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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.8

(DECEMBER 2017)

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Report No.: ENA80002

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Ref.: CEDPFRSFEM02_0_0208L.18

16 January 2018

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. 8) for December 2017 for the Tseung Kwan O Area 137 Fill Bank

Reference is made to your submission of the draft Monthly EM&A Report for December 2017 for the TKO Area 137 Fill Bank received by email on 11 January 2018 and the final revision on 15 January 2018.

We are pleased to inform you that we have no further comment on the captioned 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 Environ Hong Kong Limited

Valle

F. C. Tsang Independent Environmental Checker

c.c. CEDD Attn: Mr. Simon Leung CHZHJV Attn: Mr. S W Sung Fax No.: 2714 0113 By Email

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Contract No.: CV/2015/07 Handling of Surplus Public Fill (2016-2018) – Tseung Kwan O Area 137 Fill Bank ENA80002 Monthly EM&A Report No.8

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EXECUTIVE SUMMARY

This monthly Environmental Monitoring and Audit (EM&A) report No.8 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 December 2017.

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. Transferring public fill to vessel and delivering to Taishan and other parties.
- 3. Operation of dewatering plant.
- 4. Operation of bentonite pool.
- 5. Concrete block breaking work.
- 6.Crushing plant operation.

7. Expansion of dewatering plant 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: 6 Occasions at 2 designated locations
- 1-hour TSP Monitoring: 15 Occasions at 2 designated locations
- Marine Water Quality Monitoring: 12 Occasions at 2 designated locations
- Weekly-site inspection: 4 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 complaint, 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.

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1.0 INTRODUCTION

China Harbour – Zhen Hua Joint Venture (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/K) (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 September 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 December 2017.

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 m³ 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 | Simon Leung, May Lau, James Sze, Phoebe Tang | Engineer's Representative | 2762 5555 | 2714 0113 |
| IEC (Ramboll Environ) | 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. Transferring public fill to vessel and delivering to Taishan and other parties.
- 3. Operation of dewatering plant.
- 4. Operation of bentonite pool.
- 5. Concrete block breaking work.
- 6.Crushing plant operation.
- 7.Expansion of dewatering plant 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 4.1Air 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 4.2Monitoring 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 location | ons |
|---|-----|
|---|-----|

| 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 0.6m³/min and 1.7m³/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 <u>+</u> 3°C and the relative humidity (RH) <50% <u>+</u>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.

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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 Logotion | 24-hr TSP (μg/m³) | | 1-hr TSP (μg/m³) | |
|---------------------|-------------------|-------------|------------------|-------------|
| Monitoring Location | 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 651:1979 (Type1) and 804:1985 (Type1), 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 | Monitorina |

| | | Ŭ | |
|---|--------------|---|----------------|
| 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 5.3Noise 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(A), 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 5.4Action 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) |

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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.

| 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 | | |

Table 6.1Locations of Marine Water Monitoring Stations

6.3 Monitoring Parameters

Monitoring of the marine water quality parameters are listed in Table 6.2.

Table 6.2Marine Water Quality Monitoring Parameters

| In-situ measurement | Laboratory analysis |
|--|-------------------------|
| Depth (m) | Suspended solids (mg/L) |
| Temperature (°C) | |
| 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 6.3.

| Table 0.5 Monitoring net | fucinely of the marine we | | | |
|--------------------------|-------------------------------------|------------------|---------------------|--|
| Parameter | Frequency No. of Location | | No. of Depths | |
| Temperature | | | | |
| Salinity | | 2 | 3 | |
| DO | 3 days/week, 2 tides/day (TKO-C1 | (TKO-C1 and TKO- | (Surface, mid-depth | |
| Turbidity | 2 110e3/0ay | M4) | & bottom) | |
| Suspended solids | | | | |

Table 6.3Monitoring frequency of the marine water

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 recalibrated 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 6.4.

| Table 6.4 | Summary of testing procedures |
|-----------|-------------------------------|
|-----------|-------------------------------|

| Laboratory Analysis | Testing Procedure | Detection Limit |
|------------------------|---|-----------------|
| Total suspended solids | In house method based on APHA 19 th 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 6.5 shows the equipment used for in-situ monitoring of water quality. The calibration certificates are attached in Appendix D1.

| Parameter | Model | Date of Calibration | Due Date | Equipment No. |
|---|---|------------------------|----------|----------------|
| Coordinate of Monitoring stations | Garmin eTrex 10 | | | ET/EW/005/09 |
| Dissolved Oxygen | YSI Dissolved Oxygen, Salinity & Temperature | 14/10/17 | 13/01/18 | ET/EW/008/007* |
| (Saturation), Temperature, Salinity | Meter, YSI 2030 | 14/10/17 | 13/01/18 | ET/EW/008/009* |
| Turbidity | HACH Model 2100Q Turbid Meter | 21/10/17 | 19/01/18 | ET/0505/017* |
| | | 18/11/17 | 17/01/18 | ET/0505/014* |
| Water Depth | Speedtech SM-5 | | | ET/EW/002/08 |

 Table 6.5
 Details of Marine Water Quality Monitoring Equipment (In-site measurement)

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

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6.6 Action and Limit Level

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

| | able 6.6 Water Quality Action and Limit Levels | | | | |
|---|--|--|--|--|--|
| Parameter | Action Level | Limit Level | | | |
| DO (mg/L) | <u>Surface & Middle</u> <5.45 mg/L (5%-ile of baseline data) <u>Bottom</u> <4.72 mg/L (5%-ile of baseline data) | <u>Surface & Middle</u> <5.10 mg/L (1%-ile of baseline data) <u>Bottom</u> <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 | | | |

Table 6.6 Water Quality Action and Limit Levels

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:

| December 2017 | | | | | | |
|---------------|--------|---------|-----------|----------|---------|----------|
| 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 | | | | | | |

 Table 6.7
 Time Schedule of Impact Marine Water Quality Monitoring

Remark: $(\mathbf{\nabla}) =$ Marine water quality monitoring carried out by ET.

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 respectively. The summary of marine water quality exceedances is shown in Table 6.8.

| Table 6.8 | Summary of Impact Marine Water Quality Exceedances in this reporting period |
|-----------|---|
| | |

| 1 4 6 6 6 6 | | | | | | | | | |
|-------------|------------|-------|-----|-----------|-----|-------|-----|-------|-----|
| Station | Exceedance | DO | | Turbidity | | S | S | Total | |
| | Level | 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 |
| | Action | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TKO-M4 | 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, four weekly site inspections were conducted (06, 13, 20, 27 December 2017). Table 7.1 presents the key findings of weekly ET site inspection 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 |
|------------------------|--|---|---|-------------------------------|
| 06 December 2017 | Silt curtain near tipping hall No.1 was damaged (Previous item) | To repair the damage silt curtain properly. | Silt curtain near tipping hall No.1 was repaired. | Closed |
| 13 December 2017 | No defective work or observe | ation was recorded during | the weekly ET site inspecti | on. |
| 20 December 2017 | Silt curtain near tipping hall No.1 was damaged. (New item) | To repair the silt curtain properly. | | Follow-up |
| 27 December 2017 | Silt curtain near tipping hall No.1 was damaged. (Previous item) | To repair the silt curtain properly. | Silt curtain near tipping hall No.1 was replaced. | Closed |

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

7.1.2 EPD's Site Inspection

No EPD's site inspection was carried out at TKO137 Fill Bank in December 2017.

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.



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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.

| Waste Type | Actual Amount | Disposal Locations | | |
|-----------------------------------|---------------|---|--|--|
| Public Fill ('000m ³) | 0 | TKO 137 Fill Bank | | |
| C&D Waste ('000kg) | 50.7 | SENT Landfill / Refuse Collection Point | | |
| Chemical Waste (kg/L) | 0 | Collected by licensed collector | | |

 Table 7.2
 Actual amounts of Waste generated in this reporting period

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.

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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 O | | | sing and permit status |
|---|-----------------------|----------|----------|--|
| Description | Permit No. | | Period | Section |
| | | From | То | |
| Amended Environmental Permit | EP- 134/2002/K | 04/02/13 | | 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 |
| Marine Dumping Permit | EP/MD/18- 062 | 01/10/17 | 31/12/17 | Approval for dumping 4,800,000 tons (approximately equal to 2,666,667 cu.m. bulked quantity) of Public Fill (Reclamation Materials) from Tseung Kwan O Area 137 Fill Bank and Tuen Mun Area 38 Fill Bank to designated dumping area at Guanghaiwan of Taishan |
| Chemical Waste Producer | 5919-839- C4181-01 | 19/04/17 | | Spent battery cell containing heavy metals and spent lubricating oil |
| Effluent Discharge License | WT000291 78-2017 | 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 | | |

Table 8.1 Summary of environmental licensing and permit status

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 complaint was 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 complaint, 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).

| Complaints l | logged | Summons s | erved | Successful prosecution received | | | |
|---------------|------------|--------------------------|-------|---------------------------------|------------|--|--|
| December 2017 | Cumulative | December 2017 Cumulative | | December 2017 | Cumulative | | |
| 0 | 2 | 0 | 0 | 0 | 0 | | |

 Table 10.1
 Summary of Environmental Complaints and Prosecutions

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 complaint, 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.

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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

As informed by the Contractor, the activities to be conducted by them in the next month included: 1. Operation of the TKO137 Fill Bank.

- 2. Transferring public fill to vessel and delivering to Taishan and other parties.
- 3. Rock Crushing Plant Operation.
- 4. Public fill removal at Portion A6.
- 5. Concrete block breaking work.
- 6. Bentonite pool removal work.
- 7. Renovation of tipping halls at both fill banks

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

<u>Noise</u>

- 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

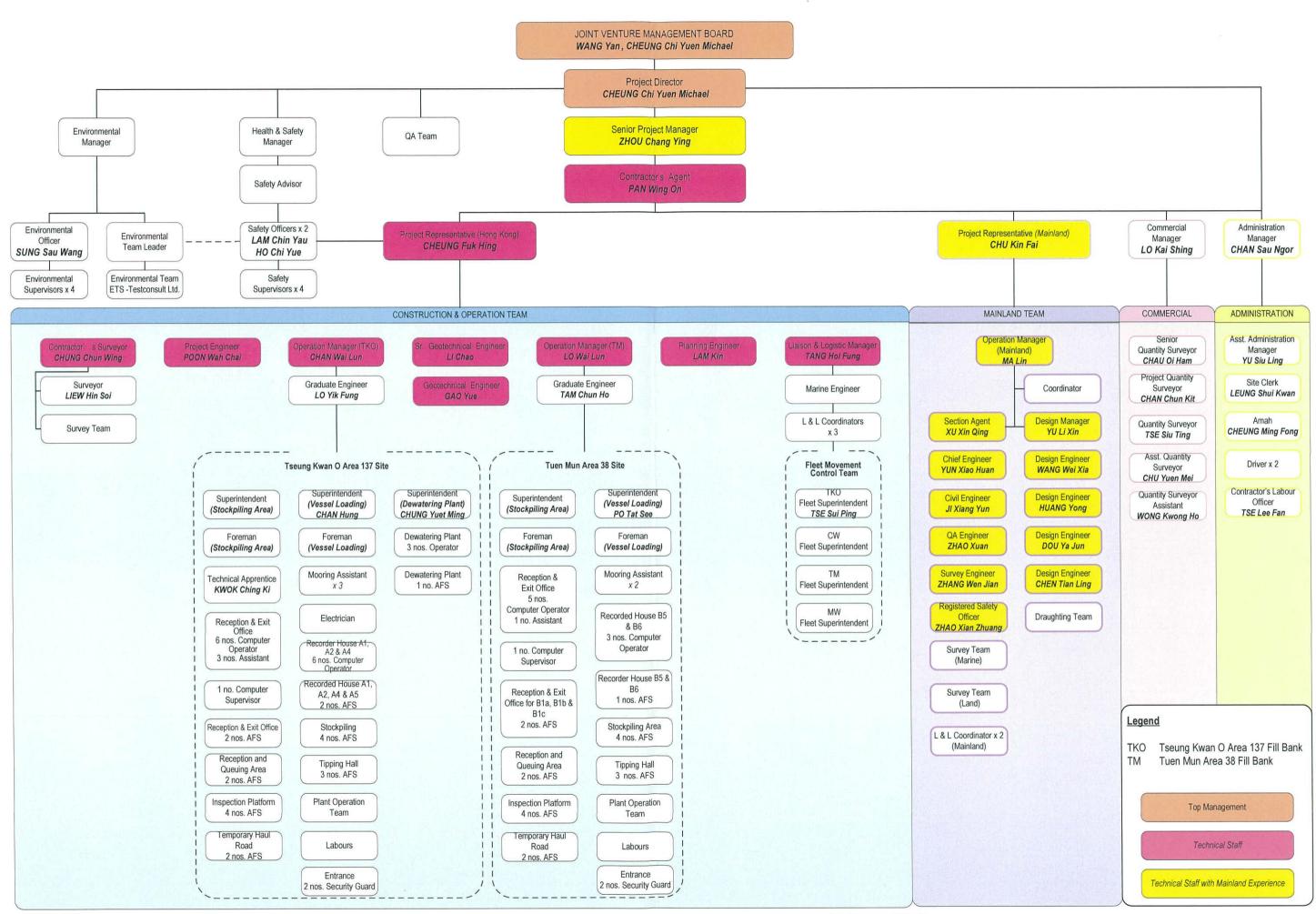
The proposed EM&A program of the coming month is attached in Appendix K.

- END OF REPORT -



Appendix A

Project Organization Chart







Organization Chart Rev. 3



Appendix B1

Calibration Certificates for Impact Air Quality Monitoring Equipment





Calibration Report

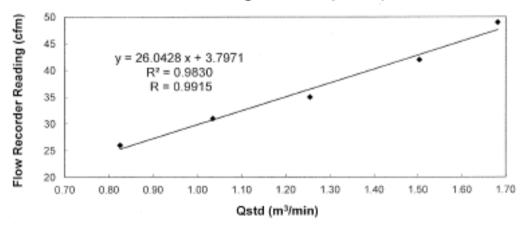
of High Volume Air Sampler

| Manufacturer | : | Graseby 105 | Date of Calibration | ; | 10 November 2017 | | | | |
|--------------|---|---|----------------------|---|------------------|--|--|--|--|
| Serial No. | ; | 9795 (ET/EA/003/18) | Calibration Due Date | : | 09 January 2018 | | | | |
| Method | ; | Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the Operations Manual | | | | | | | |

Results

| Flow recorder rea | ading (cfm) | ng (cfm) 49 | | | 35 | 31 | 26 | |
|-------------------------|--|-------------|--|---------|------|------|------|--|
| Qstd (Actual flow | Qstd (Actual flow rate, m ³ /min) | | | 1.50 | 1.25 | 1.03 | 0.82 | |
| Pressure : 762.06 mm Hg | | | | Temp. : | 300 | к | | |

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 : CHAN, Wai Man (Technician)

Checked by

LAW, Sau Yee

(Senior Environmental Officer)

- END OF REPORT -

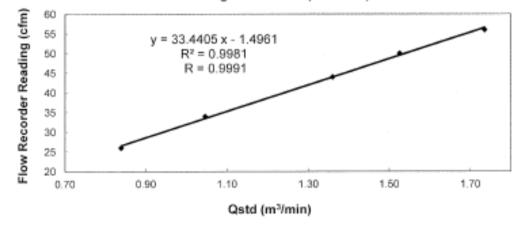




Calibration Report of High Volume Air Sampler

| Manufacturer | ; | Andersen G1051 | Date of Calib | ration | : | 10 November 2017 | | | | | | |
|--------------|---|---|--|---------|---|------------------|------------|------|--|--|--|--|
| Serial No. | ; | 1176 (ET/EA/003/05) | Calibration D | ue Date | : | 09 Ja | nuary 2018 | | | | | |
| Method | : | Based on Operations Manual for the 5-p manufactured by Tisch TE-5025 A | Based on Operations Manual for the 5-point calibration using standard calibration kit nanufactured by Tisch TE-5025 A | | | | | | | | | |
| Results | : | Flow recorder reading (cfm) | 56 | 50 | | 44 | 34 | 26 | | | | |
| | | Qstd (Actual flow rate, m ³ /min) | 1.73 | 1.53 | | 1.36 | 1.05 | 0.84 | | | | |
| | | Pressure : 762.05 mm H | 9 | Temp. : | | 300 | к | | | | | |

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 CHAN, Wai Man (Technician)

Checked by LAW, Sau Yee (Senior Environmental Officer)

ET/ EA/004/14



TISCH ENVIRONMENTAL, INC. 145 SOUTH MIAMI AVE VILLAGE OF CLEVES, OH 45002 513.467.9000 877.263.7610 TOLL FREE 513.467.9009 FAX

| | ORIFICE 7 | TRANSFER STAN | NDARD CERT | IFICATION | WORKSHEET | FE-5025A | |
|--|-------------------------|------------------------|--------------------------------------|--|----------------------------------|--------------------------------------|--|
| Date - Apr 03, 2017 Rootsmeter S/N 0438320 Ta (K) - Operator Tisch Orifice I.D 3297 Pa (mm) - 7 | | | | | | | |
| PLATE OR Run # | VOLUME START (m3) | VOLUME STOP (m3) | DIFF VOLUME (m3) | DIFF TIME (min) | METER DIFF Hg (mm) | ORFICE DIFF H2O (in.) | |
| 1 2 3 4 5 | NA NA NA NA | NA NA NA NA | 1.00 1.00 1.00 1.00 1.00 | 1.4360 1.0230 0.9170 0.8720 0.7180 | 3.2 6.4 7.9 8.8 12.7 | 2.00 4.00 5.00 5.50 8.00 | |

DATA TABULATION

| Vstd | (x axis) Qstd | (y axis) | | Va | (x axis) Qa | (y axis) |
|--|--|--|---------------------------|--|--|--|
| 0.9900 0.9858 0.9837 0.9825 0.9773 | 0.6894 0.9636 1.0727 1.1268 1.3612 | 1.4101 1.9943 2.2296 2.3385 2.8203 | | 0.9957 0.9915 0.9893 0.9882 0.9830 | 0.6934 0.9692 1.0789 1.1333 1.3691 | 0.8881 1.2560 1.4042 1.4728 1.7762 |
| Qstd slop intercept coefficie | : (b) = | 2.10166 -0.03302 0.99984 | n e r | Qa slope intercept coefficie | (b) = | 1.31603 -0.02080 0.99984 |
| y axis = | SQRT [H2O (H | Pa/760) (298/5 | y axis = SQRT[H2O(Ta/Pa)] | | | |

CALCULATIONS

Vstd = Diff. Vol[(Pa-Diff. Hg)/760](298/Ta) Qstd = Vstd/Time

Va = Diff Vol [(Pa-Diff Hg)/Pa] Qa = Va/Time

For subsequent flow rate calculations:

 $Qstd = 1/m\{ [SQRT(H2O(Pa/760)(298/Ta))] - b \}$ $\tilde{Q}a = 1/m\{[SQRT H2O(Ta/Pa)] - b\}$



Appendix B2

Impact Air Quality Monitoring Results

Summary of 24-hr TSP Monitoring Results



Monitoring Station : TKO-A1

Location : Site Egress

| St | art | Fini | sh | Elapse | e Time | Sampling | Flow Rate | e (m ³ /min.) | Average | Filter W | eight (g) | Conc. (μg/m ³) |
|------------|-------|------------|-------|----------|----------|------------|-----------|--------------------------|------------------------|----------|-----------|----------------------------|
| Date | Time | Date | Time | Initial | Final | Time (hrs) | Initial | Final | (m ³ /min.) | Initial | Final | ουπο. (μg/m) |
| 1/12/2017 | 15:00 | 2/12/2017 | 15:00 | 17862.74 | 17886.74 | 24.00 | 1.1597 | 1.1597 | 1.1597 | 2.5981 | 2.6834 | 51 |
| 7/12/2017 | 08:00 | 8/12/2017 | 08:00 | 17888.74 | 17912.74 | 24.00 | 1.0061 | 1.0061 | 1.0061 | 2.6961 | 2.8539 | 109 |
| 13/12/2017 | 14:30 | 14/12/2017 | 14:30 | 17916.74 | 17940.74 | 24.00 | 1.3133 | 1.3133 | 1.3133 | 2.6945 | 2.8946 | 106 |
| 19/12/2017 | 08:00 | 20/12/2017 | 08:00 | 17942.74 | 17966.74 | 24.00 | 1.3133 | 1.3133 | 1.3133 | 2.6781 | 2.9069 | 121 |
| 25/12/2017 | 08:00 | 26/12/2017 | 08:00 | 17969.74 | 17993.74 | 24.00 | 1.1597 | 1.1597 | 1.1597 | 2.6780 | 2.8320 | 92 |
| 31/12/2017 | 08:00 | 1/1/2018 | 08:00 | 17996.74 | 18020.74 | 24.00 | 1.3901 | 1.3901 | 1.3901 | 2.6762 | 2.8635 | 94 |

Monitoring Station : TKO-A2a

Location : CREO

| St | art | Fini | sh | Elapse | e Time | Sampling | Flow Rate | e (m ³ /min.) | Average | Filter W | eight (g) | . Conc. (μg/m³) |
|------------|-------|------------|-------|----------|----------|------------|-----------|--------------------------|------------------------|----------|-----------|-----------------|
| Date | Time | Date | Time | Initial | Final | Time (hrs) | Initial | Final | (m ³ /min.) | Initial | Final | οοπο. (μg/m) |
| 1/12/2017 | 15:00 | 2/12/2017 | 15:00 | 19956.61 | 19980.61 | 24.00 | 1.1213 | 1.1213 | 1.1213 | 2.5821 | 2.6785 | 60 |
| 7/12/2017 | 08:00 | 8/12/2017 | 08:00 | 19982.61 | 20006.61 | 24.00 | 1.1213 | 1.1213 | 1.1213 | 2.6947 | 2.9823 | 178 |
| 13/12/2017 | 14:30 | 14/12/2017 | 14:30 | 20010.61 | 20034.61 | 24.00 | 1.2409 | 1.2409 | 1.2409 | 2.7013 | 2.8443 | 80 |
| 19/12/2017 | 08:00 | 20/12/2017 | 08:00 | 20036.61 | 20060.61 | 24.00 | 1.1213 | 1.1213 | 1.1213 | 2.6687 | 2.8810 | 131 |
| 25/12/2017 | 08:00 | 26/12/2017 | 08:00 | 20063.61 | 20087.61 | 24.00 | 1.0615 | 1.0615 | 1.0615 | 2.6663 | 2.9485 | 185 |
| 31/12/2017 | 08:00 | 1/1/2018 | 08:00 | 20090.61 | 20114.61 | 24.00 | 1.1213 | 1.1213 | 1.1213 | 2.6910 | 2.8204 | 80 |



Summary of 1-hr TSP Monitoring Results

| Monitoring | Station | : TKO-A1 |
|------------|---------|----------|
|------------|---------|----------|

