東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.™

8/F Block B,
Veristrong Industrial Centre,
34-36 Au Pui Wan Street,
Fo Tan, Hong Kong

T: +852 2695 8318
F: +852 2695 3944
E: etl@ets-testconsult.com
W: www.ets-testconsult.com

China Harbour – Zhen Hua Joint Venture

Contract No.: CV/2015/07
Handling of Surplus Public Fill
(2016-2018)

TSEUNG KWAN O AREA 137 FILL BANK

MONTHLY EM&A REPORT NO.33

(JANUARY 2020)

Prepared by: _____
TANG, Chung Hang
Environmental Officer

Checked by: _____
LAU, Chi Leung
Environmental Team Leader

Issue Date: 10 February 2020 *Report No.: ENA01034*

RAMBOLL

Ref.: CEDPFRSFEM02_0_0836L.20

17 February 2020

By Email and Fax No.: 2695 3944

ETS-Testconsult Limited
8/F, Block B, Veristrong Industrial Centre
34-36 Au Pui Wan Street
Fo Tan, Hong Kong

Attention: Mr. C L Lau

Dear Mr. Lau,

Re: Contract No. CV/2015/07
Handling of Surplus Public Fill (2016 – 2018)

Monthly EM&A Report (No. 33) for January 2020 for the Tseung Kwan O Area 137 Fill Bank

Reference is made to your submission of the draft Monthly EM&A Report for January 2020 for the TKO Area 137 Fill Bank received by email on 13 February 2020 and the final revision on 17 February 2020.

We are pleased to inform you that we have no further comment on the monthly EM&A report.

Thank you for your attention. Please do not hesitate to contact our Jason Lai or the undersigned should you have any queries.

Yours sincerely,
For and on behalf of
Ramboll Hong Kong Limited

F. C. Tsang
Independent Environmental Checker

c.c.	CEDD	Attn: Mr. T M Yeung	Fax No.: 2714 0113
	CHZHJV	Attn: Mr. S W Sung	By Email

Q:\Projects\CEDPFRSFEM02\02 Project Management\02 Corr\CEDPFRSFEM02_0_0836L.20.doc

Ramboll Hong Kong Limited 英環香港有限公司
21/F, BEA Harbour View Centre, 56 Gloucester Road, Wan Chai, Hong Kong Tel: 852.3465 2888 Fax: 852.3465 2899
www.ramboll.com

TABLE OF CONTENTS **Page**

APPENDIX

FIGURES

TABLES

EXECUTIVE SUMMARY

This monthly Environmental Monitoring and Audit (EM&A) report No.33 was prepared by ETS-Testconsult Ltd (ET) for "Contract No: CV/2015/07 – Handling of Surplus Public Fill (2016-2018) – Tseung Kwan O (TKO) Area 137 Fill Bank" (The Project).

This report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at TKO Area 137 in January 2020.

Site Activities

As informed by the Contractor, the site activities in this reporting period were as below:

1. *Operation of the TKO137 Fill Bank.*
2. *Delivery of public fill to Taishan;*
3. *Operation of dewatering plant and expanded dewatering plant*
4. *Operation of bentonite pool.*
5. *Concrete block breaking work.*
6. *Crushing plant operation.*
7. *Re-construction of sampling platforms at TKOFB;*
8. *Replacement of Y40 rebar with Y50 rebar at the existing wheel washing bay at TKOFB;*
9. *Repair works for damaged at TKOFB caused by Super Typhoon*
10. *Carrying out preliminary sorting of Public Fill for 3RS project;*
11. *Demolition and Construction of Recorder House A2 at TKOFB*
12. *Construction of MIC site office, Green Wall and carpark at TKOFB.*

Environmental Monitoring Progress

The summary of the monitoring activities in this monitoring period is listed below:

- *Noise Monitoring (Day-time): 1 Occasion at 1 designated location*
- *24-hour TSP Monitoring: 5 Occasions at 2 designated locations*
- *1-hour TSP Monitoring: 17 Occasions at 2 designated locations*
- *Marine Water Quality Monitoring:13 Occasions at 2 designated locations*
- *Weekly-site inspection: 5 Occasions*

Noise Monitoring

No exceedance of Action and Limit levels for noise monitoring was recorded in the reporting period.

Air Monitoring

No exceedance of Action and Limit levels was recorded for 1-hr and 24-hr TSP monitoring in the reporting period.

Marine Water Quality Monitoring

According to the summary of marine water monitoring results, no exceedance of Action and Limit levels was recorded in this reporting period.

Weekly Site Inspections

In general, performance on environmental mitigation measures implemented was found to be satisfactory in this reporting period. The major findings observed during site inspections are presented in the Section 7.0.

Environmental Complaints, Notification of summons and successful prosecutions

No complaints, notification of summons or successful prosecutions with respect to environmental issues was received in this reporting period.

Future Key Issues

Based on site inspections and forecast of engineering works in coming month, key issues to be considered are as follows:

- *Noise and air quality impact due to site works;*
- *Maintain wheel washing facilities properly;*
- *Maintain all drainage and desilting facilities properly;*
- *Use and maintain silt curtain properly;*
- *Clean up the fill material on concrete pavement along the BHA frequently;*
- *Sufficient drip trays for all oil drums / chemical containers;*
- *Implement all necessary preventive measures to avoid oil leakage. In the event an oil leakage happens, the Contractor should properly remove the leaked oil and handle the contaminated soil and all materials using for this cleaning works as chemical waste;*
- *Maintain good site practice and waste management to minimize environmental impacts at the site; and*
- *Follow-up improvements on waste management issues.*

1.0 INTRODUCTION

*China Harbour – Zhen Hua Joint V*enture (CHZH-JV) appointed Environmental Team (ET) of ETS-Testconsult Limited (ETL) to undertake the Environmental Monitoring and Audit (EM&A) for the "Contract No: CV/2015/07 –Handling of Surplus Public Fill (2016-2018) – Tseung Kwan O (TKO) Area 137 Fill Bank" (The Project).

In accordance with the Environmental Permit (No.: EP-134/2002/N) (the EP), an EM&A programme should be implemented in accordance with the procedures and requirements in the EM&A Manual of the approved EIA report (Registration No. AEIAR-060/2002). The EM&A programme for this study as stated in Section 2.3.1 of the EM&A Manual covers the following environmental aspects during the establishment, operation and removal phases of the Fill Bank at Tseung Kwan O Area 137:

- *Fugitive Dust;*
- *Noise generation from onsite activities;*
- *Water Quality; and*
- *Landscape and Visual.*

The EM&A programme requires environmental monitoring for air quality, noise and water quality and environmental site inspections for air quality, noise, water quality, landscape and visual, and waste management. The EM&A requirements for each parameter described in the following sections include:

- *All monitoring parameters;*
- *Monitoring schedules for the reporting period and forthcoming months;*
- *Action and Limit levels for all environmental parameters;*
- *Event/Action Plans;*
- *Environmental mitigation measures, as recommended in the Project EIA study final report; and*
- *Environmental requirements in contract documents.*

Baseline monitoring was completed in August and October 2002 by MateriaLab. Action and Limit Levels were established for air and water quality parameters based on the baseline monitoring results.

This report documented the findings of EM&A Works conducted during the operation phase of Fill Bank at Tseung Kwan O Area 137 in January 2020.

2.0 PROJECT INFORMATION

2.1 Scope of the Project

The scale and scope of the Project as stated in the EP include:

- Site clearance;
- Construction of a temporary storm water system;
- Stockpiling of 6 million m^3 of public fill;
- Setting up two barging points: one at the TKO Basin and one at the Construction and Demolition Material Sorting Facility (C&DMSF) for transporting the stockpiled public fill by barges;
- Setting up a temporary barging point at the existing Explosive Off-loading Barging Point located in the south-eastern part of Area 137 for the month of May 2004 to December 2004 for transporting the stockpiled public fill by barge;
- Construction and operation of a Construction and Demolition Material Sorting Facility (C&DMSF);
- Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin; and
- Remove the temporary fill bank.

2.2 Site Description

TKO Area 137 Fill Bank is located at the southern end of Wan Po Road. In the vicinity of the site are other industrial uses such as SENT landfill, TKO Industrial Estate, etc. Both Island Resort and Fullview Garden are also situated at more than 1.8km from the site. Other existing ASRs and NSRs, including resident developments and schools, are located at a further distance away from TKO Area 137.

2.3 Work Programme

Details of work programme are shown in Appendix G.

2.4 Project Organization and Management Structure

The project organization chart is shown in Appendix A.

2.5 Contact Details of Key Personnel

The key personnel contact names and telephone numbers are shown in Table 2.1.

Table 2.1 Contact Details of Key Personnel

Organization	*Name of Key Staff*	*Project Role*	*Tel. No.*	*Fax No.*
CEDD	*T M Yeung, Norelle Li May Lau, James Sze, Phoebe Tang*	*Engineer's Representative*	*2762 5555*	*2714 0113*
IEC (Ramboll)	*F C Tsang*	*IEC*	*3465 2888*	*3465 2899*
Contractor (CHZH-JV))	*Zhou Chang Ying*	*Project Director*	*96266299*	*22474108*
ET (ETL)	*C. L. Lau*	*ET Leader*	*2946 7791*	*2695 3944*

3.0 WORK PROGRESS IN THIS REPORTING PERIOD

As informed by the Contractor, the activities in the reporting period include:

1. *Operation of the TKO137 Fill Bank.*
2. *Delivery of public fill to Taishan;*
3. *Operation of dewatering plant and expanded dewatering plant*
4. *Operation of bentonite pool.*
5. *Concrete block breaking work.*
6. *Crushing plant operation.*
7. *Re-construction of sampling platforms at TKOFB;*
8. *Replacement of Y40 rebar with Y50 rebar at the existing wheel washing bay at TKOFB;*
9. *Repair works for damaged at TKOFB caused by Super Typhoon*
10. *Carrying out preliminary sorting of Public Fill for 3RS project;*
11. *Demolition and Construction of Recorder House A2 at TKOFB*
12. *Construction of MIC site office, Green Wall and carpark at TKOFB.*

4.0 AIR QUALITY MONITORING

4.1 Monitoring Requirement

TSP levels were monitored in the reporting period in accordance with the EM&A Manual. Table 4.4 shows the Action and Limit Levels for the environmental monitoring works.

4.2 Monitoring Equipment

Both 1-hour and 24-hour TSP air quality monitoring was performed using a GMWS2310 High Volume Air Sampler (HVS) located at each of the designated monitoring station. Table 4.1 summarizes the equipment used in the air quality monitoring programme. A copy of the calibration certificates for the HVS and calibrator are attached in Appendix B1.

Table 4.1 Air Quality Monitoring Equipment

Equipment	*Model and Make*
HVS	*Greasby GMWS2310*
Calibrator	*Tisch TE-5025A*

4.3 Monitoring Parameters, Frequency and Duration

Table 4.2 summarizes the monitoring parameters, monitoring duration and frequencies of air quality monitoring.

Table 4.2 Monitoring parameters, duration, frequency of air quality monitoring

Parameter	*Duration*	*Frequency*
24-hr TSP	*24 hr*	*Once every six days*
1-hr TSP	*1 hr*	*Three times per day every six days*

4.4 Monitoring Locations

Table 4.3 tabulates the air quality monitoring locations of this project.

Table 4.3 Air quality monitoring locations

Monitoring station	*Location*
TKO-A1	*Site Egress*
TKO-A2a	*CREO*

4.5 Monitoring Methodology

Both 1-hr and 24-hr air quality monitoring (High Volume Sampler)

Instrumentation

High volume sampler, as HVS, (Greasby GMWS2310) complete with appropriate sampling inlets were employed for both 1-hour and 24-hour TSP monitoring. The sampler is composed of a motor, a filter holder, a flow controller and a sampling inlet and its performance specification complies with that required by USEPA standard Title 40, Code of Federation Regulations Chapter 1 (Part 50).

Installation

The installation of HVS refers to the requirement stated in EM&A Manual.

Operation/Analytical Procedures

Operating/analytical procedures for the operation of HVS are as below:

- Prior to the commencement of the dust sampling, the flow rate of the high volume sampler was properly set (between 0.6m^3/min and 1.7m^3/min.) in accordance with the manufacturer's instruction to within the range recommended in USEPA Standard Title 40, CFR Part 50. The flow rate was indicated on the flow rate chart.
- For TSP sampling, fiberglass filters (Whatman G653) were used.
- The power supply was checked to ensure the sampler worked properly.
- On sampling, the sampler was operated 5 minutes to establish thermal equilibrium before placing any filter media at designated air monitoring station.
- The filter holding frame was then removed by loosening the four nuts and carefully a weighted and conditioned filter was centered with the stamped number upwards, on a supporting screen.
- The filter was aligned on the screen so that the gasket formed an air-tight seal on the outer edges of the filter. Then the filter holder frame was tightened to the filter holder with swing bolts. The applied pressure should be sufficient to avoid air leakage at the edges.
- The programmable timer will be set for a sampling month of 1 hour or 24 hours. Information was recorded on the record sheet, which included the starting time, the weather condition and the filter number (the initial weight of the filter paper can be found out by using the filter number.).
- After sampling, the filter was transferred from the filter holder of the HVS to a sealed plastic bag and sent to the laboratory for weighting. The elapsed time was also recoded.
- Before weighting, all filters were equilibrated in a desiccator for 24 hour with the temperature of 25°C ± 3°C and the relative humidity (RH) <50% ±5%.
- All measurement procedures in Section 2.3 of the EM&A Manual were followed during the reporting period.

Maintenance & Calibration

- HVS and their accessories should be maintained in good working condition, such as replacing motor brushes routinely and checking electrical wiring to ensure a continuous power supply.
- HVS should be calibrated at bi-monthly intervals.

Wind Data Monitoring

Wind data (wind speed and wind direction) were directly extracted from Tseung Kwan O Station of Hong Kong Observatory. All wind data during this reporting period are shown in Appendix E.

4.6 Action and Limit Levels

Table 4.4 shows the Action and Limit levels for 24-hr TSP and 1-hr TSP monitoring.

Table 4.4 Action and Limit Levels for 24-hr TSP and 1-hr TSP

Monitoring Location	*24-hr TSP ($\mu g/m^3$)*		*1-hr TSP ($\mu g/m^3$)*	
	Action Level	*Limit Level*	*Action Level*	*Limit Level*
TKO-A1	*210*	*260*	*376*	*500*
*TKO-A2a **	*210*	*260*	*376*	*500*

Remark (*): Since dust monitoring stations TKO-A2 and TKO-A2a are located close to the major dust emission sources and also close to the same sensitive receptor and no significant difference between them on the prevailing meteorological conditions, the baseline data from TKO-A2 (August and September 2002 by MateriaLab) can also be valid in the case of TKO-A2a.

4.7 Event-Action Plans

Please refer to Appendix F for details.

4.8 Results and Observation

4.8.1 1-hour and 24-hour TSP Monitoring results

Monitoring data of both 1-hour and 24-hour TSP monitoring carried out in this reporting period are summarized in Appendix B2. Graphical presentation of 1-hour and 24-hour TSP monitoring results for the reporting period is shown in Appendix B3. Wind data included wind speed and wind direction was extracted from Tseung Kwan O Station of Hong Kong Observatory during this reporting period and is presented in Appendix E.

No exceedance of Action and Limit Level of 1-hr TSP and 24-hour TSP monitoring results was recorded during the reporting period.

4.8.2 Observation

Generally, the Contractor implemented sufficient dust mitigation measures, including operation of the mist spraying systems at the CEDD Combined Reception Office and the site egress area, wheel washing facilities, road dampening by water bowsers and automatic water sprinklers on the main haul roads. Other dust sources near TKO Area 137 also included operation of the temporary CWSF and dumping activities at the SENT Landfill.

5.0 Noise Monitoring

5.1 Monitoring Requirements

Noise monitoring was conducted at 1 monitoring station as specified in the approved EM&A Monitoring Proposal for good site practice. The equipment, parameter, frequency, duration, methodology, calibration details, results and observations of the noise monitoring for the reporting period are presented in this section.

5.2 Monitoring Equipment

An Integrating Sound Level Meter was used for noise monitoring. It was a Type 1 sound level meter capable of giving a continuous readout of the noise level reading including equivalent continuous sound pressure level (L_{eq}) and percentile sound pressure level (Lx). It complies with International Electro Technical Commission Publications IEC 61672 Type 1 specification, and speed in m/s was used to monitor the wind speed.

Table 5.1 summarizes noise monitoring equipment model being used. A copy of the calibration certificate for noise meter and calibrator are attached in Appendix C1

Table 5.1 Noise Monitoring Equipment

Equipment	*Model*
Sound Level Meter	*Rion NL-31 / Rion NL-52*
Sound Level Calibrator	*Rion NC-73 / Castle GA607*

5.3 Monitoring Parameters, Duration and Frequency

Duration, frequencies and parameters of noise measurement are presented in Table 5.2.

Table 5.2 Duration, Frequencies and Parameters of Noise Monitoring

Time	*Duration/min*	*Parameters*	*Frequency*
Day-time: 0700-1900 hrs on normal weekday	*30*	L_{eq}, L_{10}, L_{90}	*Once per month*

5.4 Monitoring Locations

One Noise monitoring was conducted at the noise monitoring location, TKO-N1 as shown in Figure 2 during the reporting period. Table 5.3 describes the location of the monitoring station.

Table 5.3 Noise Monitoring Location

Monitoring station	*Location*	*Type of Measurement*
TKO-N1	*Outside site Egress along Wan Po Road*	*Free Field*

5.5 Monitoring Procedures and Calibration Details

Operation/Analysis Procedures

- The Sound Level Meter was set on a tripod at a height of 1.2m above the ground.
- For free field measurement, the meter was positioned away from any nearby reflective surfaces.
- The battery condition was checked to ensure the correct functioning of the meter.
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:
  - *Frequency weighting: A*
  - *Time weighting : Fast*
  - *Time measurement : 30 mins*
- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94 dB at 1000HZ. If the difference in the calibration level before and after measurement was more than 1dB, the measurement would be considered invalid and repeat measurement would be required after re-calibration or repair of the equipment.
- The wind speed was frequently checked with a portable wind meter.
- During the monitoring period, the Leq, L10 and L90 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet.
- Correction factor of +3dB(A) should be made to the free Field measurements.
- Noise monitoring would be cancelled in the presence of fog, rain, wind with a steady speed exceeding 5m/s, or wind gusts exceeding 10m/s.

Maintenance and Calibration

- The microphone head of the sound level meter and calibrator are cleaned with soft cloth in quarterly intervals.
- The meter is sent to the supplier or HOKLAS laboratory to check and calibrated in yearly intervals.

5.6 Action and Limit Levels

The Action and Limit levels for noise levels derived as illustrated in Table 5.4.

Table 5.4 Action and Limit Levels for noise monitoring

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

5.7 Event-Action Plans

Please refer to the Appendix F for details.

5.8 Results and Observation

5.8.1 Results

Only Day-time noise monitoring was carried out at monitoring station TKO-N1 in this reporting period. The detail of the noise monitoring is provided in Appendix C2. Graphical presentation of the monitoring result for the reporting period is shown in Appendix C3.
Since no documented complaints on noise issue were received in this reporting period, no Action Level exceedance was recorded. Besides, no exceedance in Limit Level was recorded according to the result from Day-time monitoring.

5.8.2 Observation

The major noise source during the monitoring event was the dump truck traffic.

6.0 MARINE WATER QUALITY MONITORING

6.1 Monitoring Requirements

In accordance with the EM&A Manual, impact marine water quality monitoring was conducted three days per week. Measurements were taken at both mid-flood and mid-ebb tides at three depths (i.e. 1m below surface, mid depth and 1m from seabed) at Control Station, C1 and Monitoring Station, M4.

6.2 Monitoring Locations

For the Reclamation Project, there were 4 Designated Monitoring Stations and 2 Designated Control Stations specified in the EM&A Manual. Upon the completion of the monitoring programme under Stage 2 reclamation works, the ET started monitoring events at the impact station M4 and the control station C1 from 18 May 2004 onwards.

Figure 1 shows the location of the marine water quality monitoring stations. Table 6.1 describes the locations of the monitoring stations in the reporting period.

Table 6.1 Locations of Marine Water Monitoring Stations

Station Description	*Code*	*HK Metric Grid E*	*HK Metric Grid N*
Control Station (Ebb tide)	*TKO-C1*	*844 740.208*	*815 371.502*
Monitoring Station, Tung Lung Chau Fish Culture Zone	*TKO-M4*	*847 741.029*	*812 977.878*

According to Environmental Permit (Permit no.:EP-134/2002/N) Condition 3.2, water quality survey/monitoring shall be conducted at control station C1a , monitoring stations M4a and M5 for the period from two weeks before commencement of operation of the additional 5 barging points to 4 weeks after cessation of their operation. The water quality survey/monitoring frequency and parameters at stations C1a, M4a and M5 shall be same as the requirements set out in the EM&A Manual and the monitoring results shall be incorporated in the monthly EM&A reports.

Due to "Hong Kong International Airport, Three Runway System Project Contract 3206 – Main Reclamation Works "(3RS project) operation of the additional barging point at TKO Area 137, the ET started monitoring events at the impact station M4a, M5 and the control station C1a from 14 May 2018 onwards.

Figure 4 shows the location of water control station C1a and water monitoring station M4a and M5.

Table 6.2 describes the locations of the additional marine water monitoring stations

Table 6.2 Locations of Additional Marine Water Monitoring Stations (3RS project)

Station Description	*Code*	*HK Metric Grid E*	*HK Metric Grid N*
Control Station (Ebb tide)	*C1a*	*845647*	*814146*
Impact Monitoring Station	*M4a*	*845922*	*813973*
	M5	*847005*	*813678*

6.3 Monitoring Parameters

Monitoring of the marine water quality parameters are listed in Table 6.3.

Table 6.3 Marine Water Quality Monitoring Parameters

In-situ measurement	*Laboratory analysis*
Depth (m)	*Suspended solids (mg/L)*
Temperature (℃)	
Dissolved Oxygen (mg/L and % saturation)	
Turbidity (NTU)	
Salinity (ppt)	

6.4 Monitoring Frequency

The monitoring frequency of the marine water monitoring is summarized in Table 6.4.

Table 6.4 Monitoring frequency of the marine water

Parameter	*Frequency*	*No. of Location*	*No. of Depths*
Temperature	*3 days/week, 2 tides/day*	*2 (TKO-C1 and TKO-M4) and 3 (C1a, M4a and M5)*	*3 (Surface, mid-depth & bottom)*
Salinity			
DO			
Turbidity			
Suspended solids			

6.5 Monitoring Methodology and Equipment Used

For Location of the monitoring stations

Global Positing System (GPS)
A hand-held digital GPS was used to identify the designated monitoring stations prior to water sampling.

For Water Depth measurement

Echo Sounder

A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.

For In-situ Water Quality Measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals or sometimes longer throughout all stages of the water quality monitoring.

Dissolved Oxygen, Salinity and Temperature Measuring Equipment
A portable, weatherproof dissolved oxygen & salinity measuring instrument, which complete with cable, sensor and DC power source (e.g. YSI 85 or equivalent) was used for measuring:

- a dissolved oxygen level in the range of 0-20 mg/L and 0-200 % saturation;
- a salinity in range 0-40 ppt; and
- a temperature of 0-45 degree Celsius

A membrane electrode with automatic temperature compensation complete with a cable was installed.

Turbidity Measurement Instrument
A portable and weatherproof turbidity meter (HACH model 2100Q) was used during impact monitoring. It has a photoelectric sensor capable of measuring turbidity between 0-1000 NTU. Response of the sensor was checked with certified standard Turbidity solutions before the start of measurement.

For Water Sampling and Sample Analysis

In-situ monitoring was carried out at three depths: 1 meter below water surface, at mid-depth and 1 meter above the seabed. If the water depth is less than 6 m, the mid-depth station shall be omitted and if the water depth is below 3 m, only the mid depth station shall be monitored.

Water Sampler
A water sampler comprising a transparent PVC cylinder, with a capacity of not less than 2 liters, was lowered into the water body at the predetermined depth. The both opening ends of the sampler were then closed accordingly by dead weight and water samples were collected.

Water Container
The sample container, made by high-density polythene, was rinsed with a portion of the water sample. The water sample was then transferred to the container, labelled with a unique sample ID and sealed with a screw cap. The water samples were stored in a cool box maintained at 4°C. The water samples were then delivered to a local HOKLAS-accredited laboratory (Environmental Laboratory, ETS-Testconsult Ltd, HOKLAS Registration No. 022) on the same day for analysis.

The summary of testing method of testing parameter as recommended by EIA or required by EPD, with the QA/QC results in accordance with the requirement of HOKLAS or international accredited scheme is shown in Table 6.5.

Table 6.5 Summary of testing procedures

Laboratory Analysis	*Testing Procedure*	*Detection Limit*
Total suspended solids	*In house method based on APHA 19th ed 2540D*	*1.0 mg/L*

In-situ measurement

All in-situ monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or any other international accreditation scheme before use. Responses of sensors and electrodes were checked with certified standard solutions before each use. Wet bulb calibration for a DO meter was carried out before the start of measurement.

At each measurement/sampling depth, two consecutive measurements of dissolved oxygen (DO), dissolved oxygen saturation (DOS), turbidity and salinity were taken. For turbidity measurement, the sample was collected by using sampler and then transferred to the cell. The reading of turbidity of the sample was directly recorded from the Turbidimeter (HACH 2100Q) after inserting the cell to the Turbidimeter. For DO, DOS and Salinity, duplicate measurements were performed by dropping the calibrated probes of the corresponding monitoring equipments to the designated depths of the water column and taking readings after stabilized. The duplicate measurements were averaged if the difference was not greater than 25%. If the difference is greater than 25%, repeat measurement will be required.

Table 6.6 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix D1.

Table 6.6 Details of Marine Water Quality Monitoring Equipment (In-site measurement)

Parameter	*Model*	*Date of Calibration*	*Due Date*	*Equipment No.*
Coordinate of Monitoring stations	*Garmin eTrex 10*	*-----*	*-----*	*ET/EW/005/09*
Dissolved Oxygen (Saturation), Temperature, Salinity	*YSI Dissolved Oxygen, Salinity & Temperature Meter, YSI 2030*	*03/12/19*	*02/03/20*	*ET/EW/008/006**
Turbidity	*HACH Model 2100Q Turbid Meter*	*25/10/19*	*24/01/20*	*ET/0505/021**
		25/01/20	*24/04/20*	
Water Depth	*Speedtech SM-5*	*-----*	*-----*	*ET/EW/002/08*

Remark:(*) indicates the instrument should be calibrated on use.

6.6 Action and Limit Level

The water quality criteria, namely Action and Limit (A/L) levels are presented in the table below.

Table 6.7 Water Quality Action and Limit Levels

Parameter	*Action Level*	*Limit Level*
DO (mg/L)	*Surface & Middle* *<5.45 mg/L (5%-ile of baseline data)* *Bottom* *<4.72 mg/L (5%-ile of baseline data)*	*Surface & Middle* *<5.10 mg/L (1%-ile of baseline data)* *Bottom* *<2.00 mg/L*
SS (mg/L) (Depth-averaged)	*>6.74 mg/L (95%-ile of baseline data) or >120% of the upstream control station's SS at the same tide on the same day*	*>7.67 mg/L (99%-ile of baseline data) or >130% of the upstream control station's SS at the same tide on the same day*
Turbidity (NTU) (Depth-averaged)	*>4.28 NTU (95%-ile of baseline data) or >120% of the upstream control station's turbidity at the same tide on the same day*	*>4.58 NTU (99%-ile of baseline data) or >130% of the upstream control station's turbidity at the same tide on the same day*

The water quality Action and Limit Levels (3RS project) are presented in the table below.

Table 6.8 Water Quality Action and Limit Levels (3RS project)

Parameter	*Action Level*	*Limit Level*
DO (mg/L)	*Surface & Middle* *<5.5 mg/L* *Bottom* *<5.2 mg/L*	*Surface & Middle* *<4.00 mg/L (1%-ile of baseline data)* *Bottom* *<2.00 mg/L*
SS (mg/L) (Depth-averaged)	*>4.9 mg/L or >120% of the upstream control station's SS at the same tide on the same day*	*>5.2 mg/L or >130% of the upstream control station's SS at the same tide on the same day*
Turbidity (NTU) (Depth-averaged)	*>3.9NTU or >120% of the upstream control station's turbidity at the same tide on the same day*	*>4.2 NTU or >130% of the upstream control station's turbidity at the same tide on the same day*

6.7 Event and Action Plan

Please refer to the Appendix F for details.

6.8 Monitoring Duration in this reporting period

Below is the time schedule for the marine water quality monitoring events that were conducted in this reporting period:

Table 6.9 Time Schedule of Impact Marine Water Quality Monitoring

January 2020						
Sunday	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
			1	*2* ▼	*3*	*4* ▼
5	*6* ▼	*7*	*8* ▼	*9*	*10* ▼	*11*
12	*13* ▼	*14*	*15* ▼	*16*	*17* ▼	*18*
19	*20* ▼	*21*	*22* ▼	*23*	*24* ▼	*25*
26	*27* #	*28*	*29* ▼	*30*	*31* ▼	

Remark: (▼) = Marine water quality monitoring carried out by ET.
(#) = Due to the tidal period in holiday, 27 January 2020 water monitoring was cancelled.

The daily marine water quality monitoring duration are detailed in Appendix D2.

6.9 Marine Water Quality Monitoring Results

The impact water quality measurement results are detailed in Appendix D2. Appendix D3 presents the water quality monitoring data and graphical presentations of monitoring results. The summary of marine water quality exceedances is shown in Table 6.10.

Table 6.10 Summary of Impact Marine Water Quality Exceedances

Station	*Exceedance Level*	*DO*		*Turbidity*		*SS*		*Total*	
		Flood	*Ebb*	*Flood*	*Ebb*	*Flood*	*Ebb*	*Flood*	*Ebb*
TKO-C1	*Action*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Limit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
TKO-M4	*Action*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Limit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

The impact water quality measurement results (3RS project) are detailed in Appendix D4. Appendix D5 presents the water quality monitoring data and graphical presentations of monitoring results. The summary of marine water quality exceedances (3RS project) is shown in Table 6.11.

Table 6.11 Summary of Impact Marine Water Quality Exceedances (3RS project)

Station	*Exceedance Level*	*DO*		*Turbidity*		*SS*		*Total*	
		Flood	*Ebb*	*Flood*	*Ebb*	*Flood*	*Ebb*	*Flood*	*Ebb*
C1a	*Action*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Limit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
M4a	*Action*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Limit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
M5	*Action*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*
	Limit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*

According to the summary of marine water monitoring results, no exceedance of Action and limit levels was recorded for this reporting period.

7.0 ENVIRONMENTAL AUDIT

7.1 Weekly ET Site Inspections and EPD's Site Inspection

7.1.1 Weekly ET Site Inspections

Weekly ET site inspections were carried out by ET to monitor the timely implementation of proper environmental pollution control and mitigation measures for the Project. In this reporting period, five weekly site inspections were conducted (03, 08, 15, 22 and 29 January 2020). Table 7.1 presents the key findings of weekly ET site inspection in this reporting period.

Table 7.1 Key Findings of Weekly ET Site Audits in this reporting period

Date	*Key Findings*	*Action(s) Taken recommended by ET*	*Action(s) Taken by the Contractor during the ET weekly site audit*	*Rectification Status by ET*
03 January 2020	Stagnant water was found accumulated beside the U-channel near wheel washing facilities (New item)	Provide the sand bag to prevent wastes water runoff into U-channel.	---	*Follow-up*
08 January 2020	Stagnant water was found accumulated beside the U-channel near wheel washing facilities (Previous item)	Provide the sand bag to prevent wastes water runoff into U-channel.	Sand bags were provided	*Closed*
15 January 2020	*No defective work or observation was recorded during the weekly ET site inspection.*			
22 January 2020	Oil leakages were observed near A5b Area(New item)	To clean the oil properly	---	*Follow-up*
29 January 2020	Oil leakages were observed near A5b Area(Previous item)	To clean the oil properly	Oil leakages were cleaned.	*Closed*

7.1.2 EPD's Site Inspection

No EPD's site inspection was carried out at TKO137 Fill Blank on January 2020.

7.2 Review of Environmental Monitoring Procedures

The monitoring works conducted by the Environmental Team were inspected regularly. The observations for the monitoring works were recorded and summarized as follows:

Air Quality Monitoring
- The monitoring team recorded the observations around the monitoring stations within and outside of the site.
- The monitoring team recorded the temperature, air pressure and general weather condition on the monitoring day.

Noise Monitoring
- The monitoring team recorded the observations around the monitoring station, which might affect the results.
- Major noise sources were identified and recorded.

Water Quality Monitoring
- The monitoring team recorded the observations around the monitoring stations, which might affect the results.

7.3 Assessment of Environmental Monitoring Results

All monitoring results were audited against the Action and Limit levels and any exceedance would be validated.

No exceedance was recorded in water quality, air quality and noise monitoring in this reporting period.

The monitoring results in this reporting period were comparable with those of baseline month. Detailed discussions were given in Section 4, 5 and 6 of this Report.

7.4 Advice on the Solid and Liquid Waste Management Status

The Contractor usually disposed of non-inert waste, including general refuse and materials segregated from the existing stockpiles, to SENT landfill. Table 7.2 summarizes data on offsite waste disposal in this reporting period.

Table 7.2 Actual amounts of Waste generated in this reporting period

Waste Type	*Actual Amount*	*Disposal Locations*
Public Fill ('000m^3)	*0*	*TKO 137 Fill Bank*
C&D Waste ('000kg)	*30.52*	*SENT Landfill / Refuse Collection Point*
Chemical Waste (kg/L)	*0*	*Collected by licensed collector*

The Contractor should provide sufficient preventive measures during equipment maintenance works so as to avoid oil leakage on the ground. In the event of any oil leakage, the Contractor should clean up the polluted soil and handle all the materials used for this cleaning works as chemical waste.

