1018969-018		**27.9**	**0.036**	**0.24**	**0.28**	**4**
WY2/S /FLOOD	[23-AUG-2010]	HK1018969-019		**17.2**	**0.028**	**0.22**	**0.25**	**2**
WY2/M/FLOOD	[23-AUG-2010]	HK1018969-020		**12.2**	**0.024**	**0.21**	**0.23**	<1
WY2/B/FLOOD	[23-AUG-2010]	HK1018969-021		**13.5**	**0.031**	**0.22**	**0.25**	<1
WY3/S /FLOOD	[23-AUG-2010]	HK1018969-022		**14.6**	**0.033**	**0.22**	**0.25**	**2**
WY3/B/FLOOD	[23-AUG-2010]	HK1018969-024		**20.4**	**0.045**	**0.25**	**0.30**	**7**
CY1/S /FLOOD	[23-AUG-2010]	HK1018969-025		**10.0**	**0.015**	**0.22**	**0.24**	**2**
CY1/M/FLOOD	[23-AUG-2010]	HK1018969-026		**9.8**	**0.022**	**0.22**	**0.24**	<1
CY1/B/FLOOD	[23-AUG-2010]	HK1018969-027		**10.5**	**0.022**	**0.22**	**0.24**	**2**
CY2/S /FLOOD	[23-AUG-2010]	HK1018969-028		**8.9**	**0.020**	**0.20**	**0.22**	<1
CY2/M/FLOOD	[23-AUG-2010]	HK1018969-029		**11.9**	**0.029**	**0.22**	**0.25**	**2**
CY2/B/FLOOD	[23-AUG-2010]	HK1018969-030		**11.5**	**0.026**	**0.22**	**0.25**	**8**

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1468058)								
HK1018969-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	10.9	9.9	10.0
HK1018969-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.8	5.9	20.9
EA/ED: Physical and Aggregate Properties (QC Lot: 1468059)								
HK1018969-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	10.0	11.6	14.5
HK1019640-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1466373)								
HK1018969-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.040	0.040	0.0
HK1018969-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.026	0.024	8.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1466374)								
HK1018969-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.031	0.028	10.2
HK1019651-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.30	0.30	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1469887)								
HK1018969-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.18	0.19	5.4
HK1018969-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.20	0.20	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1469888)								
HK1019695-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	15.4	15.1	1.4
HK1019967-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.1	mg/L	<0.1	<0.1	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1468058)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	91.0	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1468059)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	90.0	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1466373)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.05 mg/L	98.8	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1466374)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.05 mg/L	97.2	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1469887)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	97.0	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1469888)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	99.1	----	85	115	----	----

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

Matrix: **WATER**

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1466373)										
HK1018969-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	116	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1466374)										
HK1018969-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	123	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1469887)										
HK1018969-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	95.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1469888)										
HK1018969-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	90.0	----	75	125	----	----

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1018971**
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Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **30-AUG-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **13-SEP-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1018971 supersedes any previous reports with this reference. The completion date of analysis is 02-SEP-2010. 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 HK1018971 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan .
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 31/08/2010 (11:25) - 02/09/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[27-AUG-2010]	HK1018971-001		**6.8**	**0.089**	**0.33**	**0.42**	<1
WY1/B/EBB	[27-AUG-2010]	HK1018971-003		**6.8**	**0.075**	**0.34**	**0.42**	<1
WY2/S /EBB	[27-AUG-2010]	HK1018971-004		**5.3**	**0.073**	**0.26**	**0.33**	<1
WY2/M/EBB	[27-AUG-2010]	HK1018971-005		**5.6**	**0.084**	**0.25**	**0.33**	<1
WY2/B/EBB	[27-AUG-2010]	HK1018971-006		**5.3**	**0.070**	**0.26**	**0.33**	<1
WY3/S /EBB	[27-AUG-2010]	HK1018971-007		**5.9**	**0.056**	**0.28**	**0.34**	<1
WY3/B/EBB	[27-AUG-2010]	HK1018971-009		**12.9**	**0.057**	**0.27**	**0.33**	<1
CY1/S /EBB	[27-AUG-2010]	HK1018971-010		**5.5**	**0.074**	**0.27**	**0.34**	<1
CY1/M/EBB	[27-AUG-2010]	HK1018971-011		**6.2**	**0.082**	**0.26**	**0.34**	<1
CY1/B/EBB	[27-AUG-2010]	HK1018971-012		**6.2**	**0.078**	**0.27**	**0.35**	<1
CY2/S /EBB	[27-AUG-2010]	HK1018971-013		**7.2**	**0.072**	**0.23**	**0.30**	<1
CY2/M/EBB	[27-AUG-2010]	HK1018971-014		**8.4**	**0.080**	**0.22**	**0.30**	<1
CY2/B/EBB	[27-AUG-2010]	HK1018971-015		**6.1**	**0.068**	**0.26**	**0.33**	<1
WY1 /S /FLOOD	[27-AUG-2010]	HK1018971-016		**12.6**	**0.058**	**0.27**	**0.33**	<1
WY1/B/FLOOD	[27-AUG-2010]	HK1018971-018		**9.1**	**0.066**	**0.28**	**0.35**	<1
WY2/S /FLOOD	[27-AUG-2010]	HK1018971-019		**13.4**	**0.054**	**0.25**	**0.30**	<1
WY2/M/FLOOD	[27-AUG-2010]	HK1018971-020		**8.3**	**0.082**	**0.23**	**0.31**	<1
WY2/B/FLOOD	[27-AUG-2010]	HK1018971-021		**6.8**	**0.065**	**0.28**	**0.34**	<1
WY3/S /FLOOD	[27-AUG-2010]	HK1018971-022		**15.9**	**0.048**	**0.30**	**0.35**	<1
WY3/B/FLOOD	[27-AUG-2010]	HK1018971-024		**13.7**	**0.051**	**0.30**	**0.35**	<1
CY1/S /FLOOD	[27-AUG-2010]	HK1018971-025		**6.3**	**0.085**	**0.36**	**0.44**	<1
CY1/M/FLOOD	[27-AUG-2010]	HK1018971-026		**5.9**	**0.074**	**0.35**	**0.42**	<1
CY1/B/FLOOD	[27-AUG-2010]	HK1018971-027		**14.9**	**0.097**	**0.35**	**0.45**	<1
CY2/S /FLOOD	[27-AUG-2010]	HK1018971-028		**6.8**	**0.062**	**0.38**	**0.44**	<1
CY2/M/FLOOD	[27-AUG-2010]	HK1018971-029		**8.0**	**0.076**	**0.39**	**0.47**	<1
CY2/B/FLOOD	[27-AUG-2010]	HK1018971-030		**12.5**	**0.067**	**0.37**	**0.44**	<1

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1472068)								
HK1018971-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	6.8	5.8	14.6
HK1018971-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	7.2	7.8	7.6
EA/ED: Physical and Aggregate Properties (QC Lot: 1472069)								
HK1018971-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	6.3	7.2	13.3
HK1019978-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	3	3	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1471329)								
HK1018971-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.089	0.091	2.2
HK1018971-013	CY2/S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.072	0.074	2.7
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1471330)								
HK1018971-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.082	0.085	3.6
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1471407)								
HK1018971-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.28	0.28	0.0
HK1019838-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.32	0.31	3.2
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1471408)								
HK1018973-011	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.16	0.16	0.0
HK1019838-018	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.32	0.32	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1472068)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	111	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1472069)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	113	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471329)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.6	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471330)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.4	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471407)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	101	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471408)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	101	----	85	115	----	----

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

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Spike	Spike Recovery (%)	Recovery Limits (%)	RPDs (%)

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471329)										
HK1018971-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	94.2	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471330)										
HK1018971-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	99.6	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471407)										
HK1018973-022	Anonymous	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	91.7	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1471408)										
HK1018971-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	104	----	75	125	----	----

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1020635**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **13-SEP-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **22-SEP-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

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Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1020635 supersedes any previous reports with this reference. The completion date of analysis is 16-SEP-2010. 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 HK1020635 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan .
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 14/09/2010 (09:40) - 16/09/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[13-SEP-2010]	HK1020635-001		**4.2**	<0.005	**0.45**	**0.45**	**11**
WY1/B/EBB	[13-SEP-2010]	HK1020635-003		**3.3**	<0.005	**0.44**	**0.44**	**9**
WY2/S /EBB	[13-SEP-2010]	HK1020635-004		**3.5**	<0.005	**0.46**	**0.46**	**1**
WY2/M/EBB	[13-SEP-2010]	HK1020635-005		**3.6**	<0.005	**0.44**	**0.44**	**2**
WY2/B/EBB	[13-SEP-2010]	HK1020635-006		**2.8**	<0.005	**0.45**	**0.45**	**1**
WY3/S /EBB	[13-SEP-2010]	HK1020635-007		**4.2**	<0.005	**0.44**	**0.44**	**19**
WY3/B/EBB	[13-SEP-2010]	HK1020635-009		**4.3**	<0.005	**0.43**	**0.43**	**8**
CY1/S /EBB	[13-SEP-2010]	HK1020635-010		**1.6**	<0.005	**0.59**	**0.59**	**12**
CY1/M/EBB	[13-SEP-2010]	HK1020635-011		**1.9**	<0.005	**0.57**	**0.57**	**3**
CY1/B/EBB	[13-SEP-2010]	HK1020635-012		**1.8**	<0.005	**0.58**	**0.58**	**1**
CY2/S /EBB	[13-SEP-2010]	HK1020635-013		**2.3**	<0.005	**0.59**	**0.59**	<1
CY2/M/EBB	[13-SEP-2010]	HK1020635-014		**1.5**	<0.005	**0.60**	**0.60**	<1
CY2/B/EBB	[13-SEP-2010]	HK1020635-015		**2.6**	<0.005	**0.58**	**0.58**	**4**
WY1 /S /FLOOD	[13-SEP-2010]	HK1020635-016		**3.4**	<0.005	**0.48**	**0.48**	**3**
WY1/B/FLOOD	[13-SEP-2010]	HK1020635-018		**3.6**	<0.005	**0.48**	**0.48**	**22**
WY2/S /FLOOD	[13-SEP-2010]	HK1020635-019		**6.6**	<0.005	**0.49**	**0.49**	**41**
WY2/M/FLOOD	[13-SEP-2010]	HK1020635-020		**6.0**	<0.005	**0.49**	**0.49**	**14**
WY2/B/FLOOD	[13-SEP-2010]	HK1020635-021		**7.9**	<0.005	**0.47**	**0.47**	**29**
WY3/S /FLOOD	[13-SEP-2010]	HK1020635-022		**3.4**	<0.005	**0.50**	**0.50**	**14**
WY3/B/FLOOD	[13-SEP-2010]	HK1020635-024		**4.8**	<0.005	**0.49**	**0.49**	**24**
CY1/S /FLOOD	[13-SEP-2010]	HK1020635-025		**1.7**	<0.005	**0.69**	**0.69**	**3**
CY1/M/FLOOD	[13-SEP-2010]	HK1020635-026		**3.7**	<0.005	**0.65**	**0.65**	**24**
CY1/B/FLOOD	[13-SEP-2010]	HK1020635-027		**17.3**	<0.005	**0.39**	**0.39**	**41**
CY2/S /FLOOD	[13-SEP-2010]	HK1020635-028		**3.0**	<0.005	**0.64**	**0.64**	**35**
CY2/M/FLOOD	[13-SEP-2010]	HK1020635-029		**3.5**	<0.005	**0.62**	**0.62**	**55**
CY2/B/FLOOD	[13-SEP-2010]	HK1020635-030		**3.6**	<0.005	**0.64**	**0.64**	**36**

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1487778)								
HK1020635-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.2	4.0	3.7
HK1020635-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.3	1.2	61.5
EA/ED: Physical and Aggregate Properties (QC Lot: 1487779)								
HK1020635-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	1.7	2.8	50.7
HK1020638-007	Anonymous	EA025: Suspended Solids (SS)	----	0.5	mg/L	2.3	4.3	58.6
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1488178)								
HK1020635-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1020638-031	Anonymous	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.019	0.019	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1488179)								
HK1020635-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1021479-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.52	0.52	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1488518)								
HK1020638-011	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.28	0.28	0.0
HK1020638-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.25	0.25	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1488519)								
HK1020638-031	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.33	0.34	3.0
HK1020638-022	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.41	0.41	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1487778)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	88.5	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1487779)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488178)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	112	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488179)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	109	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488518)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	95.1	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488519)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	89.4	----	85	115	----	----

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

Matrix: **WATER**

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488178)										
HK1020635-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	102	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488179)										
HK1020635-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	100	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488518)										
HK1020635-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	85.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1488519)										
HK1020638-031	Anonymous	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	85.3	----	75	125	----	----

