MOTT MACDONALD

Environmental Team Services for Tuen Mun Area 54 Sewage Pumping Station

Operation Phase Second Odour Impact Monitoring Report

April 2020

This Second Operation Phase Odour Impact Monitoring Report for Tuen Mun Area 54 Sewage Pumping Station has been reviewed, certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:

Ir Thomas CHAN
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date: 6 April 2020

Verified by:

Wai Kwan CHIU
Independent Environmental Checker (IEC)
Meinhardt Infrastructure and Environment Limited

Date: 6 April 2020

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Drainage Services Department

Environmental Team Services for Tuen Mun Area 54 Sewage Pumping Station

Operation Phase Second Odour Impact Monitoring Report

April 2020

Mott MacDonald Hong Kong Limited
registered in Hong Kong no. 236497

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Executive summary

In November 2018, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Quotation Ref. DEMP/2018/04 to undertake the duties of Environmental Team (ET) as specified in the Environmental Monitoring and Audit (EM&A) Manual and the EP in relation to the odour impact monitoring for the 12-month operation Tuen Mun Area 54 Sewage Pumping Station (TM54SPS). The Further Environmental Permit (Further Environmental Permit (FEP) No. FEP-01/381/2009) was granted by the Environmental Protection Department (EPD) on 20 February 2018.

The Operation Phase Second Odour Impact Monitoring Report presents the results of the 2nd impact odour monitoring event for operation phase. With reference to Section 3.2.2 of the First Baseline Monitoring Report (i.e. reporting of the first impact odour monitoring event from 26 to 27 November 2019), Single-Tiered Conservative Approach is adopted for interpretation of the impact monitoring results. No exceedance of Action and Limit Level was observed at monitoring station A1 and A5, except at monitoring station A2, the 24-hour average H_2S concentration is 2.6 ppb, exceeding the Action and Limit Level which is 2.3 ppb and 2.5 ppb respectively. Based on the monitoring data review and site observation during monitoring period, it is considered that the exceedance at A2 is not project related.

1 Introduction

1.1 Background

In November 2018, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Quotation Ref. DEMP/2018/04 to undertake the duties of Environmental Team (ET) as specified in the Environmental Monitoring and Audit (EM&A) Manual and the EP in relation to the odour impact monitoring for the 12-month operation Tuen Mun Area 54 Sewage Pumping Station (TM54SPS).

A layout plan of the Project is provided in **Figure 1.1**.

1.2 Project Organisation

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in **Appendix A**.

1.3 Purpose of the Report

The Second Odour Impact Monitoring Report (hereinafter as the “this Report”) presents the methodology and results of the operation phase 2nd impact odour monitoring. The measured impact odour levels are benchmarked with the Action and Limit Level for assessing the impact during operation of the Project.

1.4 Structure of the Report

The structure of this Report is as follows:

- Section 1: Introduction, background, purpose and the structure of the report
- Section 2: Impact odour monitoring requirements and methodology
- Section 3: Impact odour monitoring results and the event and action plan for operation phase
- Section 4: Summary of complaints
- Section 5: Conclusions and recommendations

2 Impact Odour Monitoring Requirements and Methodology

2.1 Introduction

H_2S is one of the main components of odour emissions, which can serve as a surrogate indicator for sewage odour. During operation of TM54SPS, measurements of H_2S concentrations at source and at the selected Air Sensitive Receivers (ASRs) are required. This is to indicate whether the odour concentration would be higher or lower than the baseline condition. The odour level at sources and meteorological data shall be obtained as reference information for the analysis of the exceedance event.

With reference to the EM&A Manual, an impact monitoring of H_2S measurements shall be conducted in the first year of operation upon commissioning of TM54SPS (i.e. construction of TM54SPS was substantially completed in March 2018). As discussed between DSD and EPD, a new arrangement for the odour monitoring locations and level of measurement for the impact odour monitoring had been established. As it was necessary to deal with some of the major technical issues (e.g. review of H_2S measurement method, monitoring locations and level of measurement, etc.) for the impact monitoring, the commencement of the monitoring exercise would be deferred from March 2018 to November 2019. The monitoring location, equipment, methodology and schedule will be discussed in the latter part of this report.