Concrete bunding has erected outside the CEDD combined reception office and near the automatic wheel washing facilities for storing generator sets and oil drums. The drain outlet of all the bunded areas should be plugged properly. Besides, pre-cast drip trays were provided for oil drums at several areas, such as workshop and chemical storage area. The Contractor should collect and dispose of any stagnant water accumulated in the concrete bunding and drip trays and handle them as chemical waste.

The Contractor should use suitable containers with proper labels to store chemical wastes in accordance with Code of Practice on the Packaging, Labeling and Storage of Chemical Waste. The Contractor should also advise their workers of the proper procedures in handling the chemical waste. All the trip tickets for chemical waste disposal were properly kept in the site office.

The Contractor was reminded to increase the frequency of inspection and cleaning of the site drainage system, including permanent desilting chambers, desilting facilities, oil interceptor bypass tank, DP3 and DP4 and all the trapezoidal channels. Moreover, the Contractor should apply approved pesticides in the stagnant water ponds.

All the runoff from the parking area should be pumped to the desilting facilities and oil interceptors to remove suspended solids and oil & grease prior to discharge.

8.0 Status of Environmental Licensing and Permitting

All permits/licenses valid in this reporting period are summarized in Table 8.1.

Table 8.1 Summary of environmental licensing and permit status

Description	*Permit No.*	*Valid Period*		*Section*
		From	*To*	
Environmental Permit	*EP-134/2002/N*	*20/08/19*	*---*	▪ *Site clearance* ▪ *Construction of a temporary storm water system* ▪ *Stockpiling of 6 million m3 of public fill* ▪ *Setting up two barging points for transporting the stockpiled public fill by barges* ▪ *Setting up a temporary barging point at the existing Explosive Off-loading Barging Point for the month of May 2004 to December 2004 for transporting the stockpiled public fill by barge* ▪ *Construction of operation of a construction and Demolition Material Sorting Facility (C&DMSF)* ▪ *Setting up a Construction and Demolition Material Crushing Facility at the TKO Basin* ▪ *Remove the temporary fill bank*
Chemical Waste Producer	*5919-839-C4181-01*	*19/04/17*	*---*	▪ *Spent battery cell containing heavy metals and spent lubricating oil*
Effluent Discharge License	*WT00029178-2017*	*27/09/17*	*30/09/22*	▪ *Effluent, Surface Run-off, and all other wastewater discharges from screen and sedimentation tank*
Billing Account for Waste Disposal	*7027643*	*22/05/17*	*---*	*---*

Notification Pursuant to Section 3(1) of the Air Pollution Control (Construction Dust)	*415682*	*12/04/17*	---	---

9.0 ENVIRONMENTAL NON-CONFORMANCE

9.1 Summary of air quality, noise and marine water quality

No Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting period.

Since no documented complaints on noise issue were received in this reporting period, no Action Level exceedance was recorded. Besides, no exceedance in Limit Level was recorded according to the result from Day-time monitoring.
According to the summary of marine water monitoring results, no exceedance of Action and Limit levels was recorded for this reporting period.

9.2 Summary of Environmental Complaints

No complaints were received in this reporting period.

9.3 Summary of Notification of Summons and successful Prosecution

There was no notification of summons and successful prosecution respect to environmental issues registered in this reporting period.

10.0 IMPLEMENTATION STATUS

10.1 Implementation Status of Environmental Mitigation Measures

An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix I. Most of the necessary mitigation measures were implemented properly. Any deficiencies were noted in the remarks of the schedule.

10.2 Implementation Status of Event and Action Plan

Since no exceedance of Action and Limit level of air quality, noise and marine water monitoring results was recorded for this reporting period, no further action was required.

10.3 Implementation Status of Environmental Complaint, Notifications of Summons and Successful Prosecutions Handling

No complaints, notification of summon and successful prosecution was received in this reporting period.

A summary of environmental complaints, notifications of summons and successful prosecutions was given in Table 10.1 and further details of the complaint could be found in the Complaint Log (Appendix L).

Table 10.1 Summary of Environmental Complaints and Prosecutions

Complaints logged		*Summons served*		*Successful prosecution received*	
January 2020	*Cumulative*	*January 2020*	*Cumulative*	*January 2020*	*Cumulative*
0	*11*	*0*	*0*	*0*	*0*

11.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Impact monitoring of air quality, noise and water quality were carried out at designated locations in accordance with the EM&A Manual in this reporting period.

No Action and Limit level exceedance of 1-hour and 24-hr TSP monitoring was recorded in this reporting period.

Since no documented complaints on noise issue were received in this reporting period, no Action Level exceedance was recorded. Besides, no exceedance in Limit Level was recorded according to the result from Day-time monitoring.

According to the summary of marine water monitoring results, no exceedance of Action and Limit levels was recorded for this reporting period.

No complaints, prosecutions and notifications of summons were received in this reporting period.

According to the ET weekly site inspections carried out in this reporting period, the Contractor generally implemented sufficient dust mitigation measures, including operation of the mist spraying systems and automatic wheel washing facilities, dampening of haul roads and stockpiling areas.

Recommendations

According to the environmental site inspections performed in the reporting period, the following recommendations were provided:

Air Quality

- Ensure the frequency of water spraying on haul roads, unloading areas and stockpiles to be sufficient to suppress the dust sources;
- Provide proper maintenance for the powered mechanical equipment and barges to avoid emission of dark smoke;
- Provide water spraying onto the truckloads during inspection of fill material;
- Conduct road sweeping on all paved haul roads and public roads especially outside and near the site egress by the road sweeper. Undertake water spraying on stockpiling area by water bowser;
- Erect adequate speed limit signs to advise the truck drivers of the speed limit;
- Operate mist spraying systems and automatic water sprinklers in the Fill Bank;
- Implement the dust mitigation measures for the site activities;
- Designate proper haul roads to ensure effective water spraying; and
- Ensure all vehicles to be washed before leaving the site egress by provision, operation and maintenance of automatic wheel washing facilities.

Noise

- Conduct noisy activities at a farther location from the NSRs.

Water Quality

- Maintain the drainage system, including the trapezoidal channels, permanent desilting chambers, regularly;
- Operate and maintain the silt curtains regularly;
- Operate the cleaning vessel within the TKO Basin regularly;
- Clean up the fill material on the concrete pavement at BHA frequently; and
- Remove the stagnant water or provide approved pesticides for the stagnant water in the permanent desilting chambers, if any.

Landscape and Visual

- Provide hydroseeding on the exposed slopes, on which the final profile has been formed;
- Erect all the site hoarding/chaining fences in accordance with agreed design at proper location;
- Maintain the hydroseeded slopes in accordance with the Landscape Plan.

Chemical and Waste Management

- Remove waste materials from the site to avoid accumulation regularly;
- Handle and store chemical wastes properly;
- Remove unwanted material in the existing stockpiles and avoid further dumping of such material;
- Provide and maintain sufficient drip trays for diesel drums, chemical containers, chemical waste storage drums and diesel operated generator set;
- Maintain mesh screen on top of the additional drainage to avoid improper dumping of rubbish;
- Maintain good housekeeping at the workshop area;
- Ensure sufficient tarpaulin sheets are provided to cover drip trays; and
- Avoid soil being polluted during oil filling and equipment maintenance; hence, properly remove and store the contaminated soil, if any

12.0 FUTURE KEY ISSUES

12.1 Work Programme for the Coming Month

1. Operation of the 2 public fill reception facilities;
2. Delivery of public fill to Taishan;
3. Operation of dewatering plant and expanded dewatering plant at TKOFB;
4. Operation of bentonite pool (emergency only) at TKOFB;
5. Concrete block breaking work;
6. Operation of Crushing plant at TKOFB;;
7. Removal Works of Public Fill at Portion A at TKOFB;
8. Re-construction of sampling platforms at TKOFB;
9. Replacement of Y40 rebar with Y50 rebar at the existing wheel washing bay at TKOFB;
10. Operation of Additional Filter Press at expanded dewatering plant at TKOFB;
11. Operation of Additional Crushing Plant at TKOFB;
12. Carrying out preliminary sorting of Public Fill for 3RS project;
13. Upgrade the Bituminous Access Road near Portion A10 of TKOFB;
14. Construction of MIC, Green Wall and Carpark;
15. Construction and Maintenance of the Drainage Systems along the Concrete Paved Road at TKOFB to Temporary Construction Waste Sorting Facility

12.2 Key Issues for the Coming Month

Key issues to be considered in the coming month include:

- *Chemical and waste management;*
- *Treatment of runoff and wastewater prior to discharge;*
- *Dust generated from loading and unloading activities; and*
- *Dust generated from dump trucks traffic.*

Mitigation measures to be required in the coming month:

Air Quality Impact

- To provide adequate water spraying on haul roads and working platform;
- To operate and maintain automatic wheel washing facilities properly;
- To dampen the fill material prior to unloading or movement;
- To provide road sweeping on haul road near site egress and public roads outside site egress;
- To ensure implementation of the dust mitigation measures for the site activities;
- To maintain proper operation of the mist spraying system;
- To provide proper maintenance for vehicles and machines on site; and
- To investigate any other dust sources around the air sensitive receivers

Noise

- To switch off equipment if not in use;
- To operate silent equipment;
- To identify the noise sources inside and outside of the site;
- To follow up any exceedance caused by the Fill Bank operation; and
- To re-schedule the work activities in the event of valid noise exceedance.

Water Quality Impact

- To maintain the drainage system in the Fill Bank;
- To ensure the cleanliness of oil interceptor bypass tanks and all the drainage channels;
- To maintain the existing silt trap to ensure good efficiency of wheel wash facilities;
- To repair, inspect and maintain the silt curtains regularly;
- To provide covers for the drip trays to avoid stagnant water pond due to rainfall;
- To deploy a cleaning vessel to remove floating rubbish in the TKO Basin;
- To clean up the concrete paved area at Portion I every night to avoid fill materials from being washed into the sea; and
- To avoid any stagnant water or provide insecticide to avoid mosquito breeding in the Fill Bank.

Chemical and Waste Management

- To remove waste from the site regularly;
- To properly store and handle chemical wastes on site;
- To implement trip ticket system for all the imported public fill and general refuse disposal;
- To provide and manage sufficiently sized drip trays for diesel drums or chemical containers;

- To remove existing unwanted material in the stockpiles and avoid improper disposal at the Fill Bank through inspection of imported truckloads;
- To maintain proper housekeeping at the workshop area;
- To remove the oil stains in the event of leakage and handle all materials using for this cleaning works as chemical waste;
- To maintain mesh screen on top of the additional drainage, DP3 opening to avoid improper dumping of rubbish into this channel; and
- To identify C&D material by packaging, labeling, storage, transportation and disposal in accordance with statutory regulations.

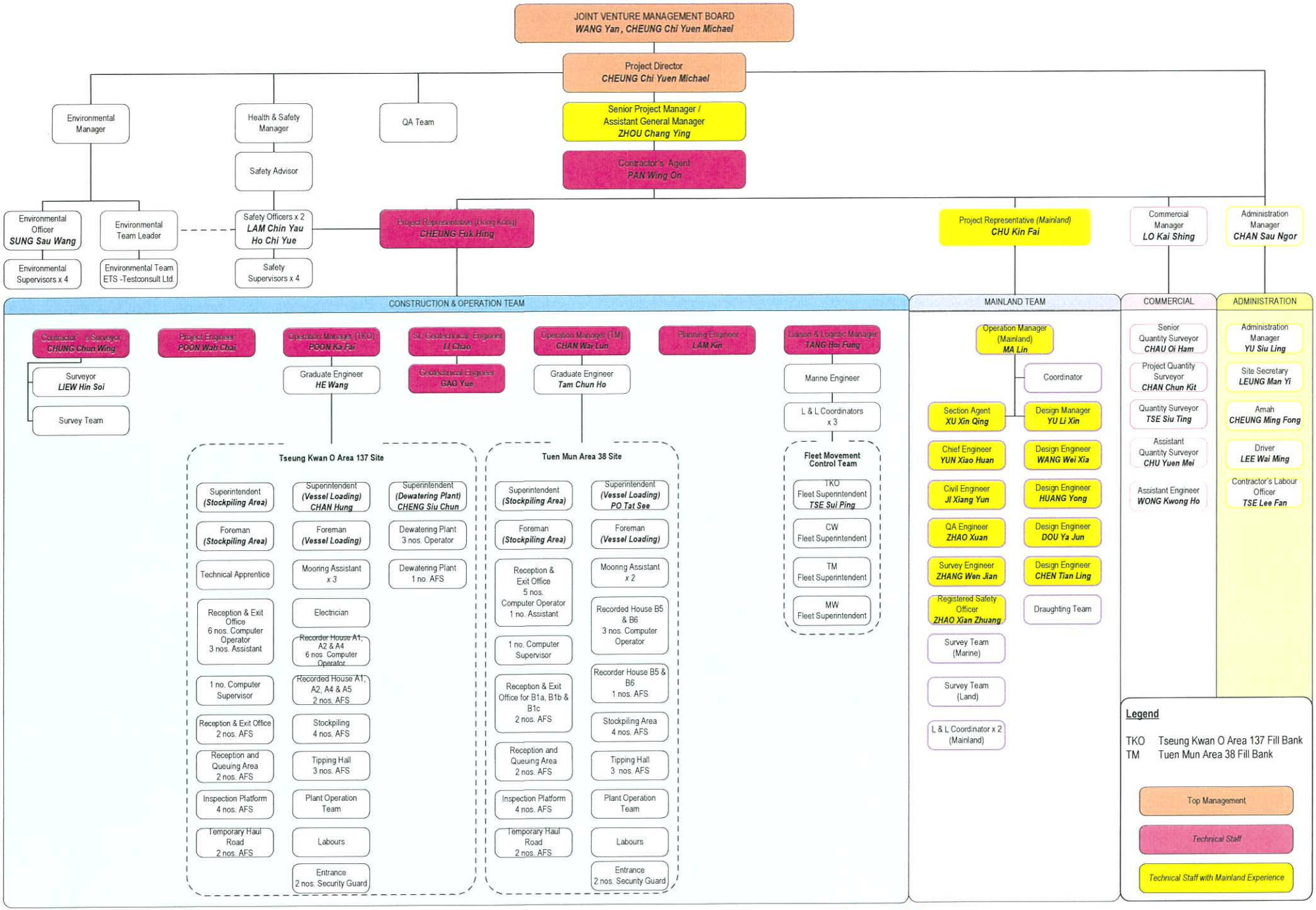
12.3 Monitoring Schedule for the Coming Month

The proposed EM&A program of the coming month is attached in Appendix K.

- END OF REPORT –

Appendix A

Project Organization Chart


JOINT VENTURE MANAGEMENT BOARD
WANG Yan , CHEUNG Chi Yuen Michael
Project Director
CHEUNG Chi Yuen Michael
Senior Project Manager / Assistant General Manager
ZHOU Chang Ying
Contractor's Agent
PAN Wing On
Environmental Manager
Health & Safety Manager
QA Team
Safety Advisor
Environmental Officer
SUNG Sau Wang
Environmental Team Leader
Safety Officers x 2
LAM Chin Yau
Ho Chi Yue
Project Representative (Hong Kong)
CHEUNG Fuk Hing
Project Representative (Mainland)
CHU Kin Fai
Commercial Manager
LO Kai Shing
Administration Manager
CHAN Sau Ngor
Environmental Supervisors x 4
Environmental Team ETS -Testconsult Ltd.
Safety Supervisors x 4
CONSTRUCTION & OPERATION TEAM
MAINLAND TEAM
COMMERCIAL
ADMINISTRATION
Contractor's Surveyor
CHUNG Chun Wing
Project Engineer
POON Wah Chai
Operation Manager (TKO)
POON Ka Fai
Sr. Geotechnical Engineer
LI Chao
Operation Manager (TM)
CHAN War Lun
Planning Engineer
LAM Kin
Liaison & Logistic Manager
TANG Hoi Fung
Surveyor
LIEW Hin Soi
Survey Team
Graduate Engineer
HE Wang
Geotechnical Engineer
GAO Yue
Graduate Engineer
Tam Chun Ho
Marine Engineer
L & L Coordinators x 3
Tseung Kwan O Area 137 Site
Superintendent (Stockpiling Area)
Foreman (Stockpiling Area)
Technical Apprentice
Reception & Exit Office 6 nos. Computer Operator 3 nos. Assistant
1 no. Computer Supervisor
Reception & Exit Office 2 nos. AFS
Reception and Queuing Area 2 nos. AFS
Inspection Platform 4 nos. AFS
Temporary Haul Road 2 nos. AFS
Superintendent (Vessel Loading) CHAN Hung
Foreman (Vessel Loading)
Mooring Assistant x 3
Electrician
Recorder House A1, A2 & A4 6 nos. Computer Operator
Recorded House A1, A2, A4 & A5 2 nos. AFS
Stockpiling 4 nos. AFS
Tipping Hall 3 nos. AFS
Plant Operation Team
Labours
Entrance 2 nos. Security Guard
Superintendent (Dewatering Plant) CHENG Siu Chun
Dewatering Plant 3 nos. Operator
Dewatering Plant 1 no. AFS
Tuen Mun Area 38 Site
Superintendent (Stockpiling Area)
Foreman (Stockpiling Area)
Reception & Exit Office 5 nos. Computer Operator 1 no. Assistant
1 no. Computer Supervisor
Reception & Exit Office for B1a, B1b & B1c 2 nos. AFS
Reception and Queuing Area 2 nos. AFS
Inspection Platform 4 nos. AFS
Temporary Haul Road 2 nos. AFS
Superintendent (Vessel Loading) PO Tat See
Foreman (Vessel Loading)
Mooring Assistant x 2
Recorded House B5 & B6 3 nos. Computer Operator
Recorder House B5 & B6 1 nos. AFS
Stockpiling Area 4 nos. AFS
Tipping Hall 3 nos. AFS
Plant Operation Team
Labours
Entrance 2 nos. Security Guard
Fleet Movement Control Team
TKO Fleet Superintendent TSE Sui Ping
CW Fleet Superintendent
TM Fleet Superintendent
MW Fleet Superintendent
Operation Manager (Mainland) MA Lin
Coordinator
Section Agent XU Xin Qing
Design Manager YU Li Xin
Chief Engineer YUN Xiao Huan
Design Engineer WANG Wei Xia
Civil Engineer JI Xiang Yun
Design Engineer HUANG Yong
QA Engineer ZHAO Xuan
Design Engineer DOU Ya Jun
Survey Engineer ZHANG Wen Jian
Design Engineer CHEN Tian Ling
Registered Safety Officer ZHAO Xian Zhuang
Draughting Team
Survey Team (Marine)
Survey Team (Land)
L & L Coordinator x 2 (Mainland)
Senior Quantity Surveyor CHAU Oi Ham
Project Quantity Surveyor CHAN Chun Kit
Quantity Surveyor TSE Siu Ting
Assistant Quantity Surveyor CHU Yuen Mei
Assistant Engineer WONG Kwong Ho
Administration Manager YU Siu Ling
Site Secretary LEUNG Man Yi
Amah CHEUNG Ming Fong
Driver LEE Wai Ming
Contractor's Labour Officer TSE Lee Fan
Legend
TKO Tseung Kwan O Area 137 Fill Bank
TM Tuen Mun Area 38 Fill Bank
Top Management
Technical Staff
Technical Staff with Mainland Experience

Appendix B1

Calibration Certificates for Impact Air Quality Monitoring Equipment

東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.™

8/F Block B,
Veristrong Industrial Centre,
34-36 Au Pui Wan Street,
Fo Tan, Hong Kong

T: +852 2695 8318
F: +852 2695 3944
E: etl@ets-testconsult.com
W: www.ets-testconsult.com

Calibration Report
of
High Volume Air Sampler

Manufacturer : Graseby 105 Date of Calibration : 20 December 2019

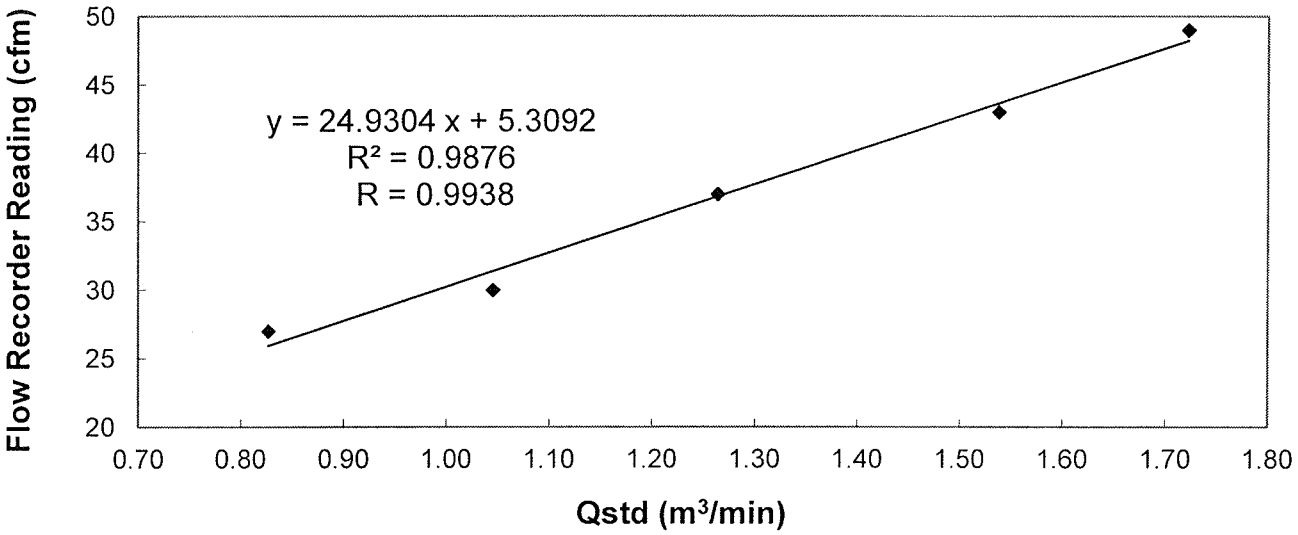
Serial No. : 9795 (ET / EA / 003 / 18) Calibration Due Date : 19 February 2020

Method : Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual

Results :

Flow recorder reading (cfm)	49	43	37	30	27
Qstd (Actual flow rate, m^3/min)	1.72	1.54	1.26	1.05	0.83
Pressure : 765.81 mm Hg		Temp. : 292 K			

Sampler 9795 Calibration Curve
Site: Tseung Kwan O 137 (TKO-A1)



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies* / ~~does not comply~~* with the specified requirements and is deemed acceptable*/ ~~unacceptable~~* for use.

Calibrated by : _____
LIAO, Yun Chao
(Technician)

Checked by : _____
LAU, Chi Leung
(Environmental Team Leader)

- END OF REPORT -

東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.™

8/F Block B,
Veristrong Industrial Centre,
34-36 Au Pui Wan Street,
Fo Tan, Hong Kong

T: +852 2695 8318
F: +852 2695 3944
E: etl@ets-testconsult.com
W: www.ets-testconsult.com

Calibration Report
of
High Volume Air Sampler

Manufacturer : Andersen G1051 — Date of Calibration : 20 December 2019

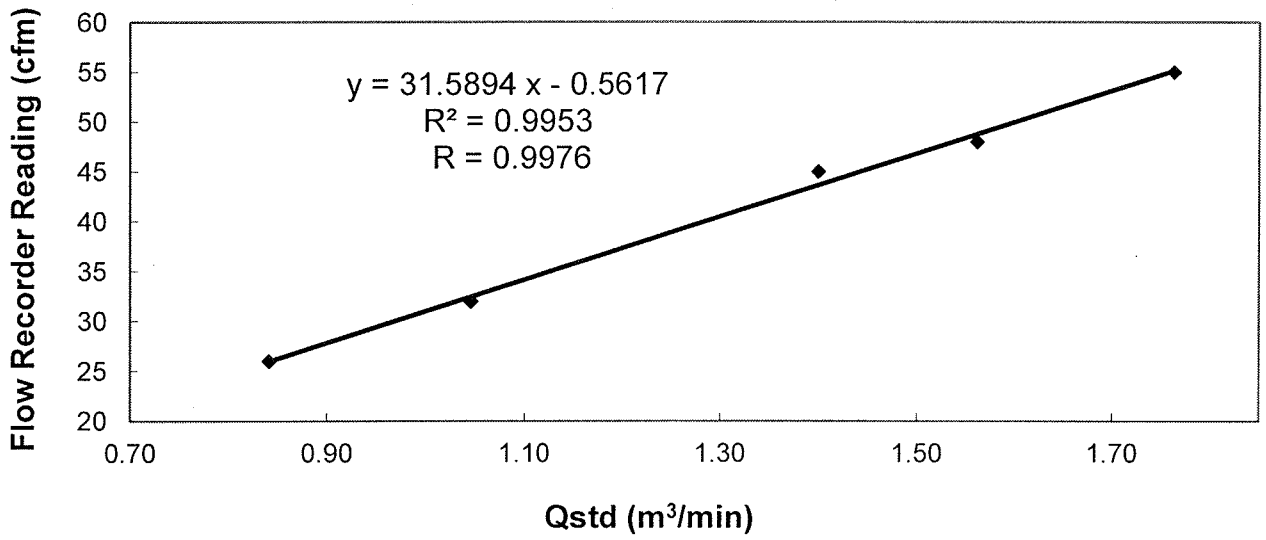
Serial No. : 1176 (ET / EA / 003 / 05) — Calibration Due Date : 19 February 2020

Method : Based on Operations Manual for the 5-point calibration using standard calibration kit manufactured by Tisch TE-5025 A

Results :

Flow recorder reading (cfm)	55	48	45	32	26
Qstd (Actual flow rate, m^3/min)	1.76	1.56	1.40	1.05	0.84
Pressure : 765.81 mm Hg		Temp. : 292 K			

Sampler 1176 Calibration Curve
Site: Tseung Kwan O 137 (TKO-A2a)



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies* / ~~does not comply~~* with the specified requirements and is deemed acceptable* / ~~unacceptable~~ * for use.

Calibrated by : _____
LIAO, Yun Chao
(Technician)

Checked by : _____
LAU, Chi Leung
(Environmental Team Leader)

- END OF REPORT -

TISCH Environmental

RECALIBRATION DUE DATE:
March 15, 2020

Certificate of Calibration

Calibration Certification Information				
Cal. Date:	March 15, 2019	**Rootsmeter S/N:** 438320	**Ta:** 293	°K
Operator:	Jim Tisch		**Pa:** 760.7	mm Hg
Calibration Model #:	TE-5025A	**Calibrator S/N:** **3612**		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4500	3.2	2.00
2	3	4	1	1.0300	6.3	4.00
3	5	6	1	0.9220	7.8	5.00
4	7	8	1	0.8780	8.7	5.50
5	9	10	1	0.7220	12.6	8.00

Data Tabulation

Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H\left(Ta/Pa\right)}$ (y-axis)
1.0138	0.6991	1.4269	0.9958	0.6868	0.8777
1.0096	0.9802	2.0180	0.9917	0.9628	1.2412
1.0076	1.0928	2.2561	0.9897	1.0735	1.3877
1.0064	1.1462	2.3663	0.9886	1.1259	1.4555
1.0012	1.3867	2.8538	0.9834	1.3621	1.7553
QSTD	**m=**	**2.07834**	**QA**	**m=**	**1.30142**
	b=	**-0.02094**		**b=**	**-0.01288**
	r=	**0.99994**		**r=**	**0.99994**

Calculations

Vstd=	ΔVol((Pa-ΔP)/Pstd)(Tstd/Ta)	**Va=**	ΔVol((Pa-ΔP)/Pa)
Qstd=	Vstd/ΔTime	**Qa=**	Va/ΔTime

For subsequent flow rate calculations:

Qstd= $1/m\left(\left(\sqrt{\Delta H\left(\frac{Pa}{Pstd}\right)\left(\frac{Tstd}{Ta}\right)}\right)-b\right)$

Qa= $1/m\left(\left(\sqrt{\Delta H\left(Ta/Pa\right)}\right)-b\right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH: calibrator manometer reading (in H2O)	
ΔP: rootsmeter manometer reading (mm Hg)	
Ta: actual absolute temperature (°K)	
Pa: actual barometric pressure (mm Hg)	
b: intercept	
m: slope	

RECALIBRATION

US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30

Tisch Environmental, Inc.
145 South Miami Avenue
Village of Cleves, OH 45002

www.tisch-env.com
TOLL FREE: (877)263-7610
FAX: (513)467-9009

Appendix B2

Impact Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-A1

Location : Site Egress

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final	
05/01/2020	08:30	06/01/2020	08:30	21317.74	21341.74	24.00	1.1107	1.1107	1.1107	2.7258	2.9081	114
11/01/2020	08:00	12/01/2020	08:00	21344.74	21368.74	24.00	1.1508	1.1508	1.1508	2.7432	2.9006	95
17/01/2020	15:20	18/01/2020	15:20	21371.74	21395.74	24.00	1.1107	1.1107	1.1107	2.7453	2.9436	124
23/01/2020	08:00	24/01/2020	08:00	21398.74	21422.74	24.00	1.1107	1.1107	1.1107	2.7381	2.9236	116
29/01/2020	09:32	30/01/2020	09:32	21425.74	21449.74	24.00	1.1508	1.1508	1.1508	2.7428	2.9135	103

Monitoring Station : TKO-A2a

Location : CREO

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final	
05/01/2020	08:30	06/01/2020	08:30	23411.61	23435.61	24.00	1.0624	1.0624	1.0624	2.7301	2.8846	101
11/01/2020	08:00	12/01/2020	08:00	23438.61	23462.61	24.00	1.0941	1.0941	1.0941	2.7370	2.8662	82
17/01/2020	15:30	18/01/2020	15:30	23465.61	23489.61	24.00	1.0624	1.0624	1.0624	2.7368	2.9020	108
23/01/2020	08:00	24/01/2020	08:00	23492.61	23516.61	24.00	1.0308	1.0308	1.0308	2.7452	2.8996	104
29/01/2020	09:45	30/01/2020	09:45	23519.61	23543.61	24.00	1.0624	1.0624	1.0624	2.7317	2.8648	87

Summary of 1-hr TSP Monitoring Results

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-A1

Location : Site Egres Site Egress

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final	
03/01/2020	09:42	03/01/2020	10:42	21314.74	21315.74	1.00	1.0706	1.0706	1.0706	2.7316	2.7453	213
03/01/2020	10:44	03/01/2020	11:44	21315.74	21316.74	1.00	1.0706	1.0706	1.0706	2.7354	2.7499	226
03/01/2020	13:00	03/01/2020	14:00	21316.74	21317.74	1.00	1.0706	1.0706	1.0706	2.7423	2.7555	205
06/01/2020	08:55	06/01/2020	09:55	21341.74	21342.74	1.00	1.1508	1.1508	1.1508	2.7354	2.7481	184
08/01/2020	13:00	08/01/2020	14:00	21342.74	21343.74	1.00	1.1508	1.1508	1.1508	2.7291	2.7476	268
10/01/2020	10:40	10/01/2020	11:40	21343.74	21344.74	1.00	1.1508	1.1508	1.1508	2.7432	2.7603	248
13/01/2020	09:00	13/01/2020	10:00	21368.74	21369.74	1.00	1.1107	1.1107	1.1107	2.7348	2.7446	147
13/01/2020	10:22	13/01/2020	11:22	21369.74	21370.74	1.00	1.1107	1.1107	1.1107	2.7462	2.7566	156
15/01/2020	16:32	15/01/2020	17:32	21370.74	21371.74	1.00	1.1107	1.1107	1.1107	2.7233	2.7356	185
20/01/2020	09:16	20/01/2020	10:16	21395.74	21396.74	1.00	1.0706	1.0706	1.0706	2.7414	2.7546	205
20/01/2020	13:00	20/01/2020	14:00	21396.74	21397.74	1.00	1.0706	1.0706	1.0706	2.7466	2.7593	198
22/01/2020	13:00	22/01/2020	14:00	21397.74	21398.74	1.00	1.0706	1.0706	1.0706	2.7418	2.7581	254
24/01/2020	08:16	24/01/2020	09:16	21422.74	21423.74	1.00	1.1107	1.1107	1.1107	2.7236	2.7417	272
24/01/2020	09:50	24/01/2020	10:50	21423.74	21424.74	1.00	1.1107	1.1107	1.1107	2.7248	2.7422	261
24/01/2020	13:00	24/01/2020	14:00	21424.74	21425.74	1.00	1.1107	1.1107	1.1107	2.7335	2.7462	191
31/01/2020	14:10	31/01/2020	15:10	21449.74	21450.74	1.00	1.1107	1.1107	1.1107	2.7436	2.7547	167
31/01/2020	15:15	31/01/2020	16:15	21450.74	21451.74	1.00	1.1107	1.1107	1.1107	2.7381	2.7486	158