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1020637**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **24-SEP-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **06-OCT-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1020637 supersedes any previous reports with this reference. The completion date of analysis is 29-SEP-2010. 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 HK1020637 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan .
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 25/09/2010 (10:00) - 27/09/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1/S/EBB	[24-SEP-2010]	HK1020637-001		**5.1**	**0.041**	**0.47**	**0.51**	<1
WY1/B/EBB	[24-SEP-2010]	HK1020637-003		**7.7**	**0.048**	**0.46**	**0.51**	<1
WY2/S /EBB	[24-SEP-2010]	HK1020637-004		**4.4**	**0.038**	**0.48**	**0.52**	<1
WY2/M/EBB	[24-SEP-2010]	HK1020637-005		**6.6**	**0.045**	**0.46**	**0.50**	<1
WY2/B/EBB	[24-SEP-2010]	HK1020637-006		**5.7**	**0.036**	**0.46**	**0.50**	<1
WY3/S /EBB	[24-SEP-2010]	HK1020637-007		**10.0**	**0.056**	**0.50**	**0.56**	**2**
WY3/B/EBB	[24-SEP-2010]	HK1020637-009		**11.6**	**0.051**	**0.47**	**0.52**	**4**
CY1/S /EBB	[24-SEP-2010]	HK1020637-010		**7.1**	**0.024**	**0.45**	**0.47**	**1**
CY1/M/EBB	[24-SEP-2010]	HK1020637-011		**3.2**	**0.039**	**0.46**	**0.50**	<1
CY1/B/EBB	[24-SEP-2010]	HK1020637-012		**10.2**	**0.037**	**0.46**	**0.50**	<1
CY2/S /EBB	[24-SEP-2010]	HK1020637-013		**6.5**	**0.020**	**0.47**	**0.49**	**1**
CY2/M/EBB	[24-SEP-2010]	HK1020637-014		**3.3**	**0.017**	**0.45**	**0.47**	<1
CY2/B/EBB	[24-SEP-2010]	HK1020637-015		**8.5**	**0.015**	**0.40**	**0.42**	**2**
WY1 /S /FLOOD	[24-SEP-2010]	HK1020637-016		**4.9**	**0.015**	**0.42**	**0.44**	<1
WY1/B/FLOOD	[24-SEP-2010]	HK1020637-018		**13.9**	**0.018**	**0.43**	**0.45**	<1
WY2/S /FLOOD	[24-SEP-2010]	HK1020637-019		**5.4**	**0.044**	**0.45**	**0.49**	<1
WY2/M/FLOOD	[24-SEP-2010]	HK1020637-020		**5.4**	**0.043**	**0.46**	**0.50**	**1**
WY2/B/FLOOD	[24-SEP-2010]	HK1020637-021		**7.0**	**0.047**	**0.47**	**0.52**	**1**
WY3/S /FLOOD	[24-SEP-2010]	HK1020637-022		**7.7**	**0.062**	**0.45**	**0.51**	**2**
WY3/B/FLOOD	[24-SEP-2010]	HK1020637-024		**4.0**	**0.062**	**0.48**	**0.54**	**2**
CY1/S /FLOOD	[24-SEP-2010]	HK1020637-025		**9.5**	**0.073**	**0.50**	**0.57**	**1**
CY1/M/FLOOD	[24-SEP-2010]	HK1020637-026		**6.2**	**0.072**	**0.50**	**0.57**	<1
CY1/B/FLOOD	[24-SEP-2010]	HK1020637-027		**4.2**	**0.073**	**0.50**	**0.57**	<1
CY2/S /FLOOD	[24-SEP-2010]	HK1020637-028		**6.6**	**0.078**	**0.49**	**0.57**	<1
CY2/M/FLOOD	[24-SEP-2010]	HK1020637-029		**5.4**	**0.080**	**0.50**	**0.58**	**2**
CY2/B/FLOOD	[24-SEP-2010]	HK1020637-030		**4.3**	**0.073**	**0.50**	**0.57**	**1**

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1503871)								
HK1020637-001	WY1/S/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	5.1	4.3	17.9
HK1020637-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	6.5	5.5	16.7
EA/ED: Physical and Aggregate Properties (QC Lot: 1503872)								
HK1020637-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	9.5	10.6	10.8
HK1022347-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	17	19	11.3
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1502986)								
HK1020637-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.47	0.48	2.1
HK1020637-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.46	0.46	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1502987)								
HK1020637-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.47	0.44	6.6
HK1022363-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	5.40	5.40	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1503269)								
HK1022409-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.1	mg/L	<0.1	<0.1	0.0
HK1020637-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	0.039	0.036	8.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1503270)								
HK1022356-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.07	0.07	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1503871)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	85.5	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1503872)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	114	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1502986)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	99.8	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1502987)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	99.4	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1503269)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	96.8	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1503270)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	101	----	85	115	----	----

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

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Spike	Spike Recovery (%)	Recovery Limits (%)	RPDs (%)

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1502986)										
HK1020637-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	87.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1502987)										
HK1020637-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	106	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1503269)										
HK1022356-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	100	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1503270)										
HK1020637-022	WY3/S /FLOOD	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	120	----	75	125	----	----

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1023012**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
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Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **07-OCT-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **18-OCT-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1023012 supersedes any previous reports with this reference. The completion date of analysis is 13-OCT-2010. 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 HK1023012 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan .
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 08/10/2010 (17:15) - 10/10/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1/S/EBB	[07-OCT-2010]	HK1023012-001		**8.7**	<0.005	**0.08**	**0.08**	**1**
WY1/B/EBB	[07-OCT-2010]	HK1023012-003		**7.8**	<0.005	**0.08**	**0.08**	**2**
WY2/S /EBB	[07-OCT-2010]	HK1023012-004		**8.9**	<0.005	**0.06**	**0.06**	**25**
WY2/M/EBB	[07-OCT-2010]	HK1023012-005		**7.9**	<0.005	**0.06**	**0.06**	**24**
WY2/B/EBB	[07-OCT-2010]	HK1023012-006		**10.0**	<0.005	**0.06**	**0.06**	**45**
WY3/S/EBB	[07-OCT-2010]	HK1023012-007		**8.3**	<0.005	**0.10**	**0.10**	**7**
WY3/B/EBB	[07-OCT-2010]	HK1023012-009		**9.2**	<0.005	**0.10**	**0.10**	<1
CY1/S/EBB	[07-OCT-2010]	HK1023012-010		**8.2**	<0.005	**0.14**	**0.14**	<1
CY1/M/EBB	[07-OCT-2010]	HK1023012-011		**9.4**	<0.005	**0.14**	**0.14**	<1
CY1/B/EBB	[07-OCT-2010]	HK1023012-012		**11.7**	<0.005	**0.14**	**0.14**	**2**
CY2/S/EBB	[07-OCT-2010]	HK1023012-013		**6.4**	<0.005	**0.13**	**0.13**	**1**
CY2/M/EBB	[07-OCT-2010]	HK1023012-014		**7.4**	<0.005	**0.14**	**0.14**	<1
CY2/B/EBB	[07-OCT-2010]	HK1023012-015		**6.6**	<0.005	**0.14**	**0.14**	<1
WY1/S/FLOOD	[07-OCT-2010]	HK1023012-016		**9.7**	<0.005	**0.08**	**0.08**	**3**
WY1/B/FLOOD	[07-OCT-2010]	HK1023012-018		**10.0**	<0.005	**0.08**	**0.08**	**7**
WY2/S/FLOOD	[07-OCT-2010]	HK1023012-019		**8.0**	<0.005	**0.10**	**0.10**	**1**
WY2/M/FLOOD	[07-OCT-2010]	HK1023012-020		**7.6**	<0.005	**0.07**	**0.07**	**4**
WY2/B/FLOOD	[07-OCT-2010]	HK1023012-021		**9.5**	<0.005	**0.10**	**0.10**	<1
WY3/S/FLOOD	[07-OCT-2010]	HK1023012-022		**6.4**	<0.005	**0.06**	**0.06**	**38**
WY3/B/FLOOD	[07-OCT-2010]	HK1023012-024		**6.5**	<0.005	**0.07**	**0.07**	**33**
CY1/S/FLOOD	[07-OCT-2010]	HK1023012-025		**9.5**	<0.005	**0.22**	**0.22**	**3**
CY1/M/FLOOD	[07-OCT-2010]	HK1023012-026		**13.6**	<0.005	**0.12**	**0.12**	**1**
CY1/B/FLOOD	[07-OCT-2010]	HK1023012-027		**9.7**	<0.005	**0.12**	**0.12**	**5**
CY2/S/FLOOD	[07-OCT-2010]	HK1023012-028		**9.6**	<0.005	**0.12**	**0.12**	**1**
CY2/M/FLOOD	[07-OCT-2010]	HK1023012-029		**12.4**	<0.005	**0.11**	**0.11**	<1
CY2/B/FLOOD	[07-OCT-2010]	HK1023012-030		**9.6**	<0.005	**0.11**	**0.11**	<1

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1520603)								
HK1023012-001	WY1/S/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	8.7	9.5	8.4
HK1023012-012	CY1/B/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	11.7	12.7	7.6
EA/ED: Physical and Aggregate Properties (QC Lot: 1520604)								
HK1023012-025	CY1/S/FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	9.5	10.8	13.2
HK1023461-002	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	3	2	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1517217)								
HK1023012-001	WY1/S/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1023012-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1517218)								
HK1023012-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1023696-018	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	7.97	8.23	3.2
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1519239)								
HK1023012-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.08	0.0
HK1023012-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.14	0.14	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1519240)								
HK1023012-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.10	0.10	0.0
HK1023621-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.1	mg/L	<0.1	<0.1	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1520603)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1520604)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	95.0	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1517217)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	98.8	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1517218)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1519239)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	106	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1519240)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	105	----	85	115	----	----

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

Matrix: **WATER**

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1517217)										
HK1023012-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	103	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1517218)										
HK1023495-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	120	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1519239)										
HK1023012-001	WY1/S/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	114	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1519240)										
HK1023012-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	93.0	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1023076**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T., HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **26-OCT-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **03-NOV-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1023076 supersedes any previous reports with this reference. The completion date of analysis is 29-OCT-2010. 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 HK1023076 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan .
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 27/10/2010 (09:30) - 29/10/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Compound			EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
LOR Unit			0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[26-OCT-2010]	HK1023076-001	**9.8**	<0.005	**0.09**	**0.09**	**49**
WY1/B/EBB	[26-OCT-2010]	HK1023076-003	**10.2**	<0.005	**0.09**	**0.09**	**39**
WY2/S /EBB	[26-OCT-2010]	HK1023076-004	**12.3**	<0.005	**0.08**	**0.08**	**35**
WY2/M/EBB	[26-OCT-2010]	HK1023076-005	**11.6**	<0.005	**0.08**	**0.08**	**43**
WY2/B/EBB	[26-OCT-2010]	HK1023076-006	**12.0**	<0.005	**0.08**	**0.08**	**52**
WY3/S /EBB	[26-OCT-2010]	HK1023076-007	**8.9**	<0.005	**0.10**	**0.10**	**15**
WY3/B/EBB	[26-OCT-2010]	HK1023076-009	**8.7**	<0.005	**0.10**	**0.10**	**24**
CY1/S /EBB	[26-OCT-2010]	HK1023076-010	**8.7**	<0.005	**0.08**	**0.08**	**1**
CY1/M/EBB	[26-OCT-2010]	HK1023076-011	**6.6**	<0.005	**0.08**	**0.08**	<1
CY1/B/EBB	[26-OCT-2010]	HK1023076-012	**4.2**	<0.005	**0.08**	**0.08**	<1
CY2/S /EBB	[26-OCT-2010]	HK1023076-013	**7.4**	<0.005	**0.08**	**0.08**	<1
CY2/M/EBB	[26-OCT-2010]	HK1023076-014	**6.9**	<0.005	**0.07**	**0.07**	**1**
CY2/B/EBB	[26-OCT-2010]	HK1023076-015	**6.6**	<0.005	**0.08**	**0.08**	<1
WY1 /S /FLOOD	[26-OCT-2010]	HK1023076-016	**16.8**	<0.005	**0.09**	**0.09**	**22**
WY1/B/FLOOD	[26-OCT-2010]	HK1023076-018	**13.4**	<0.005	**0.08**	**0.08**	**5**
WY2/S /FLOOD	[26-OCT-2010]	HK1023076-019	**9.0**	<0.005	**0.08**	**0.08**	**3**
WY2/M/FLOOD	[26-OCT-2010]	HK1023076-020	**6.0**	<0.005	**0.08**	**0.08**	**1**
WY2/B/FLOOD	[26-OCT-2010]	HK1023076-021	**12.1**	<0.005	**0.08**	**0.08**	**1**
WY3/S /FLOOD	[26-OCT-2010]	HK1023076-022	**6.0**	<0.005	**0.08**	**0.08**	<1
WY3/B/FLOOD	[26-OCT-2010]	HK1023076-024	**9.7**	<0.005	**0.08**	**0.08**	**1**
CY1/S /FLOOD	[26-OCT-2010]	HK1023076-025	**11.0**	<0.005	**0.08**	**0.08**	**1**
CY1/M/FLOOD	[26-OCT-2010]	HK1023076-026	**18.7**	<0.005	**0.08**	**0.08**	**1**
CY1/B/FLOOD	[26-OCT-2010]	HK1023076-027	**9.5**	<0.005	**0.08**	**0.08**	**4**
CY2/S /FLOOD	[26-OCT-2010]	HK1023076-028	**8.8**	<0.005	**0.08**	**0.08**	**2**
CY2/M/FLOOD	[26-OCT-2010]	HK1023076-029	**8.9**	<0.005	**0.08**	**0.08**	**2**
CY2/B/FLOOD	[26-OCT-2010]	HK1023076-030	**6.0**	<0.005	**0.08**	**0.08**	**2**