Location : Site Egres Site Egress

| St | art | Fini | sh | Elapse | e Time | Sampling | Flow Rate | e (m ³ /min.) | Average | Filter W | eight (g) | Conc. (μg/m³) |
|------------|-------|------------|-------|----------|----------|------------|-----------|--------------------------|------------------------|----------|-----------|---------------|
| Date | Time | Date | Time | Initial | Final | Time (hrs) | Initial | Final | (m ³ /min.) | Initial | Final | |
| 1/12/2017 | 13:00 | 1/12/2017 | 14:00 | 17861.74 | 17862.74 | 1.00 | 1.0829 | 1.0829 | 1.0829 | 2.6184 | 2.6416 | 357 |
| 4/12/2017 | 08:35 | 4/12/2017 | 09:35 | 17886.74 | 17887.74 | 1.00 | 1.1981 | 1.1981 | 1.1981 | 2.5953 | 2.6185 | 323 |
| 6/12/2017 | 08:30 | 6/12/2017 | 09:30 | 17887.74 | 17888.74 | 1.00 | 1.1597 | 1.1597 | 1.1597 | 2.7031 | 2.7268 | 341 |
| 8/12/2017 | 10:55 | 8/12/2017 | 11:55 | 17912.74 | 17913.74 | 1.00 | 1.1597 | 1.1597 | 1.1597 | 2.6652 | 2.6900 | 356 |
| 8/12/2017 | 13:00 | 8/12/2017 | 14:00 | 17913.74 | 17914.74 | 1.00 | 1.1213 | 1.1213 | 1.1213 | 2.7130 | 2.7371 | 358 |
| 11/12/2017 | 11:25 | 11/12/2017 | 12:25 | 17914.74 | 17915.74 | 1.00 | 1.3133 | 1.3133 | 1.3133 | 2.6978 | 2.7262 | 360 |
| 13/12/2017 | 13:00 | 13/12/2017 | 14:00 | 17915.74 | 17916.74 | 1.00 | 1.2365 | 1.2365 | 1.2365 | 2.6937 | 2.7104 | 225 |
| 15/12/2017 | 13:00 | 15/12/2017 | 14:00 | 17940.74 | 17941.74 | 1.00 | 1.3901 | 1.3901 | 1.3901 | 2.7196 | 2.7490 | 352 |
| 18/12/2017 | 14:10 | 18/12/2017 | 15:10 | 17941.74 | 17942.74 | 1.00 | 1.4669 | 1.4669 | 1.4669 | 2.6886 | 2.7151 | 301 |
| 20/12/2017 | 09:57 | 20/12/2017 | 10:57 | 17966.74 | 17967.74 | 1.00 | 1.4669 | 1.4669 | 1.4669 | 2.6660 | 2.6937 | 315 |
| 20/12/2017 | 13:37 | 20/12/2017 | 14:37 | 17967.74 | 17968.74 | 1.00 | 1.5053 | 1.5053 | 1.5053 | 2.6781 | 2.7095 | 348 |
| 22/12/2017 | 13:00 | 22/12/2017 | 14:00 | 17968.74 | 17969.74 | 1.00 | 1.3133 | 1.3133 | 1.3133 | 2.6805 | 2.7068 | 334 |
| 27/12/2017 | 13:20 | 27/12/2017 | 14:20 | 17993.74 | 17994.74 | 1.00 | 1.3133 | 1.3133 | 1.3133 | 2.6692 | 2.6817 | 159 |
| 27/12/2017 | 14:30 | 27/12/2017 | 15:30 | 17994.74 | 17995.74 | 1.00 | 1.3901 | 1.3901 | 1.3901 | 2.6796 | 2.7080 | 341 |
| 29/12/2017 | 15:30 | 29/12/2017 | 16:30 | 17995.74 | 17996.74 | 1.00 | 1.2365 | 1.2365 | 1.2365 | 2.6784 | 2.6944 | 216 |

Monitoring Station : TKO-A2a





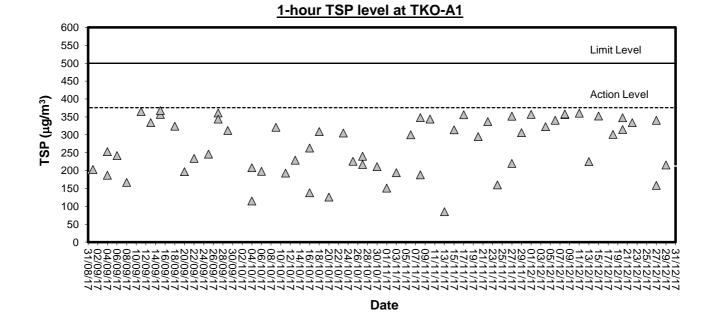
| St | art | Fini | sh | Elapse | e Time | Sampling Flow Rate (m ³ /min. | | e (m ³ /min.) | Average | Filter W | eight (g) | $Conc.(ug/m^3)$ |
|------------|-------|------------|-------|----------|----------|--|---------|--------------------------|------------------------|----------|-----------|----------------------------|
| Date | Time | Date | Time | Initial | Final | Time (hrs) | Initial | Final | (m ³ /min.) | Initial | Final | Conc. (µg/m ³) |
| 01/12/2017 | 13:05 | 01/12/2017 | 14:05 | 19955.61 | 19956.61 | 1.00 | 1.1811 | 1.1811 | 1.1811 | 2.6003 | 2.6222 | 309 |
| 04/12/2017 | 08:40 | 04/12/2017 | 09:40 | 19980.61 | 19981.61 | 1.00 | 1.1811 | 1.1811 | 1.1811 | 2.5882 | 2.6067 | 261 |
| 06/12/2017 | 08:35 | 06/12/2017 | 09:35 | 19981.61 | 19982.61 | 1.00 | 1.0017 | 1.0017 | 1.0017 | 2.6880 | 2.6985 | 175 |
| 08/12/2017 | 11:00 | 08/12/2017 | 12:00 | 20006.61 | 20007.61 | 1.00 | 1.0615 | 1.0615 | 1.0615 | 2.6741 | 2.6950 | 328 |
| 08/12/2017 | 13:00 | 08/12/2017 | 14:00 | 20007.61 | 20008.61 | 1.00 | 1.0615 | 1.0615 | 1.0615 | 2.6769 | 2.6888 | 187 |
| 11/12/2017 | 11:30 | 11/12/2017 | 12:30 | 20008.61 | 20009.61 | 1.00 | 1.2409 | 1.2409 | 1.2409 | 2.6850 | 2.7069 | 294 |
| 13/12/2017 | 13:05 | 13/12/2017 | 14:05 | 20009.61 | 20010.61 | 1.00 | 1.1512 | 1.1512 | 1.1512 | 2.6896 | 2.7010 | 165 |
| 15/12/2017 | 13:05 | 15/12/2017 | 14:05 | 20034.61 | 20035.61 | 1.00 | 1.2409 | 1.2409 | 1.2409 | 2.6988 | 2.7219 | 310 |
| 18/12/2017 | 14:20 | 18/12/2017 | 15:20 | 20035.61 | 20036.61 | 1.00 | 1.2110 | 1.2110 | 1.2110 | 2.6904 | 2.7044 | 193 |
| 20/12/2017 | 13:00 | 20/12/2017 | 14:00 | 20060.61 | 20061.61 | 1.00 | 1.3007 | 1.3007 | 1.3007 | 2.6510 | 2.6635 | 160 |
| 20/12/2017 | 14:10 | 20/12/2017 | 15:10 | 20061.61 | 20062.61 | 1.00 | 1.2708 | 1.2708 | 1.2708 | 2.6588 | 2.6856 | 351 |
| 22/12/2017 | 13:08 | 22/12/2017 | 14:08 | 20062.61 | 20063.61 | 1.00 | 1.2409 | 1.2409 | 1.2409 | 2.6732 | 2.6894 | 218 |
| 27/12/2017 | 13:25 | 27/12/2017 | 14:25 | 20087.61 | 20088.61 | 1.00 | 1.3605 | 1.3605 | 1.3605 | 2.6745 | 2.6996 | 307 |
| 27/12/2017 | 14:26 | 27/12/2017 | 15:26 | 20088.61 | 20089.61 | 1.00 | 1.2409 | 1.2409 | 1.2409 | 2.6677 | 2.6823 | 196 |
| 29/12/2017 | 15:40 | 29/12/2017 | 16:40 | 20089.61 | 20090.61 | 1.00 | 1.3007 | 1.3007 | 1.3007 | 2.6851 | 2.6941 | 115 |

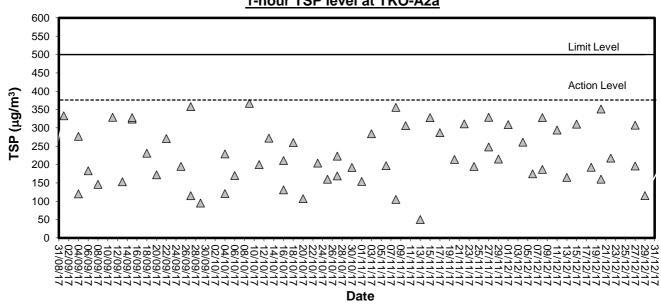


Appendix B3

Graphical Plots of Impact Air Quality Monitoring Data



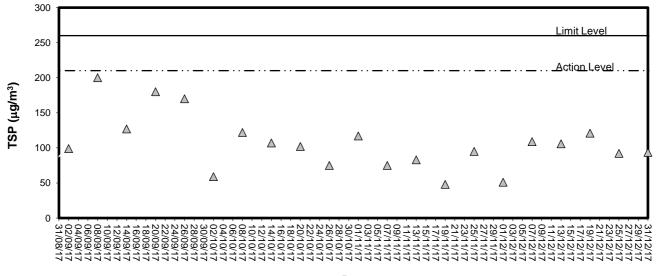




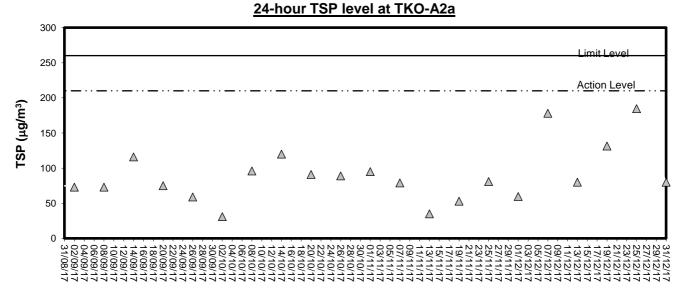
1-hour TSP level at TKO-A2a



24-hour TSP level at TKO-A1



Date



Date



Appendix C1

Calibration Certificates for Impact Noise Monitoring Equipment





Calibration Certificate

| Certificate No. 709571 | Page 1 of 2 Pages |
|--|--|
| Customer : ETS-Testconsult Limited | |
| Address : 8/F., Block B, Veristrong Industrial Cen | tre, 34-36 Au Pui Wan St., Fotan, Hong Kong. |
| Order No. : Q73909 | Date of receipt : 6-Oct-17 |
| Item Tested | - |
| Description : Sound Level Calibrator | |
| Manufacturer : Rion | I.D. : ET/EN/002/01 |
| Model : NC-73 | Serial No. : 10196943 |
| Test Conditions | |
| Date of Test : 16-Oct-17 | Supply Voltage : |
| Ambient Temperature : (23 ± 3)°C | Relative Humidity : (50 ± 25) % |

Celibration 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 |
|---------------|------------------------|-----------|---------------------|
| 8014 | Spectrum Analyzer | 707126 | NIM-PRC & SCL-HKSAR |
| -8240 | Sound Level Calibrator | 703741 | NIM-PRC & SCL-HKSAR |
| -S041 | Universal Counter | 707135 | SCL-HKSAR |
| S206 | Sound Level Meter | 707129 | SCL-HKSAR |

The volues given in this Calibration Cartificate 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, availability, mis-banding, or the capability of any other laboratory to repeat the measurement. Hong Kong Caribration 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 : | Appro | wed by : | Alan Chu | |
|---|--------------------------|-----------|----------|---|
| This Defilipse is lowed by: Heng Kong Gallavillon Ltd., UNI 98, 2471, WHI Fung Industrial Control, No. 58-78, To Chaen Ping Sanatyovy: Charg The 2425 1997, The: 2425 2406 | Date: . NT/Hong Kang. | 16-Oct-17 | | |
| inter on control of their parall states of the Kolong M. Alf Mills on Hitchie in overset by Hisnip Kong Calibration Ltd., it may not be not | reduced except in tot. | | | E |





Calibration Certificate

Certificate No. 709571

Page 2 of 2 Pages

Results :

1. Level Accuracy (at 1 kHz)

| UUT Nominal Value | Measured Value | Mfr's Spec. |
|-------------------|----------------|-------------|
| 94 dB | 94.0 dB | ± 1 dB |

Uncertainty : \pm 0.2 dB

2. Frequency Accuracy

| UUT Nominal Value | Measured Value | Mfr's Spec. |
|-------------------|----------------|-------------|
| 1 kHz | 0.987 kHz | ±2% |

Uncertainty : ± 0,1 %

- Level Stability : 0.0 dB Uncertainty : ± 0.01 dB
- Total Harmonic Distortion : < 0.5 % Mfr's Spec. : < 3 % Uncertainty : ± 2.3 % of reading

Remarks: 1. UUT : Unit-Under-Test

2. The uncertainty claimed is for a confidence probability of not less than 95%.

3. Atmospheric Pressure : 1 025 hPa

END -----

The copylight of this cardificants is investibly Hang Keng Collection Unit. It may not be reproduced eccept in full



Calibration Certificate

| Certificate No | . 704458 | | Page | 1 of 3 Pages |
|------------------|-----------------------------------|-----------------------|-------------------|---------------------|
| Customer : | ETS-Testconsult Limited | | | |
| Address : | 8/F., Block B, Veristrong Industr | rial Centre, 34-36 Au | ı Pui Wan St., Fo | otan, Hong Kong. |
| Order No. : | Q71850 | | Date of receipt | t : 16-May-17 |
| Item Tested | | | | |
| Description | : Sound Level Meter | | | |
| Manufacturer | : Rion | | I.D. | : ET/EN/003/16 |
| Model | : NL-52 | | Serial No. | : 00253765 |
| Test Condit | ions | | | |
| Date of Test : | 24-May-17 | | Supply Voltage | e : |
| Ambient Temp | perature: (23 ± 3)°C | | Relative Humic | dity: (50 ± 25) % |
| Test Specif | ications | | | |
| Calibration che | ck. | | | |
| Ref. Document | /Procedure: Z01, IEC 61672. | | | |
| Test Result | S | | | |
| All results were | within the IEC 61672 Type 1 spe | cification. | | |
| | shown in the attached page(s). | | | |
| | | | | |
| Main Test equi | pment used: | | | |
| Equipment No. | Description | <u>Cert. No.</u> | | Traceable to |
| S017 | Multi-Function Generator | C170120 | | SCL-HKSAR |
| S240 | Sound Level Calibrator | 701036 | | 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 : | Approv | ved by : | Alen Alan Chu |
|---|--------|-----------|------------------|
| 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 Kon Tel: 2425 8801 Fax: 2425 8646 | Date: | 24-May-17 | |

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Calibration Certificate

Certificate No. 704458

Page 2 of 3 Pages

Results :

1. Self-generated noise : 15.0 dBA (Mfr's Spec \leq 17 dBA)

2. Acoustical signal test

| | UUT S | etting | | | |
|------------|------------------------|-------------------|------------------|-----------------------|---------------------|
| Range (dB) | Frequency Weighting | Time Weighting | Octave Filter | Applied Value (dB) | UUT Reading (dB) |
| 30-130 | A | F | OFF | 94.0 | 94.0 |
| | | S | OFF | | 94.0 |
| | С | F | OFF | | 94.3 |
| | Z | F | OFF | | 94.3 |
| | A | F | OFF | 114.0 | 114.1 |
| | | S | OFF | | 114.1 |
| | C | F | OFF | | 114.1 |
| | Z | F | OFF | | 114.1 |

IEC 61672 Type 1 Spec. : \pm 1.1 dB Uncertainty : \pm 0.1 dB

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 | -26.2 | - 26.2 dB, ± 1.5 dB |
| 125 Hz | -16.2 | - 16.1 dB, ± 1.5 dB |
| 250 Hz | -8.7 | - $8.6 dB, \pm 1 dB$ |
| 500 Hz | -3.3 | - $3.2 \text{ dB}, \pm 1.4 \text{ dB}$ |
| 1 kHz | 0.0 (Ref) | $0 dB, \pm 1.1 dB$ |
| 2 kHz | +1.2 | $+$ 1.2 dB, \pm 1.6 dB |
| 4 kHz | +1.0 | $+ 1.0 \text{ dB}, \pm 1.6 \text{ dB}$ |
| 8 kHz | -1.1 | - 1.1 dB , + 2.1 dB ~ - 3.1 dB |
| 16 kHz | -8.0 | - 6.6 dB, + 3.5 dB ~ - 17.0 dB |

Uncertainty : $\pm 0.1 \text{ dB}$



Calibration Certificate

Certificate No. 704458

Page 3 of 3 Pages

4. Frequency & Time weightings at 1 kHz

4.1 Frequency Weighting (Fast)

| UUT | Applied | UUT | Difference | IEC 61672 |
|---------|------------|--------------|------------|--------------|
| Setting | Value (dB) | Reading (dB) | (dB) | Type 1 Spec. |
| А | 94.0 | 94.0 (Ref.) | | ± 0.4 dB |
| С | 94.0 | 94.3 | +0.3 | |
| Z | 94.0 | 94.3 | +0.3 | |

4.2 Time Weighting (A-weighted)

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

Uncertainty : $\pm 0.1 \text{ dB}$

Remarks : 1. UUT : Unit-Under-Test

- 2. The uncertainty claimed is for a confidence probability of not less than 95%.
- 3. Atmospheric Pressure : 1026 hPa.
- 4. Preamplifier model : NH-25, S/N : 43795
- 5. Firmware Version: 1.5
- 6. Power Supply Check: OK
- 7. The UUT was adjusted with the laboratory's calibrator at the reference sound pressure level before the calibration.

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



Appendix C2

Impact Noise Monitoring Results



Day-time Noise Monitoring

Monitoring Location: TKO-N1 (Site Egress)

| Date | Start Sampling Time (hh:mm) | Noi | se Level dB | (A) | Wind Speed | Weather Condition |
|----------|--------------------------------|------------------------|-----------------|-----------------|---------------|----------------------|
| | | L _{eq(30min)} | L ₁₀ | L ₉₀ | (m/s) | |
| 20/12/17 | 13:30 | 69.1 | 71.9 | 58.0 | 0.4 | Fine |

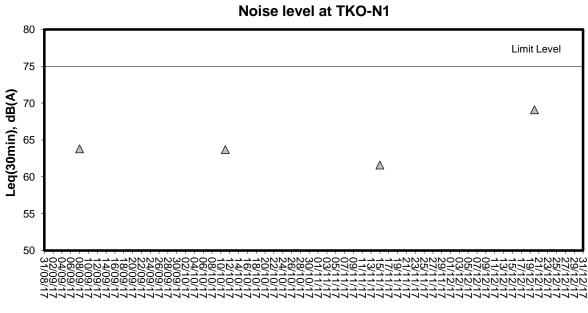


Appendix C3

Graphical Plots of Impact Noise Monitoring Data



Noise Monitoring (Day-time)



Date



Appendix D1

Calibration Certificates for Impact Marine Water Quality Monitoring Equipments



| Performance C | Theck of Turbidity | Meter |
|--|------------------------------|-----------------------|
| Equipment Ref. No. : ET/0505/017 | Manufacturer | : HACH |
| Model No. : <u>2100Q</u> | Serial No. | : <u>16030C048474</u> |
| Date of Calibration : <u>21/10/2017</u> | Due Date | : <u>19/01/2018</u> |
| | | |
| Theoretical Value of Turbidity Standard (NTU) | Measured Value (NTU) | Difference % * |
| 20 | 20.8 | 4.0 |
| 100 | 104 | 4.0 |
| 800 | 792 | -1.0 |
| (*) Difference = (Measured Value | e – Theoretical Value) / The | oretical Value x 100 |
| Acceptance Criteria Diffe | erence : -5 % to 5 % | |
| The turbidity meter complies * / d and is deemed acceptable * / unae national standards. | | |
| Prepared by : | Checked by : | 4 |



Performance Check of Turbidity Meter

| Equipment Ref. No. | : <u>ET/0505/014</u> | Manufacturer | ; | HACH |
|---------------------|----------------------|--------------|---|--------------|
| Model No. | : <u>21000</u> | Serial No. | ; | 13110C029448 |
| Date of Calibration | : <u>18/11/2017</u> | Due Date | ÷ | 17/01/2018 |

| Theoretical Value of Turbidity Standard (NTU) | Measured Value (NTU) | Difference % * |
|--|----------------------|----------------|
| 20 | 21.0 | 5.0 |
| 100 | 110 | 1.0 |
| 800 | 790 | -1.3 |

(*) 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.

| 1 | | |
|---------------|--------|---|
| | 116. | - · · · · · · · · · · · · · · · · · · · |
| Prepared by : | lotten | Checked by : // |
| | | |



Form II/CII/R/12 Issue 8 (1/2) [85/13]

| quipment Ref. No. | : ET/EW | //008/007 | | | Manufactur | rer | : YSI | |
|---|---|---|--|--|--|--|---|--|
| odel No. | : Pro 20 | 30 | | | Serial No. | | : 12H101061 | |
| ate of Calibration | : 14/10/ | 2017 | | _ | Calibration | Due Date | : 13/01/20 | 18 |
| Temperature Verifi | cation | | | | | | | |
| Rof. No. of Referen | ce Thermoine | ster : | ET/0521/ | 023 | | | | |
| Ref. No. of Water B | kath : | | | | | | | |
| | | | | | Tem | perature (°C) | | |
| Reference T | hermometer r | eading | Measured | | 19.7 | Corrected | | 20.0 |
| | deter reading | | Measured | | 19.9 | Difference | | 0.1 |
| Standardization of | endium thine | alahata () | | | | | | |
| Reagent No. of Na ₂ | | | PE/012/4.5/00 | | rent No. of 0.0 | 25N K ₂ Cr ₂ O ₂ | CPE/012 | /4.4/002/22 |
| | -13-intene | P | 1 6191214.0199 | | | | | |
| Initial Vol. of Na ₂ S ₂ O ₅ (ml) | | | | | Trial | | | ial 2 |
| Final Vol. of Na ₂ S ₂ O ₃ (m) | | | | | 0.00 | | | .15 |
| Vol. of Na2S2O3 use | | | | | 10.1 | | 20.25 | |
| Normality of Na2S20 | | 0 | | | 10.15 10.10 0.02463 0.02475 | | | |
| Average Normality | | - | 1 (N) | | 0.02463 0.02475 0.02469 | | | |
| Acceptance criteria, | the second se | 1 | | Less than ± 0.001N | | | | |
| | | | | | | DAM HILL | 0.000114 | |
| Calculation: | Normality of | f Na ₂ S ₂ O | ₃₊ N = 0.25 / ml | Na ₂ S ₂ O ₃ use | d | | | |
| | Normality o | f Na ₂ S ₂ O | 1+ N = 0.25 / ml | Na ₂ S ₂ O ₃ use | đ | | | |
| Lineality Checking | | | | | d | | | |
| Lineality Checking Determination of di | ssolved oxyg | | | | d | | | |
| Lineality Checking Determination of dl Purging Time (min) | ssolved oxyg | | | itration * | d | 5 | 1 | 0 |
| Lineality Checking Determination of di Purging Time (min) Trial | ssolved oxyg | | t by Winkler Ti | itration * | d | 5 2 | 1 | 0 |
| Lineality Checking Determination of di Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ | ssolved oxyg O ₅ (ml) | | t by Winkler Ti 2 1 0.00 | itration * | | | | 1 |
| Lineality Checking Determination of di Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ Final Vol. of Na ₂ S ₂ C | ssolved oxyg O ₅ (ml) O ₅ (ml) | | t by Winkler Ti 2 1 0.00 10.90 | itration * 2 10.90 21.90 | 1 | 2 | 1 | 2 |
| Lineality Checking Determination of di Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ Final Vol. of Na ₂ S ₂ O Vol. (V) of Na ₂ S ₂ O ₃ | osolved oxyg O ₅ (ml) O ₅ (ml) used (ml) | | t by Winkler Ti 2 1 0.00 10.90 10.90 | 2 10.90 21.90 11.00 | 1 21.90 27.90 6.00 | 2 0.00 | 1 6.20 | 2 10.30 |
| Lineality Checking Determination of di Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ C Final Vol. of Na ₂ S ₂ C Vol. (V) of Na ₂ S ₂ O ₃ Dissolved Oxygen (I | O ₅ (ml) O ₅ (ml) Used (ml) DO), mg/L | | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 | 2 10.90 21.90 11.00 7.29 | 1 21.90 27.90 6.00 3.98 | 2 0.00 6.20 6.20 4.11 | 1 6.20 10.30 4.10 2.72 | 2 10.30 14.50 4.20 2.78 |
| Lineality Checking Determination of dl Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ C Final Vol. of Na ₂ S ₂ C Vol. (V) of Na ₂ S ₂ O ₃ Dissolved Oxygen (I Acceptance criteria, | O ₅ (ml) O ₅ (ml) Used (ml) DO), mg/L Deviation | en conten | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + | 2 10.90 21.90 11.00 7.29 | 1 21.90 27.90 6.00 3.98 | 2 0.00 6.20 6.20 | 1 6.20 10.30 4.10 2.72 | 2 10.30 14.50 4.20 |
| Lineality Checking Determination of di Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ C Final Vol. of Na ₂ S ₂ C Vol. (V) of Na ₂ S ₂ O ₃ Dissolved Oxygen (I | O ₅ (ml) O ₅ (ml) Used (ml) DO), mg/L | en conten | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + | 2 10.90 21.90 11.00 7.29 | 1 21.90 27.90 6.00 3.98 | 2 0.00 6.20 6.20 4.11 | 1 6.20 10.30 4.10 2.72 | 2 10.30 14.50 4.20 2.78 |
| Lineality Checking Determination of dl Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ Final Vol. of Na ₂ S ₂ O Vol. (V) of Na ₂ S ₂ O Dissolved Oxygen (I Acceptance criteria, Calculation: | osolved oxyg O ₅ (ml) O ₃ (ml) used (ml) DO), mg/L Deviation DO (mg/L) | en conten | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + | 2 10.90 21.90 11.00 7.29 0.3mg/L | 1 21.90 27.90 6.00 3.98 | 2 0.00 6.20 6.20 4.11 a + 0.3mg/L | 1 6.20 10.30 4.10 2.72 Less than | 2 10.30 14.50 4.20 2.78 |
| Lineality Checking Determination of dl Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ C Final Vol. of Na ₂ S ₂ C Vol. (V) of Na ₂ S ₂ O ₃ Dissolved Oxygen (I Acceptance criteria, | osolved oxyg O ₅ (ml) O ₃ (ml) used (ml) DO), mg/L Deviation DO (mg/L) | en conten | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + 8000/298 | itration * 2 10.90 21.90 11.00 7.29 0.3mg/L Winkle | 1 21.90 27.90 6.00 3.98 Less that | 2 0.00 6.20 6.20 4.11 a + 0.3mg/L | 1 6.20 10.30 4.10 2.72 Less than | 2 10.30 14.50 4.20 2.78 + 0.3mg/L |
| Lineality Checking Determination of dl Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ Final Vol. of Na ₂ S ₂ O Vol. (V) of Na ₂ S ₂ O Dissolved Oxygen (I Acceptance criteria, Calculation: | osolved oxyg O ₅ (ml) O ₃ (ml) used (ml) DO), mg/L Deviation DO (mg/L) | en conten | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + 8000/298 ing, mg/L | itration * 2 10.90 21.90 11.00 7.29 0.3mg/L Winkle | 1 21.90 27.90 6.00 3.98 Less that | 2 0.00 6.20 6.20 4.11 a + 0.3mg/L ult *, mg/L | 1 6.20 10.30 4.10 2.72 Less than Difference | 2 10.30 14.50 4.20 2.78 + 0.3mg/L (%) of DO tent |
| Lineality Checking Determination of dl Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ Final Vol. of Na ₂ S ₂ O Vol. (V) of Na ₂ S ₂ O Dissolved Oxygen (I Acceptance criteria, Calculation: Purging time, min | o ₅ (ml) O ₅ (ml) used (ml) DO), mg/L DO (mg/L) DO n L | en conten = V x N x neter read 2 | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + 8000/298 ing, mg/L Average | itration * 2 10.90 21.90 11.00 7.29 0.3mg/L Winkle 1 | 1 21.90 27.90 6.00 3.98 Less that r Titration res 2 | 2 0.00 6.20 6.20 4.11 a + 0.3mg/L ult *, mg/L Average | 1 6.20 10.30 4.10 2.72 Less than Difference Con | 2 10.30 14.50 4.20 2.78 + 0.3mg/L (%) of DO trent 41 |
| Lineality Checking Determination of dl Purging Time (min) Trial Initial Vol. of Na ₂ S ₂ Final Vol. of Na ₂ S ₂ O Vol. (V) of Na ₂ S ₂ O Vol. (V) of Na ₂ S ₂ O Dissolved Oxygen (I Acceptance criteria, Calculation: Purging time, min 2 | Do (mg/L) DO (mg/L) DO (mg/L) | ew comten = V x N x neter read 2 7.25 | t by Winkler Ti 2 1 0.00 10.90 10.90 7.22 Less than + 8000/298 ing, mg/L Average 7.23 | itration * 2 10.90 21.90 11.00 7.29 0.3mg/L Winkle 1 7.22 | 1 21.90 27.90 6.00 3.98 Less that r Titration res 2 7.29 | 2 0.00 6.20 4.11 a + 0.3mg/L ult *, mg/L Average 7.26 | 1 6.20 10.30 4.10 2.72 Less than Difference Con 0.4 | 2 10.30 14.50 4.20 2.78 + 0.3mg/L (%) of DO itent 41 16 |