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-A2a

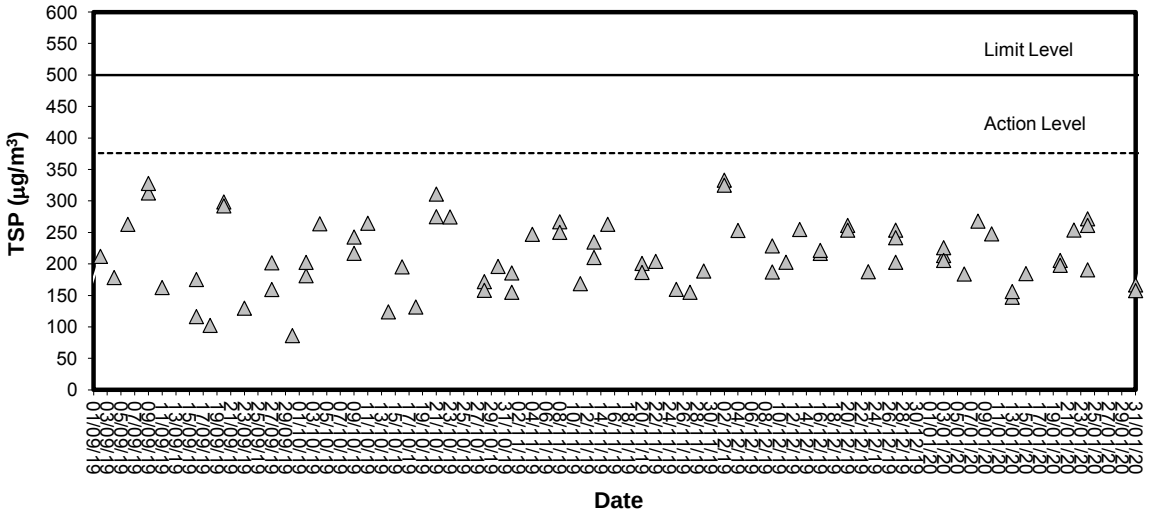
Location : CREO

Start		Finish		Elapse Time		Sampling Time (hrs)	Flow Rate (m^3/min.)		Average (m^3/min.)	Filter Weight (g)		Conc. ($\mu g/m^3$)
Date	Time	Date	Time	Initial	Final		Initial	Final		Initial	Final	
03/01/2020	09:46	03/01/2020	10:46	23408.61	23409.61	1.00	1.0624	1.0624	1.0624	2.7408	2.7527	187
03/01/2020	10:47	03/01/2020	11:47	23409.61	23410.61	1.00	1.0624	1.0624	1.0624	2.7329	2.7444	180
03/01/2020	13:00	03/01/2020	14:00	23410.61	23411.61	1.00	1.0624	1.0624	1.0624	2.7419	2.7543	195
06/01/2020	09:00	06/01/2020	10:00	23435.61	23436.61	1.00	1.0624	1.0624	1.0624	2.7329	2.7432	162
08/01/2020	13:05	08/01/2020	14:05	23436.61	23437.61	1.00	1.0941	1.0941	1.0941	2.7355	2.7511	238
10/01/2020	10:50	10/01/2020	11:50	23437.61	23438.61	1.00	1.0941	1.0941	1.0941	2.7370	2.7499	197
13/01/2020	09:10	13/01/2020	10:10	23462.61	23463.61	1.00	1.0941	1.0941	1.0941	2.7265	2.7338	111
13/01/2020	10:30	13/01/2020	11:30	23463.61	23464.61	1.00	1.0941	1.0941	1.0941	2.7395	2.7483	134
15/01/2020	16:42	15/01/2020	17:42	23464.61	23465.61	1.00	1.0624	1.0624	1.0624	2.7326	2.7418	144
20/01/2020	09:23	20/01/2020	10:23	23489.61	23490.61	1.00	1.0308	1.0308	1.0308	2.7367	2.7482	186
20/01/2020	13:00	20/01/2020	14:00	23490.61	23491.61	1.00	1.0308	1.0308	1.0308	2.7369	2.7468	160
22/01/2020	13:00	22/01/2020	14:00	23491.61	23492.61	1.00	1.0308	1.0308	1.0308	2.7462	2.7602	226
24/01/2020	08:22	24/01/2020	09:22	23516.61	23517.61	1.00	1.0308	1.0308	1.0308	2.7311	2.7468	254
24/01/2020	09:53	24/01/2020	10:53	23517.61	23518.61	1.00	1.0308	1.0308	1.0308	2.7296	2.7440	233
24/01/2020	13:00	24/01/2020	14:00	23518.61	23519.61	1.00	1.0308	1.0308	1.0308	2.7248	2.7342	152
31/01/2020	14:30	31/01/2020	15:30	23543.61	23544.61	1.00	1.0624	1.0624	1.0624	2.7355	2.7428	115
31/01/2020	15:35	31/01/2020	16:35	23544.61	23545.61	1.00	1.0624	1.0624	1.0624	2.7415	2.7493	122

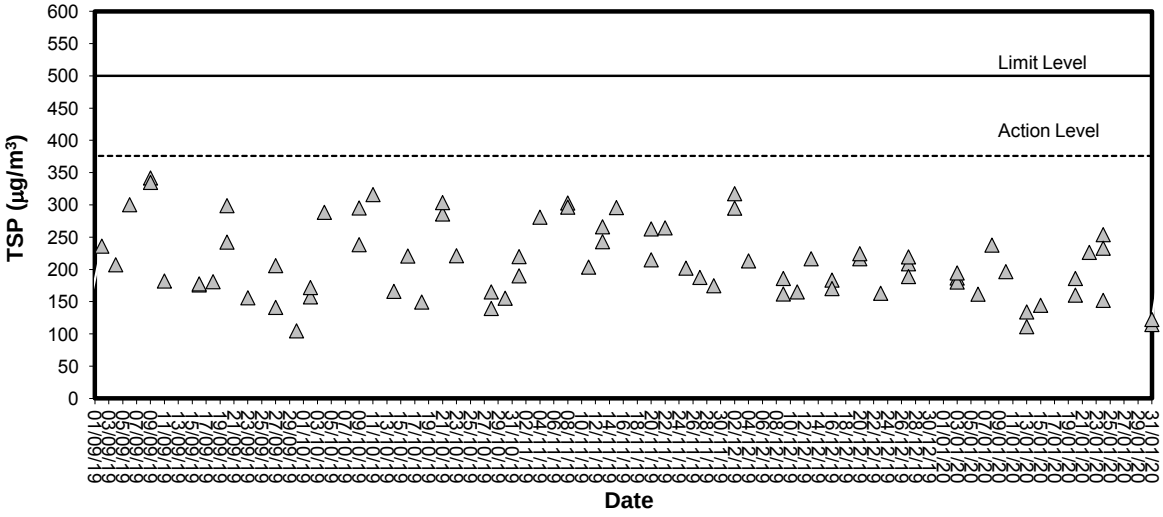
Appendix B3

Graphical Plots of Impact Air Quality Monitoring Data

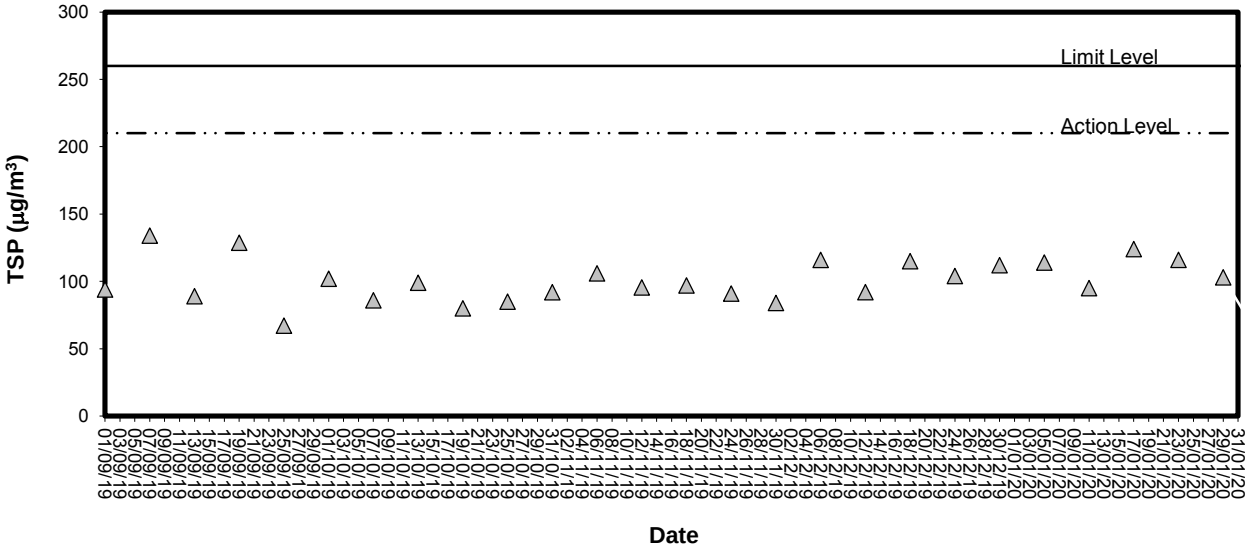
1-hour TSP level at TKO-A1



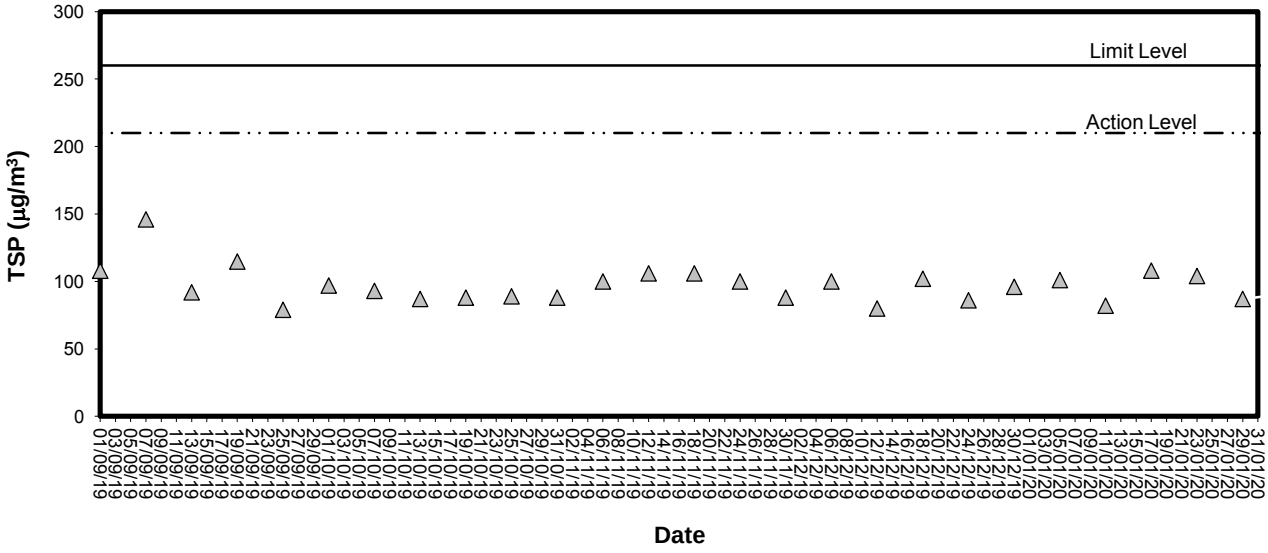
1-hour TSP level at TKO-A2a



24-hour TSP level at TKO-A1



24-hour TSP level at TKO-A2a



Appendix C1

Calibration Certificates for Impact Noise Monitoring Equipment

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **912250** Page 1 of 3 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q94911 **Date of receipt :** 10-Dec-19

Item Tested

Description : Precision Integrating Sound Level Meter

Manufacturer : Rion **I.D.** : ET/EN/003/12

Model : NL-31 **Serial No.** : 00773032

Test Conditions

Date of Test : 16-Dec-19 **Supply Voltage** : --

Ambient Temperature : (23 ± 3)°C **Relative Humidity :** (50 ± 25) %

Test Specifications

Calibration check.

Ref. Document/Procedure : Z01, IEC 61672.

Test Results

All results were within the IEC 61672 Type 1 or manufacturer's specification

The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S017	Multi-Function Generator	C190926	SCL-HKSAR
S240	Sound Level Calibrator	904042	NIM-PRC & SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Elva Chong

Approved by : Kin Wong

Date: 16-Dec-19

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Results :

Acoustical signal test

1. **Self-generated noise:** 17.3 dBA (Mfr's Spec ≤ 20 dBA)

2. **Reference Sound Pressure Level**

UUT Setting			Applied Value (dB)	UUT Reading (dB)
Level Range (dB)	Weight	Response		
20 – 100	L_A	Fast	94.0	94.0
		Slow		94.0
	L_C	Fast		94.0
	Lp	Fast		94.0
30 – 120	L_A	Fast	94.0	93.9
		Slow		93.9
	L_C	Fast		93.9
	Lp	Fast		94.0
30 – 120	L_A	Fast	114.0	113.9
		Slow		113.9
	L_C	Fast		113.9
	Lp	Fast		114.0

IEC 61672 Type 1 Spec. : ± 1.1 dB
Uncertainty : ± 0.1 dB

Electrical signal tests

3. **Electrical signal tests of frequency weightings** (A weighting)

Frequency	Attenuation (dB)	IEC 61672 Type 1 Spec.
31.5 Hz	- 39.6	- 39.4 dB, ± 2 dB
63 Hz	- 26.4	- 26.2 dB, ± 1.5 dB
125 Hz	- 16.3	- 16.1 dB, ± 1.5 dB
250 Hz	- 8.7	- 8.6 dB, ± 1 dB
500 Hz	- 3.3	- 3.2 dB, ± 1.4 dB
1 kHz	0.0 (Ref.)	0 dB, ± 1.1 dB
2 kHz	+ 1.2	+ 1.2 dB, ± 1.6 dB
4 kHz	+ 1.1	+ 1.0 dB, ± 1.6 dB
8 kHz	- 1.2	- 1.1 dB, + 2.1 dB ~ -3.1 dB
16 kHz	- 6.7	- 6.6 dB, + 3.5 dB ~ - 17.0 dB

Uncertainty : ± 0.1 dB

Calibration Certificate

4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
A	94.0	94.0 (Ref.)	- -	± 0.4 dB
C	94.0	94.0	0.0	
P	94.0	94.0	0.0	

4.2 Time Weighting (A-weighted)

UUT Setting	Applied Value (dB)	UUT Reading (dB)	Difference (dB)	IEC 61672 Type 1 Spec.
Fast	94.0	94.0 (Ref.)	- -	± 0.3 dB
Slow	94.0	93.9	-0.1	
Time-averaging	94.0	94.0	0.0	

Uncertainty : ± 0.1 dB

Remarks : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 005 hPa.
4. Preamplifier model : NH-21 , S/N : 25043
5. The UUT was adjusted with the laboratory's sound calibrator at the reference sound pressure level before the calibration.

--------- END ---------

Hong Kong Calibration Ltd.
香港校正有限公司

Calibration Certificate

Certificate No. **910146** Page 1 of 2 Pages

Customer : ETS-Testconsult Limited

Address : 8/F., Block B, Veristrong Industrial Centre, 34-36 Au Pui Wan St., Fotan, Hong Kong.

Order No. : Q94052 **Date of receipt :** 11-Oct-19

Item Tested

Description : Sound Level Calibrator
Manufacturer : Rion
Model : NC-73
I.D. : ET/EN/002/01
Serial No. : 10196943

Test Conditions

Date of Test : 18-Oct-19
Ambient Temperature : (23 ± 3)°C
Supply Voltage : --
Relative Humidity : (50 ± 25) %

Test Specifications

Calibration check.
Ref. Document/Procedure : F21, Z02.

Test Results

All results were within the manufacturer's specification.
The results are shown in the attached page(s).

Main Test equipment used:

Equipment No.	Description	Cert. No.	Traceable to
S014	Spectrum Analyzer	906710	NIM-PRC & SCL-HKSAR
S240	Sound Level Calibrator	904042	NIM-PRC & SCL-HKSAR
S041	Universal Counter	902477	SCL-HKSAR
S206	Sound Level Meter	904050	SCL-HKSAR

The values given in this Calibration Certificate only relate to the values measured at the time of the test and any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement. Hong Kong Calibration Ltd. shall not be liable for any loss or damage resulting from the use of the equipment.

The test equipment used for calibration are traceable to International System of Units (SI), or by reference to a natural constant.
The test results apply to the above Unit-Under-Test only

Calibrated by : Kin Wong

Approved by : Alan Chu

Date: 18-Oct-19

This Certificate is issued by:
Hong Kong Calibration Ltd.
Unit 8B, 24/F., Well Fung Industrial Centre, No. 58-76, Ta Chuen Ping Street,Kwai Chung, NT,Hong Kong.
Tel: 2425 8801 Fax: 2425 8646

Calibration Certificate

Certificate No. 910146

Results :

1. Level Accuracy (at 1 kHz)

UUT Nominal Value	Measured Value	Mfr's Spec.
94 dB	93.8 dB	± 1 dB

Uncertainty : ± 0.2 dB

2. Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's Spec.
1 kHz	0.983 kHz	± 2 %

Uncertainty : ± 0.1 %

3. Level Stability : 0.0 dB
Uncertainty : ± 0.01 dB

4. Total Harmonic Distortion : < 0.3 %
Mfr's Spec. : < 3 %
Uncertainty : ± 2.3 % of reading

Remark : 1. UUT : Unit-Under-Test
2. The uncertainty claimed is for a confidence probability of not less than 95%.
3. Atmospheric Pressure : 1 004 hPa.

---------- END ----------

Appendix C2

Impact Noise Monitoring Results

Day-time Noise Monitoring

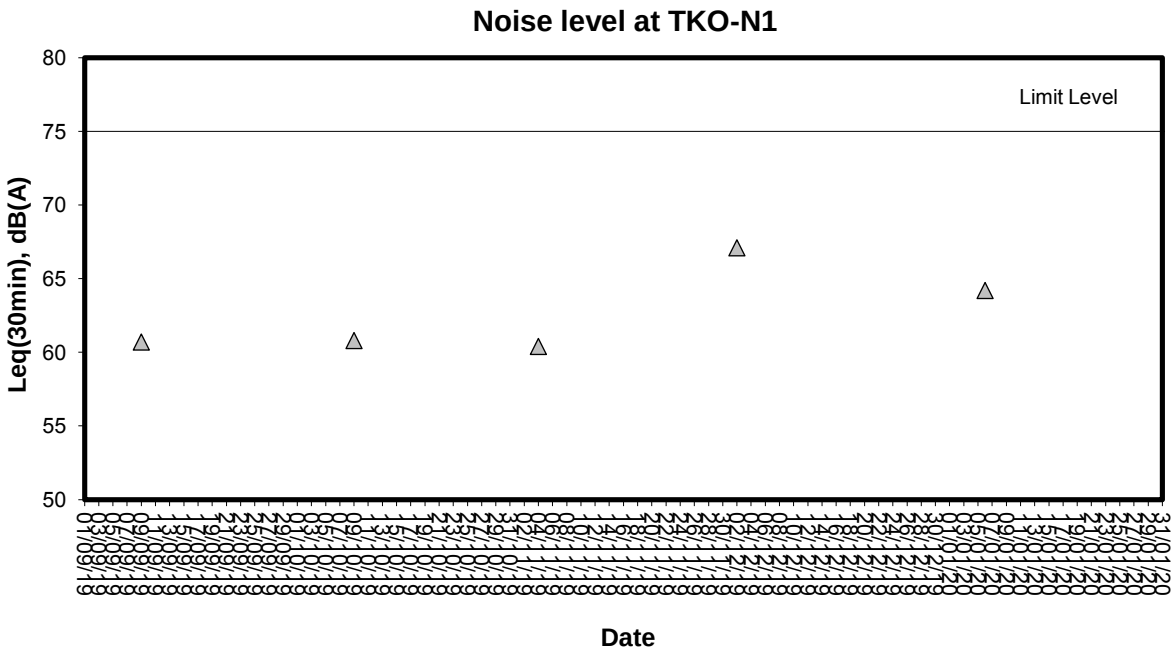
Monitoring Location: TKO-N1 (Site Egress)

Date	Start Sampling Time (hh:mm)	Noise Level dB (A)			Wind Speed (m/s)	Weather Condition
		$L_{eq(30min)}$	L_{10}	L_{90}		
06/01/2020	09:05	64.2	66.8	60.3	0.2	Fine

Appendix C3

Graphical Plots of Impact Noise Monitoring Data

Noise Monitoring (Day-time)



Appendix D1

Calibration Certificates for Impact Marine Water Quality Monitoring Equipments

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Form E/CE/R/24 Issue 1 (1/1) [01/18]

Calibration Report of Dissolved Oxygen Meter (*In situ* Measurement)

Equipment Ref. No. :	ET/EW/008/006	Manufacturer :	YSI
Model No. :	Pro 2030	Serial No. :	12A100554
Calibration Date :	3/12/2019	Calibration Due Date :	2/3/2020

Temperature Verification by Reference Thermometer (ET/0521/028)

	Temperature Reading (°C)	Correction (°C)	Corrected Temperature (°C)	Difference (°C)
Reference Thermometer	20.2	0.0	20.2	-0.1
DO Meter	20.1	0.0	20.1	

Criteria: Difference between corrected temperature from DO meter and reference thermometer : < ± 0.5 °C

Zero Point Checking

DO meter reading (mg/L)	0.03

Criteria: Zero checking: 0.0 mg/L

Linearity Checking of Dissolved Oxygen Content by APHA 19ed 4500-O G

Purging time, min	Expected DO value (mg/L) (ET/0510/012)	DO meter reading (mg/L)	Difference of DO Content (mg/L)
2	6.33	6.25	0.08
5	4.12	4.22	0.10
10	1.57	1.71	0.14

Criteria: Difference between DO meter reading and expected DO value: < ±0.30 mg/L

Salinity Checking by APHA 19ed 2520 B

	Expected Salinity (ppt)	DO meter reading (ppt)
Reagent No. of NaCl (10 ppt): CPE/012/4.7/005/05	10	9.5
Reagent No. of NaCl (30 ppt): CPE/012/4.8/005/05	30	28.8

Criteria: Difference between DO meter reading and expected Salinity: ±10.0 %

The equipment complies [#] / ~~does not comply~~ [#] with the specified requirements and is deemed acceptable [#] / ~~unacceptable~~ [#] for use.

[#] Delete as appropriate

Calibrated by : _____ Approved by : _____

CPE/024/W

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Performance Check of Turbidity Meter

Equipment Ref. No. : ET/0505/021 Manufacturer : HACH

Model No. : 2100Q Serial No. : 17020C056013

Date of Calibration : 25/10/2019 Due Date : 24/1/2020

Theoretical Value of Turbidity Standard (NTU)	Measured Value (NTU)	Difference % *
20	20.6	3.0%
100	104	4.0%
800	825	3.1%

(*) Difference = (Measured Value – Theoretical Value) / Theoretical Value x 100

Acceptance Criteria

Difference : -5 % to 5 %

The turbidity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Prepared by : _____ Checked by : _____

Performance Check of Turbidity Meter

Equipment Ref. No. : ET/0505/021 Manufacturer : HACH

Model No. : 2100Q Serial No. : 17020C056013

Date of Calibration : 25/1/20 Due Date : 24/4/2020

Theoretical Value of Turbidity Standard (NTU)	Measured Value (NTU)	Difference % *
20	20.6	3.0%
100	105	5.0%
800	791	1.1%

(*) Difference = (Measured Value – Theoretical Value) / Theoretical Value x 100

Acceptance Criteria

Difference : -5 % to 5 %

The turbidity meter complies * / ~~does not comply~~ * with the specified requirements and is deemed acceptable * / ~~unacceptable~~ * for use. Measurements are traceable to national standards.