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1540317)								
HK1023076-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	9.8	9.6	2.1
HK1023076-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	7.4	6.5	12.4
EA/ED: Physical and Aggregate Properties (QC Lot: 1540318)								
HK1023076-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	11.0	9.7	13.0
HK1025158-005	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	10	11	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1540246)								
HK1023076-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1023076-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1540247)								
HK1023076-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1541025)								
HK1023076-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.07	13.3
HK1023076-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.09	0.09	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1541026)								
HK1023076-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.08	0.0
HK1025281-002	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	10.8	10.8	0.2

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1540317)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.0	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1540318)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	89.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1540246)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.0	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1540247)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1541025)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	104	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1541026)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	108	----	85	115	----	----

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

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Spike	Spike Recovery (%)	Recovery Limits (%)	RPDs (%)

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1540246)										
HK1023076-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	90.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1540247)										
HK1023076-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	92.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1541025)										
HK1023076-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	106	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1541026)										
HK1023076-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	105	----	75	125	----	----

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1026854**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **18-NOV-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **29-NOV-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

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Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1026854 supersedes any previous reports with this reference. The completion date of analysis is 23-NOV-2010. 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 HK1026854 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile , with addition of sodium thiosulfate solution. Testing period : 19/11/2010 (09:30) - 21/11/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[18-NOV-2010]	HK1026854-001		**15.4**	<0.005	**0.16**	**0.16**	**25**
WY1/B/EBB	[18-NOV-2010]	HK1026854-003		**16.5**	<0.005	**0.16**	**0.16**	**35**
WY2/S /EBB	[18-NOV-2010]	HK1026854-004		**10.5**	<0.005	**0.15**	**0.15**	**2**
WY2/M/EBB	[18-NOV-2010]	HK1026854-005		**11.0**	<0.005	**0.15**	**0.15**	<1
WY2/B/EBB	[18-NOV-2010]	HK1026854-006		**10.7**	<0.005	**0.14**	**0.14**	<1
WY3/S /EBB	[18-NOV-2010]	HK1026854-007		**11.0**	<0.005	**0.16**	**0.16**	**4**
WY3/B/EBB	[18-NOV-2010]	HK1026854-009		**11.9**	<0.005	**0.16**	**0.16**	<1
CY1/S /EBB	[18-NOV-2010]	HK1026854-010		**8.0**	<0.005	**0.14**	**0.14**	<1
CY1/M/EBB	[18-NOV-2010]	HK1026854-011		**6.7**	<0.005	**0.14**	**0.14**	**3**
CY1/B/EBB	[18-NOV-2010]	HK1026854-012		**14.8**	<0.005	**0.15**	**0.15**	<1
CY2/S /EBB	[18-NOV-2010]	HK1026854-013		**7.3**	<0.005	**0.14**	**0.14**	<1
CY2/M/EBB	[18-NOV-2010]	HK1026854-014		**4.5**	<0.005	**0.14**	**0.14**	<1
CY2/B/EBB	[18-NOV-2010]	HK1026854-015		**10.8**	<0.005	**0.14**	**0.14**	<1
WY1 /S /FLOOD	[18-NOV-2010]	HK1026854-016		**7.5**	<0.005	**0.14**	**0.14**	**7**
WY1/B/FLOOD	[18-NOV-2010]	HK1026854-018		**11.1**	<0.005	**0.14**	**0.14**	**1**
WY2/S /FLOOD	[18-NOV-2010]	HK1026854-019		**8.5**	<0.005	**0.14**	**0.14**	<1
WY2/M/FLOOD	[18-NOV-2010]	HK1026854-020		**11.3**	<0.005	**0.14**	**0.14**	<1
WY2/B/FLOOD	[18-NOV-2010]	HK1026854-021		**6.0**	<0.005	**0.14**	**0.14**	**3**
WY3/S /FLOOD	[18-NOV-2010]	HK1026854-022		**5.8**	<0.005	**0.14**	**0.14**	**9**
WY3/B/FLOOD	[18-NOV-2010]	HK1026854-024		**4.1**	<0.005	**0.14**	**0.14**	**3**
CY1/S /FLOOD	[18-NOV-2010]	HK1026854-025		**4.3**	<0.005	**0.14**	**0.14**	<1
CY1/M/FLOOD	[18-NOV-2010]	HK1026854-026		**6.1**	<0.005	**0.14**	**0.14**	<1
CY1/B/FLOOD	[18-NOV-2010]	HK1026854-027		**6.3**	<0.005	**0.14**	**0.14**	<1
CY2/S /FLOOD	[18-NOV-2010]	HK1026854-028		**4.8**	<0.005	**0.14**	**0.14**	<1
CY2/M/FLOOD	[18-NOV-2010]	HK1026854-029		**8.3**	<0.005	**0.14**	**0.14**	<1
CY2/B/FLOOD	[18-NOV-2010]	HK1026854-030		**4.1**	<0.005	**0.14**	**0.14**	<1

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1571831)								
HK1026854-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	15.4	13.2	15.3
HK1026854-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	7.3	8.3	12.8
EA/ED: Physical and Aggregate Properties (QC Lot: 1571832)								
HK1026854-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	4.3	5.2	20.2
HK1027182-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	<2	<2	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1569943)								
HK1026854-001	WY1 /S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1026854-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1569944)								
HK1026854-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1027282-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	1.66	1.70	2.4
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1570117)								
HK1026854-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.16	0.16	0.0
HK1026854-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.14	0.14	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1570118)								
HK1026854-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.14	0.14	0.0
HK1027327-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1571831)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	94.0	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1571832)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	85.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1569943)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	108	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1569944)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	99.4	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1570117)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	90.2	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1570118)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	89.6	----	85	115	----	----

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

Matrix: **WATER**

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1569943)										
HK1026854-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	100	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1569944)										
HK1026854-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	94.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1570117)										
HK1026854-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	100	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1570118)										
HK1026854-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	101	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1026855**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **24-NOV-2010**
Order number	:	**DC/2009/13**				*Date of issue*	: **03-DEC-2010**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

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Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1026855 supersedes any previous reports with this reference. The completion date of analysis is 29-NOV-2010. 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 HK1026855 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 13:00. Microbiological sample(s), in 125mL plastic bottle labelled sterile , with addition of sodium thiosulfate solution. Testing period : 24/11/2010 (15:30) - 26/11/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Client sample ID	Client sampling date / time	Laboratory sample ID	Compound	EA025: Suspended Solids (SS)	EK055A: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
			LOR Unit	0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
				EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1/S/EBB	[23-NOV-2010]	HK1026855-001		**12.6**	<0.005	**0.07**	**0.07**	**2**
WY1/B/EBB	[23-NOV-2010]	HK1026855-003		**23.0**	<0.005	**0.08**	**0.08**	**3**
WY2/S /EBB	[23-NOV-2010]	HK1026855-004		**15.5**	<0.005	**0.07**	**0.07**	<1
WY2/M/EBB	[23-NOV-2010]	HK1026855-005		**23.2**	<0.005	**0.08**	**0.08**	**5**
WY2/B/EBB	[23-NOV-2010]	HK1026855-006		**12.8**	<0.005	**0.06**	**0.06**	**4**
WY3/S /EBB	[23-NOV-2010]	HK1026855-007		**13.4**	<0.005	**0.10**	**0.10**	**4**
WY3/B/EBB	[23-NOV-2010]	HK1026855-009		**8.3**	**0.006**	**0.16**	**0.17**	**14**
CY1/S /EBB	[23-NOV-2010]	HK1026855-010		**12.1**	<0.005	**0.03**	**0.03**	<1
CY1/M/EBB	[23-NOV-2010]	HK1026855-011		**8.2**	<0.005	**0.08**	**0.08**	<1
CY1/B/EBB	[23-NOV-2010]	HK1026855-012		**26.2**	<0.005	**0.03**	**0.03**	<1
CY2/S /EBB	[23-NOV-2010]	HK1026855-013		**9.6**	<0.005	**0.05**	**0.05**	<1
CY2/M/EBB	[23-NOV-2010]	HK1026855-014		**8.2**	<0.005	**0.04**	**0.04**	<1
CY2/B/EBB	[23-NOV-2010]	HK1026855-015		**14.5**	<0.005	**0.03**	**0.03**	<1
WY1 /S /FLOOD	[23-NOV-2010]	HK1026855-016		**10.5**	<0.005	**0.08**	**0.08**	**2**
WY1/B/FLOOD	[23-NOV-2010]	HK1026855-018		**17.0**	<0.005	**0.08**	**0.08**	<1
WY2/S /FLOOD	[23-NOV-2010]	HK1026855-019		**6.6**	<0.005	**0.04**	**0.04**	<1
WY2/M/FLOOD	[23-NOV-2010]	HK1026855-020		**17.2**	<0.005	**0.06**	**0.06**	<1
WY2/B/FLOOD	[23-NOV-2010]	HK1026855-021		**12.8**	<0.005	**0.08**	**0.08**	**1**
WY3/S /FLOOD	[23-NOV-2010]	HK1026855-022		**13.4**	<0.005	**0.14**	**0.14**	**5**
WY3/B/FLOOD	[23-NOV-2010]	HK1026855-024		**12.5**	<0.005	**0.11**	**0.11**	**4**
CY1/S /FLOOD	[23-NOV-2010]	HK1026855-025		**5.2**	**0.008**	**0.12**	**0.13**	**1**
CY1/M/FLOOD	[23-NOV-2010]	HK1026855-026		**9.0**	**0.010**	**0.11**	**0.12**	<1
CY1/B/FLOOD	[23-NOV-2010]	HK1026855-027		**13.7**	<0.005	**0.11**	**0.11**	<1
CY2/S /FLOOD	[23-NOV-2010]	HK1026855-028		**7.4**	<0.005	**0.13**	**0.13**	<1
CY2/M/FLOOD	[23-NOV-2010]	HK1026855-029		**10.2**	<0.005	**0.13**	**0.13**	**2**
CY2/B/FLOOD	[23-NOV-2010]	HK1026855-030		**8.2**	<0.005	**0.10**	**0.10**	**2**

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1575939)								
HK1026855-001	WY1/S/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	12.6	11.0	13.6
HK1026855-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	9.6	10.6	9.9
EA/ED: Physical and Aggregate Properties (QC Lot: 1575940)								
HK1026855-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	5.2	6.2	17.5
HK1027754-002	Anonymous	EA025: Suspended Solids (SS)	----	3	mg/L	21	22	4.6
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1574760)								
HK1026855-011	CY1/M/EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
HK1026855-010	CY1/S /EBB	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1574761)								
HK1026855-021	WY2/B/FLOOD	EK055A: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1575870)								
HK1026855-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.08	0.0
HK1027772-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	6.00	5.89	1.8
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1575871)								
HK1027742-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.1	mg/L	6.5	6.6	0.0
HK1027828-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.60	0.58	3.9

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1575939)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	102	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1575940)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	106	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1574760)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	105	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1574761)											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	104	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1575870)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	106	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1575871)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	105	----	85	115	----	----

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

Matrix: **WATER**

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report			
Spike	Spike Recovery (%)	Recovery Limits (%)	RPDs (%)

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1574760)										
HK1027700-005	Anonymous	EK055A: Ammonia as N	7664-41-7	5.0 mg/L	89.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1574761)										
HK1026855-001	WY1/S/EBB	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	116	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1575870)										
HK1026855-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	120	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1575871)										
HK1027742-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	10 mg/L	111	----	75	125	----	----

ALS Technichem (HK) Pty Ltd

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1029533**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **28-DEC-2010**
Order number	:	**----**				*Date of issue*	: **06-JAN-2011**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