2.2 Monitoring Requirements

In accordance with the EM&A Manual, an operation phase impact odour monitoring programme including odour monitoring stations and methodology was established by ET and agreed with Independent Environmental Checker (IEC) and EPD before commencement of monitoring, which is included in the Method Statement of Odour Impact Monitoring submitted to EPD in November 2019, which is presented in **Appendix B**.

The Event and Action Plan for Air Quality Monitoring (odour) of operational phase stipulated in the EM&A Manual is extracted and presented in **Appendix C**.

2.3 Monitoring Locations

H_2S measurements were taken at the Source and outside the premises of the identified monitoring stations A1, A2 and A5 as shown in **Table 2.1** and **Figure 2.1**.

Table 2.1: Monitoring Locations

Monitoring Station	Monitoring Location	Description of Monitoring Station
A1	Planned Secondary School	ASR
A2	Planned Primary School	ASR
A5	Road Connecting to TMS54SPS*	ASR
SPS	Exhausted Vent Pipe of TMA54SPS	Source

*Alternative monitoring location agreed by DSD, IEC and EPD as presented in the Method Statement of Odour Impact Monitoring submitted to EPD in November 2019.

2.4 Monitoring Equipment

H_2S concentrations were measured using a Jerome 631-X type H_2S analyser. Grab air sample is drawn by built-in suction pump of the analyser and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

Table 2.2 summarizes the equipment used in the impact odour monitoring. Copies of the calibration certificates for the portable H_2S analyser are presented in the technical reports in **Appendix D.**

Table 2.2: Odour Monitoring Equipment

Equipment	Model
Portable H_2S analyser	Jerome X631 0003 (Serial no. 2966)

2.5 Monitoring Methodology

A 15-min H_2S concentration was measured every 3 hours for duration of 24 hours at each of the monitoring locations. According to Section 2.35 of the EM&A Manual, impact odour monitoring was taken at a height of predicted worst level of the receivers in the EIA (i.e. 10m above ground level).

During each odour monitoring event, meteorological data including temperature, relative humidity and wind speed was obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station.

2.6 Monitoring Schedule

As specified in Section 2.53 of the EM&A Manual, impact odour monitoring shall be conducted every three months of the first year of operation for TM54SPS. The first impact odour monitoring event was conducted from 26 to 27 November 2019, while the second impact odour monitoring event was conducted from 18 to 19 February 2020. The monitoring schedule of the impact monitoring events are presented in **Table 2.3**.

Table 2.3: Schedule of Impact Odour Monitoring Events

Event	Scheduled Date
1st Impact Odour Monitoring Event	26 – 27 November 2019 (Completed)
2nd Impact Odour Monitoring Event	18 – 19 February 2020 (Completed)
3rd Impact Odour Monitoring Event	May 2020
4th Impact Odour Monitoring Event	August 2020

3 Impact Monitoring Results and Analysis

3.1 Monitoring Results

The H_2S concentrations, as well as the meteorological data during the second impact monitoring event have been presented in the technical report given in **Appendix D**.

Detailed results for the odour monitoring event are presented in the technical reports in **Appendix D**.

3.2 Monitoring Results Analysis

With reference to Section 3.2.2 of the First Baseline Monitoring Report (Reporting of the first impact odour monitoring event from 26 to 27 November 2019), Single-Tiered Conservative Approach is adopted for interpretation of the impact monitoring results.

The impact monitoring results are presented in **Table 3.1**

Table 3.1: Summary of Impact Odour Monitoring Results and Comparison with Action/ Limit Levels

Monitoring Station	Description	24-hour Average H_2S Concentration (ppb)			Exceedance	
		Impact Monitoring Level	Action Level	Limit Level	Action Level	Limit Level
A1	Planned Secondary School	2.4	2.5	2.5	No	No
A2	Planned Primary School	**2.6**	2.3	2.5	**Yes**	**Yes**
A5	Road connecting to TMA54SPS	2.5	2.5	2.5	No	No
SPS	Exhausted Vent Pipe of TMA54SPS	2.4	-	-	-	-

No exceedance of Action and Limit Level was observed at monitoring station A1 and A5, except at monitoring station A2, the 24-hour average H_2S concentration is 2.6 ppb, exceeding the Action and Limit Level which is 2.3 ppb and 2.5 ppb respectively.