Prepared by : _____ Checked by : _____

Appendix D2

Impact Marine Water Quality Monitoring Results

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1100-1118	18/Cloudy	Surface	1.0	195.0	31.5	31.5	7.53	7.55	7.49	98.8	99.0	3.43	3.42	3.47	2.0	2.4	2.3
						31.5		7.56			99.2		3.41			2.8		
			Middle	10.9	19.7	31.6	31.7	7.44	7.43		98.1	98.0	3.33	3.35		1.7	2.0	
						31.7		7.42			97.9		3.37			2.2		
			Bottom	20.7	19.8	31.8	31.8	7.30	7.28	7.28	96.5	96.3	3.65	3.64		2.7	2.7	
						31.8		7.26			96.0		3.62			2.6		
04/01/20	1200-1217	20/Cloudy	Surface	1.0	20.3	31.7	31.7	7.69	7.68	7.62	102.5	102.4	3.35	3.29	3.44	1.1	1.1	2.2
						31.6		7.67			102.2		3.22			1.0		
			Middle	10.9	20.4	31.8	31.8	7.54	7.56		100.8	101.1	3.41	3.40		0.9	1.1	
						31.8		7.58			101.3		3.39			1.3		
			Bottom	20.8	20.5	31.9	31.9	7.36	7.35	7.35	98.6	98.4	3.60	3.62		4.4	4.3	
						31.9		7.33			98.2		3.64			4.2		
06/01/20	1339-1356	21/Fine	Surface	1.0	20.5	31.7	31.7	7.77	7.78	7.72	104.0	104.2	3.29	3.28	3.37	2.5	2.4	3.2
						31.7		7.79			104.3		3.26			2.3		
			Middle	11.0	20.6	31.9	31.9	7.68	7.67		103.1	102.9	3.35	3.36		4.9	5.1	
						31.8		7.65			102.6		3.37			5.2		
			Bottom	20.9	20.8	32.0	32.0	7.43	7.45	7.45	100.2	100.5	3.46	3.48		2.2	2.3	
						32.0		7.47			100.7		3.50			2.3		
08/01/20	1442-1456	22/Fine	Surface	1.0	21.5	31.4	31.4	7.76	7.70	7.64	105.6	104.8	3.65	3.67	3.75	2.0	2.3	2.7
						31.4		7.64			103.9		3.69			2.6		
			Middle	10.9	21.3	31.6	31.6	7.52	7.58		102.0	102.8	3.77	3.74		3.1	3.3	
						31.6		7.63			103.5		3.71			3.4		
			Bottom	20.7	21.1	31.8	31.9	7.34	7.41	7.41	99.5	100.5	3.83	3.85		2.2	2.7	
						31.9		7.48			101.4		3.86			3.1		
10/01/20	1601-1617	20/Cloudy	Surface	1.0	19.3	31.5	31.6	7.54	7.56	7.49	98.6	98.8	3.31	3.29	3.33	1.9	1.8	2.1
						31.6		7.57			99.0		3.27			1.7		
			Middle	11.1	19.5	31.7	31.7	7.45	7.43		97.9	97.7	3.20	3.22		2.9	2.8	
						31.7		7.41			97.4		3.23			2.7		
			Bottom	21.1	19.6	31.8	31.8	7.28	7.27	7.27	95.9	95.8	3.46	3.47		1.6	1.6	
						31.8		7.26			95.6		3.48			1.5		
13/01/20	0830-0845	18/Cloudy	Surface	1.0	19.0	31.4	31.4	7.51	7.52	7.45	97.6	97.7	3.13	3.12	3.15	3.6	3.5	3.8
						31.4		7.53			97.8		3.10			3.3		
			Middle	11.0	19.2	31.5	31.5	7.39	7.38		96.4	96.2	3.02	3.03		4.0	3.8	
						31.5		7.36			96.0		3.04			3.6		
			Bottom	20.9	19.3	31.6	31.6	7.18	7.20	7.20	93.9	94.2	3.31	3.29		4.0	4.2	
						31.6		7.22			94.5		3.27			4.4		
15/01/20	0928-0941	20/Fine	Surface	1.0	20.6	31.5	31.6	7.76	7.80	7.84	104.0	104.6	3.41	3.43	3.63	3.8	3.4	4.5
						31.6		7.84			105.1		3.44			3.0		
			Middle	10.8	20.8	31.8	31.8	7.91	7.89		106.4	106.1	3.65	3.67		6.9	7.2	
						31.8		7.86			105.8		3.68			7.4		
			Bottom	20.6	20.9	31.9	31.9	7.64	7.72	7.72	103.1	104.2	3.81	3.81		3.1	3.1	
						31.9		7.80			105.3		3.80			3.0		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1030-1044	18/Cloudy	Surface	1.0	20.2	31.8	31.9	7.18	7.16	7.20	95.6	95.4	3.04	3.06	3.45	5.3	5.6	3.6
						31.9		7.14			95.1		3.07			5.8		
			Middle	11.2	20.8	31.9	32.0	7.25	7.23		97.7	97.5	3.52	3.54		2.4	2.7	
						32.0		7.21			97.2		3.55			3.0		
			Bottom	21.4	20.9	32.0	32.1	7.29	7.27	7.27	98.3	98.1	3.77	3.75		2.3	2.5	
						32.1		7.25			97.8		3.73			2.7		
20/01/20	1325-1341	19/Cloudy	Surface	1.0	19.4	31.4	31.5	7.47	7.46	7.39	97.8	97.7	3.39	3.40	3.42	1.7	1.9	2.0
						31.5		7.44			97.5		3.41			2.0		
			Middle	11.0	19.5	31.6	31.6	7.31	7.33		96.0	96.3	3.32	3.34		1.8	1.9	
						31.6		7.35			96.5		3.35			2.0		
			Bottom	21.0	19.7	31.7	31.7	7.14	7.13	7.13	94.2	94.1	3.50	3.52		2.0	2.2	
						31.7		7.12			93.9		3.54			2.4		
22/01/20	1458-1511	20/Cloudy	Surface	1.0	20.6	31.8	31.8	7.12	7.14	7.15	95.5	95.7	3.32	3.34	3.64	2.9	2.9	2.6
						31.8		7.15			95.9		3.36			2.8		
			Middle	10.8	20.7	31.9	32.0	7.18	7.17		96.5	96.3	3.68	3.66		2.3	2.5	
						32.0		7.15			96.1		3.64			2.6		
			Bottom	20.6	20.8	32.2	32.2	7.29	7.27	7.27	97.9	97.6	3.94	3.92		2.3	2.5	
						32.1		7.25			97.3		3.90			2.6		
24/01/20	0844-0858	18/Cloudy	Surface	1.0	20.6	31.4	31.4	7.87	7.91	7.80	104.9	105.6	3.74	3.76	3.77	2.0	2.2	2.2
						31.4		7.94			106.3		3.78			2.4		
			Middle	10.9	20.4	31.6	31.7	7.75	7.69		103.4	102.6	3.61	3.63		1.6	2.0	
						31.7		7.63			101.8		3.64			2.4		
			Bottom	20.7	20.1	31.8	31.9	7.52	7.56	7.56	100.0	100.6	3.88	3.91		2.6	2.3	
						31.9		7.60			101.1		3.94			1.9		
29/01/20	0855-0913	11/Cloudy	Surface	1.0	19.6	25.0	25.1	7.05	7.06	7.12	88.8	88.9	3.37	3.39	3.46	7.8	7.7	5.2
						25.1		7.07			89.0		3.40			7.5		
			Middle	10.9	19.4	26.2	26.3	7.16	7.18		90.6	90.8	3.46	3.48		4.9	4.7	
						26.3		7.19			90.9		3.49			4.5		
			Bottom	20.7	19.1	27.0	27.1	6.87	6.86	6.86	85.9	85.8	3.50	3.52		2.8	3.2	
						27.1		6.85			85.7		3.53			3.5		
31/01/20	0951-1006	16/Cloudy	Surface	1.0	20.1	31.2	31.2	7.64	7.72	7.60	101.1	102.2	3.54	3.56	3.70	4.7	4.5	3.9
						31.1		7.80			103.3		3.58			4.2		
			Middle	10.9	20.4	31.4	31.5	7.53	7.47		100.4	99.6	3.67	3.69		4.5	4.6	
						31.5		7.41			98.8		3.70			4.7		
			Bottom	20.7	20.5	31.7	31.8	7.26	7.31	7.31	97.2	97.9	3.81	3.85		2.6	2.6	
						31.8		7.36			98.5		3.88			2.5		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1225-1238	18/Cloudy	Surface	1.0	19.4	31.4	31.5	7.49	7.48	7.42	98.1	98.0	3.25	3.27	3.40	3.0	3.3	3.4
						31.5		7.47			97.8		3.29			3.5		
			Middle	4.9	19.5	31.6	31.6	7.35	7.37		96.5	96.7	3.41	3.40		3.1	3.6	
						31.6		7.38			96.9		3.39			4.0		
			Bottom	8.8	19.7	31.7	31.7	7.18	7.20	7.20	94.7	95.0	3.54	3.53		3.3	3.3	
						31.7		7.22			95.2		3.51			3.2		
04/01/20	1321-1335	20/Cloudy	Surface	1.0	20.4	31.6	31.6	7.61	7.62	7.54	101.6	101.8	3.14	3.16	3.19	3.4	3.3	3.9
						31.6		7.63			101.9		3.18			3.1		
			Middle	4.8	20.5	31.7	31.8	7.44	7.46		99.6	99.8	3.08	3.07		3.6	3.5	
						31.8		7.47			100.0		3.06			3.4		
			Bottom	8.6	20.6	31.9	31.9	7.29	7.27	7.27	97.9	97.6	3.31	3.33		5.1	5.0	
						31.9		7.25			97.3		3.34			4.9		
06/01/20	1458-1510	21/Fine	Surface	1.0	20.4	31.6	31.7	7.74	7.72	7.66	103.3	103.1	2.98	2.96	3.10	3.4	3.3	2.8
						31.7		7.70			102.9		2.94			3.1		
			Middle	4.9	20.5	31.8	31.8	7.59	7.61		101.6	101.8	3.09	3.11		2.9	2.7	
						31.8		7.62			102.0		3.12			2.4		
			Bottom	8.8	20.6	31.9	31.9	7.51	7.52	7.52	100.8	101.0	3.23	3.22		2.6	2.6	
						31.9		7.53			101.1		3.21			2.6		
08/01/20	1555-1609	22/Fine	Surface	1.0	21.5	31.4	31.4	7.66	7.70	7.65	104.2	104.8	3.36	3.38	3.46	4.8	5.0	3.9
						31.4		7.74			105.3		3.40			5.2		
			Middle	4.8	21.4	31.6	31.6	7.56	7.60		102.7	103.2	3.45	3.47		3.2	3.1	
						31.6		7.63			103.6		3.49			3.0		
			Bottom	8.5	21.2	31.9	31.9	7.45	7.38	7.38	101.1	100.2	3.53	3.54		3.7	3.5	
						31.9		7.31			99.2		3.54			3.2		
10/01/20	1718-1730	20/Cloudy	Surface	1.0	19.2	31.6	31.6	7.66	7.65	7.61	100.0	99.9	3.06	3.08	3.20	1.5	1.2	2.7
						31.6		7.64			99.8		3.09			0.9		
			Middle	4.9	19.3	31.8	31.8	7.56	7.58		99.0	99.2	3.18	3.16		4.0	4.3	
						31.7		7.59			99.4		3.14			4.5		
			Bottom	8.7	19.5	31.9	31.9	7.40	7.38	7.38	97.3	97.1	3.37	3.36		3.2	2.7	
						31.9		7.36			96.8		3.35			2.2		
13/01/20	0947-0959	18/Cloudy	Surface	1.0	19.1	31.5	31.5	7.59	7.61	7.53	98.9	99.1	2.94	2.93	3.06	3.8	4.3	4.8
						31.4		7.62			99.2		2.92			4.8		
			Middle	4.9	19.3	31.6	31.6	7.48	7.46		97.9	97.6	3.05	3.07		6.0	6.0	
						31.6		7.44			97.3		3.09			6.0		
			Bottom	8.8	19.4	31.7	31.7	7.28	7.29	7.29	95.5	95.6	3.15	3.17		3.9	4.1	
						31.7		7.30			95.7		3.18			4.2		
15/01/20	1044-1057	20/Fine	Surface	1.0	20.6	31.5	31.6	7.66	7.70	7.65	102.7	103.3	3.22	3.25	3.38	5.7	5.3	4.2
						31.6		7.74			103.8		3.28			4.9		
			Middle	4.9	20.7	31.8	31.8	7.51	7.60		100.9	102.1	3.36	3.38		3.4	3.8	
						31.8		7.68			103.2		3.40			4.1		
			Bottom	8.7	20.8	31.8	31.9	7.33	7.40	7.40	98.7	99.7	3.50	3.52		3.5	3.5	
						31.9		7.47			100.6		3.54			3.4		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1137-1150	18/Cloudy	Surface	1.0	20.3	31.9	31.9	7.29	7.28	7.31	97.3	97.1	2.96	2.94	3.16	2.7	2.8	4.0
						31.9		7.26			96.8		2.92			2.8		
			Middle	5.1	20.8	32.0	32.1	7.37	7.35		99.3	99.1	3.18	3.16		2.5	2.7	
						32.1		7.33			98.8		3.14			2.8		
			Bottom	9.2	20.9	32.1	32.1	7.40	7.39	7.39	100.0	99.8	3.39	3.37		6.1	6.5	
						32.1		7.37			99.6		3.35			6.9		
20/01/20	1441-1453	19/Cloudy	Surface	1.0	19.5	31.5	31.5	7.56	7.55	7.46	99.2	99.0	3.18	3.16	3.27	2.7	2.6	4.2
						31.5		7.53			98.8		3.14			2.4		
			Middle	4.9	19.7	31.7	31.7	7.40	7.38		97.6	97.3	3.26	3.25		6.3	6.5	
						31.6		7.36			97.0		3.23			6.7		
			Bottom	8.7	19.8	31.8	31.8	7.27	7.28	7.28	96.1	96.3	3.40	3.39		3.5	3.6	
						31.8		7.29			96.4		3.38			3.6		
22/01/20	1604-1616	20/Cloudy	Surface	1.0	20.6	31.8	31.9	7.27	7.26	7.29	97.5	97.3	3.27	3.28	3.59	2.6	2.4	2.3
						31.9		7.24			97.1		3.29			2.1		
			Middle	4.9	20.8	32.0	32.0	7.34	7.32		98.9	99.4	3.73	3.71		2.8	2.7	
						32.0		7.30			98.4		3.69			2.6		
			Bottom	8.8	20.8	32.1	32.1	7.38	7.37	7.37	99.6	99.4	3.79	3.77		1.6	1.8	
						32.1		7.35			99.1		3.75			1.9		
24/01/20	0951-1000	18/Cloudy	Surface	1.0	20.6	31.4	31.4	7.75	7.81	7.74	103.8	104.5	3.38	3.40	3.49	2.4	2.5	2.6
						31.4		7.86			105.2		3.41			2.6		
			Middle	4.8	20.5	31.7	31.7	7.64	7.68		102.3	102.8	3.49	3.51		3.1	2.9	
						31.6		7.71			103.2		3.52			2.6		
			Bottom	8.5	20.4	31.8	31.9	7.43	7.51	7.51	99.3	100.3	3.56	3.57		2.5	2.6	
						31.9		7.58			101.3		3.58			2.6		
29/01/20	1029-1044	11/Cloudy	Surface	1.0	19.5	24.9	25.0	7.14	7.16	7.09	90.0	90.2	3.21	3.23	3.42	3.3	3.7	4.0
						25.0		7.17			90.3		3.25			4.0		
			Middle	4.8	19.3	26.3	26.3	7.03	7.02		88.9	88.8	3.41	3.43		3.4	3.1	
						26.3		7.00			88.6		3.44			2.8		
			Bottom	8.6	19.0	27.1	27.1	6.94	6.96	6.96	86.8	87.0	3.60	3.62		5.1	5.2	
						27.0		6.97			87.1		3.63			5.2		
31/01/20	1111-11300	16/Cloudy	Surface	1.0	20.1	31.2	31.2	7.75	7.69	7.61	102.6	101.8	3.36	3.39	3.47	2.0	2.5	2.5
						31.2		7.63			101.0		3.41			2.9		
			Middle	4.9	20.3	31.4	31.5	7.49	7.53		99.7	100.3	3.44	3.46		2.3	2.4	
						31.5		7.57			100.8		3.47			2.5		
			Bottom	8.8	20.4	31.7	31.8	7.33	7.41	7.41	97.9	98.9	3.56	3.58		2.5	2.6	
						31.8		7.48			99.9		3.59			2.7		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1700-1716	19/Cloudy	Surface	1.0	19.7	31.6	31.6	7.45	7.43	7.37	98.2	97.9	3.47	3.48	3.60	2.0	2.4	3.3
						31.5		7.41			97.6		3.49			2.7		
			Middle	10.8	19.9	31.7	31.7	7.29	7.30		96.5	96.7	3.58	3.57		4.3	4.1	
						31.7		7.31			96.8		3.55			3.8		
			Bottom	20.5	20.0	31.8	31.9	7.13	7.15	7.15	94.6	94.9	3.77	3.75		3.1	3.6	
						31.9		7.16			95.1		3.73			4.0		
04/01/20	1800-1816	18/Cloudy	Surface	1.0	19.2	31.6	31.6	7.55	7.53	7.50	98.6	98.4	3.49	3.48	3.59	5.9	5.6	5.6
						31.6		7.51			98.1		3.46			5.3		
			Middle	10.8	19.4	31.7	31.7	7.46	7.47		97.8	98.0	3.51	3.53		6.4	6.3	
						31.7		7.48			98.1		3.54			6.2		
			Bottom	20.5	19.5	31.8	31.8	7.27	7.26	7.26	95.6	95.4	3.75	3.77		5.1	5.0	
						31.8		7.24			95.2		3.79			4.8		
06/01/20	0830-0846	22/Fine	Surface	1.0	19.8	31.6	31.6	7.66	7.65	7.59	101.1	101.0	3.31	3.33	3.49	3.6	3.1	3.9
						31.6		7.64			100.9		3.34			2.6		
			Middle	10.9	19.9	31.7	31.8	7.51	7.53		99.4	99.7	3.52	3.51		3.4	3.3	
						31.8		7.55			100.0		3.50			3.2		
			Bottom	20.7	20.0	31.9	31.9	7.38	7.37	7.37	98.0	97.8	3.65	3.63		5.2	5.4	
						31.9		7.35			97.6		3.61			5.6		
08/01/20	0918-0931	21/Fine	Surface	1.0	21.4	31.4	31.4	7.41	7.48	7.40	100.6	101.5	3.77	3.79	3.93	4.0	4.2	3.5
						31.4		7.54			102.4		3.80			4.4		
			Middle	10.7	21.1	31.6	31.7	7.36	7.32		99.4	98.9	3.94	3.95		3.8	3.7	
						31.7		7.28			98.3		3.95			3.5		
			Bottom	20.4	21.0	31.9	31.9	7.25	7.29	7.29	97.9	98.5	4.04	4.07		2.4	2.6	
						31.9		7.33			99.1		4.10			2.7		
10/01/20	1030-1047	21/Cloudy	Surface	1.0	19.8	31.6	31.6	7.42	7.44	7.40	98.0	98.3	3.39	3.38	3.49	2.2	1.8	1.3
						31.6		7.46			98.5		3.36			1.4		
			Middle	10.9	19.9	31.7	31.8	7.38	7.37		97.7	97.5	3.49	3.47		1.4	1.2	
						31.8		7.35			97.3		3.45			1.0		
			Bottom	20.8	20.1	31.9	31.9	7.11	7.12	7.12	94.6	94.7	3.62	3.63		0.8	1.0	
						31.9		7.13			94.8		3.64			1.2		
13/01/20	1304-1320	19/Cloudy	Surface	1.0	19.3	31.5	31.5	7.40	7.42	7.34	96.7	96.9	3.26	3.27	3.29	2.9	2.6	3.2
						31.4		7.43			97.1		3.28			2.3		
			Middle	10.8	19.4	31.6	31.6	7.25	7.26		95.0	95.2	3.17	3.15		4.3	4.0	
						31.6		7.27			95.3		3.13			3.7		
			Bottom	20.6	19.6	31.7	31.8	7.13	7.11	7.11	93.9	93.7	3.42	3.44		2.9	3.0	
						31.8		7.09			93.4		3.46			3.0		
15/01/20	1449-1504	21/Fine	Surface	1.0	20.8	31.5	31.6	7.63	7.59	7.57	102.5	101.9	3.51	3.53	3.63	3.2	3.3	5.6
						31.6		7.54			101.3		3.55			3.3		
			Middle	10.7	21.1	31.8	31.8	7.52	7.56		101.7	102.3	3.60	3.62		6.2	6.6	
						31.7		7.60			102.8		3.64			6.9		
			Bottom	20.4	21.3	31.9	31.9	7.46	7.52	7.52	101.4	102.2	3.71	3.73		7.5	7.1	
						31.9		7.58			103.0		3.74			6.7		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1600-1613	18/Cloudy	Surface	1.0	20.5	32.0	32.0	7.02	7.04	7.08	94.1	93.9	3.50	3.52	3.78	3.9	4.2	3.0
						31.9		7.05			93.7		3.54			4.4		
			Middle	10.8	20.8	32.1	32.2	7.14	7.13		96.3	96.1	3.88	3.86		2.2	2.1	
						32.2		7.11			95.9		3.84			1.9		
			Bottom	20.6	20.9	32.2	32.3	7.21	7.19	7.19	97.4	97.2	3.97	3.95		3.0	2.9	
						32.3		7.17			97.0		3.93			2.8		
20/01/20	0835-0851	17/Cloudy	Surface	1.0	19.0	31.4	31.4	7.37	7.38	7.31	95.8	95.9	3.48	3.47	3.57	3.5	3.7	4.3
						31.4		7.39			96.0		3.46			3.8		
			Middle	10.9	19.1	31.5	31.5	7.22	7.24		94.0	94.2	3.55	3.53		4.1	4.2	
						31.5		7.25			94.4		3.51			4.3		
			Bottom	20.7	19.3	31.7	31.7	7.06	7.04	7.04	92.4	92.1	3.70	3.72		5.0	5.1	
						31.6		7.02			91.8		3.73			5.2		
22/01/20	0946-0959	20/Cloudy	Surface	1.0	20.3	31.7	31.8	6.98	6.96	7.01	93.0	92.8	3.72	3.74	3.91	2.4	2.5	2.3
						31.8		6.94			92.5		3.76			2.6		
			Middle	10.8	20.5	31.9	32.0	7.08	7.07		94.9	94.7	3.93	3.95		2.8	2.3	
						32.0		7.05			94.5		3.96			1.8		
			Bottom	20.6	20.6	32.1	32.1	7.13	7.15	7.15	95.8	95.6	4.07	4.04		2.1	2.2	
						32.1		7.17			95.3		4.01			2.2		
24/01/20	1115-1130	19/Cloudy	Surface	1.0	20.8	31.4	31.4	7.66	7.69	7.53	102.9	103.3	3.81	3.83	3.93	10.9	10.3	5.3
						31.4		7.72			103.7		3.84			9.7		
			Middle	10.7	20.6	31.7	31.7	7.41	7.37		99.3	98.8	3.92	3.94		3.2	3.1	
						31.7		7.33			98.2		3.96			2.9		
			Bottom	20.4	20.3	31.9	31.9	7.24	7.31	7.31	96.7	97.6	3.99	4.02		2.6	2.6	
						31.8		7.38			98.5		4.04			2.6		
29/01/20	1420-1438	11/Cloudy	Surface	1.0	19.5	24.9	25.0	6.93	6.94	7.05	87.4	87.6	3.27	3.28	3.37	3.9	4.3	3.7
						25.0		6.95			87.7		3.29			4.6		
			Middle	10.7	19.3	26.3	26.4	7.18	7.17		90.8	90.7	3.36	3.38		3.3	3.3	
						26.4		7.15			90.5		3.39			3.2		
			Bottom	20.4	19.0	27.1	27.2	7.03	7.05	7.05	87.9	88.1	3.45	3.44		3.6	3.5	
						27.2		7.06			88.2		3.43			3.4		
31/01/20	1550-1607	17/Cloudy	Surface	1.0	20.2	31.1	31.1	7.46	7.52	7.41	98.9	99.7	3.68	3.70	3.83	4.2	4.4	3.3
						31.1		7.57			100.4		3.71			4.5		
			Middle	10.7	20.5	31.2	31.3	7.22	7.30		96.4	97.5	3.82	3.84		2.6	2.8	
						31.4		7.38			98.5		3.85			2.9		
			Bottom	20.4	20.5	31.7	31.8	7.04	7.10	7.10	94.2	95.0	3.94	3.97		2.8	2.7	
						31.8		7.16			95.8		3.99			2.6		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1817-1829	19/Cloudy	Surface	1.0	19.6	31.5	31.5	7.34	7.36	7.26	96.5	96.7	3.38	3.36	3.50	4.5	4.6	2.9
						31.5		7.37			96.9		3.34			4.7		
			Middle	4.8	19.7	31.6	31.7	7.19	7.17		94.8	94.6	3.50	3.49		2.0	2.0	
						31.7		7.15			94.3		3.48			2.0		
			Bottom	8.6	19.9	31.8	31.8	7.03	7.02	7.02	93.1	93.0	3.63	3.65		1.9	2.0	
						31.8		7.01			92.8		3.66			2.1		
04/01/20	1915-1927	18/Cloudy	Surface	1.0	19.1	31.5	31.5	7.40	7.42	7.37	96.4	96.6	3.32	3.34	3.38	6.8	6.7	4.3
						31.5		7.43			96.8		3.36			6.6		
			Middle	4.7	19.2	31.6	31.7	7.30	7.32		95.3	95.6	3.25	3.24		5.5	5.3	
						31.7		7.34			95.9		3.23			5.1		
			Bottom	8.4	19.4	31.8	31.8	7.14	7.15	7.15	93.7	93.9	3.55	3.57		0.8	1.0	
						31.8		7.16			94.0		3.58			1.1		
06/01/20	0947-1000	22/Fine	Surface	1.0	19.9	31.7	31.7	7.59	7.60	7.52	100.5	100.6	3.11	3.09	3.24	3.6	3.9	3.6
						31.7		7.61			100.7		3.07			4.1		
			Middle	4.8	20.0	31.8	31.8	7.45	7.44		98.9	98.7	3.20	3.19		3.2	3.1	
						31.8		7.42			98.5		3.18			2.9		
			Bottom	8.6	20.1	32.0	32.0	7.25	7.27	7.27	96.5	96.8	3.41	3.43		3.8	3.8	
						31.9		7.29			97.0		3.44			3.7		
08/01/20	1040-1057	21/Fine	Surface	1.0	21.4	31.4	31.4	7.52	7.48	7.40	102.1	101.6	3.46	3.48	3.56	5.2	5.1	3.4
						31.4		7.44			101.1		3.50			5.0		
			Middle	4.6	21.3	31.6	31.6	7.26	7.33		98.5	99.4	3.56	3.58		2.1	2.4	
						31.6		7.39			100.3		3.59			2.7		
			Bottom	8.1	21.1	31.8	31.9	7.15	7.20	7.20	96.9	97.5	3.66	3.64		2.5	2.6	
						31.9		7.24			98.1		3.61			2.6		
10/01/20	1152-1205	21/Cloudy	Surface	1.0	19.9	31.7	31.7	7.53	7.52	7.46	99.7	99.5	3.28	3.27	3.29	0.7	0.8	1.4
						31.6		7.50			99.2		3.25			0.8		
			Middle	4.7	20.1	31.8	31.8	7.41	7.40		98.5	98.4	3.13	3.15		2.2	2.2	
						31.8		7.39			98.2		3.16			2.1		
			Bottom	8.4	20.2	32.0	32.0	7.25	7.27	7.27	96.7	96.9	3.44	3.46		1.5	1.4	
						31.9		7.29			97.1		3.47			1.3		
13/01/20	1423-1436	19/Cloudy	Surface	1.0	19.4	31.4	31.4	7.51	7.49	7.41	98.3	98.1	3.14	3.13	3.15	3.1	3.0	3.6
						31.4		7.47			97.8		3.12			2.8		
			Middle	4.8	19.6	31.5	31.5	7.32	7.34		96.2	96.4	3.00	3.02		4.6	4.6	
						31.5		7.35			96.6		3.03			4.6		
			Bottom	8.5	19.7	31.6	31.7	7.21	7.20	7.20	95.0	94.9	3.32	3.30		3.0	3.1	
						31.7		7.19			94.8		3.28			3.2		
15/01/20	1610-1627	21/Fine	Surface	1.0	20.8	31.5	31.6	7.82	7.78	7.68	105.1	104.6	3.34	3.36	3.47	3.5	3.7	4.5
						31.6		7.74			104.0		3.38			3.8		
			Middle	4.7	20.9	31.8	31.8	7.66	7.59		103.4	102.4	3.42	3.45		4.9	4.7	
						31.8		7.51			101.4		3.47			4.4		
			Bottom	8.4	21.1	31.9	31.9	7.39	7.43	7.43	100.1	100.6	3.58	3.60		5.2	5.1	
						31.9		7.46			101.1		3.62			5.0		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

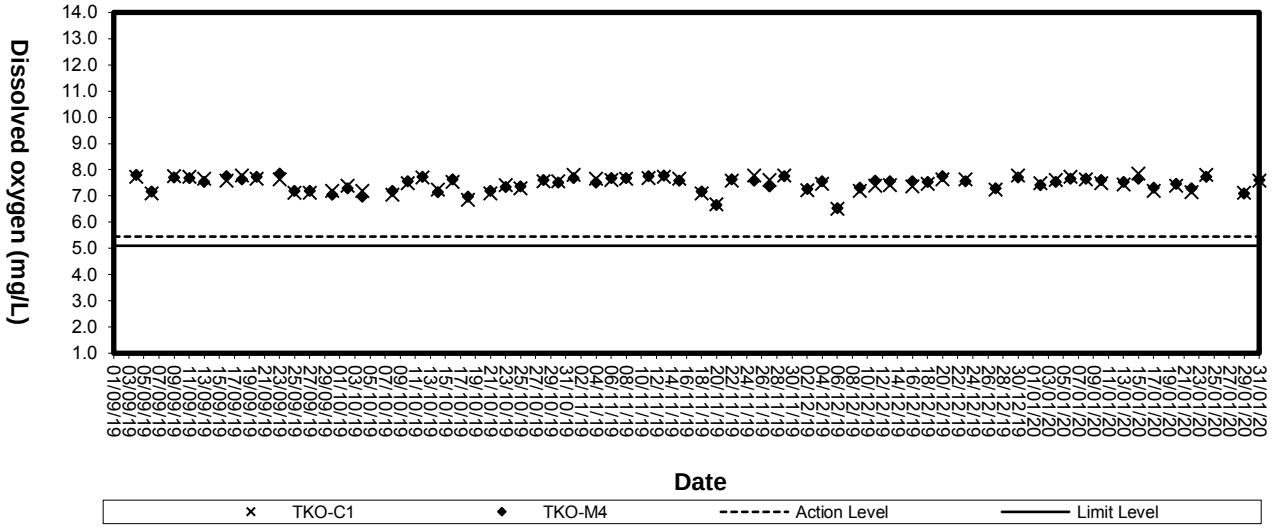
Monitoring Station : TKO-M4

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1700-1712	18/Cloudy	Surface	1.0	20.6	32.0	32.1	7.11	7.10	7.14	95.4	95.2	3.41	3.42	3.61	2.3	2.4	3.2
						32.1		7.08			95.0		3.42			2.4		
			Middle	4.8	20.8	32.2	32.2	7.17	7.18		96.7	96.9	3.66	3.65		2.0	2.1	
						32.2		7.19			97.0		3.63			2.2		
			Bottom	8.6	21.0	32.3	32.3	7.27	7.28	7.28	98.5	98.7	3.79	3.77		5.2	5.2	
						32.3		7.29			98.8		3.75			5.1		
20/01/20	0949-1000	17/Cloudy	Surface	1.0	19.1	31.4	31.5	7.43	7.42	7.36	96.7	96.6	3.27	3.26	3.31	6.0	6.2	3.8
						31.5		7.41			96.5		3.24			6.4		
			Middle	4.8	19.3	31.6	31.6	7.28	7.30		95.2	95.5	3.19	3.20		3.2	2.9	
						31.6		7.32			95.8		3.21			2.5		
			Bottom	8.5	19.4	31.7	31.7	7.13	7.15	7.15	93.5	93.7	3.45	3.47		2.3	2.4	
						31.7		7.16			93.9		3.49			2.5		
22/01/20	1050-1103	20/Cloudy	Surface	1.0	20.4	31.8	31.9	7.07	7.08	7.14	94.5	94.7	3.58	3.57	3.79	2.5	2.5	2.2
						31.9		7.09			94.8		3.55			2.4		
			Middle	4.6	20.5	32.0	32.0	7.22	7.20		96.7	96.5	3.82	3.84		2.1	2.0	
						32.0		7.18			96.2		3.86			1.8		
			Bottom	8.2	20.6	32.0	32.1	7.25	7.24	7.24	97.3	97.1	3.99	3.96		2.1	2.2	
						32.1		7.22			96.9		3.93			2.3		
24/01/20	1240-1258	19/Cloudy	Surface	1.0	20.8	31.4	31.4	7.60	7.66	7.59	102.1	102.9	3.44	3.46	3.57	2.5	2.4	2.5
						31.3		7.71			103.6		3.48			2.3		
			Middle	4.6	20.7	31.6	31.7	7.45	7.52		100.0	100.9	3.54	3.57		3.1	2.8	
						31.7		7.58			101.7		3.59			2.5		
			Bottom	8.1	20.5	31.8	31.8	7.36	7.30	7.30	98.6	97.8	3.67	3.69		2.8	2.4	
						31.8		7.23			96.9		3.70			2.0		
29/01/20	1557-1616	11/Cloudy	Surface	1.0	19.4	25.0	25.1	7.25	7.26	7.17	91.4	91.5	3.13	3.15	3.28	3.8	4.2	4.1
						25.1		7.27			91.6		3.16			4.6		
			Middle	4.7	19.2	26.2	26.3	7.09	7.08		89.7	89.6	3.27	3.28		3.9	3.9	
						26.3		7.06			89.5		3.29			3.8		
			Bottom	8.3	18.9	27.0	27.1	6.91	6.92	6.92	86.4	86.5	3.40	3.41		4.1	4.2	
						27.1		6.93			86.6		3.41			4.3		
31/01/20	1722-1741	17/Cloudy	Surface	1.0	20.2	31.1	31.2	7.65	7.71	7.61	101.4	102.3	3.22	3.24	3.35	2.5	2.5	4.1
						31.2		7.77			103.1		3.25			2.4		
			Middle	4.8	20.4	31.4	31.4	7.45	7.52		99.3	100.2	3.30	3.32		3.0	3.1	
						31.4		7.58			101.1		3.33			3.2		
			Bottom	8.5	20.5	31.7	31.8	7.23	7.20	7.20	96.7	96.3	3.48	3.50		6.6	6.6	
						31.8		7.16			95.9		3.52			6.6		

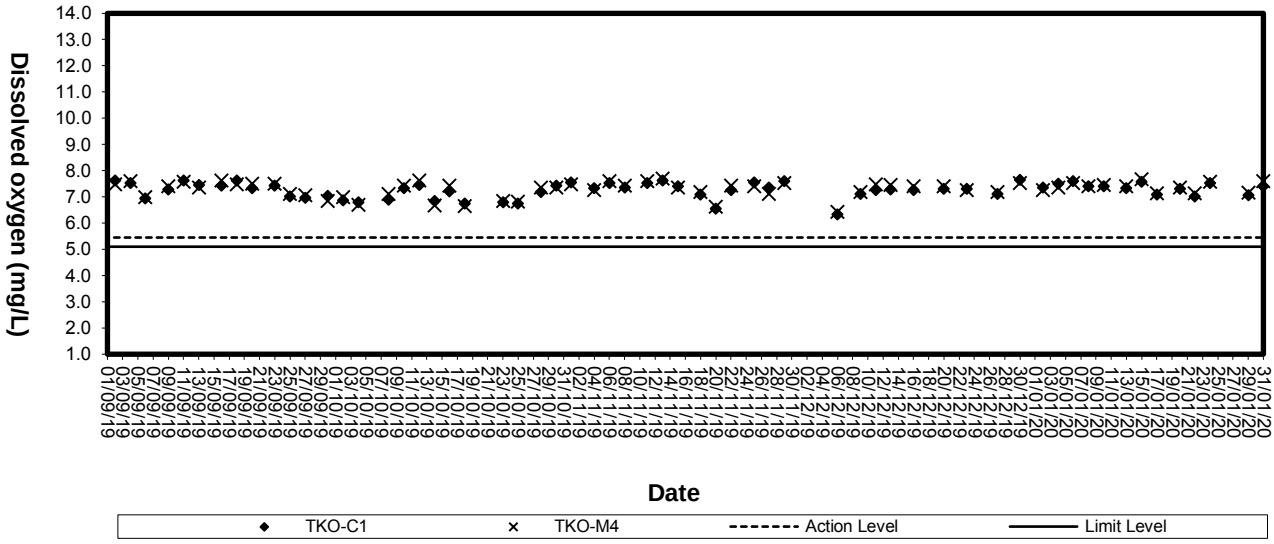
Appendix D3

Graphical Plots of Impact Marine Water Quality Monitoring Data

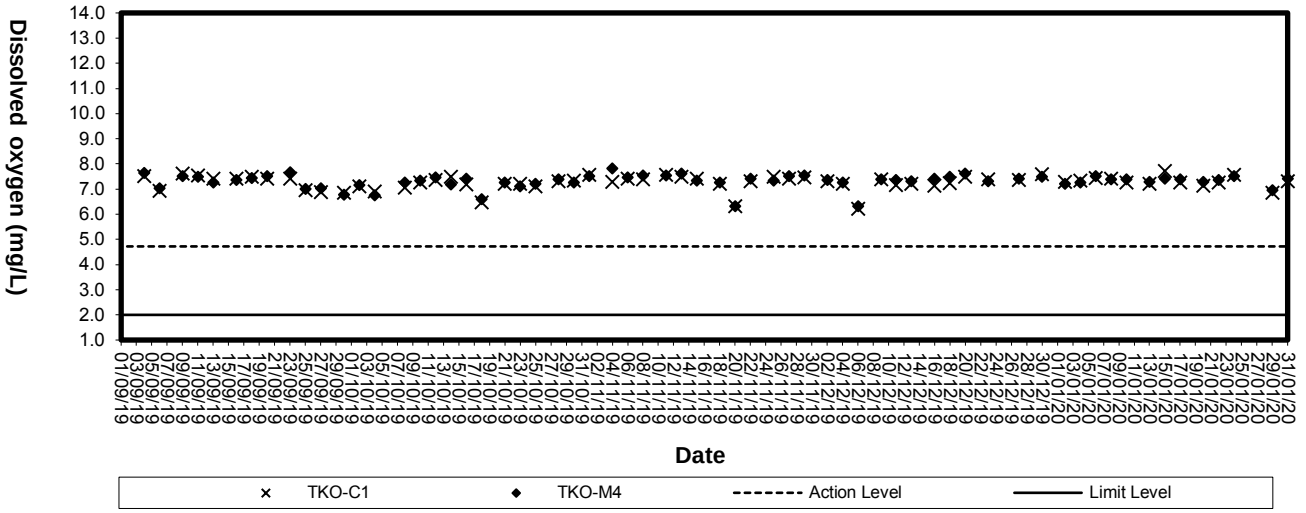
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide



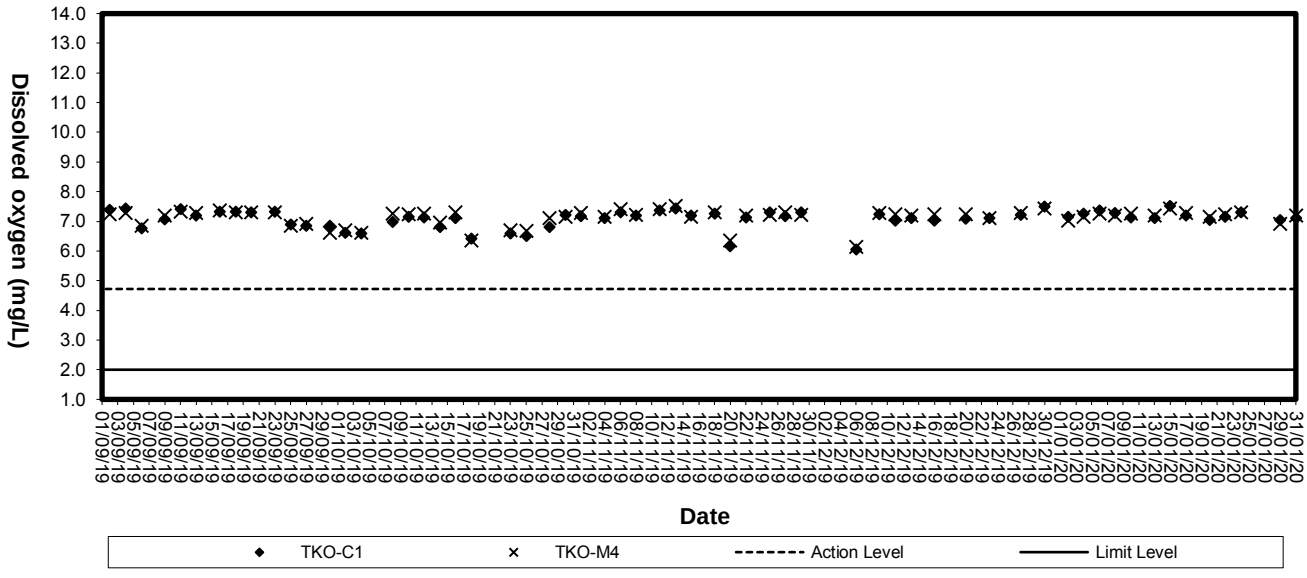
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide



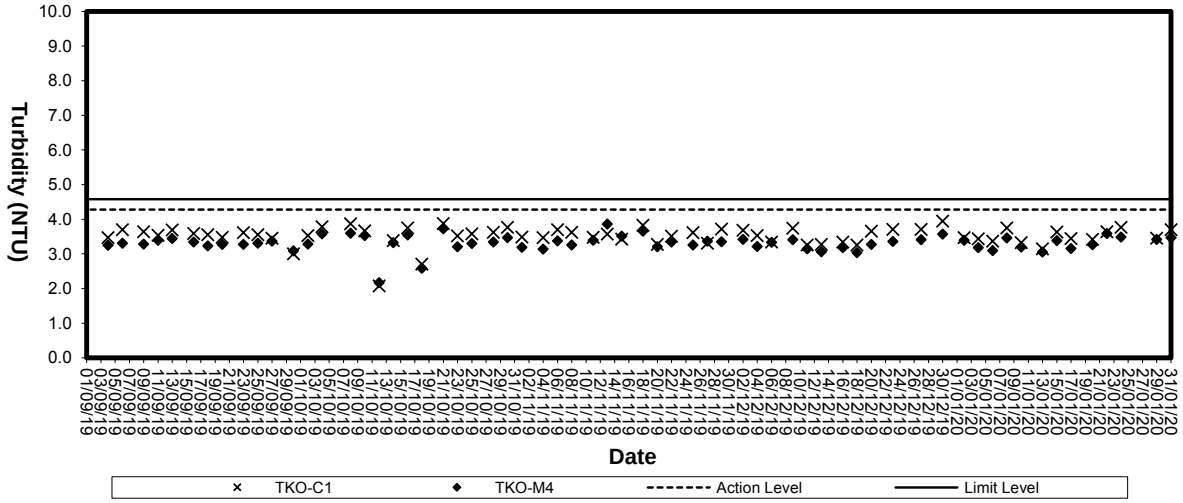
Dissolved Oxygen (Bottom) at Mid-Flood Tide