Þ



Perm E/CB/9/12 hours # (2/2) [05/13]

| Zero Point Checkin | 8 | | | | | | | | | | | | | |
|--|---|---------------|--------|------------------------------|---------------|----------------|-----------------|--------|-----------------------------|--|--|--|--|--|
| | DO meter re | ading, r | ng/L | | | | 0,00 | | | | | | | |
| | | | | | | | | | | | | | | |
| Salinity Checking | | | | | | | | | | | | | | |
| Reagent No. of NaC | 1 (10ppt) | | CPEA | 012/4.7/004/ | 11 Reag | ent No. of Na | Cl (30ppt) | CPEA | 012/4.8/004/11 | | | | | |
| Determination of di | | en conti | ent by | Winkler Thr | | | | | | | | | | |
| Salinity (ppt) | 70 | | ŕ | | | | 1 | 1 | | | | | | |
| l'rial | | | | 1 | 10 | 1 | 1 | 3 | | | | | | |
| nitial Vol. of Na ₂ S ₂ | 0, (ml) | | | 0.00 | | 2 10.60 | 21.30 | | 2 30.50 | | | | | |
| | | | | | | | | - | | | | | | |
| | | | | and the second second second | | | | | | | | | | |
| Final Vol. of Na ₂ S ₂ O ₃ (ml) 10.60 21.30 30.50 39.60 Vol. (V) of Na ₂ S ₂ O ₃ used (ml) 10.60 10.70 9.20 9.10 Dissolved Oxygen (DO), mg/L 7.03 7.09 6.10 6.03 | | | | | | | | | | | | | | |
| Dissolved Oxygen (DO), mg/L 7.03 7.09 6.10 6.03 Acceptance criteria, Deviation Less than + 0.3mg/L Less than + 0.3mg/L Less than + 0.3mg/L | | | | | | | | | | | | | | |
| Calculation: | DO (mg/L) | $-V \times N$ | x 800 | 0/298 | | | | | | | | | | |
| 0.5.5.4.0 | DO | neter rea | ading. | mg/L | Winkler | Titration rest | ilt**. me/L | D:// | (N) (DO | | | | | |
| Salinity (ppt) | 1 | 2 | | Average | l | 2 | Average | 1 Dim | erence (%) of DO Content | | | | | |
| 10 | 7.12 | 7.14 | 4 | 7.13 | 7.03 | 7.09 | 7.06 | | 0.99 | | | | | |
| 30 | 6.08 | 6.0 | 8 | 6.08 | 6.10 | 6.03 | 6.07 | | 0.16 | | | | | |
| 10 Difference Criteria 1) Difference betwee 2) Linear regression 3) Zero checking: 0. 4) Difference (%) of | n temperatur coefficient : .0mg/L | >0.99 | | | | | | nomete | r:<0.5 °C | | | | | |
| he equipment comp unaccoptable ^d for u Delete as appropria | 150. | not-com; | pły″w | ith the specif | fied requirer | oents and is d | cerned acceptal | ble " | | | | | | |
| ated by | <u> 1</u> 4 | -le- | \sim | | | Appro | ved by : | ð | / | | | | | |



| Performa | nce Check of | f Salinity Meter | | | | | | | | | | | | |
|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|
| Equipment Ref. No. : ET/EW | V/008/007 | Manufacturer : YSI | | | | | | | | | | | | |
| Model No. : <u>Pro 20</u> | 30 | Serial No. : <u>12H 101061</u> | | | | | | | | | | | | |
| Date of Calibration : 14/10/2 | 2017 | Due Date : <u>13/01/2018</u> | | | | | | | | | | | | |
| Ref. No. of Salinity Stand | lard used (30ppt) | S/001/10 | | | | | | | | | | | | |
| Salinity Standard Value (ppt) Measured Salinity (ppt) Difference * (%) | | | | | | | | | | | | | | |
| Difference * (%) | | | | | | | | | | | | | | |
| (*) Difference (%) = (Measured S | šalinity – Salinity Sta | ndard value) / Salinity Standard value x 100 | | | | | | | | | | | | |
| Acceptance Criteria | Difference : -10 % | to 10 % | | | | | | | | | | | | |
| The salinity meter complies and is deemed acceptable * national standards. | * / does not compl / unacceptable * for | y * with the specified requirements r use. Measurements are traceable to | | | | | | | | | | | | |
| Checked by : | App | roved by : | | | | | | | | | | | | |



Form E/CE/0/12 Issue 8 (1/2) [05/13]

| quipment Ref. No. | : ET/EV | W/008/009 | | | Manufactu | irer | : YSI | |
|---|---|--|--------------------|-------------------------------------|--|---|------------|---|
| fodel No. | : Pro 20 | | | | Serial No. | | : 16LL100 | 372 |
| ate of Calibration | : 14/30/ | | | | | 1 Due Date | : 13/01/20 | and the second se |
| | | 2017 | | | Cantoralised | I Dave Dolle | 1.0007/20 | 10 |
| Temperature Verifi | cation | | | | | | | |
| Ref. No. of Referen | ce Thermom | eter : | ET/052 | 1/023 | | | | |
| Rcf. No. of Water B | ath : | | | | | | | |
| | | | | | | | | |
| | | | | | Tem | perature (4C) | | |
| Reference TI | hermometer | reading | Measure | ed | 19.7 | Corrected | | 20.0 |
| | feter reading | | Measure | ed | 19.9 | Difference | | 0.1 |
| | | | | | | | | |
| Standardization of s | odium thios | sulphate (N | Va_2S_2O_3) & | olution | | | | |
| Reagent No. of Na28 | S2O3 titrant | | PE/012/4.5/0 | 001/17 | Reagent No. of 0. | 025N K2Cr2O7 | CPE/012 | /4.4/002/22 |
| | | | | | Tria | 11 | Tr | ial 2 |
| Initial Vol. of Na ₂ S ₂ | O3 (ml) | | | | 0.0 | and the second se | | 15 |
| Final Vol. of Na2S2C | | | | | 10.1 | 5 | 20 | .25 |
| Vol. of Na2S2O3 use | | | | | 10.1 | 5 | 10 | .10 |
| Normality of Na2S2C | | - | | | 0.024 | 63 | 0.02 | 475 |
| Average Normality (| | O3 solution | (N) | | | 0.0246 | 9 | |
| Acceptance criteria, | | | | | | Less than ± | 0.001N | |
| Calculation: | Normality (| of Na ₂ S ₂ O ₂ | N = 0.25 / i | ml Na ₂ S ₂ O | 3 used | | | |
| Lineality Checking | | | | | | | | |
| Determination of dis | central area | ion comfort | the Winklas | Titution | | | | |
| Purging Time (min) | sonrea osga | en conten | ay or annas | | | | | |
| Trial | | | 1 | 2 2 | 1 | 5 2 | | 2 |
| Initial Vol. of Na ₂ S ₂ 4 | O1 (ml) | | 0.00 | 10.9 | | 0.00 | 6.20 | 10.30 |
| Final Vol. of Na ₂ S ₂ O | | | 10.90 | 21.90 | | 6.20 | 10.30 | 14.50 |
| Vol. (V) of Na ₂ S ₂ O ₃ | used (ml) | | 10.90 | 11.00 | | 6.20 | 4.10 | 4.20 |
| Dissolved Oxygen (I | 00), mg/L | | 7.22 | 7.29 | | 4.11 | 2.72 | 2.78 |
| Acceptance criteria, | Deviation | | | + 0.3mg/l | the state of the second s | n + 0.3mg/L | | + 0.3mg/L |
| Calculation: | DO (mg/L) | = V x N x | 8000/298 | | | | | |
| | DO. | | ····· 7 | | Tables (17) and | 1.4 | P-105 | - |
| | 1 | meter read | ng, mg/L Averag | | inkler Titration res | sult *, mg/L Average | | (%) of DO itent |
| Purging time, min | and the second se | 7.29 | 7.30 | 7.3 | | 7.26 | 0.5 | |
| | 7,30 | | 11.70 | | | 4.05 | | |
| Purging time, min 2 5 | 7.30 | 4.24 | 4.23 | 3.0 | 98 4.11 | 1 10.000 | 4 | 15 |
| 2 | | 4.24 2.65 | 4.23 | 3.5 | | 2.75 | 4.3 | and the second second |



Form E/CE/8/13 Issue 8 (212) [05/13]

| | ł | | | | | | | | | | | | | |
|---|------------------------|-----------|---|--------------|------------------|---------------|----------------------|--|--|--|--|--|--|--|
| | DO meter re | ading, n | ıg/L | | | 0.00 | | | | | | | | |
| | | | | | | | | | | | | | | |
| Salinity Checking | | | | | | | | | | | | | | |
| Reagent No. of NaCl | (10eet) | | CPE/012/4.7/004/ | II Reas | ent No. of NaC | 1 (30ppt) | CPE/012/4.8/004/11 | | | | | | | |
| Determination of dis | | | | | | | | | | | | | | |
| Salinity (ppt) | | | | 10 | | | 30 | | | | | | | |
| Trial | | | 1 | | 2 | 1 | 2 | | | | | | | |
| Initial Vol. of Na ₃ S ₂ O ₃ (ml) 0.00 10.60 21.30 30.50 Final Val. of Na ₃ S ₂ O ₃ (ml) 0.00 10.60 21.30 30.50 | | | | | | | | | | | | | | |
| Final Vol. of Na ₂ S ₂ O ₃ (ml) 10.60 21.30 30.50 Vol. of Na ₂ S ₂ O ₃ (ml) 10.60 21.30 30.50 39.60 | | | | | | | | | | | | | | |
| Vol. (V) of Na ₂ S ₁ O ₅ used (ml) 10.60 10.70 9.20 9.10 | | | | | | | | | | | | | | |
| | | | 7.03 | | 7.09 | 6.10 | 6.03 | | | | | | | |
| Dissolved Oxygen (DO), mg/L 7.03 7.09 6.10 6.03 Acceptance criteria, Deviation Less than + 0.3mg/L Less than + 0.3mg/L | | | | | | | | | | | | | | |
| Calculation: | DO (mg/L) | = V x N | x 8000/298 | | | | | | | | | | | |
| Salinity (ppt) | DQ n | octor rea | ding, mg/L | Winkler | Titration result | lt**, mg/L | Difference (%) of DO | | | | | | | |
| 2 47 5 | 1 | 2 | Average | 1 | 2 | Average | Content | | | | | | | |
| 10 | 7.08 | 7.11 | 7.1 | 7.03 | 7.09 | 7.06 | 0.56 | | | | | | | |
| 30 | 6.12 | 6.0 | 3 6.1 | 6.10 | 6.03 | 6.07 | 0,49 | | | | | | | |
| 1) Difference Criteria 2) Linear regression 3) Zero checking: 0,1 4) Difference (%) of | coefficient : Img/L | >0.99 | | | | | tometer : < 0.5 °C | | | | | | | |
| The equipment compl 'unneceptable [#] for us ' Delete as appropriat | 9C, | iot-comj | ly ^d with the speci t | ied requiren | nents and is de | emed acceptab | de " | | | | | | | |



| Performar | nce Check of | f Salinity Meter | | | | | | | | | | | | |
|--|-------------------------|---|--|--|--|--|--|--|--|--|--|--|--|--|
| Equipment Ref. No. : ET/EW | //008/009 | Manufacturer : <u>YSI</u> | | | | | | | | | | | | |
| Model No. : <u>Pro 20</u> | 30 | Serial No. : <u>16LL100372</u> | | | | | | | | | | | | |
| Date of Calibration : 14/10/2 | 2017 | Due Date : <u>13/01/2018</u> | | | | | | | | | | | | |
| Ref. No. of Salinity Stand | lard used (30ppt) | S/001/9 | | | | | | | | | | | | |
| Colinity Standard Volue Measured Solinity | | | | | | | | | | | | | | |
| Salinity Standard Value (ppt) Measured Salinity (ppt) Difference * (%) | | | | | | | | | | | | | | |
| * Ditterence = (%) | | | | | | | | | | | | | | |
| (*) Difference (%) = (Measured S | Salinity – Salinity Sta | ndard value) / Salinity Standard value x 100 | | | | | | | | | | | | |
| Acceptance Criteria | Difference : -10 % | to 10 % | | | | | | | | | | | | |
| | | y * with the specified requirements r use. Measurements are traceable to | | | | | | | | | | | | |
| Checked by : | Арр | roved by : | | | | | | | | | | | | |



Appendix D2

Impact Marine Water Quality Monitoring Results

Mid-Ebb Tide



Monitoring Station : TKO-C1

| Date | Sampling | Ambient Temp (°C) / Weather | Monitorir | ng Depth | Temp | Salini | ty (ppt) | Dissolv | ved Oxyger | (mg/L) | | d Oxygen tion (%) | Т | urbidity (NT | Ū) | Susper | nded Solids | s (mg/L) |
|----------|-----------|--------------------------------|-----------|----------|------|--------------|----------|--------------|------------|-------------------|----------------|----------------------|--------------|--------------|-------------------|-------------|-------------|-------------------|
| Date | Duration | Condition | (n | ר) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 23.2 | 30.8 30.9 | 30.9 | 7.32 7.35 | 7.34 | 7.23 | 102.2 102.6 | 102.4 | 4.01 4.05 | 4.03 | | 5.6 5.7 | 5.7 | |
| 01/12/17 | 0930-0945 | 20/Cloudy | Middle | 9.7 | 23.1 | 31.2 31.1 | 31.2 | 7.10 7.14 | 7.12 | 1.20 | 99.3 99.8 | 99.6 | 4.12 4.16 | 4.14 | 4.08 | 5.6 2.9 | 4.3 | 5.8 |
| | | | Bottom | 18.4 | 23.1 | 31.3 31.3 | 31.3 | 7.04 7.01 | 7.03 | 7.03 | 98.4 98.0 | 98.2 | 4.08 4.05 | 4.07 | | 3.8 11.1 | 7.5 | |
| | | | Surface | 1.0 | 22.7 | 31.1 31.2 | 31.2 | 6.43 6.56 | 6.50 | 6.36 | 89.2 91.0 | 90.1 | 3.76 3.80 | 3.78 | | 4.4 2.8 | 3.6 | |
| 04/12/17 | 1133-1151 | 24/Fine | Middle | 9.1 | 22.9 | 31.2 31.2 | 31.2 | 6.26 6.17 | 6.22 | 0.50 | 87.3 86.1 | 86.7 | 3.91 3.95 | 3.93 | 3.92 | 4.9 3.6 | 4.3 | 4.3 |
| | | | Bottom | 17.2 | 23.2 | 31.4 31.5 | 31.5 | 6.02 6.10 | 6.06 | 6.06 | 84.4 85.6 | 85.0 | 4.04 4.05 | 4.05 | | 4.1 6.2 | 5.2 | |
| | | | Surface | 1.0 | 22.3 | 31.0 31.0 | 31.0 | 7.32 7.39 | 7.36 | 7.24 | 100.8 101.6 | 101.2 | 3.97 4.01 | 3.99 | | 4.0 3.7 | 3.9 | |
| 06/12/17 | 1230-1248 | 22/Fine | Middle | 9.2 | 22.5 | 31.2 31.1 | 31.2 | 7.15 7.10 | 7.13 | 7.24 | 98.8 98.1 | 98.5 | 3.83 3.88 | 3.86 | 4.00 | 5.2 4.3 | 4.8 | 4.5 |
| | | | Bottom | 17.3 | 22.7 | 31.3 31.3 | 31.3 | 7.02 6.94 | 6.98 | 6.98 | 97.3 96.2 | 96.8 | 4.13 4.18 | 4.16 | | 3.9 5.6 | 4.8 | |
| | | | Surface | 1.0 | 20.9 | 30.5 30.4 | 30.5 | 7.16 7.10 | 7.13 | 7.05 | 95.7 94.9 | 95.3 | 4.03 4.00 | 4.02 | | 5.6 4.9 | 5.3 | |
| 08/12/17 | 1500-1519 | 20/Cloudy | Middle | 9.1 | 21.1 | 30.6 30.6 | 30.6 | 7.00 6.93 | 6.97 | 7.05 | 93.8 92.9 | 93.4 | 3.91 3.95 | 3.93 | 4.04 | 1.9 3.4 | 2.7 | 4.0 |
| | | | Bottom | 17.2 | 21.3 | 30.8 30.7 | 30.8 | 6.72 6.78 | 6.75 | 6.75 | 90.3 91.1 | 90.7 | 4.15 4.21 | 4.18 | | 2.9 5.4 | 4.2 | |
| | | | Surface | 1.0 | 21.0 | 31.1 31.1 | 31.1 | 7.96 8.08 | 8.02 | 7.91 | 107.1 108.8 | 108.0 | 2.11 2.14 | 2.13 | | 2.8 2.4 | 2.6 | |
| 11/12/17 | 1800-1814 | 21/Fine | Middle | 9.2 | 21.3 | 31.2 31.3 | 31.3 | 7.75 7.83 | 7.79 | 7.91 | 105.0 106.1 | 105.6 | 2.26 2.30 | 2.28 | 2.25 | 2.9 3.3 | 3.1 | 3.1 |
| | | | Bottom | 17.3 | 21.4 | 31.4 31.4 | 31.4 | 7.64 7.77 | 7.71 | 7.71 | 103.8 105.6 | 104.7 | 2.36 2.33 | 2.35 | | 3.8 3.5 | 3.7 | |
| | | | Surface | 1.0 | 21.5 | 30.9 30.8 | 30.9 | 7.43 7.40 | 7.42 | 7.34 | 100.8 100.4 | 100.6 | 3.49 3.45 | 3.47 | | 4.5 2.9 | 3.7 | |
| 13/12/17 | 0800-0815 | 19/Cloudy | Middle | 9.7 | 21.7 | 31.0 31.1 | 31.1 | 7.24 7.27 | 7.26 | 1.34 | 98.6 99.0 | 98.8 | 3.37 3.34 | 3.36 | 3.46 | 3.8 4.1 | 4.0 | 4.0 |
| | | | Bottom | 18.4 | 21.8 | 31.2 31.1 | 31.2 | 7.04 7.08 | 7.06 | 7.06 | 96.1 96.6 | 96.4 | 3.58 3.55 | 3.57 | | 3.9 5.0 | 4.5 | |

Mid-Ebb Tide



Monitoring Station : TKO-C1

| Date | Sampling | Ambient Temp (°C) / Weather | Monitorir | ng Depth | Temp | Salini | ty (ppt) | Dissolv | ved Oxyger | (mg/L) | | d Oxygen tion (%) | Т | urbidity (NT | U) | Susper | nded Solids | s (mg/L) |
|----------|-----------|--------------------------------|-----------|----------|------|--------------|----------|--------------|------------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Date | Duration | Condition | n) | ר) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 20.6 | 30.6 30.7 | 30.7 | 7.13 7.09 | 7.11 | 7.07 | 94.9 94.4 | 94.7 | 3.84 3.80 | 3.82 | | 4.2 4.5 | 4.4 | |
| 15/12/17 | 1000-1015 | 20/Cloudy | Middle | 9.8 | 20.8 | 30.8 30.9 | 30.9 | 7.02 7.05 | 7.04 | 1.01 | 93.9 94.3 | 94.1 | 3.59 3.53 | 3.56 | 3.77 | 4.9 3.8 | 4.4 | 3.7 |
| | | | Bottom | 18.6 | 21.0 | 31.0 31.0 | 31.0 | 6.98 6.95 | 6.97 | 6.97 | 93.8 93.4 | 93.6 | 3.94 3.90 | 3.92 | | 2.7 2.0 | 2.4 | |
| | | | Surface | 1.0 | 19.3 | 31.3 31.3 | 31.3 | 6.87 6.81 | 6.84 | 6.93 | 89.7 88.9 | 89.3 | 3.31 3.36 | 3.34 | | 3.6 3.8 | 3.7 | |
| 18/12/17 | 1200-1219 | 16/Fine | Middle | 9.3 | 19.5 | 31.4 31.5 | 31.5 | 7.05 7.00 | 7.03 | 0.93 | 92.4 91.7 | 92.1 | 3.17 3.10 | 3.14 | 3.35 | 2.8 3.0 | 2.9 | 3.0 |
| | | | Bottom | 17.6 | 19.7 | 31.7 31.7 | 31.7 | 6.63 6.55 | 6.59 | 6.59 | 87.1 86.2 | 86.7 | 3.56 3.60 | 3.58 | | 1.0 3.8 | 2.4 | |
| | | | Surface | 1.0 | 18.1 | 31.0 31.1 | 31.1 | 8.15 8.10 | 8.13 | 8.26 | 103.5 102.9 | 103.2 | 3.87 3.91 | 3.89 | | 6.2 5.2 | 5.7 | |
| 20/12/17 | 1230-1248 | 19/Fine | Middle | 9.1 | 18.3 | 31.2 31.3 | 31.3 | 8.36 8.43 | 8.40 | 0.20 | 106.7 107.5 | 107.1 | 3.64 3.69 | 3.67 | 3.88 | 6.2 6.8 | 6.5 | 6.0 |
| | | | Bottom | 17.2 | 18.5 | 31.5 31.4 | 31.5 | 8.03 7.96 | 8.00 | 8.00 | 102.7 101.9 | 102.3 | 4.05 4.11 | 4.08 | | 5.4 6.0 | 5.7 | |
| | | | Surface | 1.0 | 18.2 | 31.3 31.2 | 31.3 | 7.89 7.80 | 7.85 | 7.94 | 100.8 99.7 | 100.3 | 4.04 3.96 | 4.00 | | 4.5 4.6 | 4.6 | |
| 22/12/17 | 1330-1350 | 19/Fine | Middle | 9.1 | 18.3 | 31.4 31.4 | 31.4 | 8.00 8.06 | 8.03 | 7.94 | 102.4 103.1 | 102.8 | 3.88 3.83 | 3.86 | 4.02 | 3.2 3.3 | 3.3 | 3.7 |
| | | | Bottom | 17.1 | 18.5 | 31.5 31.5 | 31.5 | 7.67 7.60 | 7.64 | 7.64 | 98.5 97.6 | 98.1 | 4.18 4.21 | 4.20 | | 2.6 3.7 | 3.2 | |
| | | | Surface | 1.0 | 17.8 | 30.6 30.5 | 30.6 | 7.83 7.76 | 7.80 | 7.72 | 98.7 97.8 | 98.3 | 3.88 3.84 | 3.86 | | 4.8 4.7 | 4.8 | |
| 27/12/17 | 1800-1816 | 17/Cloudy | Middle | 9.1 | 17.9 | 30.7 30.7 | 30.7 | 7.61 7.69 | 7.65 | 1.12 | 96.0 96.8 | 96.4 | 3.63 3.67 | 3.65 | 3.88 | 5.1 3.0 | 4.1 | 4.1 |
| | | | Bottom | 17.2 | 18.1 | 30.9 30.8 | 30.9 | 7.33 7.38 | 7.36 | 7.36 | 92.8 93.4 | 93.1 | 4.11 4.15 | 4.13 | | 2.6 4.1 | 3.4 | |
| | | | Surface | 1.0 | 17.5 | 30.5 30.6 | 30.6 | 7.98 7.90 | 7.94 | 7.82 | 100.3 99.4 | 99.9 | 3.93 3.98 | 3.96 | | 5.6 4.3 | 5.0 | |
| 29/12/17 | 0800-0820 | 18/Fine | Middle | 9.2 | 17.6 | 30.8 30.8 | 30.8 | 7.73 7.67 | 7.70 | 1.02 | 97.2 96.5 | 96.9 | 4.07 4.01 | 4.04 | 4.05 | 4.4 5.2 | 4.8 | 4.7 |
| | | | Bottom | 17.3 | 17.8 | 30.9 31.0 | 31.0 | 7.45 7.52 | 7.49 | 7.49 | 94.0 94.8 | 94.4 | 4.16 4.12 | 4.14 | | 4.3 4.2 | 4.3 | |