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Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1029533 supersedes any previous reports with this reference. The completion date of analysis is 30-DEC-2010. 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 HK1029533 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 29/12/2010 (11:30) - 31/12/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Compound			EA025: Suspended Solids (SS)	EK055K: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
LOR Unit			0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[28-DEC-2010]	HK1029533-001	**3**	<0.005	**0.11**	**0.11**	**7**
WY1/B/EBB	[28-DEC-2010]	HK1029533-003	**6**	<0.005	**0.10**	**0.10**	**15**
WY2/S /EBB	[28-DEC-2010]	HK1029533-004	**4**	<0.005	**0.10**	**0.10**	<1
WY2/M/EBB	[28-DEC-2010]	HK1029533-005	**3**	<0.005	**0.09**	**0.09**	<1
WY2/B/EBB	[28-DEC-2010]	HK1029533-006	**3**	<0.005	**0.10**	**0.10**	**2**
WY3/S /EBB	[28-DEC-2010]	HK1029533-007	**6**	<0.005	**0.10**	**0.10**	**62**
WY3/B/EBB	[28-DEC-2010]	HK1029533-009	**10**	<0.005	**0.09**	**0.09**	**28**
CY1/S /EBB	[28-DEC-2010]	HK1029533-010	**3**	<0.005	**0.10**	**0.10**	<1
CY1/M/EBB	[28-DEC-2010]	HK1029533-011	**4**	<0.005	**0.09**	**0.09**	<1
CY1/B/EBB	[28-DEC-2010]	HK1029533-012	**4**	<0.005	**0.10**	**0.10**	<1
CY2/S /EBB	[28-DEC-2010]	HK1029533-013	**4**	<0.005	**0.10**	**0.10**	<1
CY2/M/EBB	[28-DEC-2010]	HK1029533-014	**4**	<0.005	**0.10**	**0.10**	<1
CY2/B/EBB	[28-DEC-2010]	HK1029533-015	**3**	<0.005	**0.10**	**0.10**	**1**
WY1 /S /FLOOD	[28-DEC-2010]	HK1029533-016	**5**	<0.005	**0.09**	**0.09**	<1
WY1/B/FLOOD	[28-DEC-2010]	HK1029533-018	**3**	<0.005	**0.09**	**0.09**	<1
WY2/S /FLOOD	[28-DEC-2010]	HK1029533-019	**3**	<0.005	**0.09**	**0.09**	<1
WY2/M/FLOOD	[28-DEC-2010]	HK1029533-020	**4**	<0.005	**0.09**	**0.09**	<1
WY2/B/FLOOD	[28-DEC-2010]	HK1029533-021	**4**	<0.005	**0.10**	**0.10**	**1**
WY3/S /FLOOD	[28-DEC-2010]	HK1029533-022	**4**	<0.005	**0.10**	**0.10**	<1
WY3/B/FLOOD	[28-DEC-2010]	HK1029533-024	**4**	<0.005	**0.10**	**0.10**	**80**
CY1/S /FLOOD	[28-DEC-2010]	HK1029533-025	**4**	<0.005	**0.10**	**0.10**	<1
CY1/M/FLOOD	[28-DEC-2010]	HK1029533-026	**7**	<0.005	**0.10**	**0.10**	<1
CY1/B/FLOOD	[28-DEC-2010]	HK1029533-027	**3**	<0.005	**0.10**	**0.10**	<1
CY2/S /FLOOD	[28-DEC-2010]	HK1029533-028	**4**	<0.005	**0.10**	**0.10**	<1
CY2/M/FLOOD	[28-DEC-2010]	HK1029533-029	**4**	<0.005	**0.10**	**0.10**	<1
CY2/B/FLOOD	[28-DEC-2010]	HK1029533-030	**4**	<0.005	**0.10**	**0.10**	<1

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1618431)								
HK1029533-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	3	4	26.7
HK1029533-014	CY2/M/EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	4	3	28.2
EA/ED: Physical and Aggregate Properties (QC Lot: 1618432)								
HK1029533-026	CY1/M/FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	7	6	14.4
HK1030796-002	Anonymous	EA025: Suspended Solids (SS)	----	3	mg/L	350	368	5.2
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1617665)								
HK1029533-001	WY1 /S /EBB	EK055K: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1617667)								
HK1029533-011	CY1/M/EBB	EK055K: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1617694)								
HK1029533-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.11	0.10	9.5
HK1029533-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.09	0.09	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1617695)								
HK1029533-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.10	0.10	0.0
HK1030830-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.1	mg/L	4.6	4.2	7.7

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
EA/ED: Physical and Aggregate Properties (QCLot: 1618431)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	104	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1618432)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	95.0	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617665)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	108	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617667)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	108	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617694)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	105	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617695)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	96.8	----	85	115	----	----

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617665)										
HK1030805-002	Anonymous	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	97.7	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617667)										
HK1030805-003	Anonymous	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	96.2	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617694)										
HK1029533-001	WY1 /S /EBB	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	79.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1617695)										
HK1030830-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	100 mg/L	95.1	----	75	125	----	----

CERTIFICATE OF ANALYSIS

Client	:	**ACTION UNITED ENVIRO SERVICES**	*Laboratory*	:	**ALS Technichem HK Pty Ltd**	*Page*	: **1 of 5**
Contact	:	**MR T W TAM**	*Contact*	:	**Chan Kwok Fai, Godfrey**	*Work Order*	: **HK1029534**
Address	:	**RM A 20/F., GOLDEN KING IND BLDG, NO. 35-41 TAI LIN PAI ROAD, KWAI CHUNG, N.T. HONG KONG**	*Address*	:	**11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T., Hong Kong**		
E-mail	:	**Twtam@fordbusiness.com**	*E-mail*	:	**Godfrey.Chan@alsenviro.com**		
Telephone	:	**+852 2959 6059**	*Telephone*	:	**+852 2610 1044**		
Facsimile	:	**+852 2959 6079**	*Facsimile*	:	**+852 2610 2021**		
Project	:	**CONSTRUCTION OF SEWAGE TREATMENT WORKS AT YUNG SHUE WAN AND SOK KWU WAN**	*Quote number*	:	**HK/632b/2010****	*Date received*	: **22-DEC-2010**
Order number	:	**----**				*Date of issue*	: **03-JAN-2011**
C-O-C number	:	**----**				*No. of samples*	- *Received* : **26**
Site	:	**----**					- *Analysed* : **26**

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	*Position*	*Authorised results for:-*
Fung Lim Chee, Richard	**General Manager**	**Inorganics**
Leung Sai Ho, Ivan	**Supervisor**	**Microbiology**

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK1029534 supersedes any previous reports with this reference. The completion date of analysis is 24-DEC-2010. 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 HK1029534 :

Contract No. DC/2009/13 - Construction of Sewage Treatment Works at Yung Shue Wan and Sok Kwu Wan, proposed EM&A Programme for Baseline and Impact Monitoring - Yung Shue Wan.
Sample(s) were picked up from client by ALS Technichem (HK) staff in a chilled condition.
Water sample(s) analysed and reported on an as received basis.
Total Inorganic Nitrogen is the sum of the Total Oxidizable Nitrogen and Ammonical Nitrogen.
Sample(s) were arrived in the laboratory at 17:30. Microbiological sample(s), in 125mL plastic bottle labelled sterile, with addition of sodium thiosulfate solution. Testing period : 22/12/2010 (15:30) - 24/12/2010.
The accredited LOR for Total Suspended Solids is 2mg/L and Ammoniacal Nitrogen (NH3-N) is 0.01mg/L. The results reported below the accredited LOR and the decimal value of the results were for reference only.

Analytical Results

Sub-Matrix: **MARINE WATER**

Compound			EA025: Suspended Solids (SS)	EK055K: Ammonia as N	EK059A: Nitrite + Nitrate as N	EK063A: Inorganic Nitrogen as N	EM002: E. coli
LOR Unit			0.5 mg/L	0.005 mg/L	0.01 mg/L	0.01 mg/L	1 CFU/100mL
Client sample ID	Client sampling date / time	Laboratory sample ID	EA/ED: Physical and Aggregate Properties	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	ED/EK: Inorganic Nonmetallic Parameters	EM: Microbiological Testing
WY1 /S /EBB	[21-DEC-2010]	HK1029534-001	**9.9**	<0.005	**0.07**	**0.07**	**16**
WY1/B/EBB	[21-DEC-2010]	HK1029534-003	**9.2**	<0.005	**0.06**	**0.06**	**6**
WY2/S /EBB	[21-DEC-2010]	HK1029534-004	**11.0**	<0.005	**0.06**	**0.06**	<1
WY2/M/EBB	[21-DEC-2010]	HK1029534-005	**9.8**	<0.005	**0.06**	**0.06**	<1
WY2/B/EBB	[21-DEC-2010]	HK1029534-006	**7.4**	<0.005	**0.06**	**0.06**	<1
WY3/S /EBB	[21-DEC-2010]	HK1029534-007	**9.6**	<0.005	**0.07**	**0.07**	**31**
WY3/B/EBB	[21-DEC-2010]	HK1029534-009	**9.8**	<0.005	**0.06**	**0.06**	**62**
CY1/S /EBB	[21-DEC-2010]	HK1029534-010	**7.8**	<0.005	**0.06**	**0.06**	<1
CY1/M/EBB	[21-DEC-2010]	HK1029534-011	**7.7**	<0.005	**0.06**	**0.06**	<1
CY1/B/EBB	[21-DEC-2010]	HK1029534-012	**5.8**	<0.005	**0.06**	**0.06**	<1
CY2/S /EBB	[21-DEC-2010]	HK1029534-013	**5.3**	<0.005	**0.05**	**0.05**	<1
CY2/M/EBB	[21-DEC-2010]	HK1029534-014	**5.0**	<0.005	**0.06**	**0.06**	**1**
CY2/B/EBB	[21-DEC-2010]	HK1029534-015	**4.5**	<0.005	**0.06**	**0.06**	<1
WY1 /S /FLOOD	[21-DEC-2010]	HK1029534-016	**7.3**	<0.005	**0.06**	**0.06**	**1**
WY1/B/FLOOD	[21-DEC-2010]	HK1029534-018	**5.8**	<0.005	**0.06**	**0.06**	**2**
WY2/S /FLOOD	[21-DEC-2010]	HK1029534-019	**4.5**	<0.005	**0.06**	**0.06**	<1
WY2/M/FLOOD	[21-DEC-2010]	HK1029534-020	**4.0**	<0.005	**0.06**	**0.06**	<1
WY2/B/FLOOD	[21-DEC-2010]	HK1029534-021	**7.4**	<0.005	**0.06**	**0.06**	<1
WY3/S /FLOOD	[21-DEC-2010]	HK1029534-022	**8.4**	<0.005	**0.07**	**0.07**	**22**
WY3/B/FLOOD	[21-DEC-2010]	HK1029534-024	**9.9**	<0.005	**0.06**	**0.06**	**21**
CY1/S /FLOOD	[21-DEC-2010]	HK1029534-025	**7.8**	<0.005	**0.06**	**0.06**	<1
CY1/M/FLOOD	[21-DEC-2010]	HK1029534-026	**6.7**	<0.005	**0.05**	**0.05**	<1
CY1/B/FLOOD	[21-DEC-2010]	HK1029534-027	**5.5**	<0.005	**0.06**	**0.06**	<1
CY2/S /FLOOD	[21-DEC-2010]	HK1029534-028	**7.0**	<0.005	**0.05**	**0.05**	<1
CY2/M/FLOOD	[21-DEC-2010]	HK1029534-029	**6.3**	<0.005	**0.06**	**0.06**	<1
CY2/B/FLOOD	[21-DEC-2010]	HK1029534-030	**10.1**	<0.005	**0.05**	**0.05**	<1

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 (%)
EA/ED: Physical and Aggregate Properties (QC Lot: 1614772)								
HK1029534-001	WY1 /S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	9.9	10.4	5.1
HK1029534-013	CY2/S /EBB	EA025: Suspended Solids (SS)	----	0.5	mg/L	5.3	5.5	3.7
EA/ED: Physical and Aggregate Properties (QC Lot: 1614773)								
HK1029534-025	CY1/S /FLOOD	EA025: Suspended Solids (SS)	----	0.5	mg/L	7.8	7.1	9.7
HK1030305-001	Anonymous	EA025: Suspended Solids (SS)	----	2	mg/L	4	3	35.7
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1612680)								
HK1029534-011	CY1/M/EBB	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0
HK1029534-021	WY2/B/FLOOD	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.06	0.06	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1612681)								
HK1030276-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	5.30	5.17	2.5
HK1030305-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	0.05	0.05	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1614166)								
HK1029534-001	WY1 /S /EBB	EK055K: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0
ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 1614167)								
HK1029534-011	CY1/M/EBB	EK055K: Ammonia as N	7664-41-7	0.005	mg/L	<0.005	<0.005	0.0