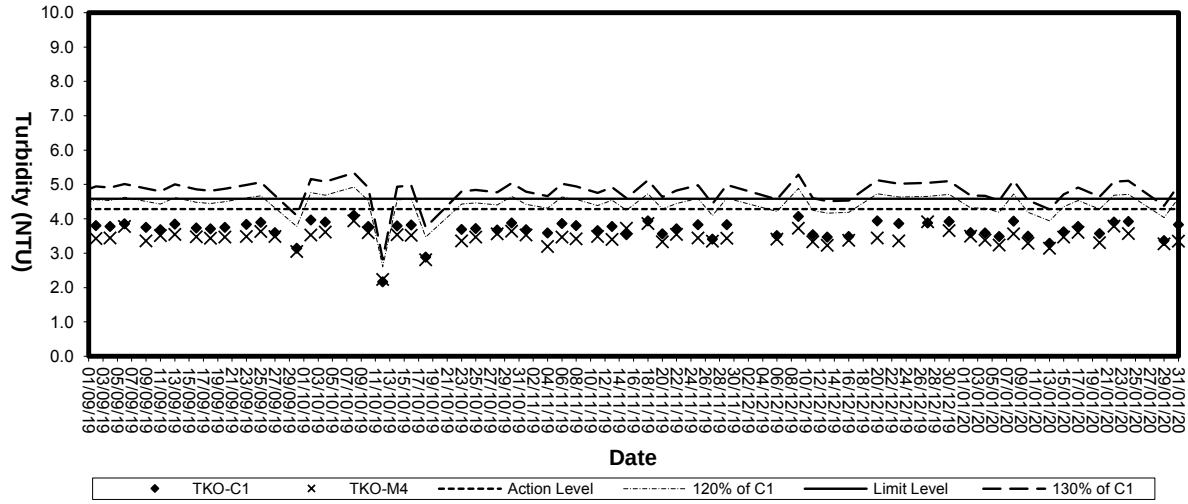
Dissolved Oxygen (Bottom) at Mid-Ebb Tide



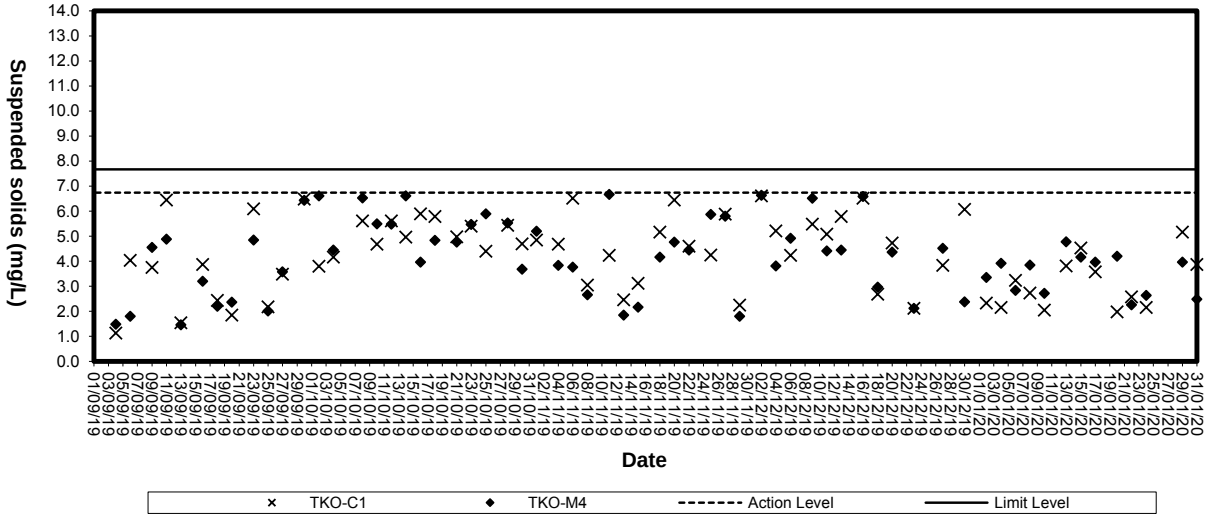
Turbidity (Depth-average) at Mid-Flood Tide



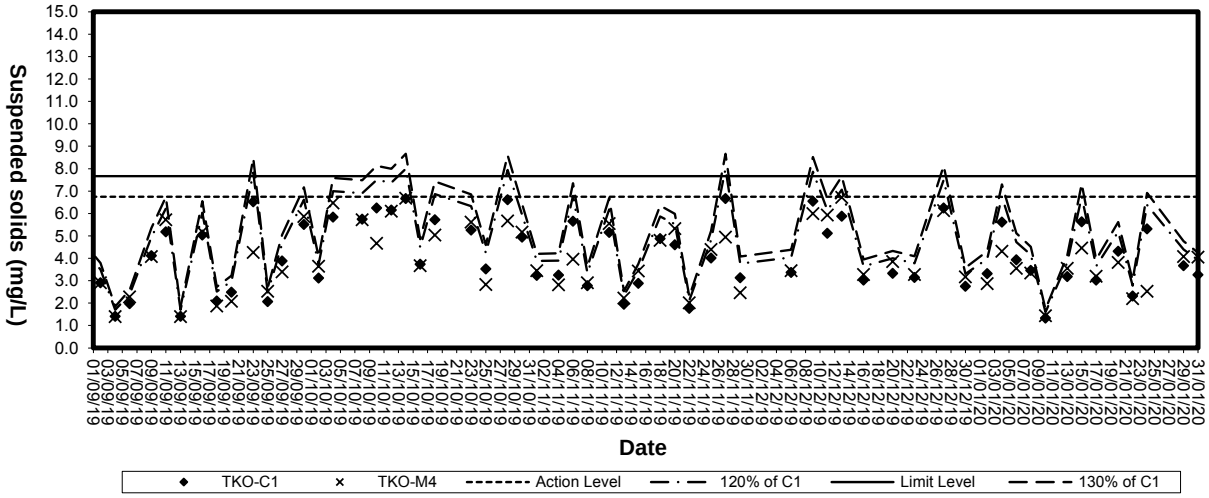
Turbidity(Depth-average) at Mid-Ebb Tide



Suspended solids (Depth-average) at Mid-Flood Tide



Suspended Solids (Depth-average) at Mid-Ebb Tide



Appendix D4

Impact Marine Water Quality Monitoring Results (3RS Project)

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1123-1140	18/Cloudy	Surface	1.0	19.6	31.5	31.5	7.62	7.61	7.55	100.2	100.1	3.47	3.48	3.59	2.2	2.1	2.9
						31.4		7.60			99.9		3.49			1.9		
			Middle	11.0	19.8	31.6	31.6	7.48	7.50		98.8	99.0	3.55	3.53		3.9	4.1	
						31.6		7.51			99.1		3.51			4.3		
			Bottom	20.9	19.9	31.7	31.7	7.36	7.34	7.34	97.4	97.2	3.73	3.75		2.5	2.4	
						31.7		7.32			96.9		3.76			2.3		
04/01/20	1221-1237	20/Cloudy	Surface	1.0	20.2	31.7	31.7	7.73	7.74	7.69	102.9	103.0	3.40	3.39	3.43	4.9	4.7	3.8
						31.7		7.75			103.1		3.38			4.5		
			Middle	11.0	20.3	31.8	31.8	7.66	7.64		102.2	102.0	3.30	3.32		2.2	2.2	
						31.8		7.62			101.7		3.33			2.1		
			Bottom	21.0	20.4	32.0	32.0	7.46	7.48	7.48	99.8	100.0	3.59	3.57		4.5	4.6	
						31.9		7.49			100.2		3.55			4.6		
06/01/20	1401-1417	21/Fine	Surface	1.0	20.5	31.6	31.7	7.69	7.71	7.66	102.9	102.6	3.19	3.21	3.24	3.1	3.2	2.7
						31.7		7.72			102.3		3.23			3.3		
			Middle	10.9	20.7	31.8	31.8	7.61	7.62		102.3	102.4	3.14	3.13		2.2	2.6	
						31.8		7.63			102.5		3.12			2.9		
			Bottom	20.8	20.8	31.9	31.9	7.44	7.42	7.42	100.2	100.0	3.39	3.38		2.2	2.3	
						31.9		7.40			99.7		3.36			2.4		
08/01/20	1500-1516	22/Fine	Surface	1.0	21.5	31.4	31.4	7.68	7.72	7.67	104.4	104.9	3.41	3.43	3.54	4.0	4.0	3.3
						31.4		7.75			105.4		3.44			4.0		
			Middle	10.8	21.3	31.6	31.7	7.66	7.62		103.9	103.3	3.54	3.56		2.1	2.4	
						31.7		7.57			102.7		3.57			2.6		
			Bottom	20.5	21.1	31.9	31.9	7.34	7.42	7.42	99.5	100.5	3.62	3.65		3.8	3.5	
						31.9		7.49			101.5		3.68			3.2		
10/01/20	1401-1417	20/Cloudy	Surface	1.0	19.2	31.5	31.5	7.50	7.52	7.44	92.9	95.6	3.25	3.24	3.26	2.1	2.2	2.7
						31.5		7.53			98.3		3.22			2.3		
			Middle	11.0	19.4	31.7	31.7	7.37	7.36		96.7	96.5	3.14	3.15		2.3	1.9	
						31.6		7.35			96.3		3.16			1.5		
			Bottom	21.0	19.5	31.8	31.8	7.21	7.23	7.23	94.8	95.1	3.40	3.39		4.4	4.0	
						31.8		7.25			95.3		3.38			3.6		
13/01/20	0850-0906	18/Cloudy	Surface	1.0	19.0	31.4	31.5	7.45	7.46	7.41	96.8	97.0	3.23	3.25	3.27	3.0	3.0	4.8
						31.5		7.47			97.1		3.26			3.0		
			Middle	11.0	19.1	31.6	31.6	7.38	7.37		96.2	96.0	3.12	3.13		6.6	6.6	
						31.6		7.35			95.8		3.14			6.6		
			Bottom	21.0	19.2	31.7	31.7	7.12	7.14	7.14	93.0	93.3	3.45	3.43		4.8	4.8	
						31.7		7.16			93.5		3.41			4.8		
15/01/20	0946-1002	20/Fine	Surface	1.0	20.6	31.6	31.6	7.64	7.72	7.65	102.4	103.4	3.32	3.36	3.48	4.5	4.6	3.7
						31.6		7.79			104.4		3.39			4.6		
			Middle	10.9	20.8	31.8	31.8	7.52	7.58		101.2	102.0	3.45	3.46		3.4	3.5	
						31.8		7.63			102.7		3.46			3.6		
			Bottom	20.8	20.9	31.8	31.9	7.41	7.50	7.50	100.0	101.2	3.65	3.63		3.2	3.1	
						31.9		7.58			102.3		3.60			2.9		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1047-1100	18/Cloudy	Surface	1.0	20.4	31.9	32.0	7.09	7.07	7.11	94.7	94.5	3.34	3.32	3.70	2.4	2.2	2.7
						32.0		7.05			94.2		3.30			2.0		
			Middle	10.9	20.9	32.2	32.2	7.16	7.15		96.7	96.5	3.87	3.86		2.5	2.4	
						32.1		7.13			96.3		3.84			2.3		
			Bottom	20.8	21.0	32.2	32.2	7.30	7.32	7.32	98.9	99.2	3.94	3.92		3.3	3.4	
						32.2		7.34			99.4		3.90			3.4		
20/01/20	1346-1401	19/Cloudy	Surface	1.0	19.4	31.5	31.5	7.51	7.50	7.44	98.4	98.2	3.34	3.36	3.46	3.6	3.6	3.7
						31.5		7.48			98.0		3.37			3.6		
			Middle	11.0	19.5	31.7	31.7	7.37	7.38		96.8	96.9	3.45	3.44		3.9	3.8	
						31.6		7.39			97.0		3.43			3.6		
			Bottom	20.9	19.6	31.8	31.8	7.23	7.21	7.21	95.2	95.0	3.59	3.57		3.3	3.7	
						31.8		7.19			94.7		3.55			4.0		
22/01/20	1514-1527	20/Cloudy	Surface	1.0	20.5	31.9	31.9	7.08	7.06	7.10	94.9	94.7	3.42	3.44	3.70	2.8	2.9	2.8
						31.9		7.04			94.4		3.46			2.9		
			Middle	10.7	20.7	32.1	32.1	7.15	7.13		96.2	95.9	3.77	3.74		2.2	2.5	
						32.0		7.11			95.6		3.71			2.8		
			Bottom	20.4	20.8	32.2	32.2	7.21	7.20	7.20	97.3	97.1	3.90	3.92		3.1	3.1	
						32.2		7.18			96.9		3.94			3.1		
24/01/20	0904-0917	18/Cloudy	Surface	1.0	20.6	31.4	31.4	7.88	7.81	7.74	105.4	104.5	3.48	3.49	3.57	3.6	3.4	2.5
						31.4		7.73			103.5		3.50			3.2		
			Middle	10.8	20.4	31.6	31.7	7.60	7.67		101.4	102.4	3.54	3.56		2.2	2.4	
						31.7		7.74			103.3		3.58			2.5		
			Bottom	20.6	20.1	31.8	31.9	7.45	7.50	7.50	99.1	99.8	3.63	3.65		2.0	1.8	
						31.9		7.55			100.4		3.67			1.5		
29/01/20	0919-0936	11/Cloudy	Surface	1.0	19.6	24.9	25.0	7.40	7.39	7.40	93.2	93.1	3.40	3.42	3.53	3.7	3.6	3.2
						25.0		7.37			92.9		3.43			3.5		
			Middle	10.8	19.3	26.4	26.4	7.40	7.42		93.6	93.8	3.55	3.56		2.8	2.9	
						26.4		7.43			93.9		3.57			2.9		
			Bottom	20.6	19.1	27.2	27.3	7.21	7.20	7.20	90.2	90.1	3.60	3.62		2.8	3.2	
						27.3		7.19			90.0		3.63			3.5		
31/01/20	1010-1026	16/Cloudy	Surface	1.0	20.1	31.2	31.2	7.68	7.73	7.65	101.7	102.3	3.47	3.49	3.56	6.2	6.2	3.7
						31.2		7.77			102.9		3.50			6.1		
			Middle	10.9	20.4	31.4	31.5	7.51	7.57		100.1	100.9	3.55	3.57		2.3	2.4	
						31.5		7.63			101.7		3.58			2.5		
			Bottom	20.8	20.5	31.7	31.8	7.46	7.53	7.53	99.8	100.7	3.62	3.63		2.9	2.5	
						31.8		7.59			101.6		3.64			2.1		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1143-1200	18/Cloudy	Surface	1.0	19.6	31.4	31.5	7.50	7.52	7.45	98.5	98.8	3.63	3.62	3.68	4.4	4.0	3.1
						31.5		7.54			99.1		3.60			3.6		
			Middle	9.9	19.7	31.6	31.7	7.39	7.38		97.4	97.3	3.53	3.55		2.4	2.8	
						31.7		7.37			97.2		3.57			3.1		
			Bottom	18.8	19.8	31.8	31.8	7.24	7.26	7.26	95.7	95.9	3.88	3.86		2.7	2.5	
						31.8		7.27			96.1		3.84			2.3		
04/01/20	1241-1256	20/Cloudy	Surface	1.0	20.3	31.6	31.6	7.65	7.67	7.60	101.9	102.2	3.56	3.55	3.59	0.8	1.0	0.7
						31.6		7.69			102.5		3.54			1.2		
			Middle	9.9	20.4	31.7	31.8	7.52	7.54		100.5	100.7	3.44	3.46		0.8	0.9	
						31.8		7.55			100.9		3.48			1.0		
			Bottom	18.7	20.5	31.9	31.9	7.41	7.40	7.40	99.3	99.2	3.73	3.75		0.2	0.2	
						31.9		7.39			99.0		3.76			0.2		
06/01/20	1420-1435	21/Fine	Surface	1.0	20.4	31.6	31.6	7.75	7.73	7.65	103.5	103.2	3.33	3.32	3.36	2.0	2.4	3.8
						31.6		7.71			102.9		3.30			2.7		
			Middle	10.0	20.6	31.7	31.8	7.55	7.56		101.2	101.4	3.21	3.23		2.3	2.5	
						31.8		7.57			101.6		3.25			2.6		
			Bottom	18.9	20.7	31.9	31.9	7.36	7.35	7.35	99.0	98.8	3.51	3.52		6.7	6.6	
						31.9		7.33			98.6		3.53			6.4		
08/01/20	1519-1532	22/Fine	Surface	1.0	21.5	31.4	31.4	7.61	7.69	7.58	103.5	104.6	3.47	3.49	3.57	2.5	3.0	4.7
						31.4		7.77			105.7		3.51			3.5		
			Middle	9.8	21.3	31.6	31.6	7.53	7.48		102.1	101.4	3.50	3.53		4.5	4.3	
						31.6		7.42			100.6		3.55			4.0		
			Bottom	18.6	21.1	31.8	31.9	7.26	7.32	7.32	98.3	99.2	3.67	3.69		6.5	6.7	
						31.9		7.38			100.0		3.70			6.9		
10/01/20	1420-1435	20/Cloudy	Surface	1.0	19.3	31.6	31.6	7.62	7.61	7.54	99.7	99.6	3.30	3.32	3.46	2.0	1.9	1.8
						31.5		7.60			99.4		3.34			1.7		
			Middle	9.9	19.4	31.7	31.7	7.44	7.46		97.6	97.9	3.45	3.44		1.9	1.9	
						31.7		7.48			98.1		3.43			1.9		
			Bottom	18.7	19.5	31.9	31.9	7.30	7.32	7.32	96.0	96.2	3.62	3.61		1.7	1.6	
						31.8		7.33			96.4		3.59			1.4		
13/01/20	0909-0925	18/Cloudy	Surface	1.0	19.1	31.5	31.5	7.56	7.54	7.48	98.5	98.3	3.35	3.37	3.49	4.1	4.3	4.3
						31.5		7.52			98.0		3.38			4.5		
			Middle	9.9	19.2	31.7	31.7	7.40	7.42		96.7	96.9	3.47	3.45		4.6	4.4	
						31.6		7.43			97.0		3.43			4.2		
			Bottom	18.8	19.3	31.8	31.8	7.27	7.28	7.28	95.2	95.4	3.66	3.65		4.3	4.3	
						31.8		7.29			95.5		3.64			4.3		
15/01/20	1006-1020	20/Fine	Surface	1.0	20.6	31.6	31.6	7.73	7.79	7.73	103.6	104.4	3.41	3.39	3.48	2.6	3.0	2.7
						31.6		7.84			105.1		3.36			3.4		
			Middle	9.9	20.8	31.8	31.8	7.60	7.68		102.2	103.3	3.47	3.49		2.2	2.4	
						31.8		7.75			104.3		3.50			2.6		
			Bottom	18.7	20.9	31.8	31.9	7.49	7.53	7.53	101.1	101.6	3.55	3.57		2.6	2.8	
						31.9		7.56			102.0		3.58			3.0		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1102-1115	18/Cloudy	Surface	1.0	20.4	32.0	32.0	7.15	7.13	7.18	95.7	95.5	3.25	3.27	3.56	2.0	2.3	3.0
						32.0		7.11			95.2		3.29			2.5		
			Middle	9.9	20.9	32.1	32.2	7.24	7.22		97.8	97.6	3.53	3.55		3.0	3.1	
						32.2		7.20			97.3		3.56			3.1		
			Bottom	18.8	21.0	32.1	32.2	7.28	7.27	7.27	98.5	98.3	3.88	3.86		4.1	3.6	
						32.2		7.25			98.1		3.84			3.1		
20/01/20	1404-1419	19/Cloudy	Surface	1.0	19.5	31.5	31.6	7.41	7.42	7.34	97.2	97.4	3.48	3.47	3.49	4.0	4.0	4.3
						31.6		7.43			97.6		3.46			4.0		
			Middle	9.9	19.7	31.7	31.7	7.24	7.26		95.5	95.8	3.32	3.34		6.2	6.2	
						31.7		7.28			96.0		3.36			6.1		
			Bottom	18.7	19.8	31.8	31.8	7.16	7.15	7.15	94.7	94.5	3.67	3.66		2.8	2.7	
						31.8		7.13			94.3		3.64			2.6		
22/01/20	1529-1542	20/Cloudy	Surface	1.0	20.6	31.9	32.0	7.13	7.12	7.18	95.7	95.5	3.38	3.37	3.48	1.9	2.0	2.7
						32.0		7.10			95.3		3.35			2.1		
			Middle	9.9	20.7	32.1	32.1	7.26	7.24		97.7	97.5	3.43	3.45		4.2	4.1	
						32.1		7.22			97.2		3.47			3.9		
			Bottom	18.8	20.8	32.2	32.2	7.31	7.30	7.30	98.6	98.4	3.61	3.63		2.1	1.9	
						32.2		7.29			98.2		3.65			1.7		
24/01/20	0920-0932	18/Cloudy	Surface	1.0	20.6	31.4	31.4	7.68	7.72	7.62	102.8	103.3	3.37	3.39	3.48	2.9	3.1	4.2
						31.4		7.75			103.7		3.41			3.3		
			Middle	9.7	20.4	31.6	31.6	7.49	7.53		100.0	100.6	3.46	3.48		4.3	4.2	
						31.6		7.57			101.1		3.50			4.0		
			Bottom	18.4	20.1	31.8	31.9	7.36	7.40	7.40	97.8	98.4	3.54	3.56		5.2	5.2	
						31.9		7.44			98.9		3.57			5.2		
29/01/20	0942-1000	11/Cloudy	Surface	1.0	19.5	25.0	25.1	7.21	7.23	7.15	90.9	91.1	3.21	3.23	3.39	3.5	3.2	3.4
						25.1		7.24			91.3		3.24			2.8		
			Middle	9.7	19.2	26.4	26.5	7.06	7.08		89.4	89.6	3.40	3.42		3.8	3.7	
						26.5		7.09			89.7		3.43			3.5		
			Bottom	18.3	19.0	27.3	27.3	7.11	7.13	7.13	88.9	89.1	3.51	3.53		2.8	3.3	
						27.3		7.14			89.3		3.55			3.7		
31/01/20	1029-1045	16/Cloudy	Surface	1.0	20.1	31.2	31.2	7.82	7.88	7.83	103.5	104.3	3.41	3.43	3.54	2.1	2.1	2.0
						31.1		7.93			105.0		3.44			2.1		
			Middle	9.9	20.4	31.5	31.5	7.75	7.78		103.3	103.7	3.56	3.58		0.9	1.4	
						31.5		7.81			104.1		3.59			1.9		
			Bottom	18.7	20.5	31.7	31.8	7.56	7.60	7.60	101.2	101.8	3.60	3.63		2.0	2.4	
						31.8		7.64			102.3		3.65			2.7		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1204-1220	18/Cloudy	Surface	1.0	19.7	31.4	31.4	7.43	7.42	7.35	97.8	97.7	3.34	3.35	3.43	2.7	2.9	2.9
						31.4		7.41			97.5		3.36			3.0		
			Middle	9.4	19.9	31.5	31.5	7.25	7.27		95.8	96.1	3.26	3.28		4.5	4.4	
						31.5		7.29			96.4		3.29			4.2		
			Bottom	17.7	20.0	31.6	31.6	7.15	7.17	7.17	94.8	95.0	3.67	3.66		1.3	1.4	
						31.6		7.18			95.2		3.64			1.5		
04/01/20	1301-1317	20/Cloudy	Surface	1.0	20.3	31.5	31.6	7.59	7.58	7.49	101.1	101.0	3.49	3.50	3.50	6.0	6.3	4.8
						31.6		7.57			100.9		3.51			6.5		
			Middle	9.4	20.5	31.7	31.7	7.38	7.40		98.8	99.1	3.34	3.36		6.0	6.0	
						31.7		7.42			99.3		3.37			5.9		
			Bottom	17.8	20.6	31.8	31.8	7.27	7.29	7.29	97.5	97.7	3.66	3.64		2.3	2.3	
						31.8		7.30			97.9		3.62			2.2		
06/01/20	1440-1454	21/Fine	Surface	1.0	20.5	31.7	31.7	7.67	7.66	7.56	102.6	102.4	3.07	3.09	3.26	2.2	2.0	4.1
						31.7		7.64			102.2		3.10			1.7		
			Middle	9.3	20.6	31.8	31.9	7.45	7.47		99.9	100.2	3.28	3.26		3.9	3.7	
						31.9		7.49			100.5		3.24			3.5		
			Bottom	17.6	20.7	32.0	32.0	7.41	7.40	7.40	99.7	99.6	3.44	3.43		6.8	6.6	
						32.0		7.39			99.4		3.42			6.3		
08/01/20	1537-1550	22/Fine	Surface	1.0	21.5	31.4	31.4	7.82	7.86	7.78	106.3	106.9	3.36	3.38	3.45	2.5	2.5	2.6
						31.4		7.90			107.4		3.39			2.5		
			Middle	9.3	21.3	31.6	31.7	7.75	7.70		105.1	104.4	3.42	3.44		2.7	3.0	
						31.7		7.64			103.6		3.46			3.2		
			Bottom	17.5	21.1	31.9	31.9	7.46	7.52	7.52	101.1	101.9	3.51	3.54		2.5	2.4	
						31.9		7.57			102.6		3.56			2.2		
10/01/20	1440-1454	20/Cloudy	Surface	1.0	19.3	31.6	31.6	7.49	7.48	7.40	98.0	97.8	3.17	3.18	3.31	2.1	2.2	1.9
						31.6		7.46			97.6		3.19			2.2		
			Middle	9.4	19.5	31.7	31.7	7.32	7.33		96.2	96.3	3.28	3.26		1.1	1.4	
						31.7		7.34			96.4		3.24			1.6		
			Bottom	17.8	19.6	31.8	31.8	7.15	7.17	7.17	94.2	94.5	3.47	3.49		2.0	2.2	
						31.8		7.19			94.7		3.50			2.4		
13/01/20	0929-0943	18/Cloudy	Surface	1.0	19.1	31.4	31.4	7.64	7.63	7.58	99.5	99.3	3.19	3.18	3.34	4.0	4.1	4.7
						31.4		7.61			99.1		3.17			4.2		
			Middle	9.3	19.3	31.5	31.6	7.53	7.54		98.4	98.6	3.29	3.31		5.4	5.5	
						31.6		7.55			98.8		3.32			5.6		
			Bottom	17.6	19.4	31.7	31.7	7.37	7.35	7.35	96.7	96.4	3.54	3.52		4.0	4.4	
						31.7		7.33			96.1		3.50			4.7		
15/01/20	1025-1039	20/Fine	Surface	1.0	20.6	31.6	31.6	7.63	7.69	7.64	102.1	103.0	3.36	3.38	3.45	7.1	7.4	4.8
						31.6		7.74			103.8		3.40			7.7		
			Middle	9.2	20.8	31.8	31.8	7.53	7.60		101.4	102.3	3.44	3.45		2.5	2.6	
						31.8		7.66			103.1		3.45			2.7		
			Bottom	17.4	20.9	31.9	31.9	7.34	7.41	7.41	99.1	100.0	3.50	3.53		4.0	4.4	
						31.9		7.48			100.9		3.56			4.8		