<u>Mid-Ebb Tide</u>



Monitoring Station : TKO-M4

| Date | Sampling | Ambient Temp | Monitoring [| Dopth (m) | Temp | Salinit | ty (ppt) | Dissolv | ved Oxyger | ı (mg/L) | | d Oxygen tion (%) | Τι | ırbidity (NT | Ū) | Susper | nded Solids | s (mg/L) |
|----------|-----------|-----------------------------|--------------|------------|------|--------------|----------|--------------|------------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Date | Duration | (°C) / Weather Condition | wonitoning t | Jeptin (m) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 23.3 | 30.9 30.9 | 30.9 | 7.44 7.47 | 7.46 | 7.36 | 104.2 104.6 | 104.4 | 3.98 3.92 | 3.95 | | 5.3 6.4 | 5.9 | |
| 01/12/17 | 1000-1015 | 20/Cloudy | Middle | 4.6 | 23.2 | 31.3 31.2 | 31.3 | 7.26 7.28 | 7.27 | 7.50 | 101.6 101.9 | 101.8 | 4.09 4.05 | 4.07 | 4.00 | 3.1 8.2 | 5.7 | 6.6 |
| | | | Bottom | 8.2 | 23.2 | 31.3 31.3 | 31.3 | 7.29 7.25 | 7.27 | 7.27 | 102.1 101.5 | 101.8 | 4.01 3.96 | 3.99 | | 9.9 6.8 | 8.4 | |
| | | | Surface | 1.0 | 22.7 | 31.2 31.2 | 31.2 | 6.36 6.28 | 6.32 | 6.24 | 88.3 87.2 | 87.8 | 3.81 3.84 | 3.83 | | 5.3 3.0 | 4.2 | |
| 04/12/17 | 1202-1222 | 24/Fine | Middle | 5.0 | 22.8 | 31.3 31.4 | 31.4 | 6.11 6.19 | 6.15 | 0.24 | 85.1 86.2 | 85.7 | 4.06 4.10 | 4.08 | 3.97 | 4.3 4.4 | 4.4 | 4.6 |
| | | | Bottom | 8.9 | 23.0 | 31.6 31.6 | 31.6 | 5.95 6.04 | 6.00 | 6.00 | 83.2 84.5 | 83.9 | 3.99 4.01 | 4.00 | | 5.5 4.9 | 5.2 | |
| | | | Surface | 1.0 | 22.3 | 31.0 30.9 | 31.0 | 7.28 7.22 | 7.25 | 7.15 | 100.3 99.5 | 99.9 | 4.06 4.02 | 4.04 | | 5.0 8.4 | 6.7 | |
| 06/12/17 | 1258-1317 | 22/Fine | Middle | 5.1 | 22.4 | 31.1 31.1 | 31.1 | 7.08 7.00 | 7.04 | 7.15 | 97.7 96.6 | 97.2 | 3.98 3.95 | 3.97 | 4.08 | 4.2 4.2 | 4.2 | 5.3 |
| | | | Bottom | 9.2 | 22.5 | 31.1 31.2 | 31.2 | 6.87 6.92 | 6.90 | 6.90 | 94.9 95.6 | 95.3 | 4.20 4.24 | 4.22 | | 5.8 4.1 | 5.0 | |
| | | | Surface | 1.0 | 21.0 | 30.4 30.4 | 30.4 | 7.04 7.12 | 7.08 | 6.98 | 94.2 95.3 | 94.8 | 4.08 4.12 | 4.10 | | 3.8 4.7 | 4.3 | |
| 08/12/17 | 1526-1546 | 20/Cloudy | Middle | 5.1 | 21.1 | 30.5 30.4 | 30.5 | 6.91 6.85 | 6.88 | 0.90 | 92.6 91.8 | 92.2 | 3.93 3.87 | 3.90 | 4.07 | 5.6 6.6 | 6.1 | 5.8 |
| | | | Bottom | 9.1 | 21.2 | 30.6 30.5 | 30.6 | 6.74 6.69 | 6.72 | 6.72 | 90.6 89.9 | 90.3 | 4.24 4.20 | 4.22 | | 7.1 7.0 | 7.1 | |
| | | | Surface | 1.0 | 21.1 | 31.0 31.1 | 31.1 | 7.85 7.97 | 7.91 | 7.74 | 105.8 107.4 | 106.6 | 2.30 2.34 | 2.32 | | 2.7 1.1 | 1.9 | |
| 11/12/17 | 1825-1841 | 21/Fine | Middle | 5.1 | 21.2 | 31.1 31.3 | 31.2 | 7.62 7.51 | 7.57 | 1.14 | 103.0 101.5 | 102.3 | 2.58 2.55 | 2.57 | 2.43 | 2.7 2.8 | 2.8 | 2.8 |
| | | | Bottom | 9.1 | 21.3 | 31.4 31.5 | 31.5 | 7.38 7.49 | 7.44 | 7.44 | 100.1 101.6 | 100.9 | 2.39 2.41 | 2.40 | | 5.1 2.6 | 3.9 | |
| | | | Surface | 1.0 | 21.4 | 30.9 30.9 | 30.9 | 7.58 7.55 | 7.57 | 7.48 | 102.5 102.1 | 102.3 | 2.97 2.94 | 2.96 | | 5.0 3.9 | 4.5 | |
| 13/12/17 | 0829-0844 | 19/Cloudy | Middle | 4.4 | 21.8 | 30.9 31.0 | 31.0 | 7.37 7.40 | 7.39 | 7.48 | 100.5 100.9 | 100.7 | 3.21 3.17 | 3.19 | 3.07 | 4.3 4.3 | 4.3 | 4.7 |
| | | | Bottom | 7.8 | 21.8 | 31.1 31.1 | 31.1 | 7.28 7.24 | 7.26 | 7.26 | 99.4 99.9 | 99.7 | 3.08 3.05 | 3.07 | | 5.5 4.9 | 5.2 | |

<u>Mid-Ebb Tide</u>



Monitoring Station : TKO-M4

| Date | Sampling | Ambient Temp | Monitoring [| Dopth (m) | Temp | Salinit | ty (ppt) | Dissolv | ved Oxyger | ı (mg/L) | | d Oxygen tion (%) | Τι | ırbidity (NT | U) | Suspe | nded Solids | s (mg/L) |
|----------|-----------|-----------------------------|--------------|------------|------|---------------------|----------|--------------|------------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Date | Duration | (°C) / Weather Condition | wontoning t | Jeptin (m) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 20.5 | 30.8 30.8 | 30.8 | 7.25 7.21 | 7.23 | 7.22 | 96.5 96.0 | 96.3 | 3.43 3.40 | 3.42 | | 4.6 2.4 | 3.5 | |
| 15/12/17 | 1028-1043 | 20/Cloudy | Middle | 4.6 | 20.9 | 30.9 31.0 | 31.0 | 7.20 7.23 | 7.22 | 1.22 | 96.6 97.0 | 96.8 | 3.62 3.65 | 3.64 | 3.57 | 4.2 4.4 | 4.3 | 4.0 |
| | | | Bottom | 8.2 | 20.9 | 31.0 31.0 | 31.0 | 7.04 7.02 | 7.03 | 7.03 | 94.5 94.2 | 94.4 | 3.68 3.65 | 3.67 | | 4.7 3.7 | 4.2 | |
| | | | Surface | 1.0 | 19.2 | 31.2 31.3 | 31.3 | 6.94 6.90 | 6.92 | 6.88 | 90.5 90.0 | 90.3 | 3.25 3.20 | 3.23 | | 4.0 3.7 | 3.9 | |
| 18/12/17 | 1229-1248 | 16/Fine | Middle | 5.1 | 19.3 | 31.3 31.3 | 31.3 | 6.82 6.87 | 6.85 | 0.00 | 89.1 89.7 | 89.4 | 3.34 3.38 | 3.36 | 3.38 | 3.0 2.6 | 2.8 | 3.6 |
| | | | Bottom | 9.1 | 19.5 | 31.5 31.5 | 31.5 | 6.69 6.61 | 6.65 | 6.65 | 87.6 86.7 | 87.2 | 3.51 3.57 | 3.54 | | 2.4 5.7 | 4.1 | |
| | | | Surface | 1.0 | 18.1 | 31.1 31.1 | 31.1 | 8.27 8.22 | 8.25 | 8.16 | 105.2 104.6 | 104.9 | 3.95 3.90 | 3.93 | | 8.0 8.1 | 8.1 | |
| 20/12/17 | 1258-1317 | 19/Fine | Middle | 5.2 | 18.2 | 31.2 31.2 | 31.2 | 8.11 8.02 | 8.07 | 0.10 | 103.3 102.2 | 102.8 | 4.07 4.02 | 4.05 | 4.04 | 5.6 6.1 | 5.9 | 6.6 |
| | | | Bottom | 9.3 | 18.4 | <u>31.4</u> 31.3 | 31.4 | 8.43 8.48 | 8.46 | 8.46 | 107.7 108.4 | 108.1 | 4.16 4.13 | 4.15 | | 6.1 5.4 | 5.8 | |
| | | | Surface | 1.0 | 18.2 | 31.3 31.3 | 31.3 | 7.74 7.70 | 7.72 | 7.66 | 98.9 98.4 | 98.7 | 4.10 4.06 | 4.08 | | 2.5 2.5 | 2.5 | |
| 22/12/17 | 1356-1412 | 19/Fine | Middle | 5.1 | 18.2 | 31.4 31.3 | 31.4 | 7.58 7.63 | 7.61 | 7.00 | 96.9 97.5 | 97.2 | 3.95 3.90 | 3.93 | 4.06 | 4.8 4.7 | 4.8 | 4.3 |
| | | | Bottom | 9.2 | 18.4 | 31.4 31.4 | 31.4 | 7.42 7.49 | 7.46 | 7.46 | 95.1 96.0 | 95.6 | 4.22 4.15 | 4.19 | | 6.3 4.8 | 5.6 | |
| | | | Surface | 1.0 | 17.8 | 30.6 30.6 | 30.6 | 7.70 7.66 | 7.68 | 7.58 | 97.0 96.5 | 96.8 | 4.04 4.08 | 4.06 | | 3.6 4.8 | 4.2 | |
| 27/12/17 | 1822-1840 | 17/Cloudy | Middle | 5.2 | 17.9 | 30.7 30.6 | 30.7 | 7.45 7.50 | 7.48 | 7.50 | 94.1 94.7 | 94.4 | 3.86 3.91 | 3.89 | 4.04 | 4.4 2.9 | 3.7 | 3.9 |
| | | | Bottom | 9.3 | 18.0 | 30.8 30.8 | 30.8 | 7.27 7.21 | 7.24 | 7.24 | 91.9 91.1 | 91.5 | 4.20 4.14 | 4.17 | | 3.8 3.9 | 3.9 | |
| | | | Surface | 1.0 | 17.6 | 30.5 30.5 | 30.5 | 7.86 7.90 | 7.88 | 7.76 | 98.9 99.4 | 99.2 | 4.03 4.00 | 4.02 | | 7.3 2.6 | 5.0 | |
| 29/12/17 | 0829-0852 | 18/Fine | Middle | 5.1 | 17.7 | 30.6 30.7 | 30.7 | 7.68 7.61 | 7.65 | 1.10 | 96.8 95.9 | 96.4 | 3.96 3.91 | 3.94 | 4.04 | 4.7 5.0 | 4.9 | 4.6 |
| | | | Bottom | 9.2 | 17.7 | 30.7 30.8 | 30.8 | 7.41 7.46 | 7.44 | 7.44 | 93.4 93.9 | 93.7 | 4.20 4.16 | 4.18 | | 4.7 3.0 | 3.9 | |



Monitoring Station : TKO-C1

| Date | Sampling | Ambient Temp (°C) / Weather | Monitorir | ng Depth | Temp | Salini | ty (ppt) | Dissolv | ved Oxyger | (mg/L) | | d Oxygen tion (%) | Τι | urbidity (NT | Ū) | Suspe | nded Solids | s (mg/L) |
|----------|-----------|--------------------------------|-----------|----------|------|--------------|----------|--------------|------------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Date | Duration | Condition | (n | n) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 23.4 | 30.8 30.8 | 30.8 | 7.28 7.25 | 7.27 | 7.20 | 102.1 101.7 | 101.9 | 4.02 4.08 | 4.05 | | 3.5 6.5 | 5.0 | |
| 01/12/17 | 1530-1545 | 20/Cloudy | Middle | 9.9 | 23.2 | 31.2 31.1 | 31.2 | 7.11 7.15 | 7.13 | 7.20 | 99.5 100.1 | 99.8 | 3.96 3.95 | 3.96 | 4.04 | 7.0 8.1 | 7.6 | 6.1 |
| | | | Bottom | 18.8 | 23.1 | 31.3 31.4 | 31.4 | 7.02 7.04 | 7.03 | 7.03 | 98.1 98.4 | 98.3 | 4.10 4.13 | 4.12 | | 6.6 4.7 | 5.7 | |
| | | | Surface | 1.0 | 23.0 | 31.0 31.1 | 31.1 | 6.80 6.77 | 6.79 | 6.75 | 94.8 94.4 | 94.6 | 3.68 3.71 | 3.70 | | 3.2 2.7 | 3.0 | |
| 04/12/17 | 1600-1618 | 24/Fine | Middle | 9.3 | 23.0 | 31.2 31.3 | 31.3 | 6.64 6.78 | 6.71 | 0.75 | 92.7 94.7 | 93.7 | 3.76 3.81 | 3.79 | 3.67 | 5.5 2.7 | 4.1 | 4.1 |
| | | | Bottom | 17.6 | 22.8 | 31.6 31.5 | 31.6 | 6.53 6.42 | 6.48 | 6.48 | 91.1 89.5 | 90.3 | 3.52 3.55 | 3.54 | | 4.1 6.1 | 5.1 | |
| | | | Surface | 1.0 | 21.7 | 30.8 30.9 | 30.9 | 7.56 7.64 | 7.60 | 7.49 | 102.9 104.0 | 103.5 | 3.58 3.61 | 3.60 | | 3.1 2.1 | 2.6 | |
| 06/12/17 | 0806-0824 | 17/Fine | Middle | 9.4 | 21.9 | 30.9 31.0 | 31.0 | 7.31 7.44 | 7.38 | 7.49 | 99.9 101.6 | 100.8 | 3.66 3.69 | 3.68 | 3.68 | 3.4 4.0 | 3.7 | 3.2 |
| | | | Bottom | 17.8 | 22.0 | 31.1 31.1 | 31.1 | 7.25 7.32 | 7.29 | 7.29 | 99.3 100.3 | 99.8 | 3.75 3.80 | 3.78 | | 2.4 4.2 | 3.3 | |
| | | | Surface | 1.0 | 20.6 | 30.2 30.2 | 30.2 | 7.32 7.25 | 7.29 | 7.22 | 97.3 96.5 | 96.9 | 3.90 3.94 | 3.92 | | 2.8 2.7 | 2.8 | |
| 08/12/17 | 0930-0948 | 17/Cloudy | Middle | 9.4 | 20.8 | 30.3 30.2 | 30.3 | 7.18 7.11 | 7.15 | 1.22 | 95.6 94.7 | 95.2 | 3.83 3.78 | 3.81 | 3.93 | 2.2 4.4 | 3.3 | 4.0 |
| | | | Bottom | 17.7 | 20.9 | 30.4 30.5 | 30.5 | 6.93 6.87 | 6.90 | 6.90 | 92.4 91.7 | 92.1 | 4.05 4.09 | 4.07 | | 6.4 5.3 | 5.9 | |
| | | | Surface | 1.0 | 21.2 | 31.1 31.0 | 31.1 | 8.34 8.28 | 8.31 | 8.24 | 112.6 111.8 | 112.2 | 1.94 1.98 | 1.96 | | 5.1 4.1 | 4.6 | |
| 11/12/17 | 1200-1218 | 22/Fine | Middle | 9.4 | 21.4 | 31.3 31.3 | 31.3 | 8.14 8.19 | 8.17 | 8.24 | 110.2 110.9 | 110.6 | 2.04 2.10 | 2.07 | 2.08 | 3.3 4.0 | 3.7 | 3.5 |
| | | | Bottom | 17.8 | 21.6 | 31.5 31.4 | 31.5 | 8.08 8.01 | 8.05 | 8.05 | 109.7 108.8 | 109.3 | 2.23 2.19 | 2.21 | | 2.1 2.5 | 2.3 | |
| | | | Surface | 1.0 | 21.7 | 30.8 30.7 | 30.8 | 7.64 7.60 | 7.62 | 7.50 | 103.9 103.4 | 103.7 | 3.24 3.38 | 3.31 | | 3.3 3.2 | 3.3 | |
| 13/12/17 | 1400-1415 | 20/Cloudy | Middle | 10.1 | 21.9 | 30.9 31.0 | 31.0 | 7.39 7.35 | 7.37 | 7.50 | 100.9 100.3 | 100.6 | 3.14 3.18 | 3.16 | 3.38 | 3.6 4.8 | 4.2 | 3.6 |
| | | | Bottom | 19.2 | 21.9 | 31.2 31.2 | 31.2 | 7.20 7.23 | 7.22 | 7.22 | 98.5 98.9 | 98.7 | 3.69 3.65 | 3.67 | | 4.0 2.6 | 3.3 | |



Monitoring Station : TKO-C1

| Date | Sampling | Ambient Temp | Monitorir | ng Depth | Temp | Salinit | ty (ppt) | Dissolv | ed Oxyger | n (mg/L) | | d Oxygen tion (%) | Τι | urbidity (NT | Ū) | Susper | nded Solids | (mg/L) |
|----------|-----------|-----------------------------|-----------|----------|------|--------------|----------|--------------|-----------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Date | Duration | (°C) / Weather Condition | (n | n) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 20.8 | 30.7 30.8 | 30.8 | 7.34 7.30 | 7.32 | 7.24 | 98.1 97.5 | 97.8 | 3.43 3.48 | 3.46 | | 2.9 3.9 | 3.4 | |
| 15/12/17 | 1430-1445 | 20/Cloudy | Middle | 10.2 | 20.9 | 30.9 31.0 | 31.0 | 7.15 7.17 | 7.16 | 7.24 | 95.9 96.2 | 96.1 | 3.68 3.62 | 3.65 | 3.58 | 3.6 3.3 | 3.5 | 3.8 |
| | | | Bottom | 19.4 | 21.0 | 31.0 31.1 | 31.1 | 7.02 7.05 | 7.04 | 7.04 | 94.3 94.7 | 94.5 | 3.60 3.64 | 3.62 | | 3.4 5.4 | 4.4 | |
| | | | Surface | 1.0 | 19.5 | 31.1 31.2 | 31.2 | 7.08 7.01 | 7.05 | 7.01 | 92.7 91.8 | 92.3 | 3.11 3.19 | 3.15 | | 3.5 2.9 | 3.2 | |
| 18/12/17 | 1600-1617 | 17/Fine | Middle | 9.5 | 19.6 | 31.3 31.3 | 31.3 | 6.94 6.99 | 6.97 | 7.01 | 91.1 91.7 | 91.4 | 3.27 3.22 | 3.25 | 3.27 | 3.3 1.0 | 2.2 | 3.0 |
| | | | Bottom | 17.9 | 19.8 | 31.5 31.4 | 31.5 | 6.73 6.80 | 6.77 | 6.77 | 88.6 89.4 | 89.0 | 3.40 3.44 | 3.42 | | 3.0 4.3 | 3.7 | |
| | | | Surface | 1.0 | 17.7 | 30.8 30.7 | 30.8 | 8.31 8.44 | 8.38 | 8.47 | 104.9 106.6 | 105.8 | 3.56 3.59 | 3.58 | | 4.2 6.3 | 5.3 | |
| 20/12/17 | 0807-0823 | 18/Fine | Middle | 9.3 | 17.9 | 30.9 30.9 | 30.9 | 8.52 8.61 | 8.57 | 0.47 | 108.0 109.1 | 108.6 | 3.67 3.70 | 3.69 | 3.71 | 5.1 4.7 | 4.9 | 4.7 |
| | | | Bottom | 17.6 | 17.9 | 31.0 31.1 | 31.1 | 8.68 8.75 | 8.72 | 8.72 | 110.3 111.2 | 110.8 | 3.84 3.88 | 3.86 | | 4.0 3.8 | 3.9 | |
| | | | Surface | 1.0 | 17.9 | 31.0 30.9 | 31.0 | 8.23 8.16 | 8.20 | 8.10 | 104.7 103.8 | 104.3 | 3.82 3.86 | 3.84 | | 3.1 3.8 | 3.5 | |
| 22/12/17 | 0900-0919 | 17/Fine | Middle | 9.3 | 18.1 | 31.2 31.1 | 31.2 | 8.04 7.98 | 8.01 | 0.10 | 102.6 101.8 | 102.2 | 3.70 3.63 | 3.67 | 3.85 | 3.3 3.3 | 3.3 | 3.2 |
| | | | Bottom | 17.5 | 18.3 | 31.3 31.3 | 31.3 | 7.73 7.81 | 7.77 | 7.77 | 98.9 100.0 | 99.5 | 4.03 4.07 | 4.05 | | 1.8 4.0 | 2.9 | |
| | | | Surface | 1.0 | 18.0 | 30.4 30.4 | 30.4 | 8.08 8.00 | 8.04 | 7.92 | 102.1 101.2 | 101.7 | 3.76 3.70 | 3.73 | | 4.5 3.0 | 3.8 | |
| 27/12/17 | 1300-1318 | 19/Cloudy | Middle | 9.4 | 18.2 | 30.6 30.5 | 30.6 | 7.83 7.76 | 7.80 | 7.92 | 99.3 98.4 | 98.9 | 3.94 3.89 | 3.92 | 3.89 | 3.5 4.2 | 3.9 | 4.1 |
| | | | Bottom | 17.7 | 18.4 | 30.7 30.8 | 30.8 | 7.51 7.56 | 7.54 | 7.54 | 95.5 96.2 | 95.9 | 4.04 4.00 | 4.02 | | 4.7 4.4 | 4.6 | |
| | | | Surface | 1.0 | 18.0 | 30.2 30.2 | 30.2 | 8.13 8.18 | 8.16 | 8.00 | 102.9 103.6 | 103.3 | 3.86 3.82 | 3.84 | | 4.5 6.3 | 5.4 | |
| 29/12/17 | 1330-1352 | 22/Fine | Middle | 9.4 | 18.2 | 30.4 30.3 | 30.4 | 7.87 7.80 | 7.84 | 8.00 | 99.9 99.1 | 99.5 | 3.64 3.70 | 3.67 | 3.85 | 3.9 3.0 | 3.5 | 4.1 |
| | | | Bottom | 17.8 | 18.4 | 30.6 30.6 | 30.6 | 7.65 7.59 | 7.62 | 7.62 | 97.5 96.7 | 97.1 | 4.05 4.00 | 4.03 | | 2.5 4.6 | 3.6 | |