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

Matrix: **WATER**

Method: Compound	CAS Number	Method Blank (MB) Report			Laboratory Control Spike (LCS) and Laboratory Control Spike Duplicate (DCS) Report						
					Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
		LOR	Unit	Result	Concentration	LCS	DCS	Low	High	Value	Control Limit
EA/ED: Physical and Aggregate Properties (QCLot: 1614772)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	92.5	----	85	115	----	----
EA/ED: Physical and Aggregate Properties (QCLot: 1614773)											
EA025: Suspended Solids (SS)	----	2	mg/L	<2	20 mg/L	99.5	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1612680)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	102	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1612681)											
EK059A: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.4 mg/L	98.6	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1614166)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	----	85	115	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1614167)											
EK055K: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	----	85	115	----	----

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

Matrix: **WATER**

				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*MSD*	*Low*	*High*	*Value*	*Control Limit*
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1612680)										
HK1030276-003	Anonymous	EK059A: Nitrite + Nitrate as N	----	10 mg/L	92.5	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1612681)										
HK1030305-001	Anonymous	EK059A: Nitrite + Nitrate as N	----	1.0 mg/L	77.0	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1614166)										
HK1029534-001	WY1 /S /EBB	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	107	----	75	125	----	----
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 1614167)										
HK1029534-011	CY1/M/EBB	EK055K: Ammonia as N	7664-41-7	0.5 mg/L	118	----	75	125	----	----

Appendix I

Meteorological of Baseline Water Quality Monitoring Days

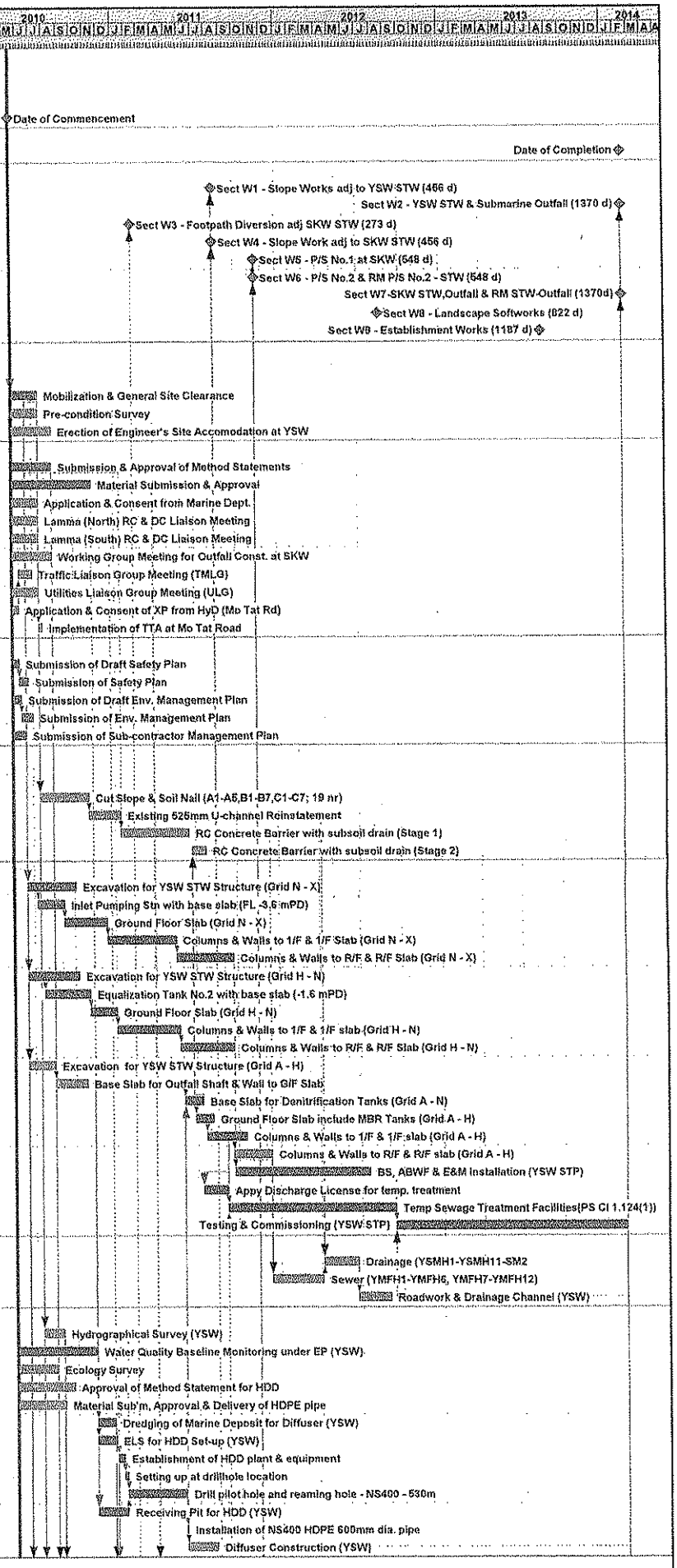
Meteorological Data Extracted from HKO during the Baseline Monitoring Period

Date		Weather
29 July 2010	Thursday	Mainly cloudy with a few showers.
31 July 2010	Saturday	A few showers. Hot with sunny periods in the afternoon.
23 August 2010	Monday	Mainly fine and hot apart from isolated showers.
27 August 2010	Friday	Light winds.
13 September 2010	Monday	Mainly cloudy with showers and a few squally thunderstorms.
24 September 2010	Friday	Moderate east to northeasterly winds.
7 October 2010	Thursday	Moderate east to northeasterly winds
26 October 2010	Thursday	Mainly cloudy and appreciably cooler.
18 November 2010	Thursday	Moderate east to northeasterly winds.
23 November 2010	Tuesday	Mainly fine and dry in the afternoon.
21 December 2010	Tuesday	Fine but hazy. Light winds.
28 December 2010	Thursday	Light to moderate northeasterly winds.

Appendix J

Master Construction Program

Activity ID	Orig Dur	Total Float	Early Start	Late Start	Early Finish	Late Finish
General						
Key Dates						
Date of Commencement						
KD0090	0	0	17/05/10*	17/05/10*		
Date of Completion						
KD0100	0	0			15/02/14*	15/02/14*
Section Completion						
KD0010	0	0			15/08/11*	15/08/11*
KD0020	0	0			14/02/14*	14/02/14*
KD0030	0	0			13/02/11*	13/02/11*
KD0040	0	0			15/08/11*	15/08/11*
KD0050	0	0			15/11/11*	15/11/11*
KD0060	0	0			15/11/11*	15/11/11*
KD0070	0	0			14/02/14*	14/02/14*
KD0080	0	0			15/08/12*	15/08/12*
KD0090	0	0			15/08/13*	15/08/13*
Preliminaries						
General						
PREL0010	60	0	17/05/10	17/05/10	15/07/10	15/07/10
PREL0020	60	27	17/05/10	13/08/10	15/07/10	11/08/10
PREL0030	90	30	17/05/10	16/06/10	14/08/10	13/09/10*
Submission & Meetings						
PREL0040	91	0	17/05/10	17/05/10	15/08/10	15/08/10
PREL0050	180	0	17/05/10	17/05/10	12/11/10	12/11/10
PREL0060	60	91	17/05/10	16/08/10	15/07/10	14/10/10
PREL0070	60	61	17/05/10	17/07/10	15/07/10	14/09/10
PREL0080	60	24	17/05/10	10/06/10	15/07/10	08/08/10
PREL0090	90	146	17/05/10	10/10/10	14/08/10	07/01/11
PREL0100	30	40	31/05/10	10/07/10	29/06/10	08/08/10
PREL0110	60	27	17/05/10	13/06/10	15/07/10	11/08/10
PREL0170	14	40	17/05/10	26/06/10	30/05/10	08/07/10
PREL0180	6	20	16/07/10	09/08/10	22/07/10	14/08/10
Quality, Safety & Environmental Management						
PREL0120	14	0	17/05/10	17/05/10	30/05/10*	30/05/10*
PREL0130	21	0	31/05/10	31/05/10	20/06/10	20/06/10*
PREL0140	21	0	17/05/10	17/05/10	06/06/10*	06/06/10*
PREL0150	24	0	07/06/10	07/06/10	30/06/10	30/06/10*
PREL0160	30	0	17/05/10	17/05/10	15/06/10	15/06/10*
Yung Shue Wan						
Geotechnical Works						
YSWGW0010	90	52	16/07/10	15/09/10	01/11/10	04/01/11
YSWGW0020	60	52	02/11/10	05/01/11	13/01/11	18/03/11
YSWGW0030	120	52	14/01/11	19/03/11	14/06/11	15/08/11
YSWGW0040	30	24	23/06/11	17/07/11	22/07/11	15/08/11
YSW Sewage Treatment Plant						
YSWSTW0010	90	0	17/06/10	17/06/10	02/10/10	02/10/10
YSWSTW0011	60	0	09/07/10	09/07/10	06/09/10	06/09/10
YSWSTW0012	96	0	07/09/10	07/09/10	11/12/10	11/12/10
YSWSTW0013	156	0	12/12/10	12/12/10	16/05/11	16/05/11
YSWSTW0014	126	0	17/05/11	17/05/11	21/09/11	21/09/11
YSWSTW0020	96	0	17/06/10	17/06/10	09/10/10	09/10/10
YSWSTW0021	102	0	23/07/10	23/07/10	01/11/10	01/11/10
YSWSTW0022	60	0	02/11/10	02/11/10	31/12/10	31/12/10
YSWSTW0023	144	0	01/01/11	01/01/11	24/05/11	24/05/11
YSWSTW0024	120	0	25/05/11	25/05/11	21/09/11	21/09/11
YSWSTW0030	60	17	17/06/10	04/07/10	15/08/10	01/09/10
YSWSTW0031	72	17	16/08/10	02/09/10	26/10/10	12/11/10
YSWSTW0032	40	0	03/06/11	03/06/11	12/07/11	12/07/11
YSWSTW0033	40	0	27/06/11	27/06/11	05/08/11	05/08/11
YSWSTW0034	90	0	21/07/11	21/07/11	18/10/11	18/10/11
YSWSTW0035	66	15	19/09/11	04/10/11	13/12/11	28/12/11
YSWSTW0040	240	0	22/09/11	22/09/11	16/07/12	16/07/12
YSWSTW0050	48	0	13/07/11	13/07/11	06/09/11	06/09/11
YSWSTW0060	302	0	07/09/11*	07/09/11	12/09/12	12/09/12
YSWSTW0070	420	0	13/09/12	13/09/12	14/02/14	14/02/14
External Works						
YSWEW0010	60	11	05/04/12	21/04/12	19/06/12	04/07/12
YSWEW0020	90	11	14/12/11	29/12/11	03/04/12	20/04/12
YSWEW0030	60	11	20/06/12	05/07/12	30/08/12	12/09/12
Submarine Outfall						
YSWSUB0000	45	142	16/07/10	05/12/10	29/08/10	18/01/11
YSWSUB0001	180	0	17/05/10	17/05/10	12/11/10	12/11/10
YSWSUB0002	90	90	17/05/10	15/08/10	14/08/10	12/11/10
YSWSUB0010	106	79	17/05/10	20/08/10	20/09/10	24/12/10
YSWSUB0020	90	89	17/05/10	01/09/10	01/09/10	17/12/10
YSWSUB0030	35	0	13/11/10	13/11/10	23/12/10	23/12/10
YSWSUB0040	36	0	13/11/10	13/11/10	24/12/10	24/12/10
YSWSUB0041	12	0	28/12/10	28/12/10	11/01/11	11/01/11
YSWSUB0042	6	0	12/01/11	12/01/11	18/01/11	18/01/11
YSWSUB0043	104	0	19/01/11	19/01/11	30/05/11	30/05/11
YSWSUB0044	54	0	13/11/10	13/11/10	18/01/11	18/01/11
YSWSUB0045	3	0	31/05/11	31/05/11	02/06/11	02/06/11
YSWSUB0050	54	26	03/06/11	06/07/11	06/08/11	06/09/11



Start Date	17/05/10
Finish Date	15/02/14
Data Date	17/05/10
Run Date	17/05/10 11:49