Mid-Flood Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1119-1132	18/Cloudy	Surface	1.0	20.3	32.0	32.1	7.21	7.20	7.26	96.2	96.0	3.40	3.42	3.59	2.4	2.5	3.9
						32.1		7.18			95.8		3.44			2.5		
			Middle	9.2	20.8	32.1	32.2	7.35	7.33		99.1	98.9	3.68	3.67		2.6	2.8	
						32.2		7.31			98.6		3.65			3.0		
			Bottom	17.4	21.0	32.2	32.2	7.39	7.37	7.37	100.1	100.0	3.71	3.70		6.8	6.5	
						32.2		7.35			99.9		3.68			6.2		
20/01/20	1424-1437	18/Cloudy	Surface	1.0	19.4	31.4	31.4	7.59	7.57	7.50	99.4	99.1	3.27	3.28	3.32	9.7	9.7	4.8
						31.4		7.55			98.8		3.29			9.7		
			Middle	9.4	19.6	31.5	31.6	7.42	7.44		97.6	97.8	3.23	3.22		2.5	2.7	
						31.6		7.45			98.0		3.20			2.8		
			Bottom	17.8	19.7	31.7	31.7	7.34	7.33	7.33	96.8	96.7	3.48	3.46		2.3	2.1	
						31.7		7.32			96.5		3.44			1.8		
22/01/20	1546-1559	20/Cloudy	Surface	1.0	20.7	32.0	32.0	7.17	7.16	7.23	96.5	96.3	3.51	3.53	3.63	2.1	2.3	2.7
						32.0		7.14			96.1		3.55			2.4		
			Middle	9.1	20.7	32.1	32.2	7.32	7.31		98.5	98.3	3.62	3.64		3.1	3.2	
						32.2		7.29			98.1		3.65			3.2		
			Bottom	17.2	20.8	32.1	32.2	7.36	7.35	7.35	99.3	99.1	3.70	3.72		2.4	2.6	
						32.2		7.33			98.9		3.74			2.8		
24/01/20	0936-0946	18/Cloudy	Surface	1.0	20.6	31.4	31.4	7.95	7.92	7.81	106.4	105.9	3.33	3.36	3.46	4.0	4.1	4.6
						31.3		7.88			105.4		3.38			4.2		
			Middle	9.1	20.4	31.6	31.7	7.63	7.70		101.8	102.8	3.45	3.47		3.4	3.8	
						31.7		7.77			103.7		3.49			4.2		
			Bottom	17.2	20.1	31.8	31.8	7.42	7.48	7.48	98.6	99.5	3.51	3.55		6.1	6.0	
						31.8		7.54			100.3		3.58			5.8		
29/01/20	1004-1022	11/Cloudy	Surface	1.0	19.5	24.9	25.0	7.33	7.32	7.23	92.4	92.3	3.16	3.18	3.27	3.3	3.3	3.6
						25.0		7.30			92.1		3.19			3.3		
			Middle	8.9	19.3	26.5	26.6	7.12	7.14		90.1	90.3	3.21	3.23		2.9	3.3	
						26.6		7.15			90.4		3.24			3.7		
			Bottom	16.7	19.1	27.3	27.3	6.93	6.92	6.92	86.7	86.6	3.40	3.42		4.3	4.1	
						27.2		6.90			86.4		3.43			3.9		
31/01/20	1049-1104	16/Cloudy	Surface	1.0	20.1	31.2	31.2	7.73	7.79	7.69	102.3	103.1	3.38	3.40	3.47	2.3	2.8	2.6
						31.2		7.84			103.8		3.41			3.3		
			Middle	9.3	20.4	31.4	31.5	7.65	7.59		102.0	101.2	3.46	3.48		2.2	2.1	
						31.5		7.53			100.4		3.50			1.9		
			Bottom	17.5	20.5	31.8	31.8	7.41	7.45	7.45	99.2	99.8	3.54	3.55		3.2	3.1	
						31.8		7.49			100.3		3.55			2.9		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1720-1736	19/Cloudy	Surface	1.0	19.8	31.5	31.5	7.53	7.51	7.43	99.4	99.1	3.58	3.60	3.72	2.3	2.2	3.8
						31.5		7.49			98.8		3.62			2.1		
			Middle	10.9	19.9	31.6	31.7	7.33	7.34		97.0	97.2	3.70	3.71		7.5	7.4	
						31.7		7.35			97.3		3.72			7.3		
			Bottom	20.7	20.1	31.8	31.8	7.19	7.18	7.18	95.6	95.4	3.85	3.84		1.9	1.8	
						31.8		7.16			95.2		3.82			1.6		
04/01/20	1820-1835	18/Cloudy	Surface	1.0	19.3	31.6	31.6	7.64	7.63	7.59	99.9	99.8	3.45	3.46	3.59	2.7	2.8	1.8
						31.6		7.61			99.6		3.47			2.9		
			Middle	10.9	19.5	31.7	31.8	7.53	7.55		98.9	99.2	3.60	3.59		1.1	1.6	
						31.8		7.56			99.4		3.57			2.0		
			Bottom	20.7	19.6	31.9	31.9	7.35	7.33	7.33	96.9	96.6	3.75	3.73		1.1	1.1	
						31.9		7.31			96.3		3.71			1.0		
06/01/20	0850-0905	22/Fine	Surface	1.0	19.8	31.6	31.6	7.60	7.59	7.54	100.4	100.3	3.29	3.28	3.42	4.0	3.9	4.1
						31.6		7.58			100.1		3.27			3.8		
			Middle	10.8	19.9	31.8	31.8	7.47	7.49		98.9	99.2	3.41	3.40		4.1	4.3	
						31.7		7.51			99.4		3.38			4.4		
			Bottom	20.6	20.0	31.9	31.9	7.34	7.33	7.33	92.4	94.8	3.55	3.57		4.1	4.1	
						31.9		7.32			97.2		3.59			4.0		
08/01/20	0935-0951	21/Fine	Surface	1.0	21.4	31.4	31.4	7.41	7.48	7.45	100.7	101.6	3.50	3.53	3.62	2.8	3.0	2.7
						31.4		7.55			102.5		3.55			3.1		
			Middle	10.6	21.1	31.6	31.7	7.36	7.42		99.4	100.2	3.59	3.62		3.2	3.3	
						31.7		7.47			100.9		3.64			3.4		
			Bottom	20.2	21.0	31.9	31.9	7.14	7.21	7.21	96.4	97.3	3.75	3.73		2.2	2.0	
						31.9		7.27			98.2		3.71			1.7		
10/01/20	1051-1108	21/Cloudy	Surface	1.0	19.8	31.5	31.6	7.40	7.42	7.37	97.7	98.0	3.36	3.38	3.40	2.4	2.4	2.0
						31.6		7.44			98.2		3.39			2.4		
			Middle	11.0	19.9	31.7	31.7	7.33	7.32		97.0	96.9	3.25	3.26		2.1	2.1	
						31.7		7.31			96.8		3.27			2.0		
			Bottom	20.9	20.0	31.8	31.8	7.11	7.13	7.13	94.3	94.5	3.58	3.56		1.4	1.5	
						31.8		7.14			94.7		3.54			1.6		
13/01/20	1324-1340	19/Cloudy	Surface	1.0	19.4	31.5	31.5	7.36	7.38	7.30	96.4	96.6	3.36	3.35	3.38	2.9	3.1	3.6
						31.5		7.39			96.8		3.34			3.3		
			Middle	10.9	19.6	31.7	31.7	7.24	7.23		95.3	95.2	3.25	3.27		3.8	4.2	
						31.6		7.22			95.0		3.28			4.5		
			Bottom	20.8	19.7	31.8	31.8	7.04	7.06	7.06	92.9	93.2	3.55	3.53		3.7	3.6	
						31.8		7.08			93.4		3.51			3.4		
15/01/20	1509-1524	21/Fine	Surface	1.0	20.8	31.5	31.6	7.40	7.46	7.39	99.5	100.3	3.42	3.45	3.57	2.9	3.1	3.6
						31.6		7.52			101.1		3.47			3.2		
			Middle	10.8	21.1	31.8	31.8	7.26	7.32		98.2	99.1	3.56	3.54		2.6	2.4	
						31.7		7.38			99.9		3.52			2.1		
			Bottom	20.5	21.3	31.9	31.9	7.14	7.21	7.21	97.0	97.9	3.70	3.73		5.3	5.3	
						31.9		7.27			98.8		3.75			5.2		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-C1a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1616-1628	18/Cloudy	Surface	1.0	20.6	31.9	32.0	7.14	7.16	7.20	95.8	96.1	3.69	3.67	3.81	3.8	4.0	4.6
						32.0		7.17			96.3		3.65			4.1		
			Middle	10.6	20.9	32.0	32.1	7.26	7.24		97.9	97.6	3.83	3.82		7.1	6.9	
						32.1		7.22			97.3		3.80			6.7		
			Bottom	20.2	21.0	32.2	32.3	7.31	7.29	7.29	99.0	98.8	3.95	3.93		2.7	3.1	
						32.3		7.27			98.5		3.91			3.4		
20/01/20	0855-0910	17/Cloudy	Surface	1.0	19.0	31.4	31.5	7.32	7.34	7.28	95.1	95.4	3.42	3.41	3.56	2.4	2.3	3.3
						31.5		7.36			95.7		3.40			2.1		
			Middle	10.8	19.1	31.6	31.6	7.23	7.22		94.2	94.0	3.56	3.55		3.0	3.2	
						31.6		7.20			93.8		3.53			3.3		
			Bottom	20.6	19.3	31.7	31.8	7.08	7.07	7.07	92.7	92.6	3.73	3.71		4.6	4.5	
						31.8		7.06			92.5		3.69			4.3		
22/01/20	1002-1015	20/Cloudy	Surface	1.0	20.4	31.9	31.9	6.87	6.88	6.96	91.8	92.0	3.60	3.62	3.83	2.3	2.4	2.0
						31.8		6.89			92.2		3.63			2.5		
			Middle	10.4	20.5	32.0	32.0	7.05	7.03		94.5	94.3	3.93	3.92		1.9	1.9	
						32.0		7.01			94.0		3.90			1.8		
			Bottom	19.8	20.6	32.1	32.2	7.11	7.10	7.10	95.5	95.3	3.98	3.96		1.8	1.8	
						32.2		7.08			95.1		3.94			1.8		
24/01/20	1134-1149	19/Cloudy	Surface	1.0	20.8	31.4	31.4	7.68	7.73	7.60	103.2	103.8	3.55	3.57	3.66	2.4	2.1	2.9
						31.3		7.77			104.4		3.58			1.7		
			Middle	10.7	20.6	31.5	31.6	7.53	7.47		101.1	100.2	3.61	3.64		5.0	4.9	
						31.6		7.40			99.3		3.67			4.7		
			Bottom	20.3	20.3	31.9	31.9	7.32	7.40	7.40	97.7	98.7	3.73	3.77		2.0	1.7	
						31.9		7.47			99.7		3.80			1.4		
29/01/20	1444-1502	11/Cloudy	Surface	1.0	19.4	25.1	25.1	7.14	7.16	7.04	90.0	90.2	3.12	3.14	3.31	3.0	3.1	3.4
						25.0		7.17			90.3		3.15			3.1		
			Middle	10.7	19.2	26.4	26.5	6.93	6.92		87.7	87.6	3.36	3.38		3.0	3.1	
						26.5		6.90			87.5		3.39			3.1		
			Bottom	20.3	19.0	27.3	27.3	6.88	6.87	6.87	86.1	86.0	3.40	3.42		4.2	4.0	
						27.2		6.86			85.9		3.44			3.8		
31/01/20	1612-1628	17/Cloudy	Surface	1.0	20.2	31.1	31.2	7.53	7.49	7.41	99.8	99.2	3.56	3.58	3.65	5.3	5.1	4.1
						31.2		7.44			98.6		3.59			4.9		
			Middle	10.7	20.5	31.3	31.4	7.29	7.33		97.3	97.8	3.63	3.64		5.2	5.1	
						31.4		7.36			98.2		3.64			4.9		
			Bottom	20.4	20.5	31.7	31.7	7.04	7.11	7.11	94.0	94.9	3.71	3.73		1.9	2.1	
						31.7		7.17			95.7		3.74			2.2		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1739-1754	19/Cloudy	Surface	1.0	19.7	31.6	31.6	7.42	7.43	7.35	97.8	97.9	3.77	3.76	3.79	3.8	3.7	2.8
						31.5		7.44			98.0		3.75			3.6		
			Middle	9.8	19.8	31.7	31.7	7.28	7.26		96.2	96.0	3.66	3.68		3.1	3.2	
						31.7		7.24			95.7		3.69			3.2		
			Bottom	18.5	20.0	31.9	31.9	7.09	7.11	7.11	94.1	94.3	3.90	3.92		1.3	1.4	
						31.8		7.12			94.5		3.94			1.5		
04/01/20	1838-1853	18/Cloudy	Surface	1.0	19.2	31.6	31.7	7.47	7.46	7.40	97.5	97.4	3.65	3.67	3.81	0.8	0.8	1.0
						31.7		7.45			97.3		3.69			0.8		
			Middle	9.7	19.4	31.8	31.8	7.33	7.35		96.2	96.4	3.81	3.80		0.8	0.7	
						31.8		7.36			96.6		3.78			0.5		
			Bottom	18.4	19.5	31.9	32.0	7.20	7.22	7.22	94.7	95.0	3.94	3.95		1.2	1.4	
						32.0		7.23			95.2		3.96			1.6		
06/01/20	0908-0924	22/Fine	Surface	1.0	19.7	31.7	31.7	7.62	7.63	7.54	100.5	100.6	3.54	3.55	3.58	2.8	3.3	3.9
						31.6		7.64			100.7		3.56			3.8		
			Middle	9.9	19.8	31.8	31.8	7.46	7.44		98.6	98.4	3.45	3.44		3.3	2.8	
						31.8		7.42			98.1		3.42			2.3		
			Bottom	18.7	19.9	32.0	32.0	7.28	7.30	7.30	96.5	96.7	3.78	3.76		5.4	5.5	
						32.0		7.31			96.9		3.74			5.5		
08/01/20	0955-1010	21/Fine	Surface	1.0	21.4	31.4	31.4	7.38	7.40	7.30	100.3	100.6	3.41	3.45	3.56	2.4	2.5	2.6
						31.4		7.42			100.8		3.48			2.6		
			Middle	9.7	21.1	31.6	31.6	7.25	7.21		97.9	97.3	3.56	3.58		3.1	2.6	
						31.6		7.16			96.7		3.60			2.0		
			Bottom	18.3	21.0	31.8	31.9	7.06	7.09	7.09	95.4	95.8	3.64	3.66		3.1	2.8	
						31.9		7.12			96.2		3.67			2.5		
10/01/20	1111-1127	21/Cloudy	Surface	1.0	19.8	31.6	31.6	7.53	7.52	7.45	99.4	99.3	3.52	3.51	3.60	1.7	2.0	2.2
						31.6		7.51			99.2		3.49			2.3		
			Middle	9.8	20.0	31.7	31.8	7.35	7.37		97.5	97.8	3.55	3.56		2.1	2.1	
						31.8		7.39			98.1		3.57			2.1		
			Bottom	18.5	20.1	31.9	31.9	7.26	7.25	7.25	96.6	96.4	3.76	3.74		2.2	2.5	
						31.9		7.23			96.2		3.72			2.7		
13/01/20	1343-1358	19/Cloudy	Surface	1.0	19.4	31.5	31.6	7.45	7.43	7.38	97.6	97.4	3.53	3.52	3.62	3.0	3.1	3.7
						31.6		7.41			97.1		3.51			3.1		
			Middle	9.8	19.5	31.7	31.7	7.32	7.33		96.2	96.3	3.56	3.58		4.0	4.2	
						31.7		7.34			96.4		3.59			4.4		
			Bottom	18.6	19.7	31.8	31.8	7.13	7.14	7.14	94.1	94.2	3.77	3.75		3.9	4.0	
						31.8		7.15			94.3		3.73			4.0		
15/01/20	1528-1542	21/Fine	Surface	1.0	20.8	31.5	31.5	7.56	7.63	7.54	101.6	102.5	3.45	3.48	3.56	3.6	3.7	3.7
						31.5		7.69			103.4		3.50			3.8		
			Middle	9.7	21.1	31.7	31.8	7.42	7.46		100.4	101.0	3.53	3.55		3.1	3.0	
						31.8		7.50			101.5		3.57			2.8		
			Bottom	18.4	21.3	31.9	31.9	7.21	7.27	7.27	97.9	98.8	3.62	3.65		4.5	4.6	
						31.9		7.33			99.6		3.68			4.6		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M4a

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1630-1641	18/Cloudy	Surface	1.0	20.6	32.0	32.1	7.17	7.18	7.21	96.2	96.4	3.42	3.44	3.69	3.3	3.0	3.8
						32.1		7.19			96.5		3.45			2.7		
			Middle	9.6	20.9	32.2	32.3	7.25	7.24		97.9	97.7	3.71	3.73		4.9	4.8	
						32.3		7.22			97.5		3.75			4.6		
			Bottom	18.2	21.0	32.3	32.3	7.34	7.32	7.32	99.4	99.2	3.90	3.92		3.8	3.8	
						32.3		7.30			98.9		3.93			3.7		
20/01/20	0913-0927	17/Cloudy	Surface	1.0	19.1	31.5	31.5	7.27	7.29	7.21	94.7	94.9	3.51	3.53	3.58	3.8	3.5	3.8
						31.5		7.30			95.1		3.55			3.1		
			Middle	9.8	19.2	31.6	31.7	7.14	7.13		93.2	93.1	3.42	3.43		3.3	3.6	
						31.7		7.12			93.0		3.44			3.8		
			Bottom	18.5	19.3	31.8	31.8	6.96	6.94	6.94	91.2	90.9	3.79	3.78		4.3	4.4	
						31.8		6.92			90.6		3.76			4.5		
22/01/20	1017-1030	20/Cloudy	Surface	1.0	20.4	31.9	32.0	6.93	6.92	7.00	92.6	92.4	3.72	3.74	3.81	2.9	3.1	2.4
						32.0		6.90			92.2		3.75			3.2		
			Middle	9.6	20.6	32.0	32.1	7.10	7.09		95.3	95.1	3.81	3.83		2.4	2.2	
						32.1		7.07			94.9		3.85			1.9		
			Bottom	18.2	20.7	32.2	32.2	7.18	7.17	7.17	96.7	96.5	3.87	3.85		1.8	1.9	
						32.2		7.15			96.2		3.83			2.0		
24/01/20	1152-1206	19/Cloudy	Surface	1.0	20.8	31.4	31.4	7.54	7.61	7.57	101.3	102.2	3.46	3.48	3.60	2.6	3.0	2.6
						31.4		7.67			103.1		3.50			3.4		
			Middle	9.5	20.6	31.5	31.6	7.48	7.53		100.4	101.0	3.57	3.61		2.5	2.0	
						31.6		7.57			101.6		3.64			1.5		
			Bottom	18.0	20.3	31.8	31.9	7.39	7.41	7.41	98.7	99.0	3.68	3.72		2.9	2.9	
						31.9		7.43			99.2		3.75			2.9		
29/01/20	1507-1524	11/Cloudy	Surface	1.0	19.5	25.0	25.0	7.28	7.27	6.92	91.7	91.6	3.24	3.26	3.45	3.4	3.6	3.9
						25.0		7.26			91.5		3.27			3.8		
			Middle	9.5	19.3	26.5	26.5	6.55	6.57		82.9	83.1	3.40	3.42		4.2	4.0	
						26.5		6.58			83.2		3.44			3.8		
			Bottom	18.0	19.1	26.9	27.0	6.41	6.40	6.40	80.2	80.1	3.65	3.66		4.1	4.1	
						27.0		6.39			80.0		3.67			4.1		
31/01/20	1633-1650	17/Cloudy	Surface	1.0	20.2	31.1	31.2	7.67	7.70	7.59	101.7	102.1	3.55	3.57	3.64	4.3	4.2	4.7
						31.2		7.72			102.4		3.58			4.0		
			Middle	9.7	20.5	31.4	31.4	7.54	7.48		100.6	99.8	3.64	3.67		3.2	2.9	
						31.4		7.41			98.9		3.69			2.6		
			Bottom	18.4	20.5	31.7	31.8	7.25	7.19	7.19	96.8	96.0	3.65	3.68		7.5	7.2	
						31.8		7.13			95.1		3.70			6.8		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

Monitoring Station : TKO-M5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
02/01/20	1758-1812	19/Cloudy	Surface	1.0	19.7	31.4	31.5	7.27	7.29	7.20	95.7	96.0	3.44	3.46	3.59	3.3	3.3	3.2
						31.5		7.30			96.2		3.48			3.2		
			Middle	9.3	19.9	31.6	31.6	7.11	7.12		94.1	94.2	3.59	3.58		4.2	4.3	
						31.6		7.13			94.3		3.56			4.3		
			Bottom	17.5	20.0	31.7	31.7	6.99	6.97	6.97	92.7	92.5	3.74	3.73		2.3	2.0	
						31.7		6.95			92.2		3.71			1.6		
04/01/20	1857-1911	18/Cloudy	Surface	1.0	19.1	31.5	31.5	7.40	7.42	7.34	96.4	96.7	3.58	3.57	3.69	0.8	1.1	1.1
						31.5		7.44			96.9		3.55			1.3		
			Middle	9.3	19.3	31.7	31.7	7.28	7.27		95.3	95.1	3.64	3.66		0.8	0.9	
						31.6		7.25			94.8		3.68			0.9		
			Bottom	17.6	19.4	31.8	31.8	7.13	7.14	7.14	93.6	93.7	3.85	3.84		1.0	1.3	
						31.8		7.15			93.8		3.83			1.6		
06/01/20	0928-0942	22/Fine	Surface	1.0	19.8	31.6	31.7	7.52	7.51	7.41	99.3	99.2	3.20	3.22	3.40	5.5	5.7	4.0
						31.7		7.50			99.1		3.23			5.8		
			Middle	9.2	20.0	31.8	31.8	7.29	7.31		96.7	97.0	3.37	3.36		2.6	2.5	
						31.8		7.33			97.3		3.34			2.3		
			Bottom	17.4	20.1	31.9	31.9	7.20	7.22	7.22	95.8	96.0	3.63	3.64		4.1	3.9	
						31.9		7.23			96.2		3.65			3.6		
08/01/20	1016-1032	21/Fine	Surface	1.0	21.4	31.4	31.4	7.52	7.58	7.49	102.1	103.0	3.45	3.48	3.54	3.3	3.2	3.1
						31.3		7.64			103.8		3.50			3.0		
			Middle	9.1	21.1	31.6	31.7	7.43	7.40		100.4	100.0	3.56	3.55		2.5	2.8	
						31.7		7.36			99.5		3.53			3.1		
			Bottom	17.2	21.0	31.9	31.9	7.22	7.31	7.31	97.5	98.7	3.58	3.60		3.3	3.4	
						31.8		7.39			99.8		3.62			3.4		
10/01/20	1132-1147	21/Cloudy	Surface	1.0	19.9	31.6	31.7	7.34	7.36	7.29	97.1	97.4	3.36	3.35	3.48	2.0	1.9	1.8
						31.7		7.38			97.7		3.33			1.8		
			Middle	9.3	20.1	31.8	31.8	7.22	7.21		96.0	95.9	3.41	3.43		1.5	1.6	
						31.8		7.20			95.7		3.45			1.6		
			Bottom	17.6	20.2	31.9	31.9	7.04	7.06	7.06	93.8	94.0	3.64	3.65		1.5	1.8	
						31.9		7.07			94.2		3.66			2.1		
13/01/20	1403-1418	19/Cloudy	Surface	1.0	19.3	31.4	31.5	7.52	7.51	7.45	98.3	98.2	3.26	3.28	3.45	3.7	3.7	4.0
						31.5		7.50			98.1		3.30			3.7		
			Middle	9.2	19.4	31.6	31.6	7.37	7.39		96.6	96.8	3.46	3.47		4.7	4.7	
						31.6		7.40			97.0		3.48			4.6		
			Bottom	17.3	19.6	31.7	31.8	7.22	7.24	7.24	95.0	95.3	3.62	3.61		3.7	3.6	
						31.8		7.26			95.6		3.60			3.5		
15/01/20	1547-1603	21/Fine	Surface	1.0	20.8	31.5	31.6	7.43	7.50	7.44	99.9	100.8	3.40	3.42	3.52	4.7	4.6	4.6
						31.6		7.57			101.7		3.44			4.5		
			Middle	9.0	21.1	31.8	31.8	7.31	7.38		98.9	99.9	3.50	3.53		4.2	4.1	
						31.8		7.45			100.8		3.56			4.0		
			Bottom	17.0	21.3	31.9	31.9	7.16	7.19	7.19	97.3	97.7	3.58	3.60		5.1	5.0	
						31.9		7.22			98.1		3.61			4.9		

Mid-Ebb Tide

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

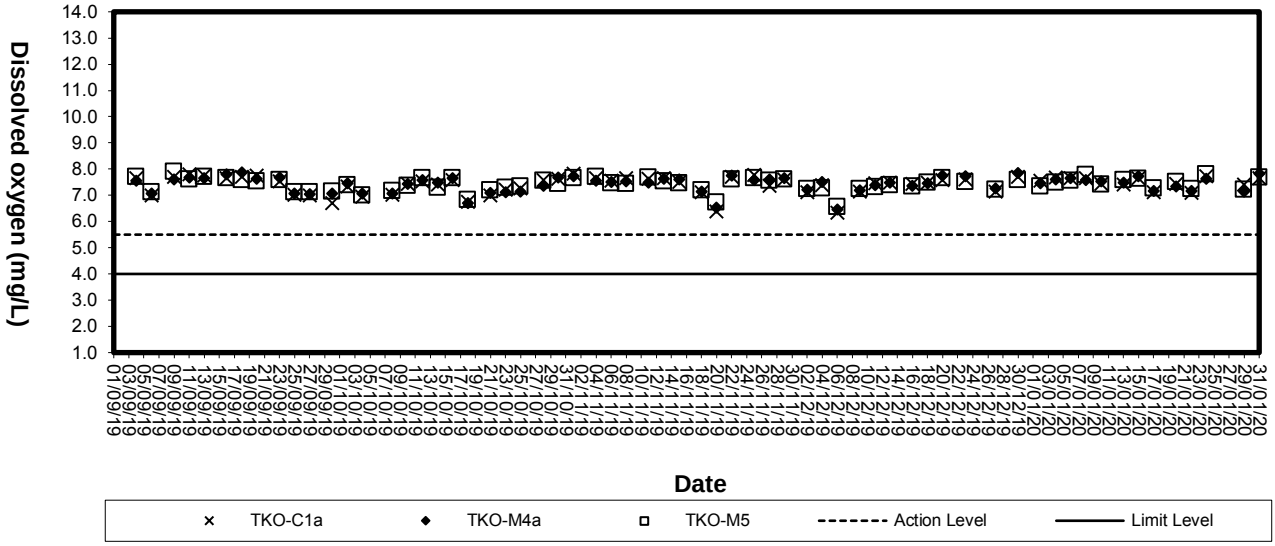
Monitoring Station : TKO-M5

Date	Sampling Duration	Ambient Temp (°C) / Weather Condition	Monitoring Depth (m)		Temp (°C)	Salinity (ppt)		Dissolved Oxygen (mg/L)			Dissolved Oxygen Saturation (%)		Turbidity (NTU)			Suspended Solids (mg/L)		
						Value	Average	Value	Average	Depth-average	Value	Average	Value	Average	Depth-average	Value	Average	Depth-average
17/01/20	1644-1656	18/Cloudy	Surface	1.0	20.5	32.1	32.1	7.22	7.20	7.26	96.9	96.7	3.51	3.53	3.64	2.4	2.2	2.4
						32.1		7.18			96.4		3.55			1.9		
			Middle	8.8	20.8	32.2	32.2	7.30	7.32		98.5	98.8	3.62	3.60		2.7	2.7	
						32.2		7.34			99.1		3.57			2.7		
			Bottom	18.6	20.9	32.2	32.3	7.40	7.39	7.39	100.0	99.8	3.81	3.79		2.3	2.5	
						32.3		7.37			99.6		3.76			2.6		
20/01/20	0931-0944	17/Cloudy	Surface	1.0	19.1	31.5	31.5	7.47	7.46	7.41	97.3	97.1	3.38	3.37	3.49	3.7	3.6	3.0
						31.4		7.44			96.9		3.35			3.5		
			Middle	9.3	19.3	31.6	31.6	7.38	7.36		96.5	96.3	3.47	3.48		2.6	3.1	
						31.6		7.34			96.0		3.49			3.6		
			Bottom	17.5	19.4	31.8	31.8	7.17	7.18	7.18	94.1	94.2	3.65	3.63		2.3	2.3	
						31.7		7.19			94.3		3.61			2.2		
22/01/20	1034-1046	20/Cloudy	Surface	1.0	20.4	32.0	32.0	7.02	7.04	7.10	93.9	94.2	3.43	3.42	3.59	2.0	2.2	2.2
						32.0		7.06			94.4		3.40			2.3		
			Middle	8.8	20.6	32.1	32.1	7.17	7.16		96.3	96.1	3.66	3.63		2.2	2.3	
						32.1		7.14			95.9		3.60			2.3		
			Bottom	16.6	20.7	32.1	32.2	7.22	7.21	7.21	97.1	96.9	3.74	3.72		2.2	2.2	
						32.2		7.19			96.7		3.70			2.2		
24/01/20	1211-1233	19/Cloudy	Surface	1.0	20.8	31.4	31.4	7.72	7.78	7.70	103.7	104.5	3.48	3.51	3.62	2.2	2.3	2.7
						31.4		7.83			105.2		3.54			2.3		
			Middle	8.9	20.6	31.6	31.7	7.64	7.62		102.5	102.2	3.64	3.65		3.1	3.2	
						31.7		7.59			101.8		3.66			3.2		
			Bottom	16.7	20.3	31.8	31.9	7.56	7.51	7.51	100.9	100.2	3.68	3.69		2.4	2.7	
						31.9		7.45			99.4		3.69			2.9		
29/01/20	1530-1549	11/Cloudy	Surface	1.0	19.5	25.1	25.1	7.31	7.30	7.22	92.1	92.0	3.07	3.08	3.24	3.2	3.3	3.9
						25.0		7.29			91.8		3.09			3.4		
			Middle	8.7	19.4	26.6	26.6	7.13	7.15		90.2	90.4	3.21	3.22		3.9	4.0	
						26.5		7.16			90.5		3.23			4.0		
			Bottom	16.4	19.2	27.1	27.2	7.00	7.02	7.02	87.6	87.8	3.41	3.42		4.2	4.4	
						27.2		7.03			87.9		3.43			4.5		
31/01/20	1656-1715	17/Cloudy	Surface	1.0	20.2	31.1	31.2	7.55	7.62	7.50	100.1	101.0	3.41	3.45	3.54	3.2	2.8	3.2
						31.2		7.68			101.9		3.48			2.3		
			Middle	9.1	20.5	31.4	31.4	7.36	7.39		98.3	98.7	3.53	3.56		2.1	2.3	
						31.4		7.42			99.1		3.59			2.5		
			Bottom	17.1	20.5	31.7	31.7	7.25	7.28	7.28	96.8	97.1	3.60	3.62		4.3	4.4	
						31.7		7.30			97.4		3.64			4.5		

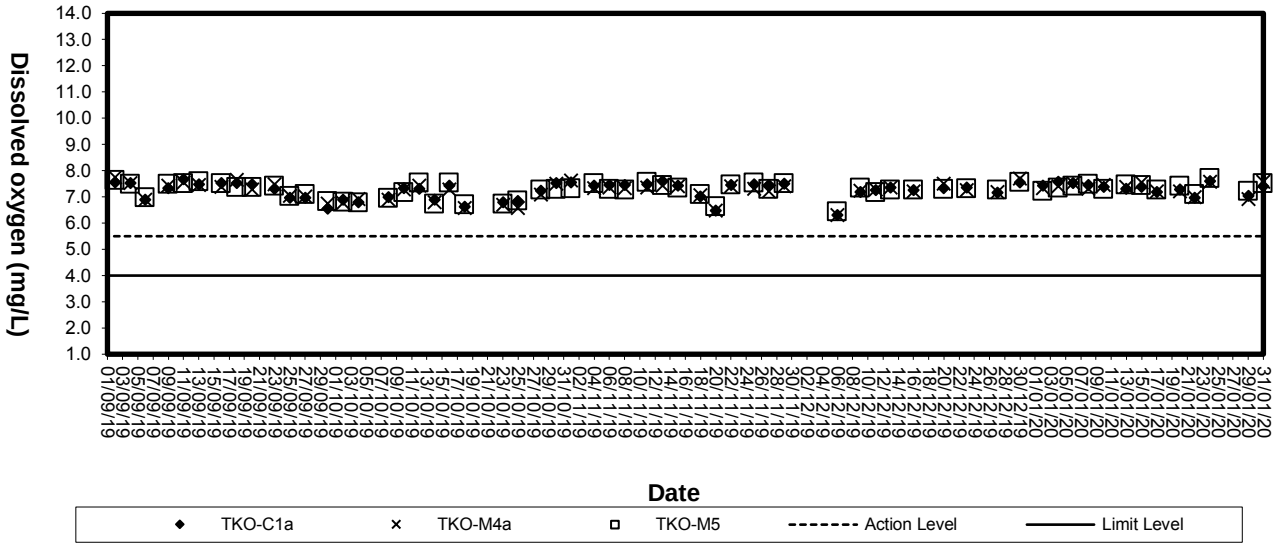
Appendix D5

Graphical Plots of Impact Marine Water Quality Monitoring Data (3RS Project)

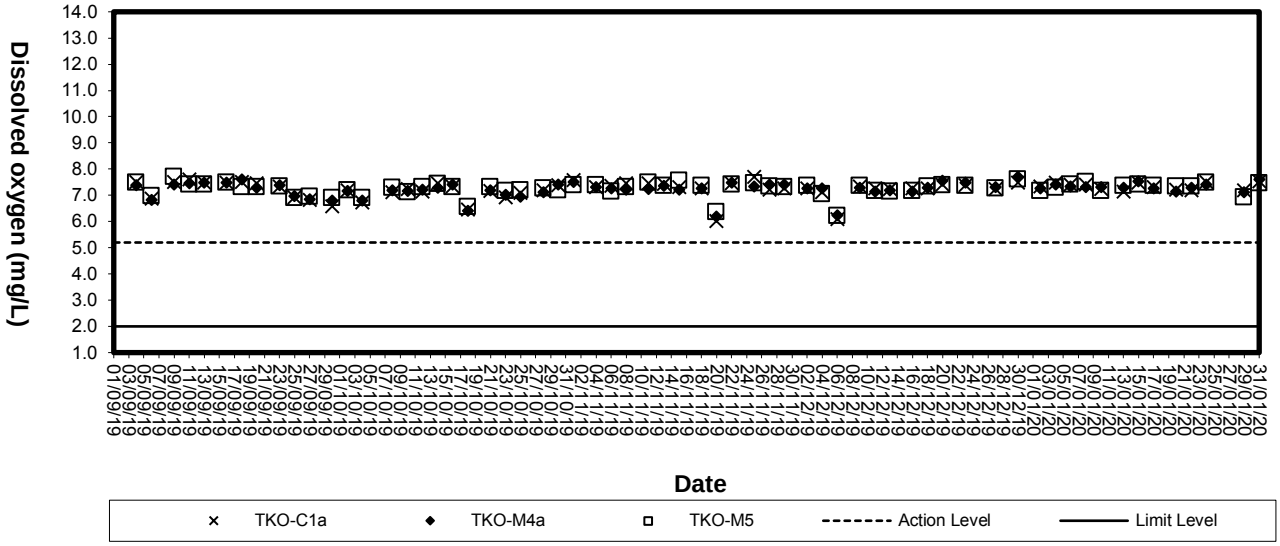
Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide (3RS project)



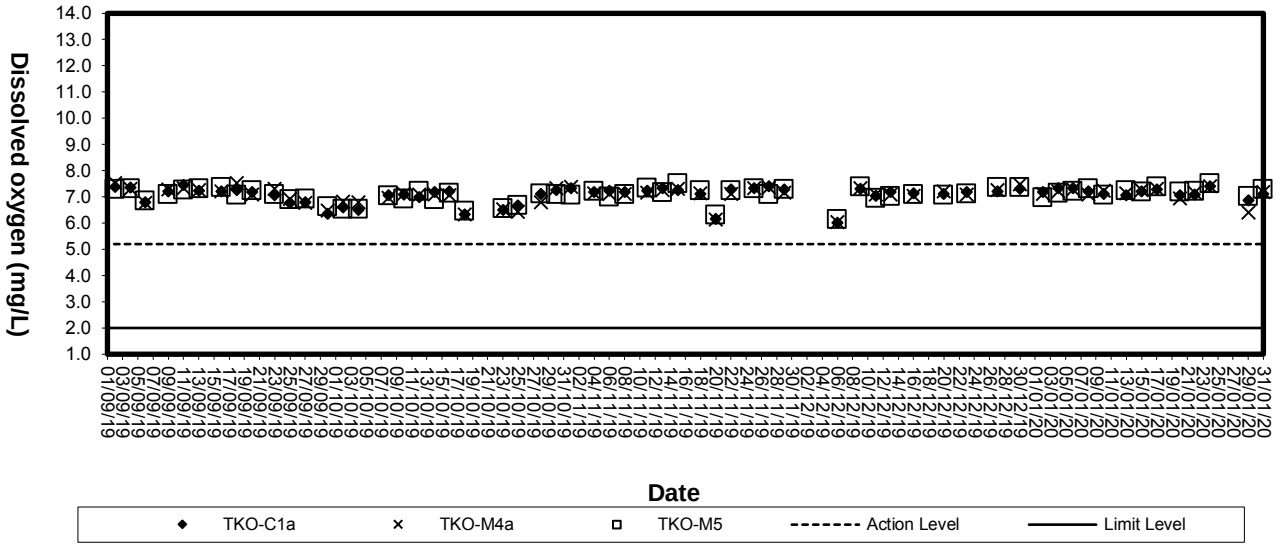
Dissolved Oxygen (Surface & Middle) at Mid-Ebb Tide (3RS project)



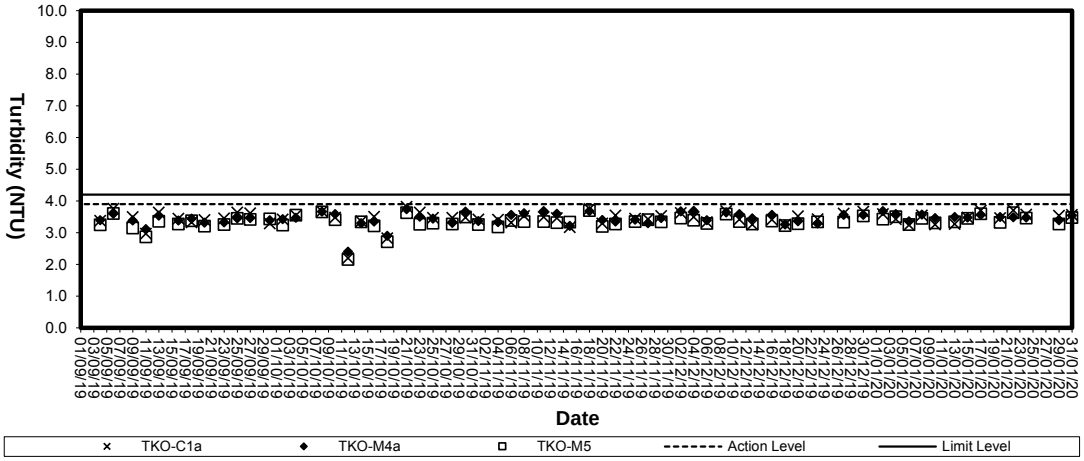
Dissolved Oxygen (Bottom) at Mid-Flood Tide (3RS project)