Monitoring Station : TKO-M4

| Date | Sampling | Ambient Temp (°C) / Weather | Monitorin | ng Depth | Temp | Salinit | y (ppt) | Dissolv | ed Oxyger | ı (mg/L) | | d Oxygen tion (%) | Τι | urbidity (NT | Ū) | Susper | nded Solids | (mg/L) |
|----------|-----------|--------------------------------|-----------|----------|------|---------------------|---------|--------------|-----------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Duit | Duration | Condition | (m | ר) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 23.5 | 30.9 30.8 | 30.9 | 7.59 7.56 | 7.58 | 7.47 | 106.7 106.3 | 106.5 | 3.82 3.86 | 3.84 | | 4.7 6.0 | 5.4 | |
| 01/12/17 | 1602-1616 | 20/Cloudy | Middle | 4.9 | 23.3 | 31.2 31.2 | 31.2 | 7.34 7.37 | 7.36 | 7.47 | 102.9 103.3 | 103.1 | 3.90 3.85 | 3.88 | 3.89 | 5.6 6.3 | 6.0 | 5.8 |
| | | | Bottom | 8.8 | 23.2 | 31.2 31.3 | 31.3 | 7.27 7.24 | 7.26 | 7.26 | 101.8 101.4 | 101.6 | 3.98 3.95 | 3.97 | | 4.6 7.3 | 6.0 | |
| | | | Surface | 1.0 | 23.0 | 31.2 31.4 | 31.3 | 6.71 6.59 | 6.65 | | 93.7 92.0 | 92.9 | 3.73 3.77 | 3.75 | | 5.4 5.5 | 5.5 | |
| 04/12/17 | 1629-1647 | 24/Fine | Middle | 5.3 | 22.9 | <u>31.4</u> 31.5 | 31.5 | 6.48 6.36 | 6.42 | 6.54 | 90.4 88.7 | 89.6 | 3.82 3.86 | 3.84 | 3.84 | 6.5 5.8 | 6.2 | 5.2 |
| | | | Bottom | 9.5 | 22.9 | 31.6 31.7 | 31.7 | 6.22 6.35 | 6.29 | 6.29 | 86.9 88.7 | 87.8 | 3.95 3.91 | 3.93 | | 4.6 3.6 | 4.1 | |
| | | | Surface | 1.0 | 21.6 | 30.9 31.0 | 31.0 | 7.72 7.61 | 7.67 | 7.00 | 105.0 103.5 | 104.3 | 3.68 3.72 | 3.70 | | 3.6 1.6 | 2.6 | |
| 06/12/17 | 0834-0852 | 17Fine | Middle | 5.3 | 21.7 | 31.0 31.0 | 31.0 | 7.48 7.57 | 7.53 | 7.60 | 101.9 103.1 | 102.5 | 3.88 3.91 | 3.90 | 3.86 | 5.0 2.3 | 3.7 | 3.5 |
| | | | Bottom | 9.6 | 21.7 | 31.2 31.3 | 31.3 | 7.34 7.44 | 7.39 | 7.39 | 100.1 101.5 | 100.8 | 3.97 4.00 | 3.99 | | 4.3 4.4 | 4.4 | |
| | | | Surface | 1.0 | 20.5 | 30.2 30.1 | 30.2 | 7.17 7.12 | 7.15 | 7.00 | 95.2 94.6 | 94.9 | 3.98 3.92 | 3.95 | | 3.8 6.5 | 5.2 | |
| 08/12/17 | 0956-1016 | 17/Cloudy | Middle | 5.3 | 20.6 | 30.3 30.2 | 30.3 | 7.06 7.00 | 7.03 | 7.09 | 93.9 93.0 | 93.5 | 3.85 3.89 | 3.87 | 3.98 | 6.6 4.0 | 5.3 | 5.2 |
| | | | Bottom | 9.5 | 20.8 | 30.3 30.3 | 30.3 | 6.95 6.84 | 6.90 | 6.90 | 92.7 91.2 | 92.0 | 4.10 4.13 | 4.12 | | 4.0 6.5 | 5.3 | |
| | | | Surface | 1.0 | 21.1 | 31.1 31.1 | 31.1 | 8.17 8.10 | 8.14 | 0.07 | 110.1 109.2 | 109.7 | 2.03 2.00 | 2.02 | | 1.0 1.7 | 1.4 | |
| 11/12/17 | 1228-1246 | 22/Fine | Middle | 5.3 | 21.3 | 31.2 31.2 | 31.2 | 8.04 7.95 | 8.00 | 8.07 | 108.7 107.5 | 108.1 | 1.95 1.99 | 1.97 | 2.06 | 2.7 2.2 | 2.5 | 2.1 |
| | | | Bottom | 9.5 | 21.4 | 31.4 31.4 | 31.4 | 7.83 7.88 | 7.86 | 7.86 | 106.0 106.7 | 106.4 | 2.21 2.15 | 2.18 | | 1.7 3.0 | 2.4 | |
| | | | Surface | 1.0 | 21.8 | 30.9 30.9 | 30.9 | 7.73 7.70 | 7.72 | 7 57 | 105.4 105.0 | 105.2 | 3.14 3.09 | 3.12 | | 5.6 3.9 | 4.8 | |
| 13/12/17 | 1423-1438 | 20/Cloudy | Middle | 4.9 | 21.9 | 31.0 31.1 | 31.1 | 7.42 7.44 | 7.43 | 7.57 | 101.3 101.6 | 101.5 | 3.03 3.08 | 3.06 | 3.14 | 4.6 1.4 | 3.0 | 4.4 |
| | | | Bottom | 8.8 | 21.9 | 31.1 31.2 | 31.2 | 7.51 7.54 | 7.53 | 7.53 | 102.7 103.2 | 103.0 | 3.26 3.21 | 3.24 | | 4.7 6.0 | 5.4 | |



Monitoring Station : TKO-M4

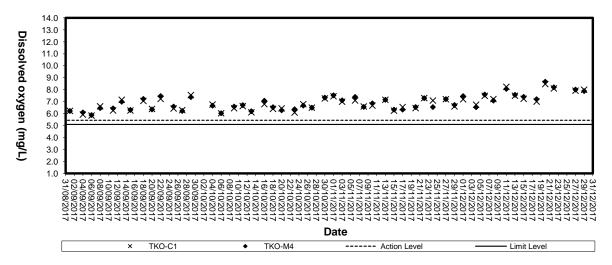
| Date | Sampling | Ambient Temp (°C) / Weather | Monitorir | ng Depth | Temp | Salinit | y (ppt) | Dissolv | ed Oxyger | ı (mg/L) | | d Oxygen tion (%) | Τι | urbidity (NT | Ū) | Susper | nded Solids | ; (mg/L) |
|----------|-----------|--------------------------------|-----------|----------|------|--------------|---------|--------------|-----------|-------------------|----------------|----------------------|--------------|--------------|-------------------|------------|-------------|-------------------|
| Duio | Duration | Condition | (n | ר) | (°C) | Value | Average | Value | Average | Depth- average | Value | Average | Value | Average | Depth- average | Value | Average | Depth- average |
| | | | Surface | 1.0 | 20.7 | 30.9 30.8 | 30.9 | 7.58 7.55 | 7.57 | 7.40 | 101.3 100.9 | 101.1 | 3.21 3.24 | 3.23 | | 4.4 2.1 | 3.3 | |
| 15/12/17 | 1500-1515 | 20/Cloudy | Middle | 4.9 | 20.9 | 31.1 31.0 | 31.1 | 7.26 7.22 | 7.24 | 7.40 | 97.5 97.0 | 97.3 | 3.49 3.46 | 3.48 | 3.47 | 4.9 2.4 | 3.7 | 3.7 |
| | | | Bottom | 8.8 | 21.0 | 31.1 31.1 | 31.1 | 7.29 7.25 | 7.27 | 7.27 | 98.1 97.6 | 97.9 | 3.74 3.70 | 3.72 | | 4.2 4.2 | 4.2 | |
| | | | Surface | 1.0 | 19.5 | 31.1 31.1 | 31.1 | 7.16 7.10 | 7.13 | 7.04 | 93.8 93.0 | 93.4 | 3.14 3.09 | 3.12 | | 2.2 1.5 | 1.9 | |
| 18/12/17 | 1625-1641 | 17/Fine | Middle | 5.3 | 19.6 | 31.2 31.2 | 31.2 | 7.24 7.32 | 7.28 | 7.21 | 94.9 96.0 | 95.5 | 3.03 3.10 | 3.07 | 3.17 | 3.2 1.3 | 2.3 | 2.1 |
| | | | Bottom | 9.6 | 19.7 | 31.3 31.2 | 31.3 | 6.87 6.94 | 6.91 | 6.91 | 90.3 91.2 | 90.8 | 3.35 3.28 | 3.32 | | 0.8 3.5 | 2.2 | |
| | | | Surface | 1.0 | 17.7 | 30.9 31.0 | 31.0 | 8.57 8.48 | 8.53 | 0.07 | 108.3 107.2 | 107.8 | 3.63 3.64 | 3.64 | | 9.3 4.6 | 7.0 | |
| 20/12/17 | 0835-0852 | 18/Fine | Middle | 5.4 | 17.8 | 31.0 31.1 | 31.1 | 8.75 8.87 | 8.81 | 8.67 | 110.9 112.4 | 111.7 | 3.71 3.76 | 3.74 | 3.71 | 7.6 2.7 | 5.2 | 6.5 |
| | | | Bottom | 9.7 | 17.9 | 31.2 31.2 | 31.2 | 8.56 8.46 | 8.51 | 8.51 | 108.8 107.5 | 108.2 | 3.73 3.78 | 3.76 | | 5.2 9.3 | 7.3 | |
| | | | Surface | 1.0 | 17.8 | 30.9 30.9 | 30.9 | 8.06 8.11 | 8.09 | 0.00 | 102.4 103.0 | 102.7 | 3.95 3.90 | 3.93 | | 2.7 3.8 | 3.3 | |
| 22/12/17 | 0928-0948 | 17/Fine | Middle | 5.4 | 18.0 | 31.1 31.0 | 31.1 | 8.28 8.36 | 8.32 | 8.20 | 105.5 106.5 | 106.0 | 3.83 3.87 | 3.85 | 3.96 | 2.6 2.4 | 2.5 | 3.1 |
| | | | Bottom | 9.8 | 18.1 | 31.2 31.2 | 31.2 | 7.87 7.81 | 7.84 | 7.84 | 100.4 99.7 | 100.1 | 4.12 4.08 | 4.10 | | 4.2 3.1 | 3.7 | |
| | | | Surface | 1.0 | 18.1 | 30.3 30.4 | 30.4 | 7.96 7.90 | 7.93 | 0.04 | 100.7 100.0 | 100.4 | 3.81 3.85 | 3.83 | | 5.2 3.4 | 4.3 | |
| 27/12/17 | 1326-1343 | 19/Cloudy | Middle | 5.4 | 18.2 | 30.5 30.5 | 30.5 | 8.11 8.07 | 8.09 | 8.01 | 102.8 102.3 | 102.6 | 3.75 3.69 | 3.72 | 3.87 | 4.1 | 3.4 | 4.1 |
| | | | Bottom | 9.8 | 18.3 | 30.6 30.7 | 30.7 | 7.77 7.72 | 7.75 | 7.75 | 98.7 98.1 | 98.4 | 4.02 4.07 | 4.05 | | 3.7 5.8 | 4.8 | |
| | | | Surface | 1.0 | 18.1 | 30.1 30.2 | 30.2 | 8.06 7.98 | 8.02 | 7.00 | 102.2 101.3 | 101.8 | 3.79 3.84 | 3.82 | | 4.7 | 5.1 | |
| 29/12/17 | 1402-1425 | 22/Fine | Middle | 5.4 | 18.2 | 30.3 30.3 | 30.3 | 7.77 | 7.75 | 7.88 | 98.7 98.0 | 98.4 | 3.96 3.92 | 3.94 | 3.93 | 9.2 2.5 | 5.9 | 5.6 |
| | | | Bottom | 9.7 | 18.3 | 30.4 30.5 | 30.5 | 7.53 7.59 | 7.56 | 7.56 | 95.8 96.5 | 96.2 | 4.07 4.02 | 4.05 | | 2.7 9.0 | 5.9 | |



Appendix D3

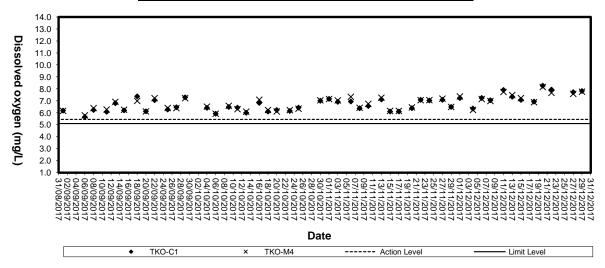
Graphical Plots of Impact Marine Water Quality Monitoring Data



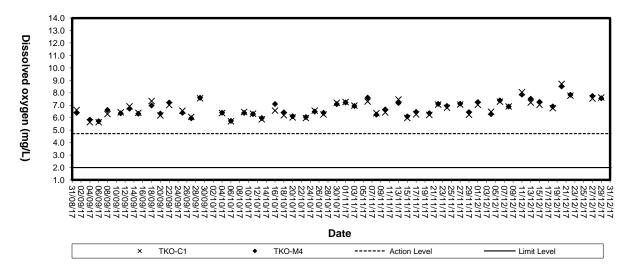


Dissolved Oxygen (Surface & Middle) at Mid-Flood Tide

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

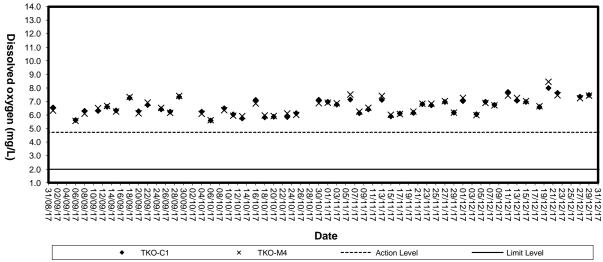




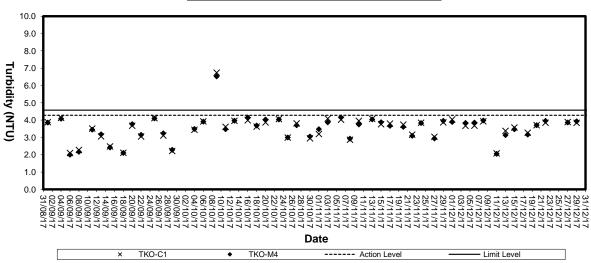


Dissolved Oxygen (Bottom) at Mid-Flood Tide



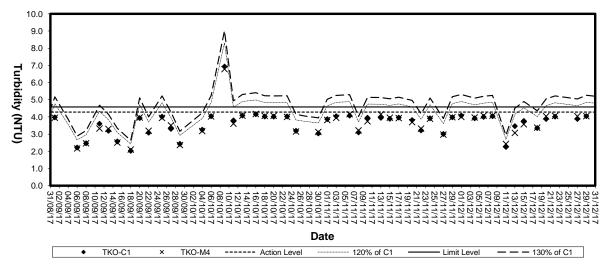




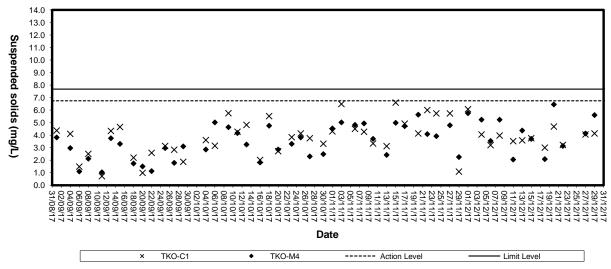


Turbidity (Depth-average) at Mid-Flood Tide

Turbidity(Depth-average) at Mid-Ebb Tide

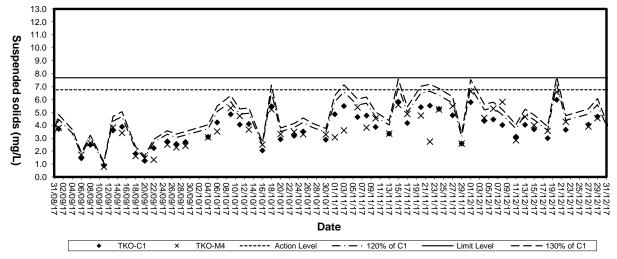






Suspended solids (Depth-average) at Mid-Flood Tide

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





Appendix E

Weather Condition

| Day | Mean Pressure (hPa) | A | vir Temperat | | Mean Dew Point | Mean Relative Humidity | Total Rainfall (mm) | Prevailing Wind Direction | Mean Wind Speed |
|-----|---------------------------|-----------------------------------|-----------------|-----------------------------------|----------------------|------------------------------|---------------------------|---------------------------------|-----------------------|
| | | Absolute Daily Max (deg. C) | Mean (deg.C) | Absolute Daily Min (deg. C) | (deg. C) | (%) | | (degrees) | (km/h) |
| 1 | *** | 24.6# | 20.6 | 18.5# | 15.1 | 71 | 0 | 60 | 6.2 |
| 2 | * * * | 24.4# | 19.3 | 16.8# | 13.8 | 72 | 0 | 50 | 5.1 |
| 3 | * * * | 24.2# | 19.3 | 16.6# | 15.3 | 79 | 0 | 60 | 4.4 |
| 4 | * * * | 24.7 | 19.3 | 15.6 | 13.8 | 72 | 0 | 60 | 5.8 |
| 5 | *** | 21.5 | 18.1 | 15.4 | 12.3 | 69 | 0 | 50 | 5.4 |
| 6 | * * * | 22.7 | 18.5 | 15.9 | 13.0 | 71 | 0 | 10 | 5.6 |
| 7 | * * * | 23.0 | 18.5 | 15.8 | 12.4 | 68 | 0 | 30 | 5.9 |
| 8 | * * * | 21.2 | 17.2 | 13.7 | 4.1 | 42 | 0 | 50 | 11.2 |
| 9 | * * * | 19.3 | 14.1 | 10.3 | 5.4 | 58 | 0 | 60 | 4.6 |
| 10 | *** | 22.3 | 16.3 | 11.7 | 9.6 | 67 | 0 | 340 | 3.3 |
| 11 | *** | 23.3 | 18.3 | 14.6 | 8.5 | 54 | 0 | 360 | 4.9 |
| 12 | *** | 21.3 | 18.2 | 16.2 | 11.7 | 66 | 0 | 70 | 6.1 |
| 13 | *** | 18.8 | 18.2 | 17.6 | 14.1 | 77 | 0 | 60 | 8.9 |
| 14 | *** | 21.5 | 19.1 | 17.7 | 14.6 | 75 | 0 | 60 | 7.3 |
| 15 | * * * | 22.1 | 19.1 | 17.6 | 15.6 | 81 | 0 | 50 | 7.1 |
| 16 | * * * | 18.8 | 15.1 | 11.5 | 7.9 | 63 | 0 | 340 | 9.8 |
| 17 | * * * | 14.7# | 11.7 | 9.8# | 4.4 | 61 | 0 | 50 | 9.4 |
| 18 | * * * | 17.7# | 12.6 | 7.8# | 2.4 | 51 | 0 | 50 | 7.1 |
| 19 | * * * | 19.0 | 13.9 | 9.3 | -0.7 | 37 | 0 | 60 | 8.9 |
| 20 | * * * | 20.0 | 15.1 | 11.3 | -2.2 | 31 | 0 | 40 | 10.4 |
| 21 | * * * | 18.8 | 15.0 | 11.4 | 2.5 | 45 | 0 | 70 | 8.1 |
| 22 | * * * | 21.6 | 16.7 | 13.1 | 8.9 | 62 | 0 | 10 | 6.9 |
| 23 | * * * | 21.9 | 18.4 | 16.4 | 13.7 | 75 | 0 | 60 | 2.6 |
| 24 | *** | 25.5 | 19.9 | 15.0 | 9.5 | 55 | 0 | 50 | 6.7 |
| 25 | * * * | 21.1 | 17.5 | 15.0 | 4.7 | 46 | 0 | 20 | 5.7 |
| 26 | * * * | 21.0 | 17.1 | 14.7 | 11.6 | 71 | 0 | 10 | 5.5 |
| 27 | * * * | 21.0# | 17.6 | 15.7# | 12.4 | 73 | 0 | 60 | 6.6 |
| 28 | *** | 21.5 | 18.2 | 16.3 | 13.5 | 75 | 0 | 10 | 5.6 |
| 29 | * * * | 23.0 | 18.9 | 15.7 | 14.2 | 75 | 0 | 60 | 5.6 |
| 30 | * * * | 24.7 | 19.3 | 15.8 | 13.3 | 69 | 0 | 20 | 5.9 |
| 31 | * * * | 23.1 | 17.9 | 14.7 | 9.6 | 60 | 0 | 50 | 5.9 |

Daily Extract of Meteorological Observations , December 2017 - Tseung Kwan O

*** unavailable

data incomplete

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



Appendix F

Event-Action Plans

| | | hods if | r remedial fication ed | ion to tance remedial fication od |
|--|------------|--|---|---|
| | Contractor | Rectify any unacceptable practise Amend working methods if appropriate | Submit proposals for remedia actions to IC(E) within 3 working days of notification implement the agreed Amend proposal if Amend proposal if | Take immediate action to avoid further exceedance Submit proposals for nemedia actions to IC(E) within 3 working days of notification implement the agreed Amend proposal If Amend proposal If |
| | | ~ ~ ~ 5 2 2 8 | ⊷് പ് ഷ് പ് പ് ഷ് | ≓ ನಿ ನೆ ಸೆ |
| | ER | - | Confirm receipt of notification of failure in writing Notify the Contractor Ensure remedial measures properly implemented | Confirm receipt of notification of failure in writing Notify the Contractor Ensure remedial measures property implemented |
| | Н | v: ⊢ | 두 N 6 는 목 | - diei - 8 |
| EVENT/ACTION PLAN FOR AIR QUALITY EXCEEDANCE ACTION | IC(E) | Ac mon Level Level Check monitoring data submitted by the ET Check contractor's working method | Check monitoring data submitted by the ET Leader Check the Contractor's working method Discuss with ET and Contractor on poesible nemedial measures Advise the RR on the effectivaness of the proposed remedial measures Supervise implementation of remedial measures | LIMIT LEVEL. Check monitoring data submitted by the ET Leader Check Contractor's working method Discuss with ET and Contractor on possible remedial measures Advise the ER on the effectiveness of the previse the ermedial measures Supervise implementation of remedial measures |
| EV | Ц | + ni | e > − | નં લંશં મંધર્ગ આ અ |
| | ET Leader | Identify source, investigate the causes of exceedance and propose remedial measures Inform ER, IC(E) and Contractor Repeat messurement to confirm finding Increase monitoring frequency to daily | Identify source, investigate the causes of exceedance and propose remedial measures inform IC(E) and Contractor Repeat measurements to confirm finding Increase monitoring frequency to daily Increase monitoring I exceedance stops, ceaste additional monitoring | |
| | | ને લોળ ને | + NH +4 6 F | ને ભોલે થયેલે |
| EVENT | | . Exceedance for one sample | 2. Exceedance for two or more consecutive samples | Exceedance for one sample |