Early Bar
Progress Bar
Critical Activity

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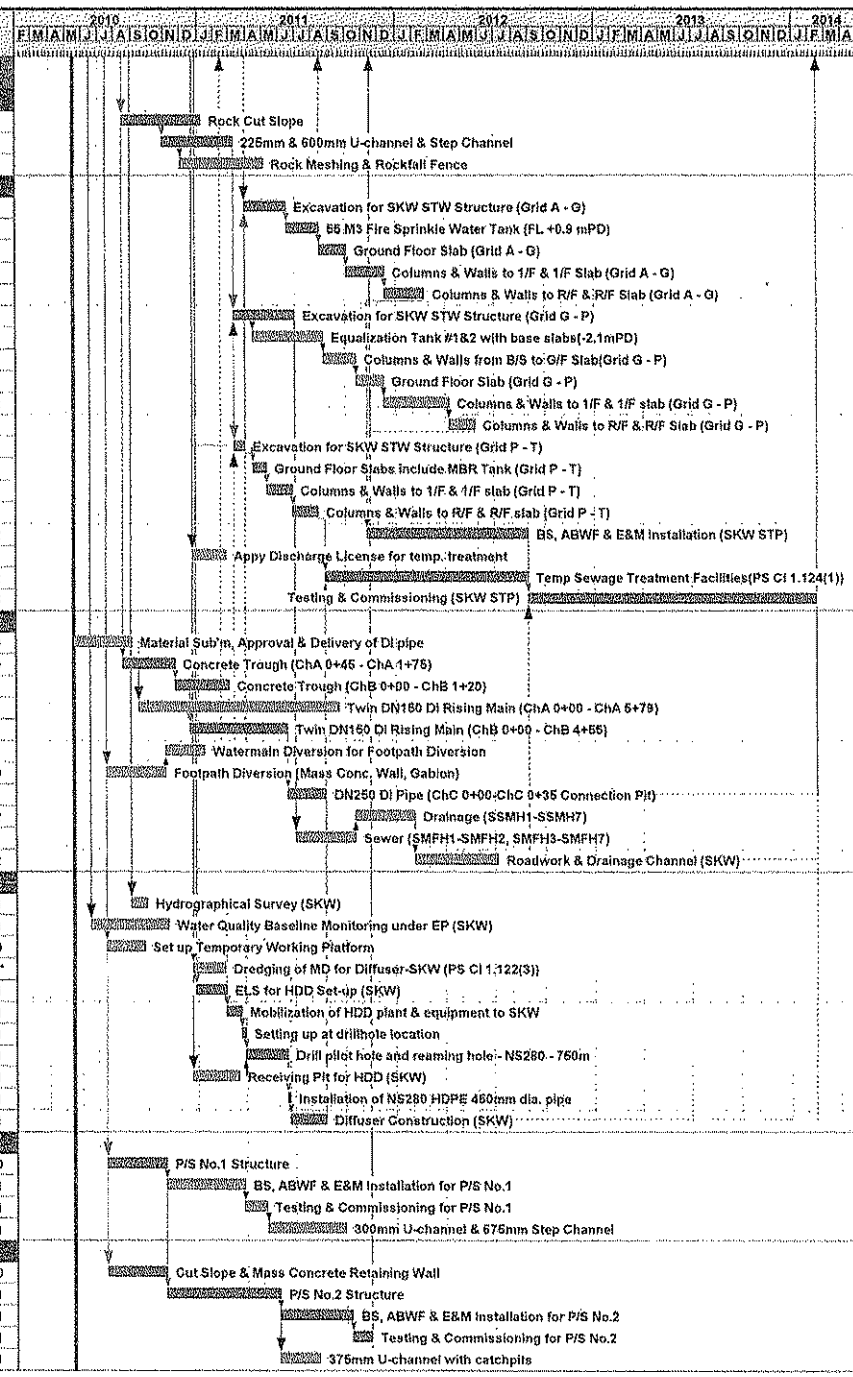
S1W0 Sheet 1 of 2

Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & S
Works Programme (Rev.0)

Date	Revision	Checked	Approved
17/05/10	0 (Initial Submission)	STL	VC

Activity ID	Orig Dur	Total Float	Early Start	Late Start	Early Finish	Late Finish
SoK Kwu Wan						
Geotechnical Works						
SKWGW0010	120	0	16/08/10	16/08/10	08/01/11	08/01/11
SKWGW0020	108	0	28/10/10	28/10/10	09/03/11	09/03/11
SKWGW0030	120	66	02/12/10	19/03/11	03/05/11	15/08/11
SKW Sewage Treatment Plant						
SKWSTW0010	60	0	31/03/11	31/03/11	16/06/11	16/06/11
SKWSTW0011	60	0	17/06/11	17/06/11	15/08/11	15/08/11
SKWSTW0012	48	0	16/08/11	16/08/11	02/10/11	02/10/11
SKWSTW0013	72	0	03/10/11	03/10/11	13/12/11	13/12/11
SKWSTW0014	72	0	14/12/11	14/12/11	23/02/12	23/02/12
SKWSTW0020	90	0	10/03/11	10/03/11	30/06/11	30/06/11
SKWSTW0021	130	41	15/04/11	26/05/11	22/08/11	02/10/11
SKWSTW0022	60	41	23/08/11	03/10/11	21/10/11	01/12/11
SKWSTW0023	50	41	22/10/11	02/12/11	10/12/11	20/01/12
SKWSTW0024	120	41	11/12/11	21/01/12	08/04/12	19/05/12
SKWSTW0025	48	41	09/04/12	20/05/12	26/05/12	06/07/12
SKWSTW0030	18	0	10/03/11	10/03/11	30/03/11	30/03/11
SKWSTW0031	24	0	15/04/11	15/04/11	08/05/11	08/05/11
SKWSTW0032	48	0	09/05/11	09/05/11	25/06/11	25/06/11
SKWSTW0033	48	0	26/06/11	26/06/11	12/08/11	12/08/11
SKWSTW0040	240	0	10/11/11	10/11/11	31/08/12	31/08/12
SKWSTW0050	48	148	23/12/10	29/06/11	23/02/11	24/08/11
SKWSTW0060	303	0	25/08/11*	25/08/11	31/08/12	31/08/12
SKWSTW0070	430	0	01/09/12	01/09/12	14/02/14	14/02/14
External Works						
SKWEW0000	90	57	17/05/10	26/07/10	01/09/10	10/11/10
SKWEW0010	80	0	16/08/10	16/08/10	19/11/10	19/11/10
SKWEW0020	80	0	20/11/10	20/11/10	28/02/11	28/02/11
SKWEW0030	300	48	13/09/10	11/11/10	17/09/11	15/11/11
SKWEW0040	180	0	18/12/10	18/12/10	15/06/11	15/06/11
SKWEW0050	60	23	02/11/10	29/11/10	13/01/11	12/02/11
SKWEW0060	90	23	16/07/10	12/08/10	01/11/10	27/11/10
SKWEW0070	59	0	16/06/11	16/06/11	24/08/11	24/08/11
SKWEW0080	90	49	19/10/11	15/12/11	03/02/12	05/04/12
SKWEW0090	90	49	02/07/11	29/08/11	18/10/11	14/12/11
SKWEW0100	120	49	04/02/12	10/04/12	05/07/12	31/08/12
Submarine Outfall						
SKWSUB0000	30	148	30/08/10	25/01/11	28/09/10	23/02/11
SKWSUB0001	144	144	16/06/10	07/11/10	06/11/10	30/03/11
SKWSUB0010	60	76	16/07/10	15/10/10	24/09/10	24/12/10
SKWSUB0020	45	10	24/12/10*	08/01/11	21/02/11	04/03/11*
SKWSUB0030	46	0	28/12/10	28/12/10	23/02/11	23/02/11
SKWSUB0031	24	0	24/02/11	24/02/11	23/03/11	23/03/11
SKWSUB0032	6	0	24/03/11	24/03/11	30/03/11	30/03/11
SKWSUB0033	60	0	31/03/11	31/03/11	16/06/11	16/06/11
SKWSUB0034	67	10	24/12/10	08/01/11	18/03/11	30/03/11
SKWSUB0035	4	0	17/06/11	17/06/11	21/06/11	21/06/11
SKWSUB0040	54	0	22/06/11	22/06/11	24/08/11	24/08/11
Pumping Station No.1						
SKWPS10010	90	0	16/07/10	16/07/10	01/11/10	01/11/10
SKWPS10020	120	38	02/11/10	16/12/10	28/03/11	18/05/11
SKWPS10030	30	38	29/03/11	19/05/11	07/05/11	23/06/11
SKWPS10040	120	38	09/05/11	24/06/11	29/09/11	15/11/11
Pumping Station No.2						
SKWPS20010	90	0	16/07/10	16/07/10	01/11/10	01/11/10
SKWPS20020	170	0	02/11/10	02/11/10	01/06/11	01/06/11
SKWPS20030	108	0	02/06/11	02/06/11	11/10/11	11/10/11
SKWPS20040	30	0	12/10/11	12/10/11	15/11/11	15/11/11
SKWPS20050	60	78	02/06/11	03/09/11	12/08/11	15/11/11



Start Date	17/05/10
Finish Date	15/02/14
Data Date	17/05/10
Run Date	17/05/10 11:49

Early Bar
Progress Bar
Critical Activity

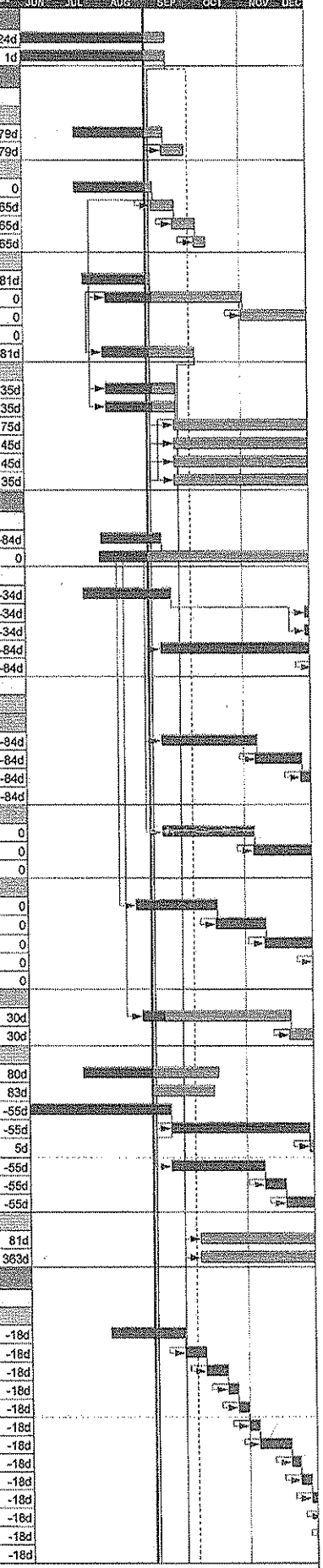
?Primavera Systems, Inc.

STW0 Sheet 2 of 2

Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13
Construction of Sewage Treatment Works at YSW & S
Works Programme (Rev.0)