3.3 Exceedance Investigation

Regarding the exceedance of Action and Limit Level observed at A2, a review of monitoring data has been undertaken and our observations are as follows,

1. At A2, it is observed that half of the sampling events throughout the 24-hours monitoring period, the H_2S concentration at A2 is higher than at Source (SPS);
2. Also, at Sample 3 and 4, the H_2S concentration at A2 is 31-44% higher than at Source (SPS);
3. Under the above observations, it is considered that the Source (SPS) is not the major contributor to H_2S concentration at A2 during Sample 3 and 4, and thus the exceedance at A2 is not project related.

In addition, a review of site observation throughout the whole monitoring period have been undertaken. As reported by the monitoring personnel, no significant odour was recorded at Source (SPS). Therefore, through the result of monitoring data review together with the site observation, it is considered that the exceedance at A2 is not project related.

Since the exceedance at A2 is not project related, therefore, no remedial actions have been recommended. Still, the Incident Report on Action Level or Limit Level Exceedance is prepared and provided in **Appendix E**.

3.3.1 Weather Condition during Impact Monitoring

The weather condition during the impact odour monitoring event was mainly fine and wind was mainly mild to moderate.

4 Summary of Complaints

4.1 Summary of Complaints

There was no complaint received by ET in relation to the environmental impact received from TMA54SPS operation commencement to end of the 2nd impact monitoring event.

5 Conclusions and Recommendations

5.1 Conclusion and Recommendations

The 2nd impact odour monitoring was carried out on 18 - 19 February 2020.

Odour monitoring was conducted at three monitoring stations and the Source. A 15-minute H_2S concentration was measured every 3 hours for a duration of 24 hours. All monitoring equipment used were properly calibrated and have valid calibration certificates.

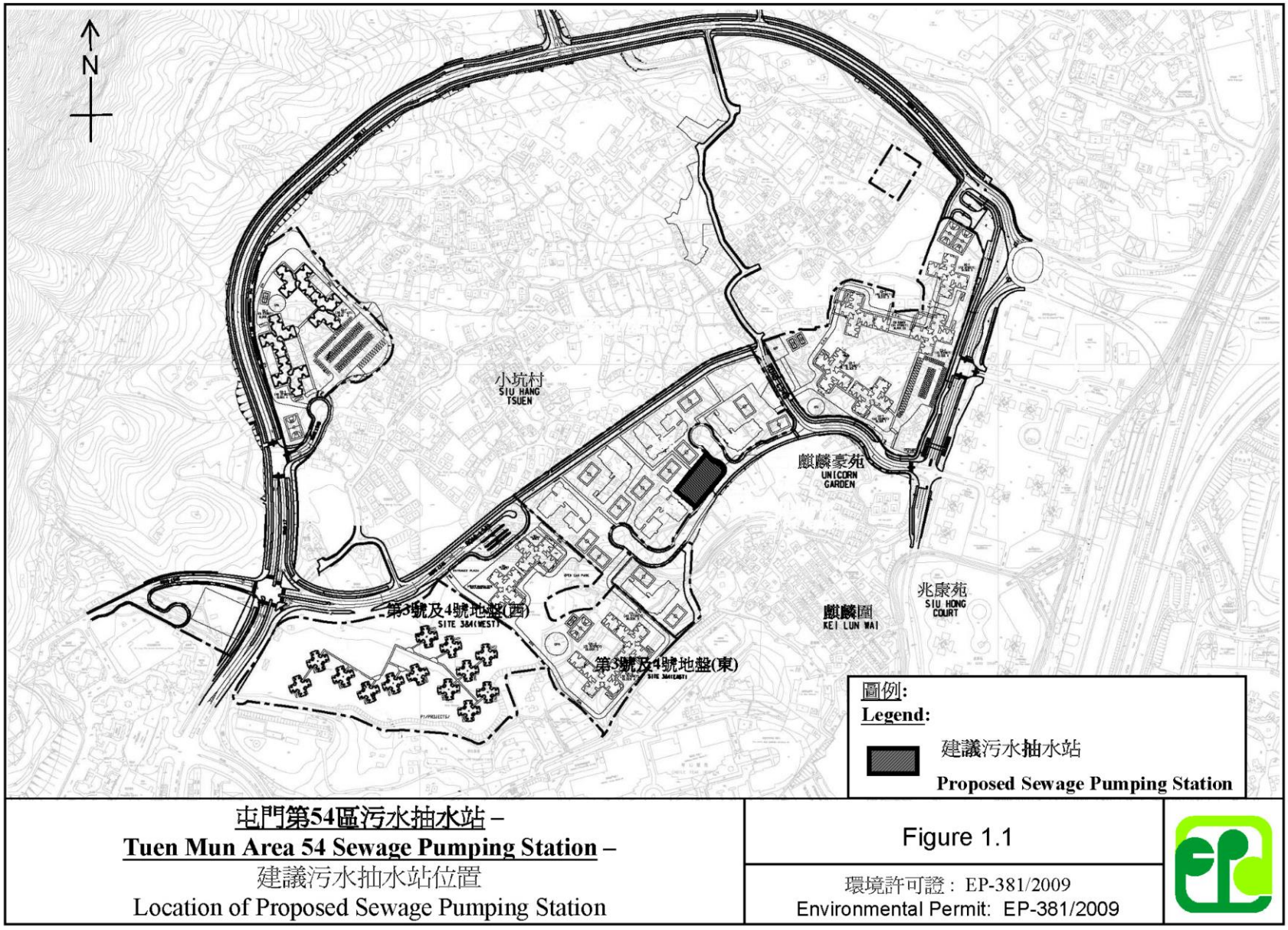
With reference to Section 3.2.2 of the First Baseline Monitoring Report (Reporting of the first impact odour monitoring event from 26 to 27 November 2019), Single-Tiered Conservative Approach is adopted for interpretation of the impact monitoring results. No exceedance of Action and Limit Level was observed at monitoring station A1 and A5, except at monitoring station A2, the 24-hour average H_2S concentration is 2.6 ppb, exceeding the Action and Limit Level which is 2.3 ppb and 2.5 ppb respectively. Based on the monitoring data review and site observation during monitoring period, it is considered that the exceedance at A2 is not project related. The weather during the 2nd impact monitoring was generally fine and wind was mild to moderate.