東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

| ACTION ET Leader ACTION ER Contractor 2. Exceedance 1. Identify source, Investigata the causes of exceedance and propose namedial extreme 1. Discuss amongst ER, ET and Contractor on of exceedance and propose namedial of exceedance and propose namedial of exceedance and propose namedial of exceedance and propose namedial of exceedance and propose namedial exercise 1. Confirm receipt of notification of fabre in writing avoid furthe exceedences working procedance and propose namedial exercise 2. Reve Contractor on frations 1. Take immediate action to evoid furthe exceedences and the Exceedence inding 3. Notify Contractor working grooted in properation inding 3. Notify Contractor or consultance in properation inding 3. Notify Contractor inding 3. Notify Contractor inding 3. Notify Contractor inding 6. Arrange meeting with ICE] and ER to consider with procedance to indice with procedances of Contractor's intervent in the remedial measures 3. Report in the factor intervent in the exceedances in the intervent in the intervent in the contractor's intervent in the intervent in | EVENT | | | | EVENTIACTION PLAN FOR AIR QUALITY EXCEEDANCE | Ę | Y EXCEEDANCE | | | |
|--|----------------------------|---|----|--|--|-----|---------------------------------|-----|---------------------------------|----|
| ET Leader IC(E) ER 1. Identify source, inwestigate the causes of exceedance and propose namedial decondance and propose namedial measures 1. Discuss amongst ER, ET and Contractor on of exceedance and propose namedial measures 1. Discuss amongst ER, ET and Contractor on of exceedance and propose namedial measures 1. Discuss amongst ER, ET and Contractor on of exceedance and propose namedial measures 1. Discuss amongst ER, ET and Contractor on of exceedance and propose namedial measures 1. Discuss amongst ER, ET and Contractor on of exceedance and propose namedial measures 2. Notity Contractor 2. Notity Contractor 2. 3. Respect measurement to confirm finding 3. In consultation with the IC(E), and the medial actions working proceedines to downline possible mitigation to be implemented fiscuss the remedial actions to be tidecuss the remedial actions of the vork is responsible and instruct the Contractor's fit exceedance stops, cases additional monitoring 5. If exceedance is absted instruct the Contractor to stop that portion of work until the exceedance stops, case additional 5. | | | | | ACTION | | | | | - |
| 1. Identify source, Investigate the causes of accordance and propose nemediat the causes of accordance and propose nemediat the contractor on the accordance and propose nemediations of accordance and propose nemediations. 1. Discuss amongst ER, ET and Contractor on the mediations of accordance and propose nemediations the potential nemediations of accordance and propose nemediations. 1. Confirm receipt of notification the mediations of failure in writing consultation with the IC(E). ER, EPD and Contractor on finding 1. Discuss amongst ER, ET and Contractor on the potential nemediations actions and advise the ER accordingly interactor and finding procedures to datamine possible mitpation to be implemented fractive accordance and tester according to the potential actions to be tester according to the potential actions to be tester according to the potential actions and last to consult actions and last the fractive consider what portion of the work is responsible and the fractive to stope, cease additional menuted instruction to the implemented menution and the fraction of the exceedance is abaled actions and the actions and the contractor to stope, cease additional instructing the exceedance is abaled actions. 1. Configuration of the exceedance is abaled actions to abale actions is abaled actions is abaled actions to action at work and instruction of work until the exceedance is abaled actions. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. <td< td=""><td></td><td></td><td></td><td>ET Leader</td><td>1C(E)</td><td></td><td>ER</td><td>_</td><td>Contractor</td><td>-</td></td<> | | | | ET Leader | 1C(E) | | ER | _ | Contractor | - |
| o or of exceedance and propose numedial measures the potential remedial actions measures 2. Nolify C(E), ER, EPD and Contractor measures 2. Nolify C(E), ER 2. Nolify C(E), ER 2. 6. Inding 3. Supervise the implemented measures 3. 1. | Exceedan | 8 | ÷. | dentify source, investigate the causes | 1. Discuss amongst ER, ET and Contractor on | ÷ | Confirm receipt of notification | ÷ | Take immediate action to | - |
| measures 2. Nolify IC(E), ER, EPD and Contractor 2. Review Contractor 2. Nolify C(E), ER, EPD and Contractor 2. Nolify IC(E), EPD and ER to contractor 3. | for two or | | 0 | if exceedance and propose remedial | the potential nemedial actions | | of failure in writing | | avoid further exceedances | |
| Bits 2. Notify IC(E), ER, EPD and Contractor finding 3. In consultation with the IC(E), finding 1. In consultation with the IC(E), finding 3. Supervise the implemented finding 3. Supervise the implemented finding 3. In consultation with the IC(E), finding 3. Supervise the implemented finding 4. Ensure remedial measures finding 4. Ensure remedial measures finding 4. Ensure remedial measures finding 4. Ensure remedial measures finding 5. If exceedances confinues, finding 5. If exceedance is abled 5. If exceedance is abled 7. Assess effectiveness of Contractor's montiloring 7. Assess finding 7. Assess finding 5. If exceedance is abled 5. If exceedance is abled 5. If exceedance is abled <td>more</td> <td></td> <td>E</td> <td>nedsurbs</td> <td>Review Contractor's remedial actions</td> <td>evi</td> <td>Notify Contractor</td> <td>evi</td> <td>Submit proposals for remedial</td> <td>70</td> | more | | E | nedsurbs | Review Contractor's remedial actions | evi | Notify Contractor | evi | Submit proposals for remedial | 70 |
| Repet mesurement to confirm finding Repet mesurement to confirm Repet mesurement to confirm Increase monitoring frequency to daily for transfer monitoring frequency to daily Carry out analysis of contractor's working procedures to determine possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be discuss the remedial actions to be taken Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken Research of the remedial actions to be taken Research of the remedial actions of the results Research of the research of | consecutiv | | ~ | totily IC(E), ER, EPD and Contractor | whenever necessary to assure their | eż | In consultation with the IC(E), | | actions to IC(E) within 3 | |
| finding finding frequency to daily carry out smallysis of contractor's working procedures to determine possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be discuss the remedial actions to be discuss the remedial actions and keep IC(E), EPD and ER informed of the vertice to stope, cease additional fracting that portion of work is responsible and instruct the Contractor to stope, cease additional monitoring arrow and to be exceedance is abated arrange and instructing that portion of work is responsible and instructing the exceedance is abated area. | samples | ~ | | tepeat messurement to confirm | effectiveness and advise the ER accordingly | | agree with the Contractor on | | working days of notfication | |
| Increase monitoring frequency to daily contraster monitoring frequency to daily carry out snalysis of contractor's working procedures to detormine possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be discuss the remedial actions to be discuss the remedial actions and keep IC(E), EPD and ER informed of the exceedance stops, cease additional monitoring monitoring arrange arrange arrange arrange arrange arrange arrange arrange are property implemented arrange are properly implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be discuss the remedial actions and keep IC(E), EPD and ER informed of the exceedance stops, cease additional monitoring arrange area are arrange arrange. | | | æ | inding | | | the remedial measures to be | rő | Implement the agreed | - |
| Cerry out analysis of contractor's working procedures to detormine working procedures to detormine possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be discuss the remedial actions to be discuss the remedial actions and keep IC(E), EPD and ER informed of the vertice to stope, cease additional monitoring that portion of work is abated work is abated monitoring that portion of work is abated work is abated work is abated work is abated work in the work work is abated work is abated work in the work in the work work is abated work in the work is abated work in the work work work work in the work work work work work work work work | | 4 | - | a monitoring | measures | | implemented | | proposals | - |
| working procedures to determine possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken Assess effectiveness of Contractor's Assess effectiveness of Contractor's Assess effectiveness of Contractor's and ER informed of the results if exceedance stops, cease additional monitoring | | ŝ | - | Sarry out analysis of contractor's | | ŧ | Ensure remedial measures | ÷ | Resubmit proposals if | - |
| possible mitigation to be implemented Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken Assess effectiveness of Contractor's Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results if exceedance stops, cease additional monitoring | | | * | vorking procedures to determine | | | are property implemented | _ | problem still not under control | - |
| Arrange meeting with IC(E) and ER to discuss the remedial actions to be taken Assess effectiveness of Contractor's Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results if exceedance stops, cease additional monitoring | | | 6 | ossible mitigation to be implemented | | ιų | If exceedances confinues, | цź | Stop the relevant activity of | - |
| discuss the remedial actions to be taken work is responsible and taken taken and taken and taken and taken and keep IC(E), EPD and ER informed of the results and taken actions and keep IC(E), EPD and ER informed of the results and taken actions actions and taken actions | | 0 | | vrange meeting with IC(E) and ER to | | | consider what portion of the | _ | works as determined by the | - |
| taken instruct the Contractor to step transformedial actions and keep (C(E), EPD ended actions and keep (C(E), EPD end ER informed of the results if exceedance stops, cease additional monitoring | | | 9 | liscuss the remedial actions to be | | | work is responsible and | | ER until the exceedance is | - |
| Assess effectiveness of Contractor's remedial actions and keep IC(E), EPD and ER informed of the results if exceedance stops, cease additional monitoring | | | 3 | ektern | | | instruct the Contractor to stop | _ | abated | - |
| remedial actions and keep IC(E), EPD - and ER informed of the results if exceedance stops, cease additional monitoring | | - | | kases effectiveness of Contractor's | | | that portion of work until the | | | - |
| and ER informed of the stops, the monitoring of the stops, the stops of the stops of the stops of the stop of the | | | 2 | emedial actions and keep IC(E), EPD | | | exceedance is abaled | - | | |
| lif exceedance stops, monitoring | | | 40 | and ER informed of the results | | | | _ | | - |
| monitoring | | | | | | | | | | _ |
| | | | E | nonttoring | | | | | | 7 |

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| EVENT | | | | | | | | | _ |
|--------|--------------|--|----------|--|-----------|---|----------------|--|---|
| | | | | ACTION | NO | | | | |
| | | ET Leader | | IC(E) | L | ER | | Contractor | |
| Level | મંત્રં જં જં | Notify the IC(E) and the Contractor. Carry out investigation. Report the results of investigation to the IC(E) and the Contractor. Discuss with the Contractor and formulate remedial measures. Increase monitoring frequency to check miligation effectiveness | r" el el | Review the amalysed results submitted by the ET. Review the proposed remedial measures by the Contractor and advise the ER accordingly. Supervise the implementation of remedial measures. | ને લોલે 4 | Confirm receipt of notification of failure in writing. Notify the Contractor to propose Require the Contractor to propose remedial measures for the snelvase noise problem. Ensure remedial measures are property implemented. | , 4 | Submit noise mitigation proposals to IC(E). Implement noise mitigation proposals. | |
| , Lmit | ÷ | | ÷ | Discuss amongst the ER, the ET | ÷ | Confirm receipt of notification of fotune in unified | * <u>-</u> | Take immediate action to avoid futbar excentance | |
| n and | | and the Contractor. | | Leader and the Contractor on the rotantial temedial actions. | e | Notify the Contractor. | 2 | Submit proposals for remedial | _ |
| | ici | | N | Review the Contractor's remedial | ાં ભ | Require the Contractor to propose | i | actions to IC(E) within 3 | |
| | - | - | | actions whenever necessary to | | remedial measures for the | _ | working days of notfication. | |
| | ψu | | | assure their effectiveness and | | analysed noise problem. | ni | Implement the agreed | |
| | ń | working procedures to determine | e | sume the characteringly. Supervise the inclementation of | ŕ | property implemented. | 4 | Resubmit proposals if problem | |
| | | possible miligation to be | ; | remedial measures. | ьć | If ecceedances continue, consider | | still not under control. | |
| | | | | | | what activity of the work is | က် | Stop the relevant activity of | - |
| | ó | EDD et careas & actions taken for | | | | responsible and right ration, use Contractor to shor that activity of | | worke as determined by all Cry | |
| | | the exceedances. | | | | work until the exceedances is | | abated. | _ |
| | Ŀ, | | | | | abated. | | | |
| | _ | Contractor's remedial actions and | | | | | | | - |
| | | keep the IC(E), the EPD and the | | | | | | | |
| | a | EK informed of the results If avoandence due to the | | | | | | | |
| | ś | | | | _ | | | | |
| | _ | additional monitoring | | | | | | | |

| EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE | ER | | Nolify EPD and other relevant 1. 0 | of governmental agencies in writing | | | 2. Discuss with IEC, ET and | 8 | days of mitigation measures; Contractor on the mitigation | Require contractor to propose | Ń | king analysed problem if related to the mitigation measures | construction works | Ensure remodial measures are ensure their effectiveness | | 5. Assess the effectiveness of the | mitigation measure 5. 8 | | aton of measures . | | tigation | ble time | | | |
|--|------------|---|---|--------------------------------------|-------------------|--------------|-----------------------------|------------|---|---|------------------|---|--------------------------------|---|---------------------------------|------------------------------------|------------------------------------|------------------------------------|--|---------------------------------|---|---------------------------------|--|--------------------------------|-------------------------------|
| AND ACTION PLAN | Contractor | 1 | | within 24 hours of identification of | exceedance | | | | and ER within 3 working days of | the identification of an | encedance | Consider changes of working | method if exceedance is due to | the construction works | Discuss with ET, IEC and ER and | propose mitigation measures to | IEC and ER if exceedance | to the construction works within 4 | working days of identification of | an exceedance | Implement the sgreed mitigation | measures within reasonable time | scale | | |
| ENT | | | γ ² | | | - | ei | | تريد | | | ú | 8 | 8 | ¢ | | 2 | | ş | | <u>کر</u> 14 | | 1ay | | |
| EV | RT Laster | | Identify source(s) of impact; | Repeat in-situ measurement to | confirm findings: | | | exceedance | | | working methods: | | | to the Contractor within 3 working | days of identification of | exceedance and advise | contractor if exceedance is due to | contractor's construction works | Discuss miligation measures with | Contractor if exceedance is due | to the construction works within 4 | working days | Repeat measurement on next day | of exceedance if exceedance is | due to the construction works |
| | | 4 | | e i | | ei | | | 4 | | | uş | യ | | _ | | | | 1- | | | | ග් | | |
| Event | | | Action level | being exceeded | by one | sampling day | | | | | | | | | | | | | | | | | | | |

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| ActToN ActToN fimpact, surrement 1. Notify IEC and ER in writing surrement 1. Notify IEC and ER in writing writing writing at hours of dentification of exceedance 1. Notify IEC and Other relevant 1. surrement aurement 1. Notify IEC and ER in writing dentification of exceedance 1. Notify IEC and CR 2. writing 3. Check all plant and dentification of exceedance 1. Notify IEC and ER 3. an dentification of exceedance 2. Discuss with IEC, ET and methods; 3. 3. an methods; 5. Submit the results of the equine contractor on the proposed miligation measures; 3. 4. for Contractor 8. 3. 3. op openities contractor on the proposed miligation measures; 3. 4. for Contractor 4. Ensure remedial measures for the measures to iEC and ER 4. for 10 methods; 5. Assess the effection measures for the measures of the miligation measure 5. for 10 10 10 10 10 10 for 11 4. Ensure remedial measures for the measures <t< th=""><th>Event</th><th></th><th></th><th></th><th>EVENT AND ACTION PLAN FOR WATER QUALITY</th><th>5</th><th>DR WATER QUALITY</th><th></th></t<> | Event | | | | EVENT AND ACTION PLAN FOR WATER QUALITY | 5 | DR WATER QUALITY | |
|--|---------------|----------|---------------------------------|-----|---|----|--------------------------------|---|
| ET Leader Contractor ER Ieweil 1. Identify seurice(s) of impact. Notify ED and other relevant 1. ded by 2. Repeat in-glu measurement within 24 hours of the identification of exceedance Notify ED and other relevant 1. ded by 3. Notify Contractor In writing 2. Rectify unacceptable practice, identification of the confinant and identification of the investigation is the Confidence in milgation measures; identification of the investigation of an identification of the investigation of an identification of an identidi and advise contractor i | | | | | ACTIC | Ň | | |
| Identify source(s) of impact, indext indext in the second merine indext in the source of the second merine indext in the second merine indext in the second merine indext in the second merine indext indext in the second merine indext i | | | ET Leader | | Contractor | _ | ж | IEC |
| 2. Repeat In-sllur measurement within 24 hours of the two of exceedance 2. Repeat In-sllur measurement 2. Repeat In-sllur measurement 2. Submit Table 24 hours of the two of exceedance 2. Submit Table 24 hours of the two of exceedance 2. Consider the measurement 3. Consider the two of exceedance 3. Consider the two of two of the two of two of the two of t | Action level | ÷ | Identify source(s) of impact; | ÷ | Notify IEC and ER in writing | ų. | | Check monitoring data |
| Notity Contractor in writing within 24 hours of the viting within 24 hours of identification Notity Contractor in writing Check monitoring data, all Check monitoring data, all Check monitoring data, all Consider changes of working Contractor swriting methods; Consider changes of working days of the infigation measures; Carry out investigation to the Contractor Report the results of investigation to the Contractor on the proposed mediating advise construction of exceedance and advise construction of exceedance indentification of an exceedance indentification of an exceedance within 1 4 working days of the miligation measures of miligation measures of miligation measures for the construction works with IEC and Contractor within 1 4 working days of the miligation measures of miligation measures of miligation measures of molecular construction of an exceedance indentification of an exceedance indentification of an exceedance indentification of an exceedance indentification of an exceedance are implemented. Discuss miligation measures within EC and CR and ER and working days of the miligation measures of measures of molecular and advise contractor within 1 4 working days of the miligation measures within the exceedance are implemented. Prepare to increase the molecular and exceedance are implemented and exceedance. | being | ei | Repeat in-situ measurement | | within 24 hours of | | governmental agencies in | submitted by ET |
| 3. Notify Contractor in writing writin 24 hours of montoring data, all montoring montoring data, all montoring mont | exceeded by | | to confirm findings | | identification of exceedance | | writing within 24 hours of the | |
| within 24 hours of identification 3. Check all plant and identification 3. Check all plant and identification 3. Check all plant and plant equipment; 4. Consider changes of working methods; 3. Check all plant and methods; 4. Consider changes of working methods; 4. Constactor on the proposed methods; 3. Check all plant and methods; 4. Constactor on the proposed methods; 4. Constactor on the proposed methods; 4. Constactor on the proposed methods; 3. Check all plant and methods; 4. Constactor on the methods; 4. Constactor on the methods; 4. Constactor on the mediation of en methods; 5. Submit if C and ER methods; 6. Discuss with IT, IEC and ER methods; 7. Discuss mitigation measures; 6. Discuss with IT, IEC and ER methods; 7. Discuss mitigation measures; 8. Ensure thedit; 8. Discuss with IT, IEC | more than one | eś | Notify Contractor In writing | 2 | Rectify unacceptable practice; | | identification of the | if exceedance is due / |
| Cherkification Cherkification Check monitoring data, all plant, exuptiment and contractor's working methods; Consider changes of working plant, exuption and contractor's working methods; Consider changes of working methods; Consider changes of working methods; Submit the results of investigation to the Contractor within 3 working days of the investigation to the Contractor within 3 working days of investigation to the Contractor within 3 working days of investigation to the Contractor within 3 working days of investigation to the Contractor within 3 working days of identification of an exceedance Discuss mitigation measures identification of an exceedance Discuss mitigation measures and propose mitigation works Discuss mitigation measures in exceedance Discuss mitigation measures and secontractor within an exceedance Discuss mitigation measures and works Discuss mitigation measures and propose mitigation measures and propose mitigation measures and propose mitigation measures and propose and avoid or exceedance Discuss mitigation measures and propertion of an exceedance Discuss mitigation measures are implemented; Discuss mitigation measures are implemented; Prepare to increase the monitoring frequency to daily david exceedance | consecutive | | within 24 hours of | က် | Check all plant and | | exceedance | not due to the works |
| Check monitoring data, all 4. Consider changes of working Contractor on the proposed plant, equipment and 5. Submit the results of 7. Require contractor to proposed Contractor's working methods; 5. Submit the results of 7. Require contractor to proposed Carry out investigation 6. Consider changes of working 3. Require contractor to propose Report the results of 5. Submit the results of 3. Require contractor to propose Report the results of 6. Discuss within 3 working days of the 3. Require contractor works within 3 working days of 6. Discuss with ET, IEC and ER 4. Ensure remedial measures and advise contractor if 6. Discuss with ET, IEC and ER 4. Ensure remedial measures and advise contractor if 6. Discuss with ET, IEC and ER 4. Ensure remedial measures and advise contractor if 6. Discuss with ET, IEC and ER 5. Assess the effectiveness of works exceedance 6. Assess the effectiveness of 5. Discuss mitigation measures intentification of an 6. Assess the effectiveness of 5. montification of enceedance 7. Implemented 7. Implemented 5. Prepare to increase the montingrequency to daily. 6. Asseses | sempling days | | identification | _ | equipment; | N | in the | _ |
| plant, equipment and contractor's working methods; 5. Submit the results of the remedial measures; 3. Require contractor to propose investigation to the Contractor to remedial measures for the investigation to the Contractor if mestigation to the Contractor if investigation to the Contractor if investigation to the Contractor if within 3 working days of identification of an within 3 working days of identification of an within 3 working days of identification of an works 3. Require contractor to propose investigation works 4. Contractor if investigation to the Contractor investigation within 3 working days of identification of an works 6. Discuss with ET, IEC and ER and propose identification of an identification of an works 4. 4. Contractor if investigation investigation measures identification of an works 6. Discuss with ET, IEC and ER are properly implemented identification of an works 6. 5. Contractor within EC and ER with IEC and Contractor within an exceedance intervented and exceedance with IEC and Contractor within an exceedance 7. 1. Contractor within an exceedance in property inplemented an exceedance in mitigation measures within the moleching frequency to dely 7. 1. | | ÷ | Check monitoring data, all | Ť | Consider changes of working | | Contractor on the proposed | Contractor on the |
| Contractor's working methods: 5. Submit the results of the carry out investigation 3. Require contractor to propose investigation to the Contractor to propose investigation to the Contractor if within 3 working days of the interestingation of encellation of encelation of encellation of encellation of enc | | | plant, equipment and | | methods; | | miligation measures; | mitigation measures. |
| Carry out investigation Report the results of investigation to the Contractor within 3 working days of identification of en analysed problem if related to identification of en analysed problem if related to identification of en exceedance and advise contractor if exceedance and advise contractor if exceedance and advise contractor if exceedance identification of en exceedance identification of en exceedance identification of an works Discuss mitigation measures with IEC and ER working days of exceedance identification of an works Discuss mitigation measures with IEC and Contractor within te construction works Discuss mitigation measures with IEC and Contractor within the construction works exceedance identification of an exceedance Ensure mitigation measures identification of an exceedance Ensure mitigation measures identification of an exceedance identification of an exceedance inth IEC and Contractor within the construction works with IEC and Contractor within the mitigation measures with IEC and Contractor within the mitigation measures identification of an exceedance Ensure mitigation of an exceedance intervented the mitigation measures with IEC and Contractor within the mitigation measures with IEC and Contractor within the construction works identification of an exceedance Ensure mitigation of an exceedance intervented the construction works identification of an exceedance identification of an exceedance identification of an exceedance identification of an exceedance identification of an identification of an id | | | Contractor's working methods; | uń. | Submit the results of the | es | Require contractor to propose | |
| Report the results of investigation to the Contractor within 3 working days of identification of the and advise contractor if and advise contractor if and advise contractor if and advise contractor if and propose miligation exceedance within 3 working days of the identification of an exceedance analysed problem if related to the construction works within 3 working days of dentification of exceedance 6. Discuss with ET, IEC and ER and propose miligation exceedance 4. Ensure remedial measures are properly implemented are properly implemented are properly implemented are properly implemented within EC and CR with IEC and Contractor within tecsoures the monitoring of identification of an exceedance 5. Assess the affectiveness of the miligation measures are properly implemented are | | ທ່ | Carry out investigation | | investigation to IEC and ER | | remedial measures for the | mitigation measures |
| Investigation to the Contractor within 3 working days of and advise contractor if and advise contractor and advise contractor and advise contractor and advise contractor and advise contractor and advise contractor and propose mitigation exceedance contractor's construction works Ensure remedial measures and advise contractor within 3 working days of contractor's construction works Ensure sures with EC and ER within 4 working days of identification of an works Ensure mitigation measures with EC and Contractor within an exceedance Finplemented an exceedance Finplemented an exceedance Finplemented <l< td=""><td></td><td>ω</td><td>Report the results of</td><td></td><td>within 3 working days of the</td><td></td><td>analysed problem If related to</td><td>whenever necessary to</td></l<> | | ω | Report the results of | | within 3 working days of the | | analysed problem If related to | whenever necessary to |
| within 3 working days of identification of exceedance 6. Discuss with ET, IEC and ER and advise contractor if and propose mitigation exceedance is due to contractor's construction works 6. Discuss with ET, IEC and ER and propose mitigation messures to IEC and ER within 4 working days of identification of an works 4. Ensure remedial measures are properly implemented are properly implemented are properly implemented and propose mitigation messures to IEC and ER within 4 working days of identification of an exceedance Ensure mitigation measures with IEC and Contractor within a exceedance Ensure mitigation measures with IEC and Contractor within a exceedance Ensure mitigation measures with IEC and Contractor within a exceedance Ensure mitigation measures with IEC and Contractor vithin a exceedance Ensure mitigation measures are implemented. 4. Ensure remedial measures identification of an exceedance are interesting are implemented. | | | investigation to the Contractor | | identification of an | | the construction works | ensure their |
| Identification of exceedance and advise contractor if and propose mitigation and advise contractor if exceedance is due to contractor's construction works works mitigation measures to EC and ER and propose mitigation measures within the spread arcs is the mitigation measure endence. | | | within 3 working days of | | exceedance | ÷ | Ensure remedial measures | effectiveness and advise |
| and advise contractor if and propose mitigation escondance is due to contractor's construction works contractor's construction works with IEC and Contractor within 4 working days of contractor within EC and Contractor within 4 working of identification of an exceedance within ET and properent of an exceedance and exceedance are implemented; Prepare to increase the mollocing frequency to daily; Repeat measurement on next | | | identification of exceedance | ø | Discuss with ET, IEC and ER | | are properly implemented | the ER accordingly |
| exceedance is due to contractor's construction works works the mitigation measures with IEC and Contractor within the EC and Contractor within the EC and Contractor within the EC and Contractor within the mitigation measures with IEC and Contractor within the mitigation measures with IEC and Contractor within the scale Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next | | | and advise contractor if | | and propose mitigation | uś | Assess the effectiveness of | 5. Assess the effectiveness |
| contractor's construction within 4 working days of identification of an works. with IEC and Contractor within a agreed with IEC and Contractor within the agreed ance exceedance and exceedance and exceedance are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next in a greed and the agreed | | | exceedance is due to | | measures to IEC and ER | | the mitigation measure | of the implemented |
| works Discuss mitigation measures with IEC and Contractor within 4 working of Identification of an exceedance Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance. | | | contractor's construction | | within 4 working days of | | | mitigation measures. |
| Discuss mitigation measures with IEC and Contractor within 7. I 4 working of Identification of an exceedance Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance. | | | works | | identification of an | | | I |
| with IEC and Contractor within 7. 1 4 working of Identification of an exceedance Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance. | | <u>к</u> | Discuss mitigation measures | | exceedance | | | |
| 4 working of Identification of an exceedance Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily; Repeat measurement on next day of exceedance. | | | with IEC and Contractor within | Þ. | | _ | | |
| an exceedance Ensure mitigation measures are implemented; Prepare to increase the monitoring frequency to daily, Repeat measurement on next day of exceedance. | | | 4 working of Identification of | | mitigation measures within | | | |
| | | | an exceedance | | reasonable time scale | | | |
| | | œ | Ensure mitigation measures | | | | | |
| | | | are implemented; | | | | | |
| | | σ | Prepare to increase the | | | | | |
| | | | | | | | | |
| day of exceedance. | | 6 | | | | | | |
| | | | day of exceedance. | | | | | |