Date	Revision	Checked	Approved
17/05/10	0 (Initial Submission)	SIL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float
Preliminary (Civil)								
PRE0090	Working Group Meeting for Outfall Construction	120	89	17/05/10 A	13/09/10	17/05/10 A	14/01/11	124d
PRE0100	Application & Consent of XP from HyD (Mo Tat Rd)	120	89	17/05/10 A	13/09/10	17/05/10 A	13/09/10	1d
Preliminary (E&M)								
Technical Submission								
Process Design of SKWSTW & YSWSTW								
E&M0030	Revision and Resubmission	28	60	15/07/10 A	11/09/10	15/07/10 A	16/06/11	279d
E&M0080	Approval from the Engineer	14	0	11/09/10	25/09/10	17/06/11	30/06/11	279d
Hydraulic Design								
E&M0040	Submission	21	80	15/07/10 A	04/09/10	15/07/10 A	04/09/10	0
E&M0050	Vetting and Comment by ER	14	0	04/09/10	18/09/10	27/05/11	09/06/11	265d
E&M0060	Revision and Resubmission	14	0	18/09/10	02/10/10	10/06/11	23/06/11	265d
E&M0430	Approval from the Engineer	7	0	02/10/10	09/10/10	24/06/11	30/06/11	265d
Equipment Submission & Approval								
E&M0100	Revision and Resubmission	14	86	20/07/10 A	02/09/10	20/07/10 A	22/11/10	81d
E&M0101	Submission of Equipment	90	34	04/08/10 A	02/11/10	04/08/10 A	02/11/10	0
E&M0102	Vetting and Comment by ER	60	0	02/11/10	01/01/11	03/11/10	01/01/11	0
E&M0103	Revision and Resubmission	60	0	01/01/11	02/03/11	02/01/11	02/03/11	0
E&M0160	Approval on MBR Membrane Modules (M.M.)	60	51	02/08/10 A	01/10/10	02/08/10 A	21/12/10	81d
Drawings Submission & Approval								
E&M0240	Sub. Plant GA Drawings	45	68	04/08/10 A	18/09/10	04/08/10 A	31/01/11	135d
E&M0250	Sub. Civil Works Requirements Drawings	45	68	04/08/10 A	18/09/10	04/08/10 A	31/01/11	135d
E&M0260	Sub. Mechanical Installation Drawings	90	0	18/09/10	17/12/10	13/03/11	10/06/11	175d
E&M0270	Sub. Electrical Installation Drawings	120	0	18/09/10	16/01/11	11/02/11	10/06/11	145d
E&M0280	Sub. BS Installation Drawings	120	0	18/09/10	16/01/11	11/02/11	10/06/11	145d
E&M0290	Sub. FS Installation Drawings	120	0	18/09/10	16/01/11	01/02/11	31/05/11	135d
Yung Shue Wan								
Preliminary								
YSW0030	Baseline monitoring (Air & Noise)	14	40	31/07/10 A	08/09/10	31/07/10 A	15/06/10	-84d
YSW0040	Baseline monitoring (Water)	183	33	30/07/10 A	31/12/10	30/07/10 A	31/12/10	0
Section W1 - Slope Works in Portion A & C								
YSW0090	Verify the Rock Boulder required Stabilization Wk	30	53	19/07/10 A	14/09/10	19/07/10 A	10/08/10	-34d
YSW0100	Removal of Rock Boulder	280	0	13/12/10	19/09/11	09/11/10	15/08/11	-34d
YSW0110	Stablizing work for rock boulder	280	0	13/12/10	19/09/11	09/11/10	15/08/11	-34d
YSW0120	Cut the slope to design profile	100	0	08/09/10	17/12/10	16/06/10	23/09/10	-84d
YSW0130	Soil Nail installation (19Nr.)	120	0	17/12/10	16/04/11	24/09/10	21/01/11	-84d
Section W2 - YSW STW & Submarine Outfall								
Civil & Structural Work								
YSW STP - GL H - T								
YSW0500	ELS & Excavation for Inlet Pumping Station	62	0	08/09/10	09/11/10	16/06/10	16/08/10	-84d
YSW0510	Sub-structure construction (Inlet Pumping Stn)	30	0	09/11/10	09/12/10	17/08/10	15/09/10	-84d
YSW0520	Backfill & Remove ELS (Inlet Pumping Stn)	30	0	09/12/10	08/01/11	16/09/10	15/10/10	-84d
YSW0530	ELS & Excavation for Equalization Tank	40	0	08/01/11	17/02/11	16/10/10	24/11/10	-84d
YSW STP - GL T - X								
YSW0610	Excavate to formation	60	0	08/09/10	07/11/10	08/09/10	06/11/10	0
YSW0620	Base slab construction	60	0	07/11/10	06/01/11	07/11/10	05/01/11	0
YSW0630	G/F to 1/F construction	100	0	06/01/11	16/04/11	06/01/11	15/04/11	0
YSW STP - GL C - H & DN Tanks								
YSW0650	ELS & Excavation for DN Tanks	61	42	21/08/10 A	13/10/10	21/08/10 A	13/10/10	0
YSW0660	Sub-struction construction (DN Tanks)	32	0	13/10/10	14/11/10	13/10/10	14/11/10	0
YSW0670	Backfill & Remove ELS (DN Tanks)	32	0	14/11/10	16/12/10	14/11/10	16/12/10	0
YSW0680	Base slab construction	30	0	16/12/10	15/01/11	16/12/10	15/01/11	0
YSW0690	Superstructure construction upto +10.5mPD	60	0	15/01/11	16/03/11	15/01/11	16/03/11	0
Road, Drain, Cable Draw Pits & Ducting								
YSW0152	Temporary Diversion of Drainage	92	10	25/08/10 A	30/11/10	25/08/10 A	29/12/10	30d
YSW0153	Removal of Ex U-Channel where clash with B. Wall	50	0	30/11/10	19/01/11	30/12/10	17/02/11	30d
Submarine Outfall								
YSW0210	Ecology Survey	90	52	16/07/10 A	13/10/10	16/07/10 A	31/12/10	80d
YSW0230	Hydrographical Survey (YSW)	45	10	31/08/10 A	10/10/10	31/08/10 A	31/12/10	83d
YSW0240	Material Submission, Approval of HDPE pipe	60	80	17/05/10 A	11/09/10	17/05/10 A	18/07/10	-55d
YSW0250	Submit and Approval of Method Statement for HDD	92	0	12/09/10	12/12/10	19/07/10	18/10/10	-55d
YSW0260	Submission of HDD Method Statement to HEC	14	0	13/12/10	26/12/10	18/12/10	31/12/10	5d
YSW0270	Additional G.I. Boreholes (YSW)	62	0	12/09/10	12/11/10	19/07/10	18/09/10	-55d
YSW0280	Submission of propose alignment to the Eng	14	0	13/11/10	26/11/10	19/09/10	02/10/10	-55d
YSW0290	Submission of Marine Notice	60	0	27/11/10	25/01/11	03/10/10	01/12/10	-55d
E&M Works - YSW STP								
E&M0360	Delivery of MBR Memb. Mod. (MBR Tk 4)	150	0	01/10/10	28/02/11	21/12/10	20/05/11	81d
E&M0370	Delivery of MBR Membrane Modules - 2nd Shipment	150	0	01/10/10	28/02/11	29/09/11	25/02/12	363d
Sok Kwu Wan								
Section W3 - Footpath Diversion in Portion G								
Civil & Geotechnical Works								
SKW0251	Drill & Install Dowel Bar for Bay 1 & 3	21	5	02/08/10 A	19/09/10	02/08/10 A	01/09/10	-18d
SKW0301	Erect Formwork, mesh & weephole for Bay 1 & 3	14	0	20/09/10	03/10/10	02/09/10	15/09/10	-18d
SKW0311	Concreting for Bay 1 & 3	14	0	04/10/10	17/10/10	16/09/10	29/09/10	-18d
SKW0321	Drilling & Install Dowel Bar for Bay 2 & 5	7	0	18/10/10	24/10/10	30/09/10	06/10/10	-18d
SKW0331	Erect Formwork, mesh & weephole for Bay 2 & 5	7	0	25/10/10	31/10/10	07/10/10	13/10/10	-18d
SKW0341	Concreting for Bay 2 & 5	7	0	01/11/10	07/11/10	14/10/10	20/10/10	-18d
SKW0351	Excavation to formation for Bay 6 to 9	21	0	08/11/10	26/11/10	21/10/10	10/11/10	-18d
SKW0361	Drill & install dowel Bar for Bay 4 & 7	6	0	29/11/10	04/12/10	11/11/10	16/11/10	-18d
SKW0371	Erect formwork, mesh & weephole for Bay 4 & 7	7	0	05/12/10	11/12/10	17/11/10	23/11/10	-18d
SKW0381	Concreting for Bay 4 & 7	7	0	12/12/10	18/12/10	24/11/10	30/11/10	-18d
SKW0391	Drill & install dowel Bar for Bay 6 & 9	3	0	19/12/10	21/12/10	01/12/10	03/12/10	-18d
SKW0401	Erect formwork, mesh & weephole for Bay 6 & 9	7	0	22/12/10	28/12/10	04/12/10	10/12/10	-18d
SKW0411	Concreting for Bay 6 & 9	7	0	29/12/10	04/01/11	11/12/10	17/12/10	-18d



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Run date	13/09/10
Page number	1A
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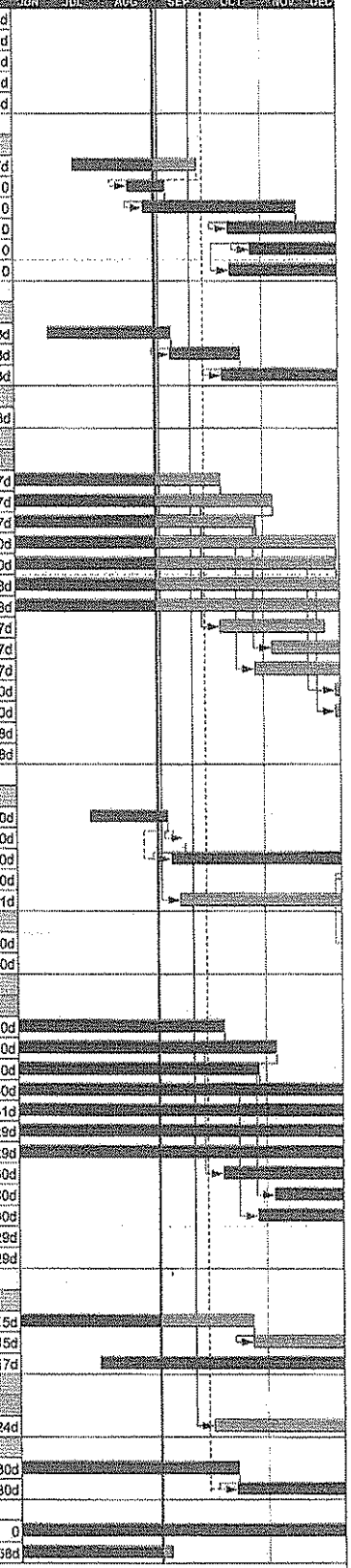
Early bar
Progress bar
Critical bar
Summary bar
Progress point
Critical point
Summary point
Start milestone point
Finish milestone point

Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13 (2010 Aug)
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (August 2010)