No complaints were received by ET in relation to the environmental impact received from TMA54SPS operation commencement to end of the 2nd impact monitoring event.

Figures

Figures

Figure1.1: Layout Plan



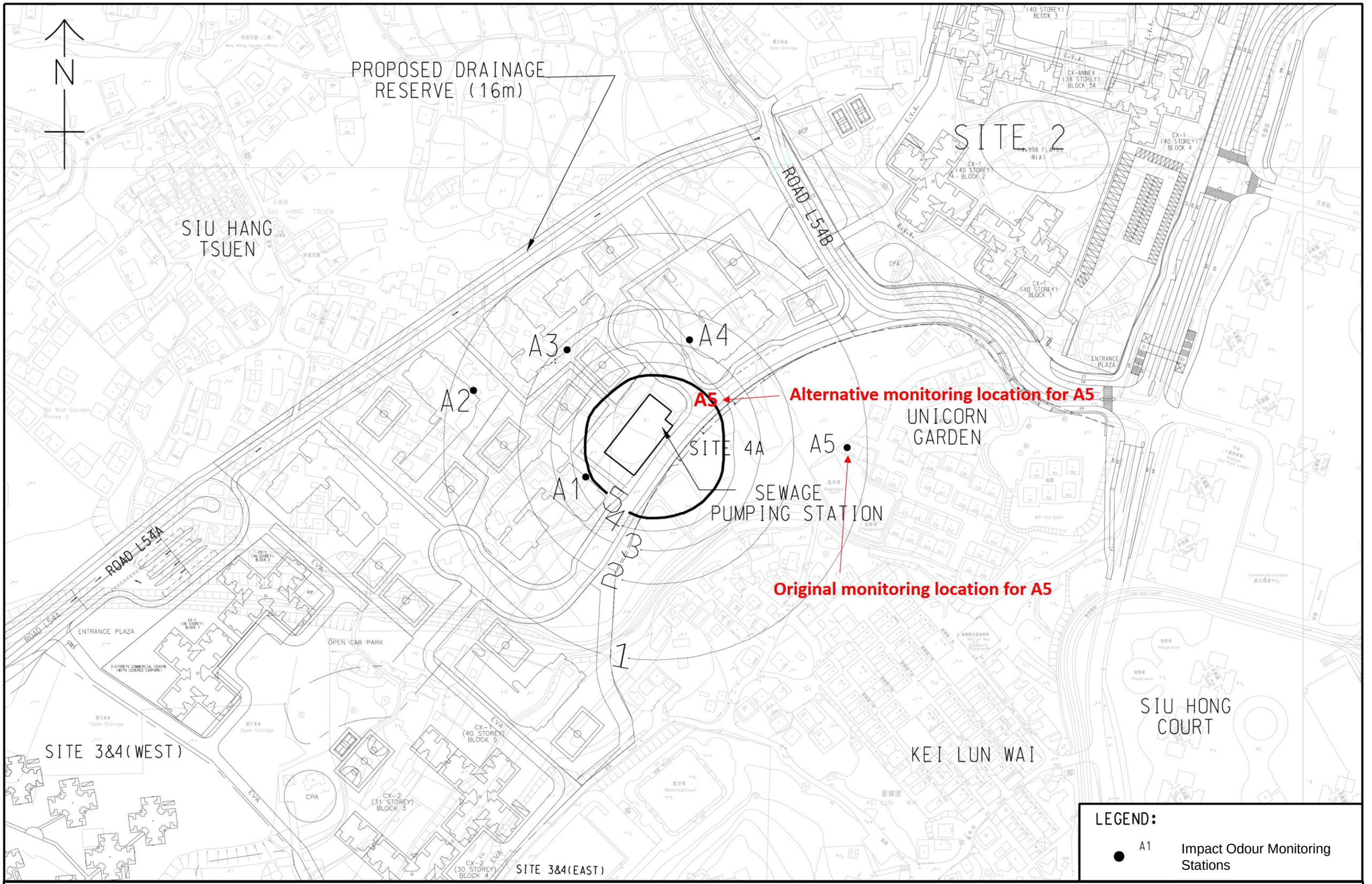


Figure 2.1 Locations of Impact Odour Monitoring Stations

Appendices

A. Project Organisation

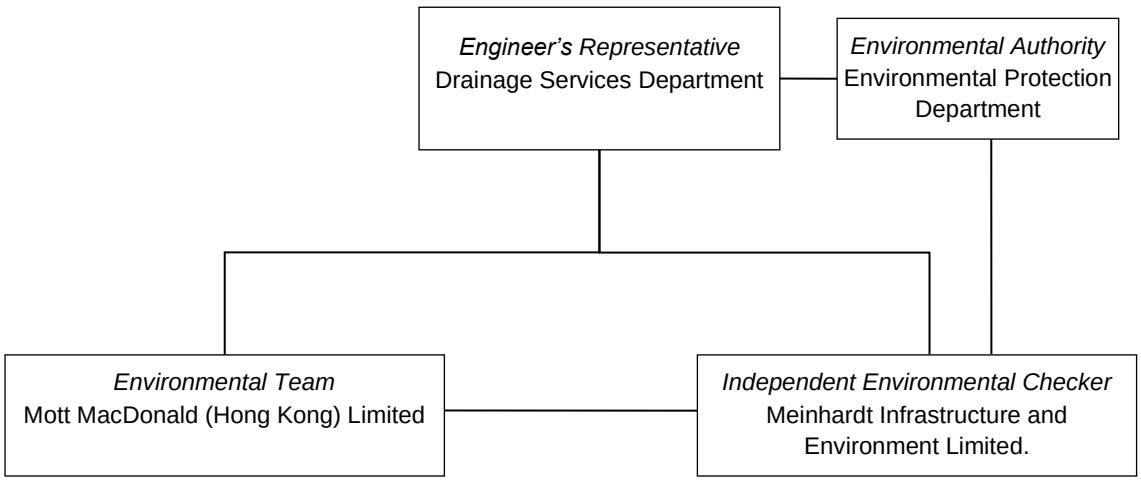


Table A.1: Contact Information

Company / Department	Position	Name	Telephone / Mobile
Drainage Services Department	Engineer's Representative	Mr. Lui Chun-lung, Sam	2594 7306
Meinhardt Infrastructure and Environment Limited	Independent Environmental Checker	Mr. Chiu Wai Kwan	2859 5881
Mott MacDonald (Hong Kong) Ltd.	Environmental Team Leader	Ir Thomas Chan	2828 5967

B. Method Statement of Odour Impact Monitoring

MOTT MACDONALD

Provision of Environmental Team (ET) Services for Tuen Mun Area 54 Sewage Pumping Station

Method Statement of Odour Impact Monitoring

September 2019

Drainage Services Department

This Method Statement of Odour Impact Monitoring for Tuen Mun Area 54 Sewage Pumping Station has been reviewed, certified by the Environmental Team Leader (ETL) and verified by the Independent Environmental Checker (IEC).