| Event | | EVEN | E | EVENT AND ACTION PLAN FOR WATER QUALITY EXCEEDANCE | ATI | ER QUALITY EXCEEDANCI | ш | |
|--------------|-----|-------------------------------|----|--|-----|----------------------------------|----|-------------------------|
| | _ | | | ACTION | z | | | |
| | | ET Leader | Ц | Contractor | | ER | | IEC |
| Limit level | | Repeat in-situ measurement | | . Notify IEC and ER in writing: | ÷ | _ | ÷ | Check monitoring data |
| being | _ | to confirm findings; | | within 24 hours of the | | governmental agencies in | | submitted by E1 |
| exceeded by | Ň | | | identification of the | _ | writing within 24 hours of | N | Confirm ET assessment |
| one sampling | e | | _ | exceedance | _ | identification of exceedance | | if exceedance is due / |
| dav | 5 | | r, | | ŝ | Discuss with IEC, ET and | | not due to the works |
| 600 | | identification of the | eó | - | _ | Contractor on the proposed | ei | Discuss with ET, ER and |
| | | exceedance | | equipment; | | mitigation measures; | | Contractor on the |
| | 4 | | ÷ | Ξ. | က် | Request Contractor to critically | | - |
| | | plant, equipment and | _ | methods; | | review the working methods; | ٩ŕ | |
| | | Contractor's working methods: | ю | Submit the results of the | Ý | Ensure remedial measures | | milligation measures |
| | ú | | _ | | | are properly implemented | _ | submitted by Contractor |
| | ί¢ | | _ | within 3 working days of the | цó | Assess the effectiveness of | _ | and advise the ER |
| | i . | | | identification of an | | the implemented miligation | | |
| | _ | within 3 working days of | | exceedance | _ | measures. | ω | |
| | | identification of exceedance | φ | Discuss with ET, IEC and ER | | | | of the implemented |
| | | and advise contractor if | | | | | | mitigation measures |
| | | exceedance is due to | | measures to IEC and ER | | | _ | |
| | | contractor's construction | | within 4 working days of the | _ | | | |
| | | works | | identification of an | _ | | | |
| | ř | Discuss mitigation measures | _ | _ | | | | |
| | _ | with IEC, ER and Contractor | ~ | Implement the agreed | | | | |
| | | within 4 working of | | miligation measures within | | | | |
| | | identification of an | _ | reasonable time scale | - | | | |
| | _ | exceedance | | | _ | | | 8 |
| | œ | Ensure mitigation measures | | | | | | |
| | _ | are implemented; | | | _ | | | |
| | á | | | | | | | |
| | | frequency to daily until no | | | | | | |
| | | exceedance of LIMIT Level. | - | | 1 | | ł | |



| | | | | ACTION | N | | | |
|------------------------------|-----|---------------------------------|---------|--------------------------------|----|----------------------------------|---|--------------------------|
| | | ET Leader | L | Contractor | L | ER | | IEC |
| Limit Level | - | Recest in-situ measurement | ÷ | Notify ER and IEC in writing | ÷ | Notify EPD and other relevant | ÷ | Check monitoring data |
| being | | to confirm findings: | | within 24 hours of the | | governmental agencies in | | submitted by ET |
| avranded hv | \$ | Identify source(s) of impact: | _ | identification of the | | writing within 24 hours of | N | Confirm ET assessment |
| more than one | i e | | _ | exceedance and | | Identification of exceedance | | if exceedance is due / |
| and the user one | 5 | | 5 | Rectify unacceptable practice: | ŝ | Discuss with IEC, ET and | | not due to the works |
| consecutive compline date | | Muttin 24 Floure Of | i e | Check all plant and | | Contractor on the proposed | ę | Discuss with ER, ET and |
| edan fuurfuise | | | i | equipment: | | mitigation messures; | | Contractor on the |
| | 4 | Check monitoring data, all | ٩ | Consider changes of working | ભં | Request Contractor to critically | | miligation measures. |
| | - | plant accibment and | | methods: | | review the working methods; | ŧ | Review proposals on |
| | | Contractor's working methods: | -00 | Submit the results of the | ശ് | Ensure remedial measures | | mitigation measures |
| | u2 | Cerv out investingion | | investigation to IEC and ER | | are properly implemented | | submitted by Contractor |
| | śœ | Report the results of | _ | within 3 working days of the | Ť | Assess the effectiveness of | | and advise the ER |
| | i | investination to the Contractor | | identification of an | | the implemented mitigation | | accordingly. |
| | | within 3 working days of | | exceedance | _ | measures; | ю | Assess the effectiveness |
| | _ | identification of exceedance | чó | Discuss with ET, IEC and ER | ъ | Consider and instruct, if | | of the implemented |
| | _ | and advise contractor if | | and propose mitigation | | necessary, the Contractor to | | mitigation measures. |
| | | exceedance is due to | | messures to IEC and ER | | slow down or to stop all or part | | |
| | | contractor's construction | | within 4 working days; | | of the marine work until no | | |
| | | works | ώ | Implement the agreed | | exceedance of Limit Level. | | |
| | ۲. | Discuss mitigation measures | worther | mitigetion measures within | | | | |
| | | with IEC, ER and Contractor, | | reasonable time scale | | | | |
| | න් | Ensure mitigation measures | ř | As directed by the Engineer, | | | | |
| | | are implemented; | | to slow down or to stop all or | | | | |
| | ல் | Increase the monitoring | | part of the marine work or | | | | |
| | | frequency to daily until no | | construction actives. | | | _ | |
| | | exceedance of Limit Level for | | | | | _ | |
| | _ | two consecutive days. | _ | | _ | | | |



Appendix G

Works Programme

Three Months Rolling Programme (1-December-2017 to 28-February-2018)

| Item | Description | From | То | 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 1 2 3 4 5 | Jan-18 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 |
|------|---|-----------|-----------|---|--|
| 1 | Section 1 | 1-Dec-17 | 28-Feb-18 | | |
| 1.1 | Take over existing site faiclities | 11-May-17 | 11-May-17 | | |
| 1.2 | Operation of Fill Bank, surveillance system and tipping halls | 1-Dec-17 | 28-Feb-18 | | |
| 1.3 | Design, provision and operation of crushing plant | 1-Dec-17 | 28-Feb-18 | | |
| 1.4 | Operation of the existing dewatering plant | 1-Dec-17 | 28-Feb-18 | | |
| 1.5 | Collection and delivery of Public Fill from CWPFBP and MWPFRF to TKOFB | 1-Dec-17 | 28-Feb-18 | | |
| 1.6 | Design, provision and operation of the expanded de-watering plant | 1-Dec-17 | 28-Feb-18 | | |
| 1.7 | Breaking up the incoming precast concrete units | 1-Dec-17 | 28-Feb-18 | | |
| 2 | Section 2 | 1-Dec-17 | 28-Feb-18 | | |
| 2.1 | Take over existing site faiclities | 11-May-17 | 11-May-17 | | |
| 2.2 | Operation of Fill Bank, surveillance system and tipping halls | 1-Dec-17 | 28-Feb-18 | | |
| 2.3 | Design and construction of 750mm U-channel and catchpits | 1-Dec-17 | 28-Feb-18 | | |
| 2.4 | Design, construction and operation of New Secondary Site Office for the Engineer | 1-Dec-17 | 28-Feb-18 | | |
| 2.5 | Raising up and replacement of 5 nos. of weighbridges at CREO | 1-Dec-17 | 28-Feb-18 | | |
| 2.6 | Breaking up the incoming precast concrete units | 1-Dec-17 | 28-Feb-18 | | |
| 2.7 | Design and construction of glass cullet storage compartment at Portion B7 | 1-Dec-17 | 5-Jan-18 | | |
| 3 | Section 3 | 1-Dec-17 | 28-Feb-18 | | |
| 3.1 | Design and construction of of seawalls at Zone B (approx. 900m) | 1-Dec-17 | 28-Feb-18 | | |
| 3.2 | Design and construction of of seawalls at at Zone C (approx. 2000m) | 1-Dec-17 | 28-Feb-18 | | |
| 4 | Section 3A | 1-Dec-17 | 28-Feb-18 | | |
| 4.1 | Design, construction and operation of new berthing facilities at Zone B | 1-Dec-17 | 28-Feb-18 | | |
| 4.2 | Design, construction and operation of new navigation chaneel and turning basin inassociated with the berthing facilities at Zone B | 1-Dec-17 | 28-Feb-18 | | |
| 4.3 | Design and construction of seawalls at Zone B (approx. 1500m) | 1-Dec-17 | 28-Feb-18 | | |
| 5 | Section 4 | 1-Dec-17 | 28-Feb-18 | | |
| 5.1 | Collection and delivery of Public Fill to the Designated Reclamation Sites in the Mainland | 1-Dec-17 | 28-Feb-18 | | |
| | | | | | |

| 30 31 | Feb-18 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 |
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Appendix H

Weekly ET's Site Inspection Record

| CEDD Contract No.: CV/2015/07 Handling of Surplus Public Fill (20 | CEDD Contract No.: CV/2015/07 Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank ETS-TESTCONSULT LTD; |
|--|---|
| Inspection Date | L1/2/19 |
| Time | 15 ⁻ 30 |
| Weather | Sunny / Fine) / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy |
| Wind | calm / (ight) Breeze / Strong |
| Temperature | |
| Humidity | High / Moderate / w |

| Inspected by | CEDD | Contractor / Sub-Contactor | ET |
|--------------|------------|----------------------------|--------------|
| Signature: | ~ | flee | , Aut |
| Name: | 7 12 Tou 9 | Sin-Jung | |
| Title | R.U. | Jo. | VLOR JUN WON |

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東業德勤測試麗間有限公司 ETS-TESTCONSULT LTD.

Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank

| | Environmental Checklist | Ĕ | Implementation Stages* | | Kemark |
|----------|--|-------|---|---|--------|
| | | Yes | A/N N/A | A | |
| Fug | Fugitive Dust Emission | | | | |
| | Dust control / mitigation measures shall be provided to prevent dust nuisance. | 2 | | | |
| 4 | 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. | 7 | | | |
| | 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. | 7 | | | |
| | All vehicles shall be restrict to a maximum speed of 10 km per hour. | 7 | | | |
| | 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. | 7 | | | |
| | The designated site main haul road shall be paved or regular watering. | 7 | | | |
| | Frequent watering of work site shall be at least three times per day. | 7 | | | |
| | 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. | 7 | | | |
| | 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. | 7 | | | |
| | 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. | 7 | | | l |
| | When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides. | > | | | |
| <u>.</u> | 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. | 7 | | | |
| | 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). | 7 | | | |
| Nois | Noise Impact | No. I | States and | | |
| | The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. | 7 | | | |
| | Only well maintained plant should be operated on-site and plant should be serviced regularly during the construction works. | 2 | | | |
| 2 | Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials. | 2 | | | |
| | Air compressors and hand held breakers should have noise labels. | 2 | | | |
| | Machines and plants that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum. | 2 | | - | |
| | Noisv equipment and mobile plant shall alwave he site away from NSRs | 7 | | | |

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| | | lmp | Implementation | ion Remark |
|-------------|---|-----|----------------|------------|
| | | Yes | No | N/A |
| Wat | Water Quality | | | 「「「「「「」」」 |
| • | Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms. | 7 | | |
| | The permanent drainage channels should have sediment basin, traps and baffles and maintain properly. | 2 | | |
| ۲ | 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. | 7 | | |
| | Manholes should be covered and sealed. | 7 | | |
| • | Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. | 7 | | |
| • | A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front. | 7 | | |
| • | A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront. | 7 | | |
| | The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge. | 7 | | |
| | 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. | 7 | | |
| | 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. | 2 | | |
| | 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. | 7 | | |
| • | 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. | 7 | | |
| • | 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. | 7 | | 7 |
| | 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. | 7 | | |
| | Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas. | 7 | | |
| • | Oil interceptor shall be provided at work shop. | 7 | | |
| | Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water. | 7 | | |
| | 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. | 7 | | |
| : . | All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport. | 7 | | |
| • | Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer. | 7 | | |
| | 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. | 7 | | |
| | 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. | 7 | | - |
| • | Existing slit 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 slit curtains shall not be less than 160m, and a gap of about 80m shall be left open for access of barges. The slit curtain shall be properly maintained such that it can also serve the function of refuse containment boom to confine floating refuse. | 7 | | |
| • | A waste collection vessel shall be deployed to remove floating debris. | 7 | | |

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東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD:

| | Environmental Checklist | Idml | lementatio Stages* | Implementation Remark Stages* |
|----|---|------|-----------------------|----------------------------------|
| | | Yes | No N/A | A |
| Lê | 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 shopes should be avoided. | 7 | | |
| | The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD. | 7 | | |
| ٠ | 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. | 2 | | |
| • | 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. | 7 | | |
| Ö | 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. | 7 | | |
| • | 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. | 7 | | |
| • | All generators, fuel and oil storage are within bundle areas. | 7 | | |
| • | Oil leakage from machinery, vehicle and plant is prevented. | 7 | | |
| | The Environmental Permit should be displaced conspicuously on site. | 7 | | |
| • | 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. | 7 | | |
| • | 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. | 7 | | |

| Item | | | | | | |
|---|---|--|-----------|---------------|--|-------------------|
| | <u>8</u> | Summary of the Weekly Site Inspection: | pection: | | | |
| | Details of defective works or observations | Proposed Follow Up Action | | Photo Ref. Fi | Further Action Required (Yes/No) | Follow up Date |
| 1 Follow up action hall No.1 was rep | Follow up action to item 1 on 29/11/17, silt curtain near tipping hall No.1 was repaired. | 1 | 171 | 171206_001 | Ŷ | 1 |
| Remark | | | | | | |
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| | - | | | | | |
| | Title | te te | Signature | Date | | |
| Checked by | Linda Law Se | Senior Environmental Officer | 12/2 | 09 D | 06 December 2017 | 21 |

Page 5 of 6



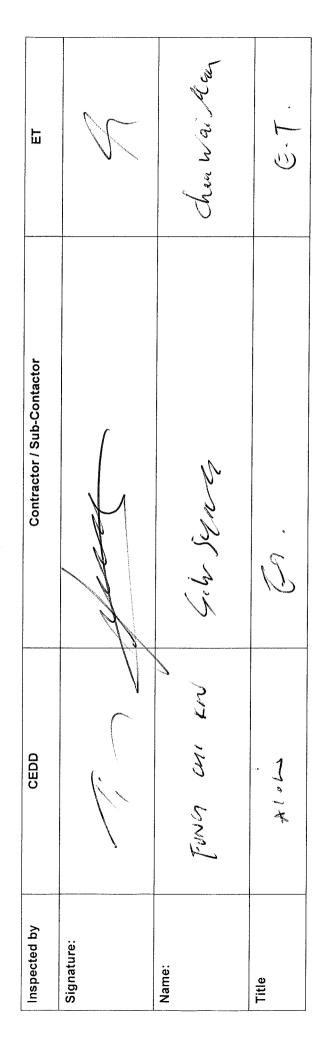


| <u>Photo</u> | |
|--------------|------------------|
| | No.1) (Improved) |

CEDD Contract No.: CV/2015/07



| nspection Date | • • | 13/ Dec/2017 |
|----------------|-----|--|
| Time | •• | 15:00 |
| Neather | •• | Sunny / Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy |
| Nind | •• | Calm / Light /Breeze / Strong |
| [emperature | | J_081 |
| Humidity | ••• | High /Moderate / Low |



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| | | Ĩ | Implementation | Remark |
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| | Environmental Checklist | | Stages* | |
| Fua | Fuditive Dust Emission | Ies | S NO N/A | |
| | | | | |
| | 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. | 7 | | |
| ■ | 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. | 7 | | |
| ¥ | The designated site main haul road shall be paved or regular watering. | 7 | | |
| - | Frequent watering of work site shall be at least three times per day. | 7 | | |
| • | Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site. | 7 | | |
| - | Every vehicle shall be washed to remove any dusty materials from its body and wheels before leaving the fill bank. | 2 | | |
| • | All plant and equipment should be well maintained e.g. without black smoke emission. | 7 | | |
| • | 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. | 7 | | |
| • | 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. | 7 | | |
| • | 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). | 2 | | |
| Noi: | Noise Impact | | | |
| • | The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. | 7 | | |
| • | 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. | 7 | | |
| | Noisy equipment and mobile plant shall always be site away from NSRs. | > | | |

CEDD Contract No.: CV/2015/07

東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank

| | | Imple | ementatio | Implementation Remark | |
|----|--|-------|-----------|-----------------------|--|
| | Environmental Checklist | Yes | Stages* | | |
| Wa | Water Quality | 2 | | | |
| • | 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. | 7 | | | |
| | 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. | 7 | | | |
| • | Manholes should be covered and sealed. | 2 | | | |
| • | Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. | 1 | | | |
| • | A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front. | ٧ | | | |
| | 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. | 2 | | | |
| | 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. | 2 | | | |
| • | 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. | 7 | | | |
| • | 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. | 2 | | | |
| • | 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. | 2 | | | |
| • | 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. | 2 | | | |
| • | 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. | 7 | | | |
| • | 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. | 7 | | | |
| • | 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. | 7 | | | |
| • | A waste collection vessel shall be deployed to remove floating debris. | > | | | |
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Page 3 of 5





| | | Imple | Implementation | n Remark | |
|---|---|-------|----------------|----------|---------|
| | Environmental Checklist | S | Stages* | | |
| | | Yes | No N/A | A | |
| Ľ | 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. | 7 | | | T |
| - | 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. | > | | | |
| õ | 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. | 7 | | | 1 |
| | 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. | 7 | | | 1 |
| - | Oil leakage from machinery, vehicle and plant is prevented. | ~ | | | |
| - | The Environmental Permit should be displaced conspicuously on site. | 7 | | | |
| | 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. | > | | | 1 |

CEDD Contract No.: CV/2015/07

Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank

Summary of the Weekly Site Inspection:

東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

| Details of defective works or observations | Proposed Follow Up Action | Photo Ref. | Photo Ref. Further Action Follow up Required Date | Follow up Date |
|--|---------------------------|------------|--|-------------------|
| | | | | |
| | | | | |
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| | | | | |

Remark

I

| Signature Date | LC. (2. 13 December 2017 |
|----------------|------------------------------|
| Title | Senior Environmental Officer |
| Name | Linda Law |
| | Checked by |

Page 5 of 5

CEDD Contract No.: CV/2015/07



| Inspection Date | : 20/ DEC/2017 | | |
|-----------------|---|---------------------------|---|
| Time | 00:01 | | |
| Weather | : Sunny (Fine / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy | zle / Rain / Storm / Hazy | |
| Wind | : Calm / Light / Breeze / Strong | | |
| Temperature | :. 13°C | | |
| Humidity | : High / Moderate / Low | , | |
| Inconcert by | | | t |

| Inspected by | CEDD | Contractor / Sub-Contactor | Ш |
|--------------|----------|----------------------------|--------------|
| Signature: | | Sing | K |
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| Title | Tow. | S. | Ć.T. |

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| | Environmental Checklist | Imple | Implementation Remark |
|------|--|-------|-----------------------|
| | | Yes | No N/A |
| Fugi | Fugitive Dust Emission | | |
| | Dust control / mitigation measures shall be provided to prevent dust nuisance. | 2 | |
| • | 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. | 7 | |
| - | Water sprays shall be provided and used to dampen materials. | 2 | |
| • | Regular cleaning and watering the site shall be provided to minimize the fugitive dust emissions. | 2 | |
| - | All vehicles shall be restrict to a maximum speed of 10 km per hour. | 7 | |
| • | 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. | 7 | |
| • | Wheel washing facilities including high-pressure water jet shall be provided at the entrance of work site. | 7 | |
| • | 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. | 2 | |
| • | 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). | 2 | |
| Nois | 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. | 7 | |
| | Air compressors and hand held breakers should have noise labels. | 7 | |
| • | 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. | > | |

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東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

| | Environmental Checklist | dul | lementat Stages* | tion | Implementation Remark Stages* |
|-----|---|-----|---------------------|------|----------------------------------|
| | | Yes | ٩ | N/A | |
| Wat | 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 stockpliing 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. | ~ | | | |
| F | 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. | ~ | | | |
| Ð | 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. | 7 | | | |
| • | | ~ | | | |
| • | 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. | 2 | | | |
| • | 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. | 7 | | - | |
| | 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. | | > | | Item 1 |
| • | A waste collection vessel shall be deployed to remove floating debris. | > | | | |

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CEDD Contract No.: CV/2015/07

| | | Implementat | Implementation Remark |
|---|--|-------------|-----------------------|
| | | Yes No | N/A |
| Ľ | 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. | 7 | |
| • | The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD. | 7 | |
| | 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. | 7 | |
| • | 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. | 7 | |
| 0 | 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. | 7 | |
| | Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste. | 7 | |
| • | 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. | 7 | |
| • | 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. | 7 | |
| • | To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse general refuse generated by the workforce. | ٧ | |

| Item Details of defective works or observations From 1 Details of defective works or observations Item 1 Silt curtain near tipping hall No.1 was damaged. To repair the silt curtain | Details of defective works or observations Details of defective works or observations | Summary of the Weekly Site Inspection: Proposed Follow Up Action To repair the silt curtain properly. | ion: | | | |
|--|--|---|--|------------|--|-------------------|
| t curtain r | ve works or observations Vo.1 was damaged. | Proposed Follow Up Ac To repair the silt curtain properly. | | | | |
| 1 Silt curtain near tipping hall No. Remark | Vo.1 was damaged. | To repair the silt curtain properly. | | Photo Ref. | Further Action Required (Yes/No) | Follow up Date |
| Remark | | | | 171220_001 | Yes | 27/12/17 |
| | | | | | | |
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| Name | Title | | Signature / | Date | ite | |
| Checked by Fran | Frankie Tang ET Rei | ET Representative | A Contraction of the second se | 20 | 20 December 2017 | 17 |
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Page 5 of 6