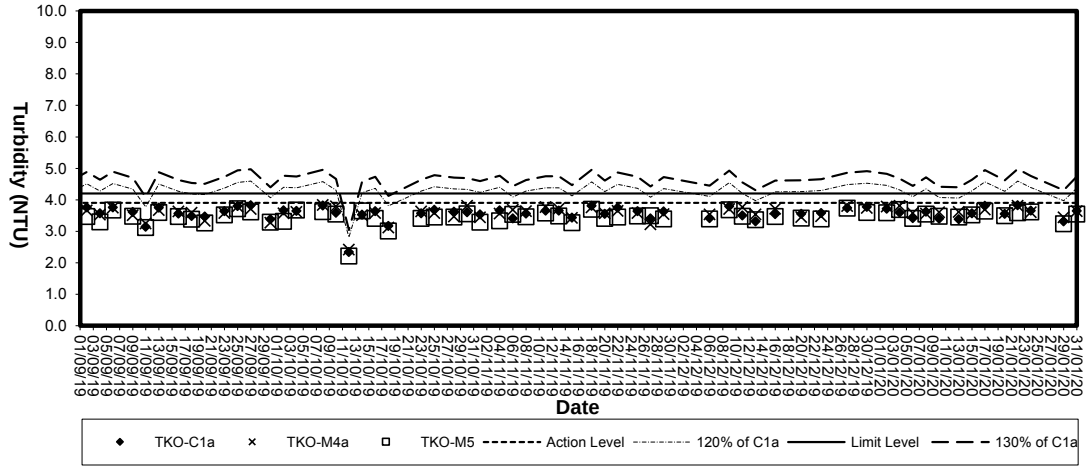
Dissolved Oxygen (Bottom) at Mid-Ebb Tide (3RS project)



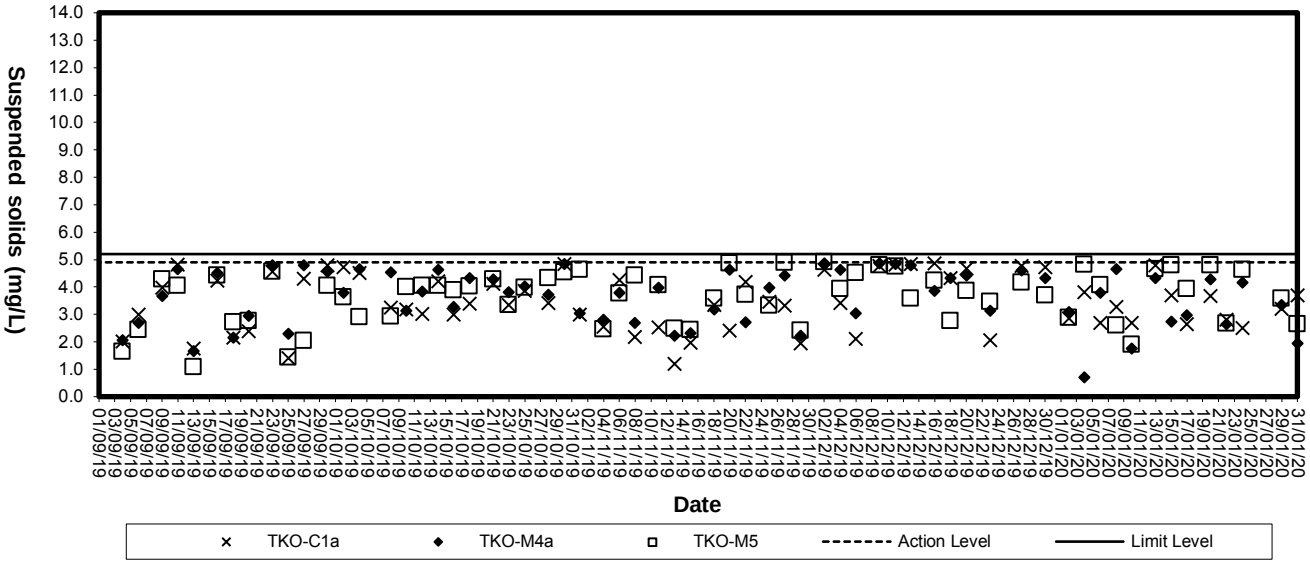
Turbidity (Depth-average) at Mid-Flood Tide (3RS project)



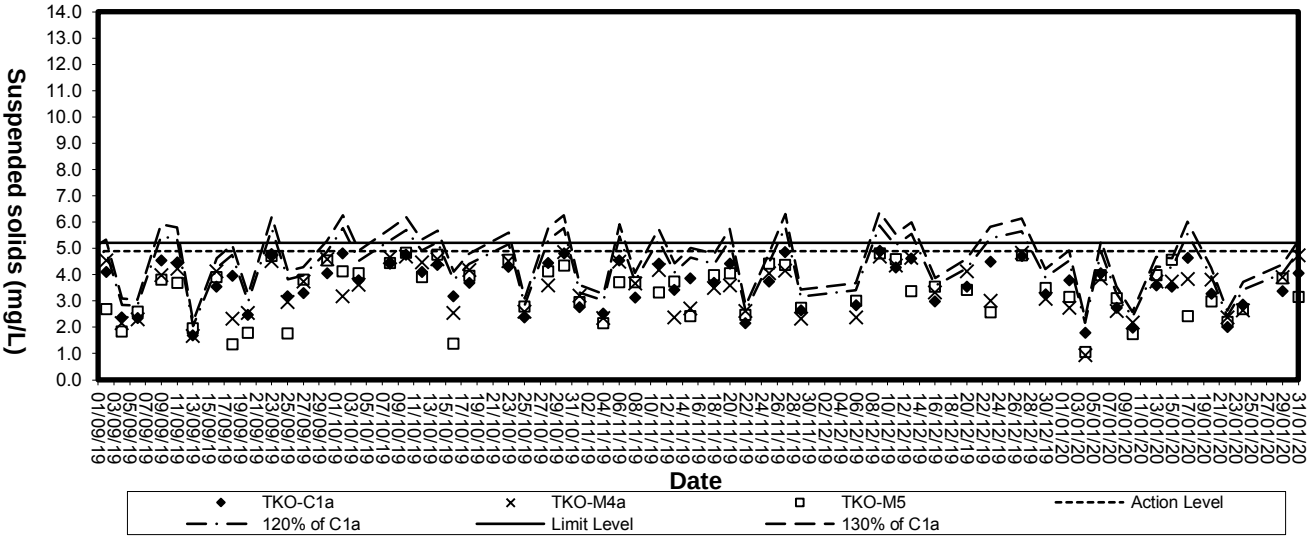
Turbidity(Depth-average) at Mid-Ebb Tide (3RS project)



Suspended solids (Depth-average) at Mid-Flood Tide (3RS project)



Suspended Solids (Depth-average) at Mid-Ebb Tide (3RS project)



Appendix E

Weather Condition

Daily Extract of Meteorological Observations , January 2020 - Tseung Kwan O

Day	Mean Pressure (hPa)	Air Temperature			Mean Dew Point (deg. C)	Mean Relative Humidity (%)	Total Rainfall (mm)	Prevailing Wind Direction (degrees)	Mean Wind Speed (km/h)
		Absolute Daily Max (deg. C)	Mean (deg.C)	Absolute Daily Min (deg. C)					
1	***	19.1	17.2	16.5	12.9	76	0	70	6
2	***	21.3	17.3	14.4	13.1	77	0	70	5.5
3	***	22.3	17.7	14.4	14.3	82	0	50	4.7
4	***	22.1	17.7	14.2	14.7	83	0	60	4.4
5	***	22.9	19.5	18.1	15.1	76	0	40	8.8
6	***	24.6	20.4	18.7	16	76	0	60	6.8
7	***	25.7	21.1	18.4	17.9	83	0	80	2.3
8	***	27.1#	20.8	17.9#	14.9	71	0	60	5.9
9	***	19.1	18.4	17.7	13.9	75	0	30	7.8
10	***	21.7	18.9	17	15.3	80	0	20	7.4
11	***	24.0#	20.1	17.1#	16.4	80	0	020#	4.0#
12	***	21.4	17.1	14.2	9.4	62	0	60	7.5
13	***	18.3	17.1	16.1	12.4	74	0	10	6.3
14	***	22.1	18	15.5	13	73	0	20	6.4
15	***	20.6	18.8	17.4	14.7	77	0	60	8
16	***	20.6	18.5	16.9	15.7	83	0	10	5.8
17	***	19.4	17.5	15.7	10.9	66	0	60	6.3
18	***	20.3#	16.9	14.1#	11.5	71	0	010#	5.9#
19	***	20.6#	17.5	14.8#	12.1	71	0	70	7.8
20	***	19.9#	16.3	13.3#	12	76	0	70	3.5
21	***	20.7	17.6	15	13.7	78	0	20	7.3
22	***	23.2#	19.7	17.0#	16	80	0	20	4.3
23	***	25.6#	21.1	19.4#	18.5	85	0.5	60	3.8
24	***	20.9#	20.1	18.8#	18.4	90	0	60	5.5
25	***	21.7#	18.8	17.6#	16.6	88	2.5	20	7.5
26	***	19.3#	15.6	12.6#	12.4	82	16	340	7.4
27	***	16.9#	12.1	9.7#	6.1	67	0	330	7.7
28	***	16.3	12	9.3	5.2	63	0.5	350	6.7
29	***	17.2#	12.7	9.7#	2.3	49	0	60	8.3
30	***	19.1#	13.4	9.5#	-0.6	39	0	50	7.4
31	***	18.1#	13.3	9.5#	2.4	50	0	70	4.5

*** unavailable

data incomplete

Rainfall measured in increment of 0.5 mm. Amount of < 0.5 mm cannot be detected

Appendix F

Event-Action Plans

EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE

EVENT	ACTION			
	ET Leader	IC(E)	ER	Contractor
ACTION LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform ER, IC(E) and Contractor 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily	1. Check monitoring data submitted by the ET 2. Check contractor's working method	1. Notify Contractor	1. Rectify any unacceptable practise 2. Amend working methods if appropriate
2. Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform IC(E) and Contractor 3. Repeat measurements to confirm finding 4. Increase monitoring frequency to daily 5. Discuss with IC(E) and Contractor on remedial actions 6. If exceedance continues, arrange meeting with IC(E) and ER. 7. If exceedance stops, cease additional monitoring	1. Check monitoring data submitted by the ET Leader 2. Check the Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify the Contractor 3. Ensure remedial measures properly implemented	1. Submit proposals for remedial actions to IC(E) within 3 working days of notification 2. Implement the agreed proposals 3. Amend proposal if appropriate
LIMIT LEVEL				
1. Exceedance for one sample	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Inform ER, Contractor and EPD 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Assess the effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results	1. Check monitoring data submitted by the ET Leader 2. Check Contractor's working method 3. Discuss with ET and Contractor on possible remedial measures 4. Advise the ER on the effectiveness of the proposed remedial measures 5. Supervise implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify the Contractor 3. Ensure remedial measures properly implemented	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Amend proposal if appropriate.

EVENT	EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	IC(E)	ER	Contractor
2. Exceedance for two or more consecutive samples	1. Identify source, investigate the causes of exceedance and propose remedial measures 2. Notify IC(E), ER, EPD and Contractor 3. Repeat measurement to confirm finding 4. Increase monitoring frequency to daily 5. Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented 6. Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken 7. Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results 8. If exceedance stops, cease additional monitoring	1. Discuss amongst ER, ET and Contractor on the potential remedial actions 2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly 3. Supervise the implementation of remedial measures	1. Confirm receipt of notification of failure in writing 2. Notify Contractor 3. In consultation with the IC(E), agree with the Contractor on the remedial measures to be implemented 4. Ensure remedial measures are properly implemented 5. If exceedances continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated	1. Take immediate action to avoid further exceedances 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification 3. Implement the agreed proposals 4. Resubmit proposals if problem still not under control 5. Stop the relevant activity of works as determined by the ER until the exceedance is abated

EVENT/ACTION PLAN FOR NOISE EXCEEDANCE

EVENT	ACTION			
	ET Leader	**IC(E)**	**ER**	**Contractor**
Action Level	1. Notify the IC(E) and the Contractor. 2. Carry out investigation. 3. Report the results of investigation to the IC(E) and the Contractor. 4. Discuss with the Contractor and formulate remedial measures. 5. Increase monitoring frequency to check mitigation effectiveness	1. Review the analysed results submitted by the ET. 2. Review the proposed remedial measures by the Contractor and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented.	1. Submit noise mitigation proposals to IC(E). 2. Implement noise mitigation proposals.
Limit Level	1. Notify the IC(E), the ER, the EPD and the Contractor. 2. Identify source. 3. Repeat measurement to confirm findings. 4. Increase monitoring frequency. 5. Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented. 6. Inform the IC(E), the ER and the EPD the causes & actions taken for the exceedances. 7. Assess effectiveness of Contractor's remedial actions and keep the IC(E), the EPD and the ER informed of the results 8. If exceedance due to the construction works stops, cease additional monitoring	1. Discuss amongst the ER, the ET Leader and the Contractor on the potential remedial actions. 2. Review the Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly. 3. Supervise the implementation of remedial measures.	1. Confirm receipt of notification of failure in writing. 2. Notify the Contractor. 3. Require the Contractor to propose remedial measures for the analysed noise problem. 4. Ensure remedial measures are properly implemented. 5. If exceedances continue, consider what activity of the work is responsible and instruct the Contractor to stop that activity of work until the exceedances is abated.	1. Take immediate action to avoid further exceedance 2. Submit proposals for remedial actions to IC(E) within 3 working days of notification. 3. Implement the agreed proposals. 4. Resubmit proposals if problem still not under control. 5. Stop the relevant activity of works as determined by the ER until the exceedances is abated.

Event	EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	Contractor	ER	IEC
Action level being exceeded by one sampling day	1. Identify source(s) of impact; 2. Repeat in-situ measurement to confirm findings; 3. Notify Contractor in writing within 24 hours of identification of the exceedance 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Carry out investigation 6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works 7. Discuss mitigation measures with Contractor if exceedance is due to the construction works within 4 working days 8. Repeat measurement on next day of exceedance if exceedance is due to the construction works	1. Notify the ER and IEC in writing within 24 hours of identification of exceedance 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Submit investigation report to IEC and ER within 3 working days of the identification of an exceedance 5. Consider changes of working method if exceedance is due to the construction works 6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER if exceedance is due to the construction works within 4 working days of identification of an exceedance 7. Implement the agreed mitigation measures within reasonable time scale	1. Notify EPD and other relevant governmental agencies in writing within 24 hours of the Identification of the exceedance 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Require contractor to propose remedial measures for the analysed problem if related to the construction works 4. Ensure remedial measures are properly implemented 5. Assess the effectiveness of the mitigation measure	1. Check monitoring data submitted by ET 2. Confirm ET assessment if exceedance is due / not due to the works 3. Discuss with ET, ER and Contractor on the mitigation measures 4. Review contractor's mitigation measures whenever necessary to ensure their effectiveness and advise the ER accordingly 5. Supervise the implementation of mitigation measures

Event	EVENT AND ACTION PLAN FOR WATER QUALITY			
	ACTION			
	ET Leader	Contractor	ER	IEC
Action level being exceeded by more than one consecutive sampling days	1. Identify source(s) of impact; 2. Repeat in-situ measurement to confirm findings 3. Notify Contractor in writing within 24 hours of identification 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Carry out investigation 6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works 7. Discuss mitigation measures with IEC and Contractor within 4 working of identification of an exceedance 8. Ensure mitigation measures are implemented; 9. Prepare to increase the monitoring frequency to daily; 10. Repeat measurement on next day of exceedance.	1. Notify IEC and ER in writing within 24 hours of identification of exceedance 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance 6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days of identification of an exceedance 7. Implement the agreed mitigation measures within reasonable time scale	1. Notify EPD and other relevant governmental agencies in writing within 24 hours of the identification of the exceedance 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Require contractor to propose remedial measures for the analysed problem if related to the construction works 4. Ensure remedial measures are properly implemented 5. Assess the effectiveness of the mitigation measure	1. Check monitoring data submitted by ET 2. Confirm ET assessment if exceedance is due / not due to the works 3. Discuss with ET, ER and Contractor on the mitigation measures. 4. Review contractor's mitigation measures whenever necessary to ensure their effectiveness and advise the ER accordingly 5. Assess the effectiveness of the implemented mitigation measures.

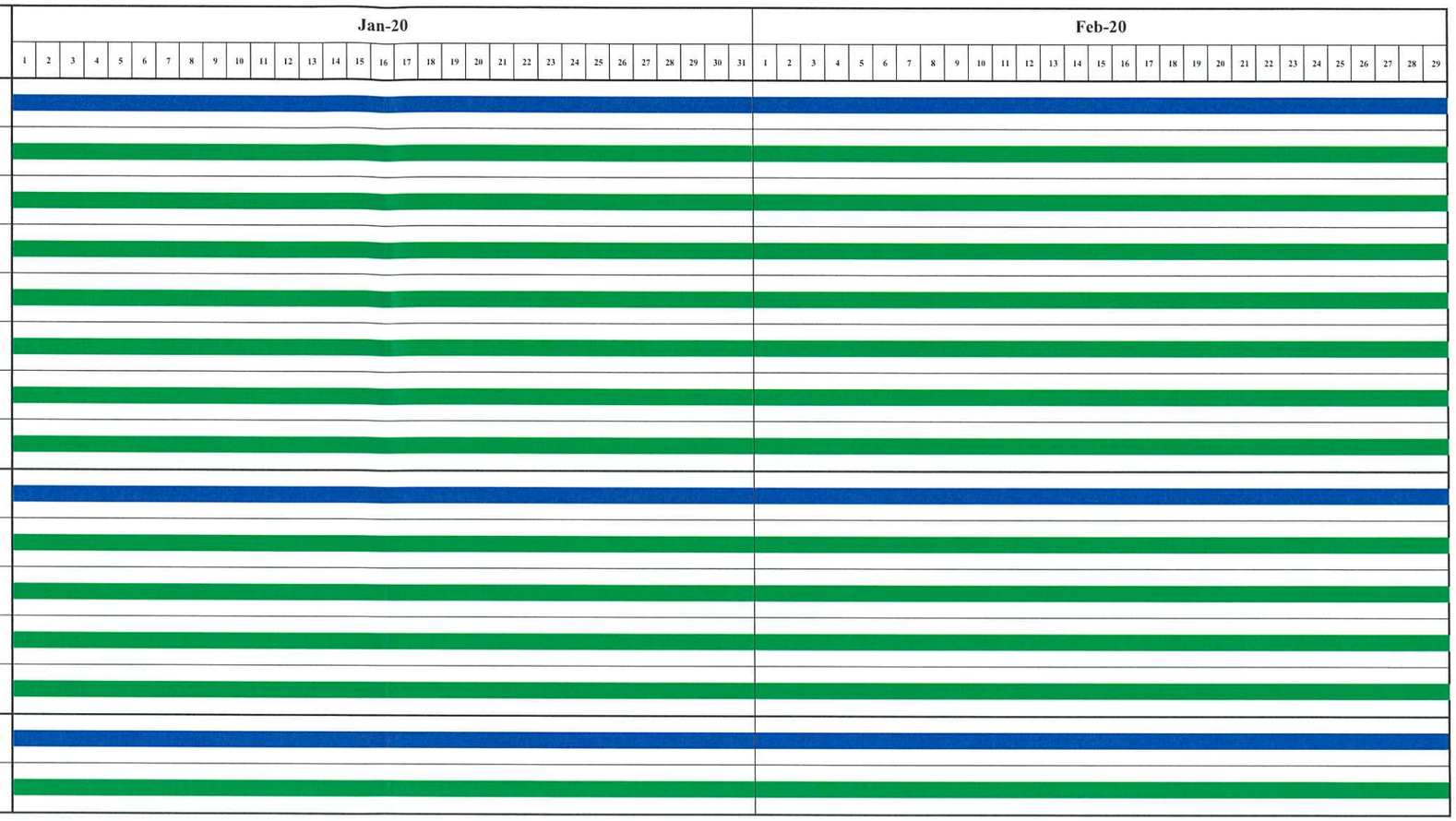
Event	EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	Contractor	ER	IEC
Limit level being exceeded by one sampling day	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Notify Contractor in writing within 24 hours of identification of the exceedance 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Carry out investigation 6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works 7. Discuss mitigation measures with IEC, ER and Contractor within 4 working of identification of an exceedance 8. Ensure mitigation measures are implemented; 9. Increase the monitoring frequency to daily until no exceedance of Limit Level.	1. Notify IEC and ER in writing; within 24 hours of the identification of the exceedance 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 5. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance 6. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days of the identification of an exceedance 7. Implement the agreed mitigation measures within reasonable time scale	1. Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 4. Ensure remedial measures are properly implemented 5. Assess the effectiveness of the implemented mitigation measures.	1. Check monitoring data submitted by ET 2. Confirm ET assessment if exceedance is due / not due to the works 3. Discuss with ET, ER and Contractor on the mitigation measures. 4. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly. 5. Assess the effectiveness of the implemented mitigation measures

Event	EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE			
	ACTION			
	ET Leader	Contractor	ER	IEC
Limit Level being exceeded by more than one consecutive sampling days	1. Repeat in-situ measurement to confirm findings; 2. Identify source(s) of impact; 3. Notify Contractor in writing within 24 hours of identification of the exceedance 4. Check monitoring data, all plant, equipment and Contractor's working methods; 5. Carry out investigation 6. Report the results of investigation to the Contractor within 3 working days of identification of exceedance and advise contractor if exceedance is due to contractor's construction works 7. Discuss mitigation measures with IEC, ER and Contractor; 8. Ensure mitigation measures are implemented; 9. Increase the monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.	1. Notify ER and IEC in writing within 24 hours of the identification of the exceedance and 2. Rectify unacceptable practice; 3. Check all plant and equipment; 4. Consider changes of working methods; 8. Submit the results of the investigation to IEC and ER within 3 working days of the identification of an exceedance 5. Discuss with ET, IEC and ER and propose mitigation measures to IEC and ER within 4 working days; 6. Implement the agreed mitigation measures within reasonable time scale 7. As directed by the Engineer, to slow down or to stop all or part of the marine work or construction actives.	1. Notify EPD and other relevant governmental agencies in writing within 24 hours of identification of exceedance 2. Discuss with IEC, ET and Contractor on the proposed mitigation measures; 3. Request Contractor to critically review the working methods; 6. Ensure remedial measures are properly implemented 4. Assess the effectiveness of the implemented mitigation measures; 5. Consider and instruct, if necessary, the Contractor to slow down or to stop all or part of the marine work until no exceedance of Limit Level.	1. Check monitoring data submitted by ET 2. Confirm ET assessment if exceedance is due / not due to the works 3. Discuss with ER, ET and Contractor on the mitigation measures. 4. Review proposals on mitigation measures submitted by Contractor and advise the ER accordingly. 5. Assess the effectiveness of the implemented mitigation measures.

Appendix G

Works Programme

Item	Description	From	To
1	Section 1B	1-Sep-19	1-Oct-19
1.1	Operation of Fill Bank, surveillance system and tipping halls	1-Sep-19	1-Oct-19
1.2	Operation of crushing plants	1-Sep-19	1-Oct-19
1.3	Operation of the existing and expanded dewatering plants	1-Sep-19	1-Oct-19
1.4	Collection and delivery of Public Fill from CWPFBP and MWPFRF to TKOFB	1-Sep-19	1-Oct-19
1.5	Breaking up the incoming precast concrete units	1-Sep-19	1-Oct-19
1.6	Carry out repair works for damages caused by Super Typhoon	1-Sep-19	1-Oct-19
1.7	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Sep-19	1-Oct-19
2	Section 2B	1-Sep-19	1-Oct-19
2.1	Operation of Fill Bank, surveillance system and tipping halls	1-Sep-19	1-Oct-19
2.2	Breaking up the incoming precast concrete units	1-Sep-19	1-Oct-19
2.3	Operation of glass cullet storage compartment at Portion B7	1-Sep-19	1-Oct-19
2.4	Carry out preliminary sorting on Public Fill for Three Runway System (3RS) project	1-Sep-19	1-Oct-19
5	Section 4A	1-Sep-19	30-Nov-19
5.1	Collection and delivery of Public Fill to the Designated Reclamation Sites in the Mainland	1-Sep-19	30-Nov-19



Appendix H

Weekly ET's Site Inspection Record

Inspection Date : 03/01/2020

Time : 10:00

Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / Strong

Temperature : 20 °C

Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:	[signature]	[signature]	[signature]
Name:	Tsang Yan Wing	[illegible]	[illegible]
Title	ACOW/PP	[illegible]	E.T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.		√		Item 1
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area (BHA) throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Follow up Date
1	Stagnant water was found accumulated beside the U-channel near wheel washing facilities.	Provide the sand bag to prevent wastes water runoff into U-channel.	200103_001	Yes	10/01/20

Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		03 January 2020

Photo

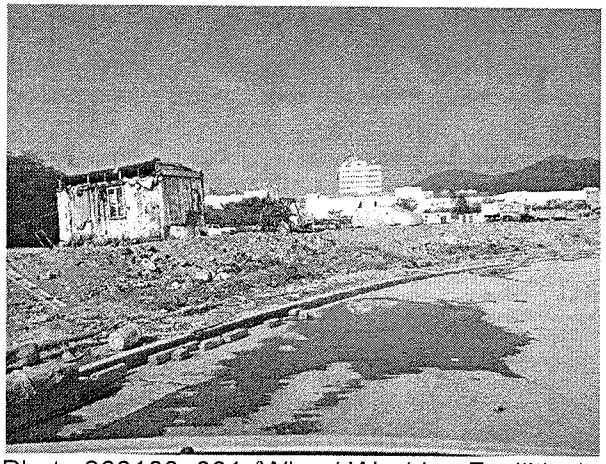


Photo 200103_001 (Wheel Washing Facilities)

Inspection Date : 8/1/20

Time : 15:00

Weather : Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / Strong

Temperature : 22°C

Humidity : High / Moderate / Low

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:	[signature]	[signature]	Mak
Name:	Tsang Yan Wing	Lam Samuel	Mak Kei Wai
Title	Acw/pf	RSO	ET

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area (BHA) throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

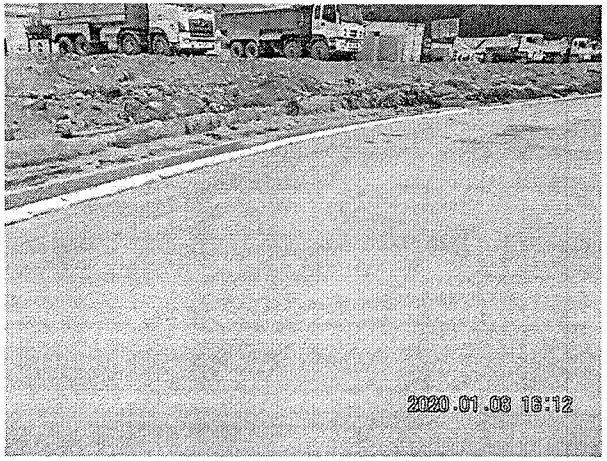
Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Follow up Date
1	Follow up action to item no.1 on 08/01/20, sand bags were provided.	---	200108_001	No	---

Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		08 January 2020

Photo

 Photo 200108_001 (Wheel Washing Facilities) (Improved)		

Inspection Date : 15/1/20

Time : 15:00

Weather : Sunny / Fine / (Cloudy) / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / (Breeze) / Strong

Temperature : 20°C

Humidity : High / Moderate / (Low)

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:			
Name:	YP TONG	G.W. SZE	Mak Tsz Wai
Title	IOW		E.T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area (BHA) throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Follow up Date
---	---	---	---	---	---

Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		15 January 2020

Inspection Date : 22/01/2020

Time : 15:00

Weather : Sunny / Fine / (Cloudy) / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / (Breeze) / Strong

Temperature : 22°C

Humidity : High / (Moderate) / Low

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:			
Name:			Chan Wai Man
Title			E.T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area (BHA) throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.		√		Item 1
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Follow up Date
1	Oil leakages were observed near A5b Area.	To clean the oil properly.	200122_001	Yes	29/01/20

Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		22 January 2020

Photo

Photo 200122_001 (Near A5b Area)

Inspection Date : 29/01/2020

Time : 15:00

Weather : Sunny / (Fine) / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy

Wind : Calm / Light / Breeze / (Strong)

Temperature : 16°C

Humidity : High / (Moderate) / Low

Inspected by	CEDD	Contractor / Sub-Contactor	ET
Signature:			
Name:	Tsang Yan Wing		Chan Wai Man
Title	ALOW / PS		G-T

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Fugitive Dust Emission				
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	√			
▪ Water sprays shall be provided and used to dampen materials.	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	√			
▪ The designated site main haul road shall be paved or regular watering.	√			
▪ Frequent watering of work site shall be at least three times per day.	√			
▪ Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site.	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	√			
▪ Open burning should be prohibited.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	√			
Noise Impact				
▪ The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works.	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	√			
▪ Air compressors and hand held breakers should have noise labels.	√			
▪ Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Water Quality				
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	√			
▪ Manholes should be covered and sealed.	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas.	√			
▪ Oil interceptor shall be provided at work shop.	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area (BHA) throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	√			

Environmental Checklist	Implementation Stages*			Remark
	Yes	No	N/A	
Landscape and Visual				
▪ The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	√			
▪ The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	√			
▪ Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	√			
▪ The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	√			
Other Environmental Factors				
▪ C&D waste sorted from mixed C&D material shall be removed from the temporary buffer storage area on a daily basis and transfer to SENT landfill for disposal.	√			
▪ Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste.	√			
▪ Any unused materials or those with remaining functional capacity should be recycled and stored properly.	√			
▪ All generators, fuel and oil storage are within bundle areas.	√			
▪ Oil leakage from machinery, vehicle and plant is prevented.	√			
▪ The Environmental Permit should be displaced conspicuously on site.	√			
▪ Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	√			
▪ To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	√			

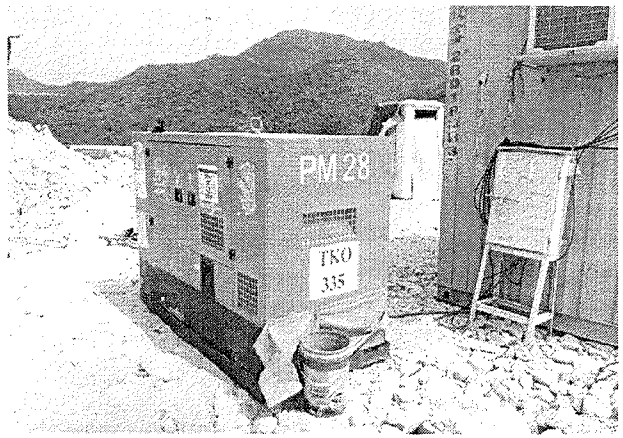
Summary of the Weekly Site Inspection:

Item	Details of defective works or observations	Proposed Follow Up Action	Photo Ref.	Further Action Required (Yes/No)	Follow up Date
1	Follow up action to item no.1 on 22/01/20, Oil leakages were cleaned.	~~To clean the oil properly.~~ ✓	200129_001	No	---

Remark

	Name	Title	Signature	Date
Checked by	Frankie Tang	ET Representative		29 January 2020

Photo

 Photo 200129_001 (Near A5b Area) (Improved)		

Appendix I

Implementation Schedule of Mitigation Measures

Environmental Mitigation Implementation Schedule

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Air Quality					
▪ Dust control / mitigation measures shall be provided to prevent dust nuisance.	All areas	√			
▪ A buffer zone of at least 100m shall be maintained between the edge of the stockpiling area and the nearest ASRs at the TKO Industrial Estate. Within the buffer zone, no dusty material shall be stockpiled and no loading / unloading and similar activities should be allowed.	Northern Site Boundary	√			
▪ Water sprays shall be provided and used to dampen materials.	All areas	√			
▪ Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions.	All areas	√			
▪ All vehicles shall be restrict to a maximum speed of 10 km per hour.	All areas	√			
▪ Any vehicle with open load carrying area used for moving materials which has the potential to create dust shall have properly fitting side and tail boards. Material having the potential to create dust shall not be loaded to a level higher than the side and tail boards, and shall be covered by a clean tarpaulin.	Site Egress	√			
▪ The designated site main haul rout shall be paved or regular watering.	All haul roads	√			
▪ Frequent watering of work site shall be at least three times per day.	All areas	√			
▪ Wheel washing facilities including high pressure water jet shall be provided at the entrance of work site.	Site Egress	√			
▪ Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank.	Site Egress	√			
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	All areas	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	All areas	√			
▪ When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides.	C&DMSF	√			
▪ The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt.	C&DMFS	√			
▪ The level of stockpiling belt conveyor shall be adjustable such that the vertical distance between the belt conveyor and the material landing point is maintained at no more than 1m.	C&DMFS	√			
▪ All plant and equipment should be well maintained e.g. without black smoke emission.	All areas	√			
▪ Approval or exemption Non-road Mobile Machinery (NRMM) labels should be painted or securely fixed on regulated machines and non-road vehicles at a conspicuous position according to the Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap.311).	All areas	√			
Noise Impact					
▪ Approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted.	All areas	√			
▪ Only well maintained plant should be operated on-site and plant should be serviced regularly during the site works.	All areas	√			
▪ Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials.	All areas	√			
▪ Air compressors and hand held breakers should have noise labels.	All areas	√			
▪ Machines and plants that may be in intermittent use should be shut down between work months or should be throttled down to a minimum.	All areas	√			
▪ Noisy equipment and mobile plant shall always be site away from NSRs.	All areas	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Water Quality					
▪ Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms.	All areas	√			
▪ The permanent drainage channels should have sediment basin, traps and baffles and maintain properly.	All areas	√			
▪ Temporary intercepting drains should be used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers shall be used to assist the diversion of polluted stormwater to the intercepting channels.	All areas	√			
▪ Manholes should be covered and sealed.	All areas	√			
▪ Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding.	All areas	√			
▪ A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front.	Public fill stockpiling area	√			
▪ A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront.	C&DMFS	√			
▪ The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge.	All areas		√		
▪ The temporary slope surfaces, especially those facing to the north of the site shall be covered with impermeable sheet or sprayed with water or protected by other method approved by CEDD.	Temporary Slopes	√			
▪ Final slope surfaces, especially those facing to the north of the site shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shotconcrete, latex, vinyl, bitumen, or other suitable surface stabilizer approved by CEDD.	Temporary Slopes	√			
▪ Existing and newly constructed Catchpits, sand and silt removal facilities and intercepting channels shall be maintained, and the deposited silt and grit shall be removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times.	All areas	√			
▪ A wheel washing bay shall be provided at the site exit and wash-water shall have sand and silt settled out or removed before being discharged into storm drains.	Wheel Washing facility	√			
▪ The section of construction road between wheel washing bay and the public road shall be paved with concrete, bituminous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains.	Wheel Washing facility	√			
▪ Sewage from toilets shall be discharged in to a foul sewer, or chemical toilets shall be provided. The chemical toilets (if use) shall be provided by a licensed contractor, who will be responsible for disposal and maintenance of these facilities.	All areas	√			
▪ Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas and work shop.	All areas	√			
▪ Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water.	Barge Handling Area (BHA)	√			
▪ The barges shall be in right size such that adequate clearance in maintained between the vessels and the seabed at all states of the tide to ensure the undue turbidity is not generated by turbulence from vessel movement or propeller wash.	Barge Handling Area (BHA)	√			
▪ All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport.	Barge Handling Area (BHA)	√			
▪ Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer.	Along the seafront	√			
▪ Barges shall not be filled to a level which may cause the overflow of material during loading or transportation. Barge effluents shall be properly collected and treated before disposal.	Barge Handling Area (BHA)	√			
▪ The work activities shall not cause any visible foam, oil, grease, scum, litter or other objectionable matters to be present on the water in the vicinity of the barging facilities.	Along the seafront	√			
▪ Existing silt curtain at the outward side of the basin near the Barging Handling Area throughout the period shall be repair, maintain and service when there is public fill intake by barges to the Fill Bank in accordance with PS Clause 1.68. The total length of the silt curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The silt curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse.	Along the seafront	√			
▪ A waste collection vessel shall be deployed to remove floating debris.	Along the seafront	√			

Environmental Protection Measures	Location	Implementation Status			
		Implemented	Partially implemented	Not implemented	Not Applicable
Landscape and Visual					
• The design of the fill bank and platform heights adopted should allow the fill bank to fit into the general topography of the surrounding land. Straight edged slopes should be avoided.	All areas	√			
• The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD.	Completed slopes	√			
• Surface of outer slopes of the fill bank shall preferably be hydroseeded or covered with geo-textile matting of appropriate colour (e.g. dark green / brown) once completed.	Site boundary	√			
• The barging point and the C&DMSF at the fill bank shall not be in operation from 07:00 pm to 08:00 am daily to avoid potential visual impact from glare.	All areas	√			
Other Environmental Factors					
• C&D waste sorted from mixed C&D material shall be transfer to SENT landfill for disposal.	All areas	√			
• Plan and stock construction materials carefully to minimise generation of waste.	All areas	√			
• Any unused materials or those with remaining functional capacity should be recycled.	All areas	√			
• All generators, fuel and oil storage are within bunded areas.	All areas	√			
• Oil leakage from machinery, vehicle and plant is prevented.	All areas		√		
• The Environmental Permit should be displaced conspicuously on site.	All areas	√			
• Good site practices should be adopted to clean the rubbish and litter on a regular basis so as to prevent the rubbish and litter from dropping into the nearby environment.	All areas	√			
• To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse generated by the workforce.	All areas	√			

Appendix J

Site General Layout plan

CLEARWATER BAY
COUNTRY PARK
SENT LANDFILL
TAT TONG CHAU
TIT CHAM CHAU
LOCATION PLAN
HANDLING OF SURPLUS
PUBLIC FILL
(2016-2018)
FM10077-2-A
FILL MANAGEMENT DIVISION
CIVIL ENGINEERING OFFICE
CEDD
SETTING OUT DETAILS
SETTING OUT DETAILS

Appendix K

Monitoring Schedule for the Coming Month

東業德勤測試顧問有限公司
ETS-TESTCONSULT LTD.