Date	Revision	Checked	Approved
31/08/10	Revision 0	StL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float
SKW0421	Drill & install dowel Bar for Bay 8	1	0	05/01/11	05/01/11	18/12/10	18/12/10	-18d
SKW0431	Erect formwork, mesh & weephole for Bay 8	4	0	06/01/11	09/01/11	19/12/10	22/12/10	-18d
SKW0441	Concreting for Bay 8	4	0	10/01/11	13/01/11	23/12/10	26/12/10	-18d
SKW0461	Excavation for no fine concrete Bay (1-9)	3	0	14/01/11	16/01/11	27/12/10	29/12/10	-18d
SKW0471	Concreting for no-fine concrete	7	0	17/01/11	23/01/11	30/12/10	05/01/11	-18d
Section W4 - Slope Works in Portions H & I								
Geotechnical Works								
SKW0590	Site Clearance for Slope	100	75	15/07/10 A	24/09/10	15/07/10 A	01/10/10	7d
SKW0591	Initial Survey for Slope	28	75	16/08/10 A	06/09/10	16/08/10 A	06/09/10	0
SKW0592	Temporary Rockfall fence at ex. Footpath	80	5	25/08/10 A	21/11/10	25/08/10 A	21/11/10	0
SKW0593	Cut Slope	200	0	13/10/10	30/04/11	13/10/10	30/04/11	0
SKW0594	Road & Drains Works	248	0	26/10/10	30/06/11	26/10/10	30/06/11	0
SKW0595	Rock Meshing & Rockfall Fence	260	0	14/10/10	30/06/11	14/10/10	30/06/11	0
Section W5 - P.S. No. 1 in Portion D								
Civil & Geotechnical Works								
SKW0681	Excavate to lower the working platform to +3mPD	49	80	30/06/10 A	09/09/10	30/06/10 A	17/08/10	-23d
SKW0691	ELS to +2.2mPD	40	0	09/09/10	19/10/10	18/08/10	26/09/10	-23d
SKW0721	Excavate to formation	92	0	09/10/10	09/01/11	17/09/10	17/12/10	-23d
Structural Works								
SKW0741	Base Slab (BSD2 & BSD3)	15	0	09/01/11	24/01/11	18/12/10	01/01/11	-23d
E&M Works (PS1)								
Submission & Delivery								
E&M1001	Submission of Pumps	113	67	17/05/10 A	07/10/10	17/05/10 A	02/03/11	147d
E&M1002	Submission of Gen-Set	143	53	17/05/10 A	06/11/10	17/05/10 A	02/03/11	117d
E&M1003	Submission of DeO System	133	57	17/05/10 A	27/10/10	17/05/10 A	02/03/11	127d
E&M1004	Submission of LV SB & MCC	180	42	17/05/10 A	13/12/10	17/05/10 A	02/03/11	80d
E&M1005	Submission of Instrumentation	180	42	17/05/10 A	13/12/10	17/05/10 A	02/03/11	80d
E&M1006	Submission of FS System	213	36	17/05/10 A	14/01/11	17/05/10 A	02/03/11	48d
E&M1007	Submission of BS System	213	36	17/05/10 A	14/01/11	17/05/10 A	02/03/11	48d
E&M1011	Delivery of Pumps	60	0	07/10/10	06/12/10	03/03/11	01/05/11	147d
E&M1012	Delivery of Gen-Set	60	0	06/11/10	05/01/11	03/03/11	01/05/11	117d
E&M1013	Delivery of DeO System	60	0	27/10/10	26/12/10	03/03/11	01/05/11	127d
E&M1014	Delivery of LV SB & MCC	60	0	13/12/10	11/02/11	03/03/11	01/05/11	80d
E&M1015	Delivery of Instrumentation	60	0	13/12/10	11/02/11	03/03/11	01/05/11	80d
E&M1016	Delivery of FS Equipment	60	0	14/01/11	15/03/11	03/03/11	01/05/11	48d
E&M1017	Delivery of BS Equipment	60	0	14/01/11	15/03/11	03/03/11	01/05/11	48d
Section W6 - Sewer and PS No.2 in Portions E&H								
Civil & Geotechnical Works								
SKW0921	Cut Slope & U-Channel	14	60	23/07/10 A	05/09/10	23/07/10 A	16/08/10	-20d
SKW0931	Hoarding & Fencing	14	80	15/09/10 A	08/09/10	15/09/10 A	19/08/10	-20d
SKW0951	Excavate to formation	108	0	06/09/10	23/12/10	20/08/10	03/12/10	-20d
SKW0961	Mass Conc. Retaining Wall	257	0	23/12/10	06/09/11	04/03/11	15/11/11	70d
SKW1491	Concrete Trough (ChA0+45 - ChA1+75)	180	0	13/09/10	12/03/11	14/09/10	12/03/11	1d
Structural Works								
SKW0971	Base Slab to -3.2mPD	14	0	23/12/10	06/01/11	04/12/10	17/12/10	-20d
SKW0981	Basement Beam (BBB-1,BBC-1,BBD-1)	14	0	06/01/11	20/01/11	18/12/10	31/12/10	-20d
E&M Works (PS2)								
Submission & Delivery								
E&M2001	Submission of Pumps	113	67	17/05/10 A	07/10/10	17/05/10 A	06/09/10	-30d
E&M2002	Submission of Gen-Set	143	53	17/05/10 A	06/11/10	17/05/10 A	06/10/10	-30d
E&M2003	Submission of DeO System	133	57	17/05/10 A	27/10/10	17/05/10 A	26/09/10	-30d
E&M2004	Submission of LV SB & MCC	271	28	17/05/10 A	14/03/11	17/05/10 A	11/02/11	-30d
E&M2005	Submission of Instrumentation	243	31	17/05/10 A	14/02/11	17/05/10 A	14/01/11	-31d
E&M2006	Submission of FS System	213	36	17/05/10 A	14/01/11	17/05/10 A	15/12/10	-29d
E&M2007	Submission of BS System	213	36	17/05/10 A	14/01/11	17/05/10 A	15/12/10	-29d
E&M2011	Delivery of Pumps	282	0	07/10/10	16/07/11	07/09/10	15/06/11	-30d
E&M2012	Delivery of Gen-Set	252	0	06/11/10	16/07/11	07/10/10	15/06/11	-30d
E&M2013	Delivery of DeO System	262	0	27/10/10	16/07/11	27/09/10	15/06/11	-30d
E&M2016	Delivery of FS Equipment	120	0	14/01/11	14/05/11	16/12/10	14/04/11	-29d
E&M2017	Delivery of BS Equipment	120	0	14/01/11	14/05/11	16/12/10	14/04/11	-29d
Section W7 - SKW STW,Sewer and Submarine Outfall								
Submarine Outfall								
SKW1130	Approval of IHS Consultant	180	70	17/05/10 A	23/10/10	17/05/10 A	07/10/12	715d
SKW1131	Hydrographical Survey (SKW)	300	0	24/10/10	19/08/11	08/10/12	03/08/13	715d
SKW1141	Water Quality Baseline Monitoring under EP (SKW)	183	16	27/07/10 A	31/01/11	27/07/10 A	14/01/11	-17d
SKW STW								
Submission & Delivery (E&M)								
E&M3010	Delivery of MBR M.M. - 1st shipment for Temp STP	150	0	01/10/10	28/02/11	21/08/11	17/01/12	324d
Rising Main								
SKW1481	Subm, Approval & Delivery of DI pipes	120	63	17/05/10 A	14/10/10	17/05/10 A	13/09/10	-30d
SKW1501	Concrete Trough (ChB0+00 - ChB1+20)	300	0	14/10/10	10/08/11	14/09/10	10/07/11	-30d
Section W8 - Landscape Softworks in All Portions								
SKW1611	Preservation & Protection of Trees	822	9	17/05/10 A	16/09/12	17/05/10 A	16/09/12	0
SKW1621	Transplantation at SKW	60	90	07/06/10 A	05/09/10	07/06/10 A	14/02/14	1258d



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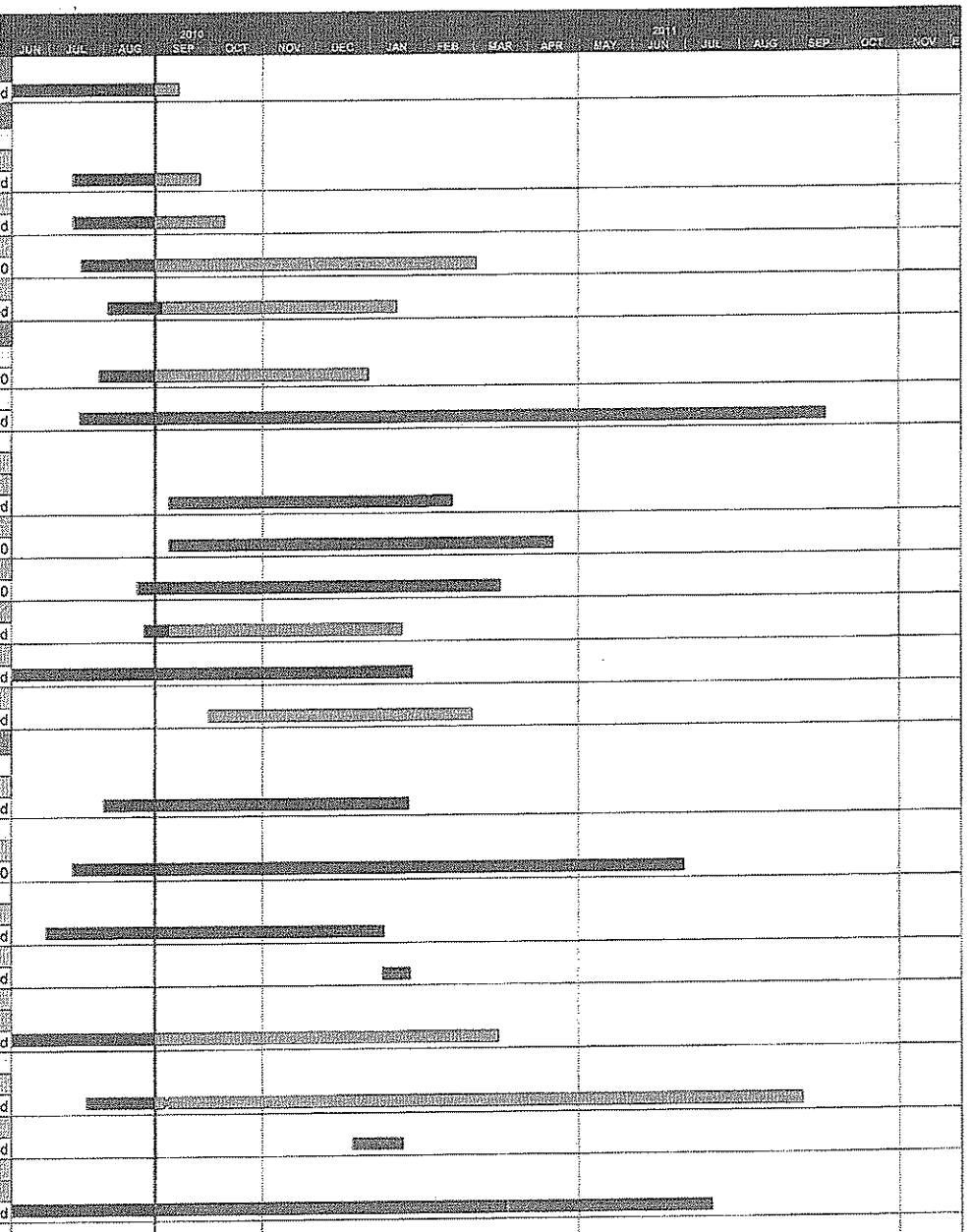
Leader Civil Engineering Corp. Ltd.
Contract No. DC/2009/13 (2010 Aug)
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (August 2010)

Date	Revision	Checked	Approved
31/08/10	Revision 0	StL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float
+Preliminary (Civil)								
		119	89	17/05/10 A	13/09/10	17/05/10 A	14/01/11	124d
Preliminary (E&M)								
Technical Submission								
+Process Design of SKW STW & YSW STW								
		72	40	15/07/10 A	25/09/10	15/07/10 A	30/06/11	279d
+Hydraulic Design								
		86	30	15/07/10 A	09/10/10	15/07/10 A	30/06/11	265d
+Equipment Submission & Approval								
		226	26	20/07/10 A	02/03/11	20/07/10 A	02/03/11	0
+Drawings Submission & Approval								
		161	11	04/08/10 A	16/01/11	04/08/10 A	10/06/11	145d
Yung Shue Wan								
+Preliminary								
		155	34	30/07/10 A	31/12/10	30/07/10 A	31/12/10	0
+Section W1 - Slope Works in Portion A & C								
		427	2	19/07/10 A	19/09/11	16/06/10 A	15/08/11	-34d
Section W2 - YSW STW & Submarine Outfall								
Civil & Structural Work								
+YSW STP - GL H - T								
		162	0	08/09/10	17/02/11	16/06/10	24/11/10	-84d
+YSW STP - GL T - X								
		220	0	08/09/10	16/04/11	08/09/10	15/04/11	0
+YSW STP - GL E - H & DN Tanks								
		199	12	21/08/10 A	16/03/11	21/08/10 A	16/03/11	0
+Road, Drain, Cable Draw Pits & Ducting								
		139	6	25/08/10 A	19/01/11	25/08/10 A	17/02/11	30d
+Submarine Outfall								
		254	23	17/05/10 A	25/01/11	17/05/10 A	31/12/10	-25d
+E&M Works - YSW STP								
		150	0	01/10/10	28/02/11	21/12/10	25/02/12	363d
Sok Kwu Wan								
Section W3 - Footpath Diversion in Portion G								
+Civil & Geotechnical Works								
		175	1	02/08/10 A	23/01/11	02/08/10 A	05/01/11	-18d
Section W4 - Slope Works in Portions H & I								
+Geotechnical Works								
		351	11	15/07/10 A	30/06/11	15/07/10 A	30/06/11	0
Section W5 - P.S. No. 1 in Portion D								
+Civil & Geotechnical Works								
		194	22	30/06/10 A	09/01/11	30/06/10 A	17/12/10	-23d
+Structural Works								
		15	0	09/01/11	24/01/11	18/12/10	01/01/11	-23d
E&M Works (PS1)								
+Submission & Delivery								
		302	33	17/05/10 A	15/03/11	17/05/10 A	01/05/11	48d
Section W6 - Sewer and PS No.2 in Portions E&H								
+Civil & Geotechnical Works								
		411	3	23/07/10 A	06/09/11	23/07/10 A	15/11/11	70d
+Structural Works								
		28	0	23/12/10	20/01/11	04/12/10	31/12/10	-20d
E&M Works (PS2)								
+Submission & Delivery								
		425	23	17/05/10 A	16/07/11	17/05/10 A	15/06/11	-30d
Section W7 - SKW STW,Sewer and Submarine Outfall								



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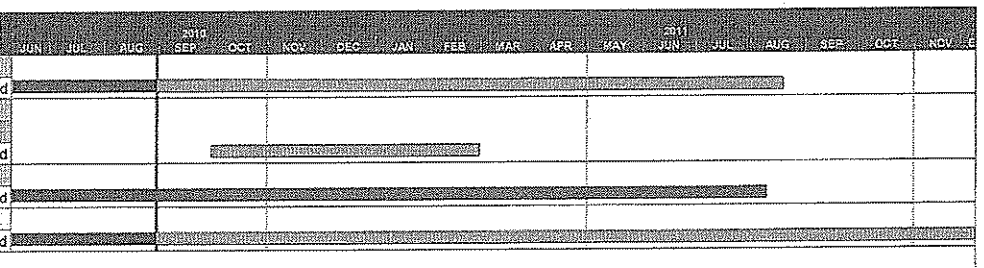
Contract No. DC/2009/13 (2010 Aug)
Construction of Sewage Treatment Works at YSW & SKW
3-month Rolling Programme (August 2010)
(Outline)

Date	Revision	Checked	Approved
31/08/10	Revision 0	StL	VC

Activity ID	Description	Original Duration	Percent Complete	Early Start	Early Finish	Late Start	Late Finish	Total Float
+Submarine Outfall								
		460	23	17/05/10 A	19/08/11	17/05/10 A	03/08/13	715d
SKW STW								
+Submission & Delivery (E&M)								
		150	0	01/10/10	28/02/11	21/08/11	17/01/12	324d
+Rising Main								
		450	18	17/05/10 A	10/08/11	17/05/10 A	10/07/11	-30d
+Section W8 - Landscape Softworks in All Portions								
		854	15	17/05/10 A	16/09/12	17/05/10 A	14/02/14	516d



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