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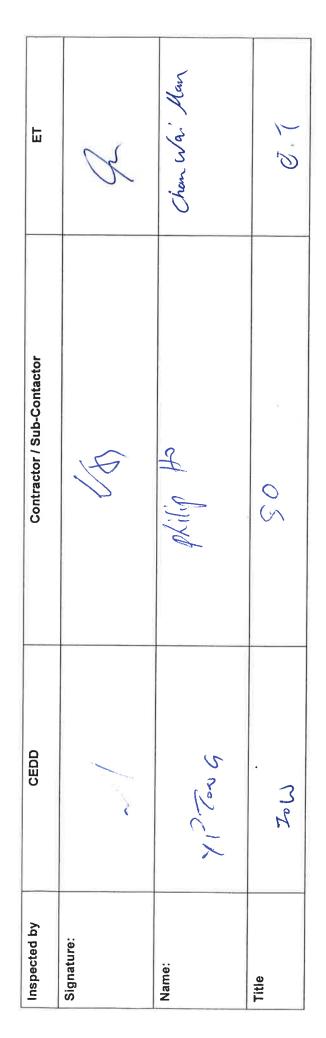
| | | 20 12 2017 10:55 | Photo 171220_001 (Silt curtain near tipping hall No.1) |
|--|--|------------------|--|

CEDD Contract No.: CV/2015/07

Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank



| an onder of formers | | |
|---------------------|------|--|
| | | |
| Inspection Date | 6.00 | 27/0ec/2017 |
| Time | 626 | (S: 00 |
| Weather | 1473 | Sunny (Fine) / Cloudy / Overcast / Drizzle / Rain / Storm / Hazy |
| Wind | 5.00 | Calm (Light) Breeze / Strong |
| Temperature | 94 | J.61 |
| Humidity | 525 | High / Moderate /Low |



Page 1 of 6

CEDD Contract No.; CV/2015/07

東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD:

Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank

| Yes Yes No ifing area and the nearest ASRs at the TKO Industrial ' | | Environmental Checklist | Idul | Implementation Stages* | n Remark |
|--|--------------|--|------|---------------------------|----------|
| 'upprive Dast Emission 'upprive Dast Emission Under storys in the provided to prevent dust nuisance. Dest control / milgation measures shall be maintained torkware A buffer score of a least: 700m shall be maintained torkware Dest control / milgation measures shall be provided to prevent dust nuisance. Dest control / milgation measures shall be provided to prevent dust needed of a level higher and the allowed. Walter sprays shall be provided and used to dampon materials. Media reprays shall be provided and used to dampon materials. Note: sprays shall be provided and used to a maximum speed of 10 km per hour. Any vehicles shall be rearried to a maximum speed of 10 km per hour. Any vehicles shall be rearried to a maximum speed of 10 km per hour. Any vehicles shall be rearried to remaximum speed of 10 km per hour. Any vehicle shall be rearried to a maximum speed of 10 km per hour. Any vehicle shall be rearried to the previsite and shall be provided to prevering the statements. Any vehicle shall be rearried to the previsite the least three timese per day. Thereaun maximum speed of 10 km per hour. Thereaun maximum speed of 10 km per hour. Thereaun maximum speed of 10 km per hour. Thereaun maximum speed to remox any dusty materials from its body and wheels before leaving the fill back. Unter importay store suffaces. Reprive the store store should be proved by CEDD. Thereaun matherial from the compacy of the site shall be covered dys of material loored on power should be advected by other method approved by CEDD. Thereaun matherial should be solved by the method approved by CEDD. The entroparty store at a consportance to the state and the material loor or equation may and states. Thereaun the state accuration whole material be advected by other method approved by CEDD. Thereaun the state accurate the state and the state advected by other | | | Yes | No N/A | A |
| Dust control / miligation measures shall be provided to prevent dust nuisance. Dust control / miligation measures shall be provided to prevent dust nuisance. Auther scrays shall be provided and used to dampen materials and be edge of the strong. Jundeading and the marter of states recent on shall be more index to a strong and strong the provided to minimize the fugitive dust in the uniter astrong the prential to create dust shall not period and strong and strong the prential to create dust shall not period to a new more strong the prential to create dust shall not period to a level higher than the side and hauf mad shall be avained the strong the prential to create dust shall not be strong the prential to create dust shall be strong the prential to create dust shall not period to a level higher than the side and tail boards, and shall be owered by the strong the prential to create dust shall be provided at the entrance of work site. The designated she mean hauf mad shall be vashed to remove any dusty materials from its body and wheels before leaving the fill bank. The tensory stops at unit and summary specially those facing to the north of the site shall be environg strong the prential occurs. The tensory stops at the strong strong the second strong to the north of the site shall be environg strong the second strong to the north of the site shall be environg strong the second strong the second strong the second strong to the north of the site shall be environg strong the second strong to the north of the site shall be environg strong the second strong to the north of the site shall be environg strong the second | Fug | jitive Dust Emission | | | |
| A buffer zone of at least 10 mon shall be maintained between the edge of the stockpling are and the measet ASRs at the TKO Industrial Estate. Within the buffer zone, mo dusy matined shall be stockplied and used ing the stockplied and used ing the familer activities should be allowed. Water strays shall be provided and used to drampen matrials. Regular cleaning and watering the site bar exprise should be restrict to a maximum speed of 10 km per hour. Any whice with open blace carrying area used for morning metales. The loaded to a level higher than the side and fail boards, and shall be apvoid of minimize the fugitive dust small no coreated dust shall have properly titing side and tall boards. Matering the works maximum speed of 10 km per hour. The designated site main hauf road shall be paved or regular watering. Where washing faculties including high-pressue valer jet shall be paved for moving materials within the side and fail boards, and shall be regenerated to such that the effect and the provided to the maximum speed of morning materials when the care of the state state of the state state and the interaction of the site shall be at least three firms and tall part of work site. Every wells and have and the state state and the interaction of the site shall be at least three firms and tall parts. The designated site main hauf road supremist should be prohibited. The envoyent shall be at least three firms and the material state and should be prohibited. The termore and the mathematical state and the material state and the material state and state and the material state and should be prohibited. The envolves of states the latest state and the state before teaving the fill hank. The termore and the material state and state state and state state by composed by CEDD. When fill material states and stock and should be prohibited to the north of the site shall be andised of resented by adming the state state and stock and shou | • | Dust control / mitigation measures shall be provided to prevent dust nuisance. | 7 | | |
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| Regular cleaning and watering the stall be provided to minimize the fugitive dust emissions. All vehicles with point and watering the stall be provided to minimize the fugitive dust emission. All vehicles with point and stall production area used for moving materials which has the potential to create dust shall not be loaded to a level higher than the side and fail boards, and shall be activity materials with mas the potential to create dust shall not be activity and shall be part than the side and tail boards, and shall be part the firms be day. The designated sile main haul road shall be part the firms be day and wheels before leaving the fill bank. If all boards, and tail boards, and tail boards, and shall be part the firms bedy and wheels before leaving the fill bank. 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. Mill fail and equipment should be within be toronde by CEDD. The temporary stope surfaces. especially those facing to the north of the site shall be routeded at the entrance of work site. Every vehicle shall be equiped with bottom plates or other subble surfaces stabilizar approved by hydroseeding. vegtation fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides. The temporary stope surfaces. especially those facing to the north of the site shall be transfer by belt conveyor systems. Every vehicle shall be required with bottom plates or other subble surfaces stabilizar approved by hydroseeding. vegtation planing or seating with bottom plates to other subble be and sotherese. | 3 . | Water sprays shall be provided and used to dampen materials. | 7 | | |
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| 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 well maintained e.g. without black smoke emission. Deen burning should be prohibide. 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. When fill material is transfer by blact conveyor systems, the conveyors shall be treated by compaction, followed by hydroseeding, vegetation planting or sealing with shot concrete. latex, with bittomen, or other suitable surface stabilizer approved by CEDD. When fill material is transfer by blat conveyor systems, the conveyors shall be treated by compaction, followed by hydroseeding, vegetation the level of stockpling bet conveyor shall be adjustable such that the vertical distance between the bell conveyor and the material landing point is maintained at no more than fm. Approval or exemption Non-road Mobile Machinery (NRIMM) labels should be painted or securely fixed on regulated machines and noncare advestible such according to the Air Pollution Control (Non-road Mobile Machinery item stable). Approval or exemption Non-road Mobile Machinery (NRIMM) labels should be painted or securely fixed on regulated machines and noncare addition according to the Air Pollution Control (Non-road Mobile Machinery item stable). Approval or exemption Non-road Mobile Machinery (NRIMM) labels should be painted or secu | (1) | Frequent watering of work site shall be at least three times per day. | 7 | | |
| 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 woll maintained e.g. without black smoke emission. Open burning should be prohibited. Copen burning should be prohibited. Chen 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 the temporary obter method approved by CEDD. When fill material is transfer by other method approved by CEDD. When fill material is transfer by belt conveyor shall be enclosed on top and 2 sides. When fill material is transfer by belt conveyor shall be enclosed on top and 2 sides. When fill material is transfer by belt conveyor shall be enclosed on top and 2 sides. When fill material is transfer by 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. Approved by CEDD. Approved method of working, equipment, inc. Approved to 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. Approved method of working, equipment and accurate (Non-road Mobile Machinery) (Emission) Regulation (APCO Cap. 311). Approved method of working, equipment and sound-reducing measures (e.g. use of silenced tregulated machines and non-cap. 311). And well need nechanical equipment (PME) should be serviced regularly during the construction works. Powered mechanical equipment (PME) should be covered or sile adviced by dring the construction works. And velocine equipment (PME) should be covered or sile ded by appropriate acoustic materials. A | :(#) | | 7 | | |
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| The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt. Intelevel of stockpilling 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. The level of stockpilling 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). Oise Impact Intervent and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. Only well maintained plant should be serviced regularly during the construction works. Powered mechanical equipment (PME) should be serviced by appropriate acoustic materials. Air compressors and hand held breakers should have noise labels. Machines and plant should be shuld be shuld be shuld be shuld be work periods or should be throttled down to a minimum. Noisy equipment and mobile plant should be shuld be sh | | When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides. | 7 | | |
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| 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. | ÷ | The approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. | 7 | | |
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| | × | Noisy equipment and mobile plant shall always be site away from NSRs. | 7 | | |

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東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

Handling of Surplus Public Fill (2016-2018) - Tseung Kwan O Area 137 Fill Bank

| | Environmental Checklist | | elementat Stages* | ation | Implementation Remark Stages* |
|--------------|---|-----|----------------------|-------|----------------------------------|
| | | Yes | No | N/A | |
| Wat | Water Quality | | | | |
| ٠ | 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. | 7 | | | |
| | Temporary intercepting drains should be used at the stockpliing 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. | 7 | | | |
| 8 0 0 | Manholes should be covered and sealed. | 7 | | | |
| | Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. | 7 | | | |
| 3 9 % | A buffer distance of at least 100m shall be maintained between the boundary of the public fill stockpiling area and the sea front. | 7 | | | |
| | A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront. | 7 | | | |
| | The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge. | 7 | | | |
| | 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. | 7 | | | |
| | 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. | 7 | | | |
| (. | 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. | 7 | | | |
| | A wheel washing bay shall be provided at the site exit and wash-water shall have sand and sitt settled out or removed before being discharged into storm drains. | 7 | | | |
| | The section of construction road between wheel washing bay and the public road shall be paved with concrete, biturninous materials or hardcores to reduce vehicle tracking of soil and to prevent site run-off from entering public road drains. | 2 | | | |
| | 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. | 7 | | | |
| | Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas. | 7 | | | |
| | Oil interceptor shall be provided at work shop. | 7 | | | |
| | Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water. | 2 | | | |
| | 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. | 2 | | | |
| | All vessels used for transportation of fill material shall have tight fitting seals to their bottom openings to prevent leakage of material during transport. | 7 | | | |
| | Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer. | 7 | | | |
| | 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. | 7 | | | |
| 841 | 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: | 7 | | | |
| | 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. | 7 | | | |
| :••• | A waste collection vessel shall be deployed to remove floating debris. | ~ | | | |

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| | Environmental Checklist | | Implementation Remark Stages* | Remark |
|--------------|--|-----|----------------------------------|--------|
| | | Yes | No N/A | |
| Lé | 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. | 7 | | |
| • | The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD. | 2 | | |
| 2 • 2 | 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. | 2 | | |
| • | 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. | > | | |
| õ | Other Environmental Factors | | | |
| 200 | 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. | 7 | | |
| ()))) | Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnece ssary generation of waste. | > | | |
| ۰ | Any unused materials or those with remaining functional capacity should be recycled and stored properly. | 7 | | |
| • | All generators, fuel and oil storage are within bundle areas. | 7 | | |
| * | · Oil leakage from machinery, vehicle and plant is prevented. | 7 | | |
| 800 | The Environmental Permit should be displaced conspicuously on site. | 7 | | |
| | 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. | 7 | | |
| : • | To encourage collection of aluminium cans by individual collectors, separate labelled bins should be provided to segregate this waste from other general refuse general refuse generated by the workforce. | 2 | | |

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Summary of the Weekly Site Inspection:

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| n Follc Dî | |
| Photo Ref. Further Action Follow up Required Date (Yes/No) | Ŝ |
| Photo Ref. | 171227_001 |
| Proposed Follow Up Action | . Man |
| Details of defective works or observations | Follow up the action to item 1 on 20/12/17, silt curtain near tipping hall No.1 was replaced. |
| Item | ~ |

Remark

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| Frankie Tang | | Name | Title | Signature | Date |
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| 0 | Checked by | Frankie Tang | ET Representative | | 27 December 2017 |

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CEDD Contract No.: CV/2015/07



| <u>Photo</u> | |
|--------------|---|
| | Photo 171227_001 (Silt curtain near tipping hall No.1) (Improved) |



Appendix I

Implementation Schedule of Mitigation Measures



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

Environmental Mitigation Implementation Schedule

| | | Location | | Implementation Status | | | |
|----|--|---------------------------|--------------|--------------------------|--------------------|-------------------|--|
| | Environmental Protection Measures | | Implemented | Partially implemented | Not implemented | Not Applicable | |
| Ai | ir Quality | | | | | | |
| • | Dust control / mitigation measures shall be provided to prevent dust nuisance. | All areas | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| • | Water sprays shall be provided and used to dampen materials. | All areas | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| • | The designated site main haul rout shall be paved or regular watering. | All haul roads | \checkmark | | | | |
| • | Frequent watering of work site shall be at least three times per day. | All areas | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| • | When fill material is transfer by belt conveyor systems, the conveyors shall be enclosed on top and 2 sides. | C&DMSF | \checkmark | | | | |
| • | The belt scraper shall be equipped with bottom plates or other similar means to prevent falling of material from the return belt. | C&DMFS | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| | All plant and equipment should be well maintained e.g. without black smoke emission. | All areas | \checkmark | | | | |
| • | 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 | \checkmark | | | | |
| No | pise Impact | | | | | | |
| • | Approved method of working, equipment and sound-reducing measures (e.g. use of silenced type of equipment, etc.) shall be adapted. | All areas | \checkmark | | | | |
| • | Only well maintained plant should be operated on-site and plant should be serviced regularly during the site works. | All areas | \checkmark | | | | |
| • | Powered mechanical equipment (PME) should be covered or shielded by appropriate acoustic materials. | All areas | \checkmark | | | | |
| • | Air compressors and hand held breakers should have noise labels. | All areas | \checkmark | | | | |
| • | 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 | \checkmark | | | | |



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

| • | Noisy equipment and mobile plant shall always be site away from NSRs. | All areas | \checkmark | | | |
|---|---|---------------------------------|--------------|-----------------------|--------------------|-------------------|
| | | Location | Implementat | ion Status | | |
| | Environmental Protection Measures | | Implemented | Partially implemented | Not implemented | Not Applicable |
| W | ater Quality | | | | | |
| • | Drainage system should be adequate and well maintained to prevent flooding and overflow, especially after rain storms. | All areas | \checkmark | | | |
| • | The permanent drainage channels should have sediment basin, traps and baffles and maintain properly. | All areas | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | Manholes should be covered and sealed. | All areas | \checkmark | | | |
| • | Unnecessary water retained in receptacles and standing water should be avoided to prevent mosquito breeding. | All areas | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | A buffer distance of at least 20m shall be maintained between the boundary of the C&DMSF and the seafront. | C&DMFS | \checkmark | | | |
| • | The stormwater intercepting system shall be effective to collect of runoff and remove suspended solids before discharge. | All areas | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | Oil intercept in addition of sand / silt removal facilities shall be provided at the car parking areas and work shop. | All areas | \checkmark | | | |
| • | Tipping halls enclosed with top and 3-side to prevent spillage of material into marine water. | Barge Handling Area (BHA) | \checkmark | | | |
| • | 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) | \checkmark | | | |
| • | 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) | \checkmark | | | |
| • | Adequate environmental control measures shall be provided to prevent / avoid dropping of fill material into the sea during the transfer. | Along the seafront | \checkmark | | | |
| • | 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) | \checkmark | | | |
| • | 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 | \checkmark | | | |
| • | 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 | | \checkmark | | |



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

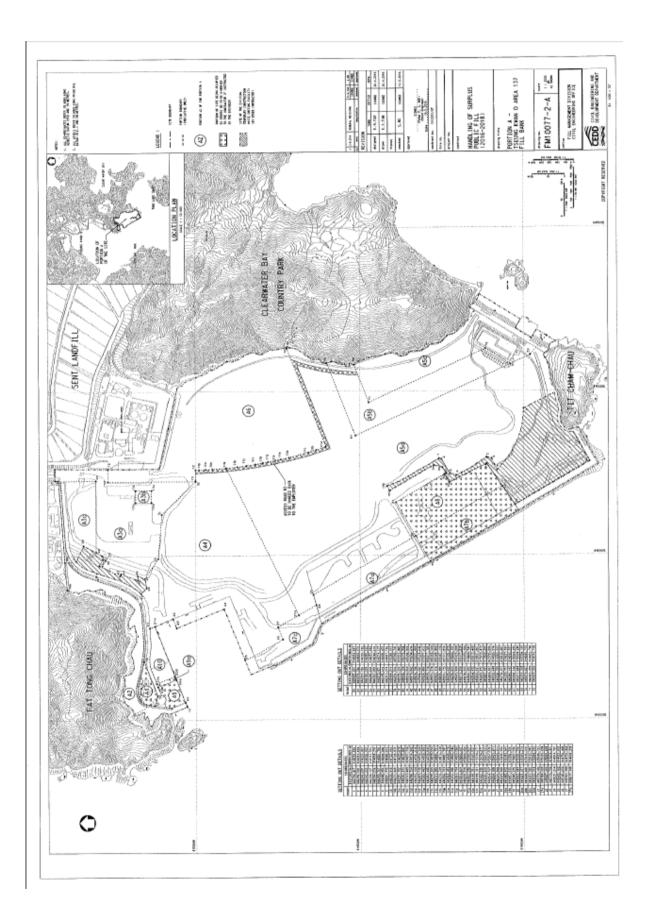
| | Location | Implementation Status | | | | |
|---|------------------|-----------------------|--------------------------|--------------------|-------------------|--|
| Environmental Protection Measures | | Implemented | Partially implemented | Not implemented | Not Applicable | |
| Landscape and Visual | | | | | | |
| • 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 | \checkmark | | | | |
| • The maximum stockpiling height at the fill bank shall be limited to a maximum of +35.2mPD. | Completed slopes | \checkmark | | | | |
| • 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 | \checkmark | | | | |
| • 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 | \checkmark | | | | |
| Plan and stock construction materials carefully to minimise generation of waste. | All areas | \checkmark | | | | |
| Any unused materials or those with remaining functional capacity should be recycled. | All areas | \checkmark | | | | |
| All generators, fuel and oil storage are within bunded areas. | All areas | \checkmark | | | | |
| Oil leakage from machinery, vehicle and plant is prevented. | All areas | \checkmark | | | | |
| 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 | \checkmark | | | | |
| 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







Appendix K

Monitoring Schedule for the Coming Month



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-hr TSP, 24-hr TSP and 24-hr RSP), Weekly Site Inspection (Weekly SI) and Impact Noise Monitoring (NM)

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|------------------------------|---|------------------------------|--|-------------------------------------|--|---|
| 31 24 hr TSP 24-hr RSP | 1/1 | 2 | 3 <u>1-hr TSPx2</u> <u>Weekly SI (pm)</u> <u>WQM</u> Mid-ebb (08:00 -09:00) Mid-flood (14:30 -15:30) | 4 | 5 <u>1-hr TSP</u> <u>WQM</u> Mid-flood (09:00 -10:00) Mid-ebb (14:00 -15:00) | 6 <u>24 hr TSP</u> <u>24-hr RSP</u> |
| 7 | 8 <u>1-hr TSPx2</u> <u>WQM</u> Mid-flood (11:16 –12:16) Mid-ebb (17:01 -18:01) | 9 | 10 <u>1-hr TSP</u> <u>Weekly SI (pm)</u> <u>WQM</u> Mid-ebb (08:00 –09:00) Mid-flood (13:00-14:00) | 11 | 12 24 hr TSP 24-hr RSP WQM Mid-ebb (08:33-09:33) Mid-flood (14:23-15:23) | 13 |
| 14 | 15 <u>1-hr TSP</u> <u>NM</u> WQM Mid-ebb (11:00-12:00) Mid-flood (16:10-17-10) | 16 | 17 <u>1-hr TSPx2</u> <u>Weekly SI (pm)</u> <u>WQM</u> Mid-ebb (12:11-13:11) Mid-flood (17:16-18:16) | 18 <u>24 hr TSP</u> 24-hr RSP | 19 <u>1-hr TSPx1</u> <u>WQM</u> Mid-flood (08:00-09:00) Mid-ebb (13:22 -14:22) | 20 |
| 21 | 22 <u>1-hr TSPx2</u> <u>WQM</u> Mid-flood (09:42-10:42) Mid-ebb (15:27-16:27) | 23 | 24 <u>1-hr TSPx1</u> <u>24 hr TSP</u> <u>24-hr RSP</u> <u>Weekly SI (pm)</u> <u>WQM</u> Mid-flood (11:06-12:06) Mid-ebb (17:22-18:22) | 25 | 26 <u>1-hr TSPx1</u> <u>WQM</u> Mid-flood (12:38-13:38) Mid-ebb (19:00-20:00) | 27 |
| 28 | 29 <u>1-hr TSPx1</u> <u>WQM</u> Mid-ebb (09:54-10:54) Mid-flood (15:20-16:20) | 30 24 hr TSP 24-hr RSP | 31 <u>1-hr TSPx2</u> <u>Weekly SI (pm)</u> <u>WQM</u> Mid-ebb (11:41-12:41) Mid-flood (17:10-18:10) | 1/2 | 2/2 1-hr TSPx1 WQM Mid-flood (07:45-08:45) Mid-ebb (13:11-14:11) | 3/2 |

January 2018



Appendix L

Complaint Log

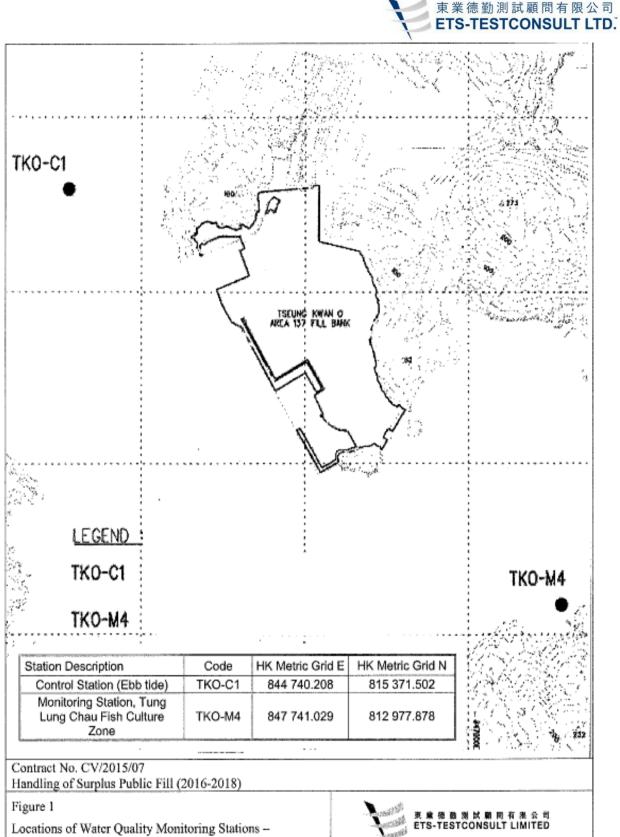


Complaint Logs

| 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. The contractor started to dump fill materials from 19 May 2017 after receiving the valid dumping permit. | |
| 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 |



Figures



Tseung Kwan O Area 137 Fill Bank