Contract No. CV/2015/07 Handling of Surplus Public Fill (2016-2018)
Tseung Kwan O Area 137

Time Schedule for Impact Water Quality Monitoring (WQM), Impact Air Monitoring (1-hrTSP, 24-hr TSP and 24-hr RSP), Weekly Site Inspection (Weekly SI) and Impact Noise Monitoring (NM)

February 2020

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-Feb
02-Feb	03-Feb	04-Feb	05-Feb	06-Feb	07-Feb	08-Feb
	1-hr TSP x 1 **NM** WQM Mid-flood (11:35-13:35)	**24 hr TSP** **24-hr RSP**	**1-hr TSP x 2** **Weekly SI (pm)** WQM Mid-flood (08:35-10:35)		**1-hr TSP x 1** WQM Mid-ebb (09:52-11:52) Mid-flood (14:55-16:55)	
09-Feb	10-Feb	11-Feb	12-Feb	13-Feb	14-Feb	15-Feb
	24 hr TSP **24-hr RSP** WQM Mid-flood (08:33-10:33) Mid-ebb (12:09-14:09)		**1-hr TSP x 2** **Weekly SI (pm)** WQM Mid-flood (08:00-10:00) Mid-ebb (13:39-15:39)		**1-hr TSP x 1** WQM Mid-flood (09:18-11:18) Mid-ebb (15:20-17:20)	
16-Feb	17-Feb	18-Feb	19-Feb	20-Feb	21-Feb	22-Feb
24 hr TSP **24-hr RSP**	**1-hr TSP x 1** WQM Mid-flood (11:39-13:39)		**1-hr TSP x 1** **Weekly SI (pm)** WQM Mid-ebb (08:42-10:42) Mid-flood (13:41-15:41)		**1-hr TSP x 1** WQM Mid-ebb (10:25-12:25) Mid-flood (15:31-17:31)	**24 hr TSP** **24-hr RSP**
23-Feb	24-Feb	25-Feb	26-Feb	27-Feb	28-Feb	29-Feb
	1-hr TSP x 2 WQM Mid-flood (08:00-10:00) Mid-ebb (12:08-14:08)		**1-hr TSP x 1** **Weekly SI (pm)** WQM Mid-flood (08:00-10:00) Mid-ebb (12:09-14:09)		**24 hr TSP** **24-hr RSP** WQM Mid-flood (08:10-10:10) Mid-ebb (14:14-16:14)	

Remark: Due to the tidal period is not within the working hour,water monitoring (Mid-ebb) in 03, 05 and 17 February 2020 has been cancelled.

Appendix L

Complaint Log

Complaint Logs

Log Ref.	Location	Received Date	Details of Complaint	Investigation / Mitigation Action	Status
001	Barge handling area (BHA) at Tseung Kwan O 137	15 May 2017	One complaint received on 15 May 2017, which was forwarded to ET on 11 August 2017, from CEDD (Complaint NCF-N08/RE/00014875-17 Sent By CSO[RN]3 [CASE#2-3943858817 Int.Comm. – WS170513A57354] against illegal dumping at sea without permit in TKO137 fill bank.	Refer to the ET site investigation on 14 August 2017, the contractor clarified that the contractor conducted vessel loading test at Tseung Kwan O 137 Fill bank on 13 May 2017 and the material was then unloaded from the vessels. Follow up action to complaint by ET and contractor: Contractor under the valid dumping permit to dump fill materials and the site works shall be complied with the relevant environmental protection and pollution control ordinances. ET reminded contractor that the dump fill material under the valid dumping permit should be checked and confirmed. In addition, record should be kept for ET reference. Details of Action(s) Taken by the Contactor: • The contractor started to dump fill materials from 19 May 2017 after receiving the valid dumping permit. • The contractor dump fill materials were followed by the valid dumping permit and the permit was kept apply every three month • The contractor kept the permit for ET reference.	Closed
002	Tseung Kwan O 137 Fill Bank	12 Oct 2017	One complaint received on 12 October 2017, which was forwarded to ET on 18 October 2017, from public against dust emission at the fill bank and discharge of muddy water to the seafront.	Refer to the ET weekly site inspection on 18 October 2017, no defective observation related to dust emission and discharge of water was recorded during the investigation. Details of Action(s) Taken by the Contactor: • Regular water spraying by water lorries is provided for dust suppression inside the Fill Bank; • Mist spraying systems at the site entrance are operated properly; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • All dusty material is sprayed with water prior to loading, unloading or transfer so as to maintain the material wet; • Site vehicle for transporting materials are covered properly by using clean tarpaulin sheets; • Regular cleaning at the site haul road is provided to minimize the fugitive dust emission; • Silt curtains are provided at the outward side of the basin near the Fill Bank; • Drainage systems are adequate and maintained to prevent flooding and overflow; • Catchpits, sand and silt removal facilities and intercepting channels are maintained and functioning properly.	Closed

003	Tseung Kwan O 137 Fill Bank	09 April 2018	One complaint received on 09 April 2018, which was forwarded to ET on 18 April 2018, from public against the rocks and debris deposited on the road surface along Wan Po Road near TKO137 Fill Bank. The complainant complained that waste generated caused an environmental nuisance.	Refer to the ET site investigation on 20 April 2018, the condition of Wan Po Road near TKO137 Fill Bank was found satisfactory. (Photos on ET follow-up investigation at TKO137 Fill Bank on 20 April 2018). Details of Action(s) Taken by the Contactor: • Regular cleaning on Wan Po Road and the access road at the site exit by haul road cleaning team to remove mud and gravel is arranged eight times per month; • Regular water spraying by water lorries is provided for road cleaning at Wan Po Road; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • Site vehicles for transporting materials are covered properly by using clean tarpaulin sheets; • Regular cleaning at the site haul road is provided.	Closed
004	Tseung Kwan O 137 Fill Bank	13 January 2019	One complaint received on 13 January 2019, which was forwarded to ET on 16 January 2019, from EPD (NCF-N08/RE/00001348-19) against 將軍澳 137 堆填區內，缸車池污水，不經處理，直接排到河道，河道係直接流出大海，極度嚴重影響周遭環境生態，污染程度極爲嚴重，促請政府有關部門嚴正跟進！	After received the details of the complaint from the Contractor on 16 January 2019, ET have performed a site investigation on 21 January 2019 to investigate this event. During the site inspection, no muddy water was observed discharged from the Fill Bank to nearby environment. Besides, refer to the marine water monitoring results during that period, no exceedance was recorded on Turbidity and Suspended Solids. This reflects that this occurrence did not affect the condition of marine water near the TKO137Filll Bank. Details of Action(s) Taken by the Contactor: • Drainage system were adequate and well maintained to prevent flooding and overflow; • Sand and silt removal facilities, e.g. silting screen, were provided before the discharge point; • Temporary intercepting drains were used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers were used to assist the diversion of polluted stormwater to the intercepting channels; • Catchpits and intercepting channels were maintained, and the deposited silt and grit were removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times;	Closed

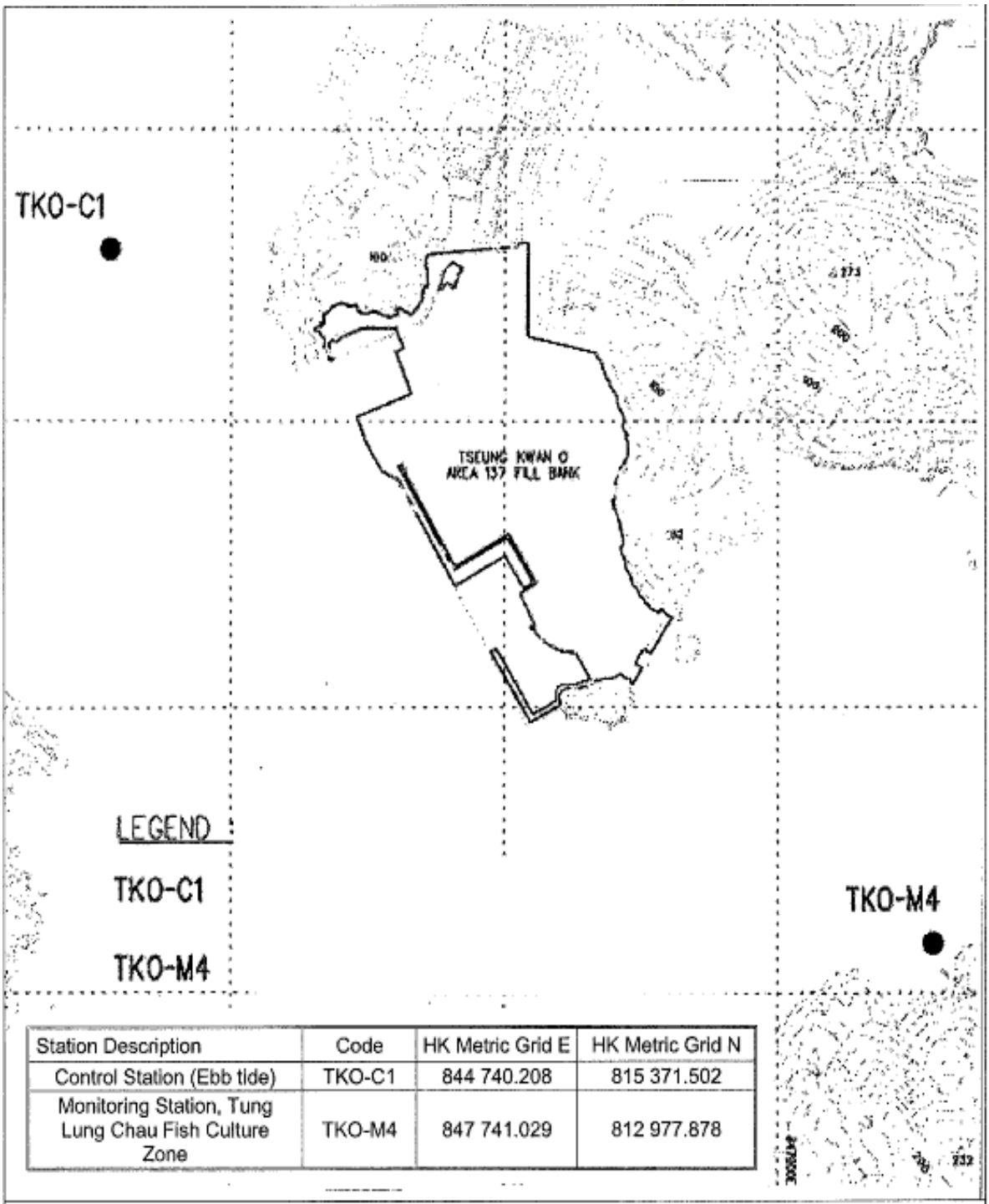
005	Tseung Kwan O 137 Fill Bank	14 May 2019	One complaint received on 14 May 2019, which was forwarded to ET on 14 May 2019, from public against 投訴將軍澳第 137 區填料庫，有車出入沒有灑水傳出大量沙塵，破壞環境，帶出大量沙泥到馬路，造成污染及嚴重滋擾，要求跟進。 要求改善，停止滋擾	Refer to the ET site investigation on 15 May 2019, the condition of Wan Po Road near TKO137 Fill Bank was found satisfactory. (Photos on ET follow-up investigation at TKO137 Fill Bank on 15 May 2019). Details of Action(s) Taken by the Contactor: • Regular cleaning on Wan Po Road and the access road at the site exit by haul road cleaning team to remove mud and gravel is arranged eight times per month; • Regular water spraying by water lorries is provided for road cleaning at Wan Po Road; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • Site vehicles for transporting materials are covered properly by using clean tarpaulin sheets; • Regular cleaning at the site haul road is provided.	Closed
006	Tseung Kwan O 137 Fill Bank	11 June 2019	One complaint received on 04 June 2019, which was forwarded to ET on 11 June 2019, from public regarding the muddy water problem at 137 fill bank.	After received the details of the complaint from the Contractor on 11 June 2019, ET have performed a site investigation on 14 June 2019 to investigate this event. During the site inspection, no muddy water was observed discharged from the Fill Bank to nearby environment. Besides, refer to the marine water monitoring results during that period, no exceedance was recorded on Turbidity and Suspended Solids during the concerning period. This reflects that this occurrence did not affect the condition of marine water near the TKO137Filll Bank. Details of Action(s) Taken by the Contactor: • Drainage system were adequate and well maintained to prevent flooding and overflow; • Sand and silt removal facilities, e.g. silting screen, were provided before the discharge point; • Temporary intercepting drains were used at the stockpiling area to divert polluted stormwater to the intercepting channels. Earth bunds and sand bay barriers were used to assist the diversion of polluted stormwater to the intercepting channels; • Catchpits and intercepting channels were maintained, and the deposited silt and grit were removed weekly and on a need basis especially at the onset of and after each rainstorm to ensure that these facilities are functioning properly at all times;	Closed

007	Tseung Kwan O 137 Fill Bank	27 June 2019	One complaint received on 27 June 2019, which was forwarded to ET on 28 June 2019, from public against dust emission at the fill bank. The complainant complained that the dust caused an environmental nuisance.	Refer to the ET site investigation on 02 July 2019, no defective observation related to dust emission was recorded during the investigation. No impact air quality monitoring result of 1-hr TSP and 24-hr TSP was exceeded Action and Limit Level at all monitoring stations from 24 to 28 June 2019. Details of Action(s) Taken by the Contactor: • Regular water spraying by water lorries is provided for dust suppression inside the Fill Bank; • Mist spraying systems at the site entrance are operated properly; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • All dusty material is sprayed with water prior to loading, unloading or transfer so as to maintain the material wet; • Truck speed within the site is limited within 10 km/h; • Regular cleaning at the site haul road is provided to minimize the fugitive dust emission;	Closed
008	Tseung Kwan O 137 Fill Bank	17 July 2019	One complaint received on 17 July 2019, which was forwarded to ET on 17 July 2019, from public against 投訴將軍澳堆填 137 區及收泥頭區，於運作時產生大量沙塵，嚴重污染周圍環境及影響行人，情況已持續發生了幾日	Refer to the ET site investigation on 19 July 2019, no defective observation related to dust emission was recorded during the investigation. No impact air quality monitoring result of 1-hr TSP and 24-hr TSP was exceeded Action and Limit Level at all monitoring stations from 2 to 17 July 2019. Details of Action(s) Taken by the Contactor: • Regular water spraying by water lorries is provided for dust suppression inside the Fill Bank; • Mist spraying systems at the site entrance are operated properly; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • All dusty material is sprayed with water prior to loading, unloading or transfer so as to maintain the material wet; • Truck speed within the site is limited within 10 km/h; • Regular cleaning at the site haul road is provided to minimize the fugitive dust emission;	Closed

009	Tseung Kwan O 137 Fill Bank	26 July 2019	One complaint received on 26 July 2019, which was forwarded to ET on 26 July 2019, from public against 投訴將軍澳第 137 區填料庫，大風吹起引致塵埃飛揚，更吹到 TVB，造成嚴重滋擾，要求跟進及回覆。	Refer to the ET site investigation on 29 July 2019, no defective observation related to dust emission was recorded during the investigation. No impact air quality monitoring result of 1-hr TSP and 24-hr TSP was exceeded Action and Limit Level at all monitoring stations from 23 to 29 July 2019. Details of Action(s) Taken by the Contactor: • Regular water spraying by water lorries is provided for dust suppression inside the Fill Bank; • Mist spraying systems at the site entrance are operated properly; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • All dusty material is sprayed with water prior to loading, unloading or transfer so as to maintain the material wet; • Truck speed within the site is limited within 10 km/h; • Regular cleaning at the site haul road is provided to minimize the fugitive dust emission;	Closed
010	Tseung Kwan O 137 Fill Bank	09 September 2019	One complaint received on 09 September 2019, which was forwarded to ET on 09 September 2019, from public against 投訴將軍澳第 137 區填料庫，大風吹起引致塵埃飛揚，更吹到日出康城，造成嚴重滋擾，要求跟進及回覆。	Refer to the ET site investigation on 11 September 2019, no defective observation related to dust emission was recorded during the investigation. No impact air quality monitoring result of 1-hr TSP and 24-hr TSP was exceeded Action and Limit Level at all monitoring stations from 1 to 13 September 2019. Details of Action(s) Taken by the Contactor: • Regular water spraying by water lorries is provided for dust suppression inside the Fill Bank; • Mist spraying systems at the site entrance are operated properly; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • All dusty material is sprayed with water prior to loading, unloading or transfer so as to maintain the material wet; • Truck speed within the site is limited within 10 km/h; • Regular cleaning at the site haul road is provided to minimize the fugitive dust emission;	Closed

011	Tseung Kwan O 137 Fill Bank	10 September 2019	One complaint received on 10 September 2019, which was forwarded to ET on 10 September 2019, from public against 投訴將軍澳 137 區經常於處理建築廢料時沒有灑水，導致沙塵滾滾，嚴重污染環境，要求環保署跟進及回覆。	Refer to the ET site investigation on 11 September 2019, no defective observation related to dust emission was recorded during the investigation. No impact air quality monitoring result of 1-hr TSP and 24-hr TSP was exceeded Action and Limit Level at all monitoring stations from 1 to 13 September 2019. Details of Action(s) Taken by the Contactor: • Regular water spraying by water lorries is provided for dust suppression inside the Fill Bank; • Mist spraying systems at the site entrance are operated properly; • Site vehicles are washed to remove any dusty materials from their bodies and wheels by using high pressure water jet manually at the entrance of work site before leaving; • All dusty material is sprayed with water prior to loading, unloading or transfer so as to maintain the material wet; • Truck speed within the site is limited within 10 km/h; • Regular cleaning at the site haul road is provided to minimize the fugitive dust emission;	Closed

Figures



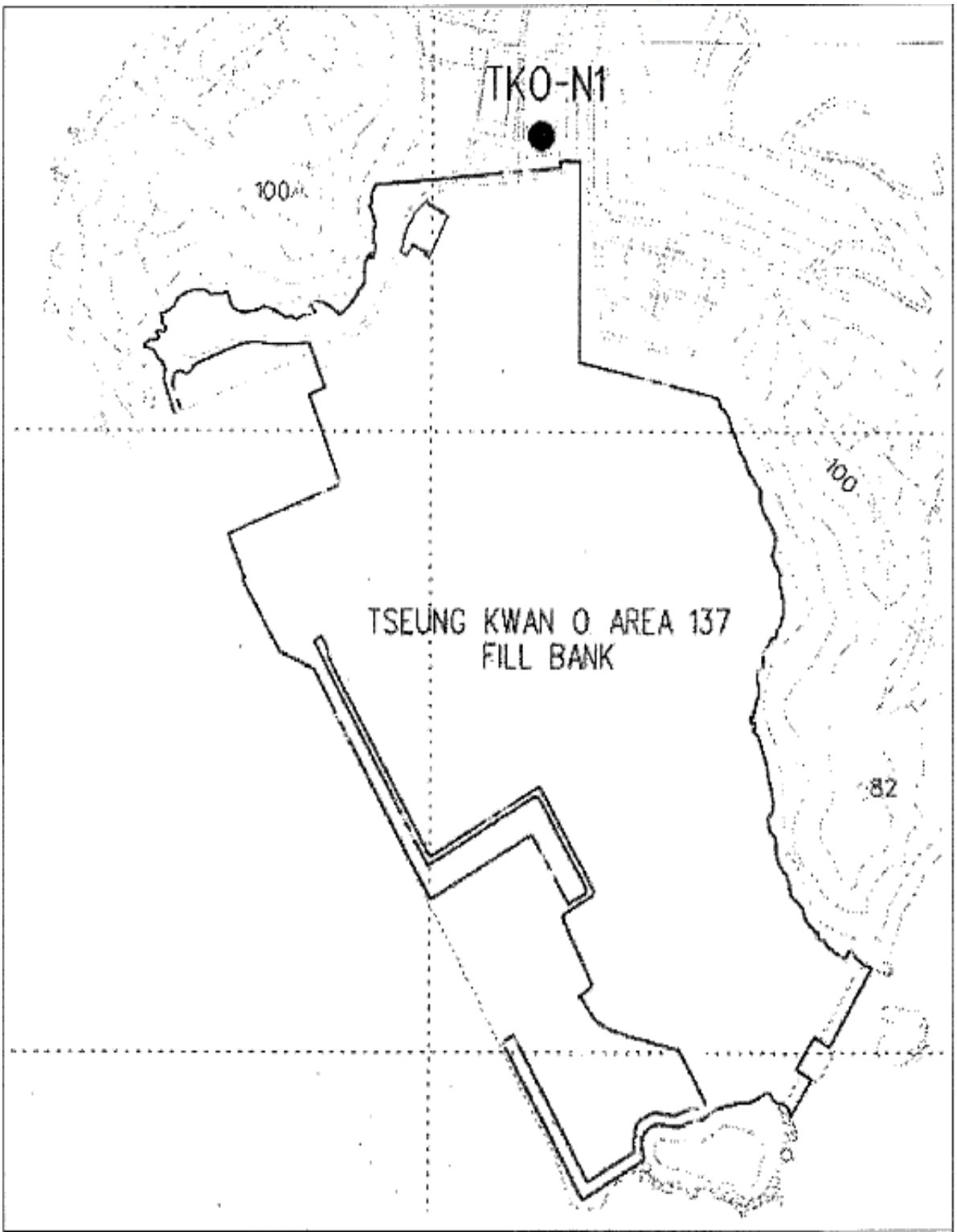
Station Description	Code	HK Metric Grid E	HK Metric Grid N
Control Station (Ebb tide)	TKO-C1	844 740.208	815 371.502
Monitoring Station, Tung Lung Chau Fish Culture Zone	TKO-M4	847 741.029	812 977.878

Contract No. CV/2015/07
Handling of Surplus Public Fill (2016-2018)

Figure 1

Locations of Water Quality Monitoring Stations – Tseung Kwan O Area 137 Fill Bank

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

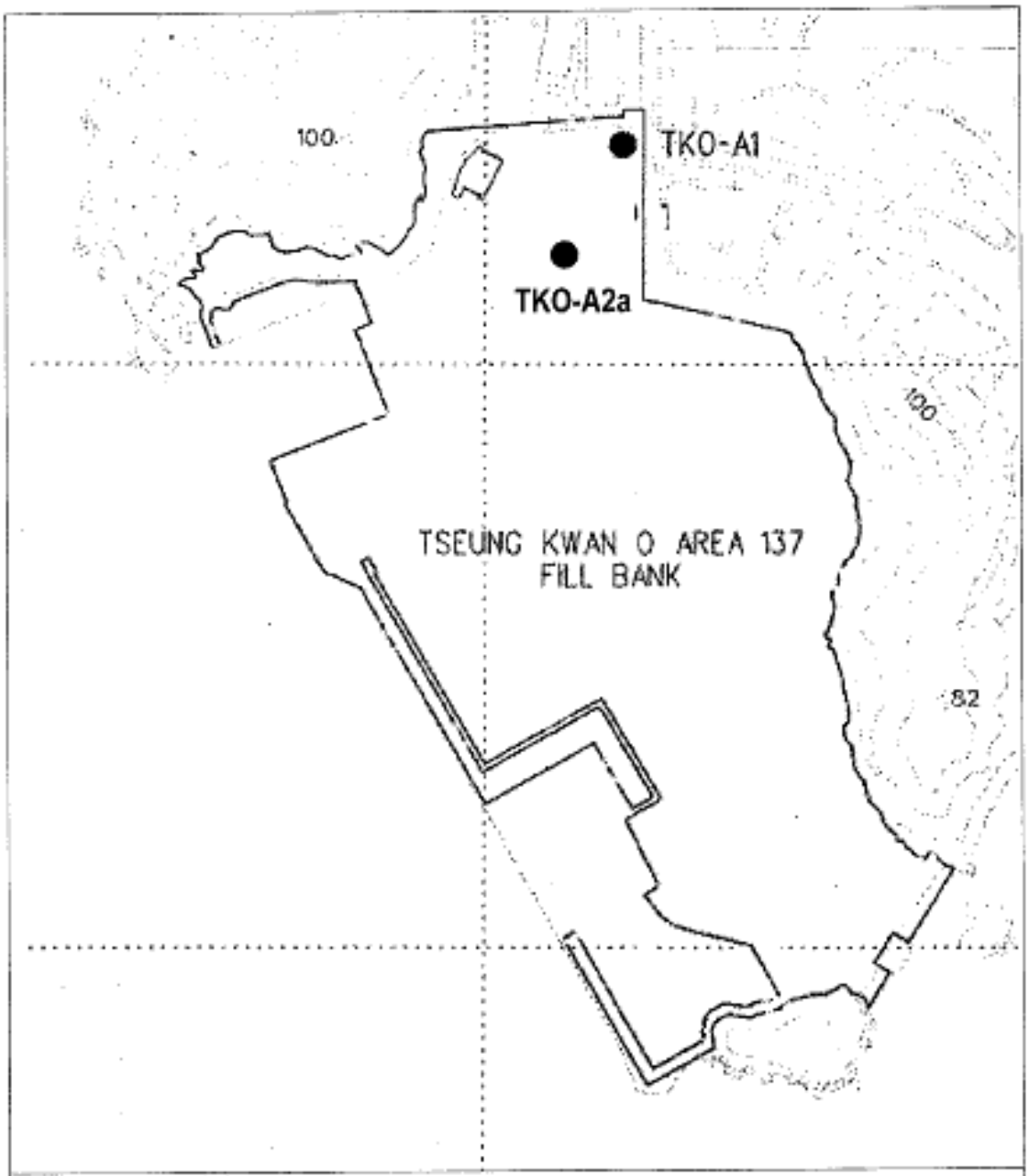


Contract No. CV/2015/07
Handling of Surplus Public Fill (2016-2018)

Figure 2

Location of Noise Monitoring Station –
Tseung Kwan O Area 137 Fill Bank

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED

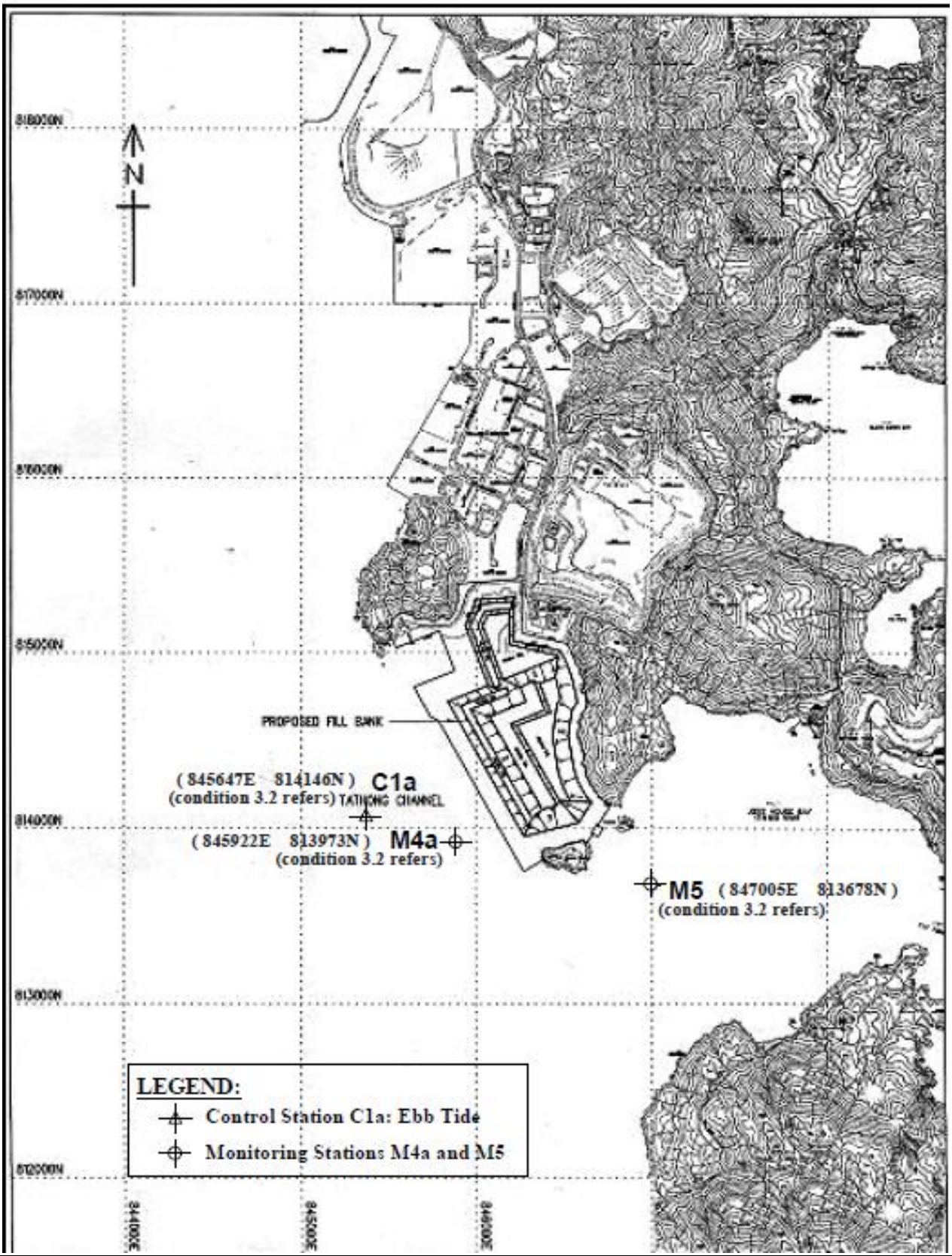


Contract No. CV/2015/07
Handling of Surplus Public Fill (2016-2018)

Figure 3

Locations of Air Quality Monitoring Stations –
Tseung Kwan O Area 137 Fill Bank

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED



Contract No. CV/2015/07
Handling of Surplus Public Fill(2016-2018)

Figure 4
Locations of Additional Water Quality Monitoring Stations (3RS project)
Tseung Kwan O Area 137 Fill Bank

東業德勤測試顧問有限公司
ETS-TESTCONSULT LIMITED