Certified by:

Ir Thomas Chan
Environmental Team Leader (ETL)
Mott MacDonald Hong Kong Limited

Date: 30 October 2019

Verified by:

Wai Kwan CHIU
Independent Environmental Checker (IEC)
Meinhardt Infrastructure and Environment Limited

Date: 4 Nov 2019

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Drainage Services Department

Provision of Environmental Team (ET) Services for Tuen Mun Area 54 Sewage Pumping Station

Method Statement of Odour Impact Monitoring

September 2019

Contents

1 Introduction

1.1 Background

In November 2018, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Quotation Ref. DEMP/2018/04 to undertake the duties of Environmental Team (ET) as specified in the Environmental Monitoring and Audit (EM&A) Manual and the EP in relation to the odour impact monitoring for the 12-month operation Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS).

1.2 Purpose of the Method Statement

With reference to Section 2.53 of the EM&A Manual (AEIAR-122/2008), Hydrogen Sulphide (H_2S) monitoring programme shall be conducted in the first year upon commissioning of TMA54SPS. This method statement presents the methodology and monitoring requirements for the odour impact monitoring according to the EM&A Manual (AEIAR-122/2008).

1.3 Structure of the Method Statement

The structure of the method statement is as follows:

- Section 1 - Background, purpose and the structure of the proposal;
- Section 2 - Monitoring requirements of odour impact monitoring; and
- Section 3 - Conclusion.

1.4 Abbreviation

The following abbreviations are used in this method statement:

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
IEC	Independent Environmental Checker
EM&A	Environmental Monitoring and Audit
H_2S	Hydrogen Sulphide
MMHK	Mott MacDonald Hong Kong Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station

2 Monitoring Requirements

2.1 Background

H_2S is one of the main components of odour emissions, which can serve as a surrogate indicator for sewage odours. During commissioning of TMA54SPS, measurements of H_2S concentrations at source and at the selected ASRs are required. This is to indicate whether the odour concentration would be higher or lower than the baseline condition. The odour level at sources and meteorological data shall be obtained as reference information for the analysis of the exceedance event.

The site measurements of the baseline odour monitoring have been conducted in December 2016, March 2017, August 2017 and February 2018. Taking into account the locations of potential representative sensitive receivers in the vicinity of TMA54SPS during its first year of commissioning, the ET proposed and the IEC agreed to adopt alternative odour monitoring stations (A1 to A4) for the baseline odour monitoring, while the monitoring station of A5 remained unchanged. The measurements were taken from a height of 2m above ground level. The Baseline Odour Monitoring Report has been prepared to present the methodology and the measurement results of the baseline odour monitoring. It also established the Action Levels for the operational phase odour impact monitoring in accordance with Table 2.4 of the Final EM&A Manual of the approved EIA of "Tuen Mun Area 54 Sewage Pumping Station" (TMA54SPS) (hereafter known as EM&A Manual). The Report, with IEC's verification, was submitted to EPD for agreement on 9 April 2018. EPD expressed no objection to the Baseline Odour Monitoring Report on 16 May 2018.

With reference to the EM&A Manual, an impact monitoring of H_2S measurements shall be conducted in the first year of operation upon commissioning of TMA54SPS (i.e. construction of TMA54SPS was substantially completed in March 2018). The monitoring measurement shall be conducted by the ET at the same monitoring stations and levels as in the baseline period (as presented in Table 3-1 of the Baseline Odour Monitoring Report). Further to discussions between DSD and EPD in the past few months, a new arrangement for odour monitoring locations and level of measurement for the impact odour monitoring has been established. As it was necessary to deal with some of the major technical issues (e.g. review of H_2S measurement method, monitoring locations and level of measurement, etc) for the impact odour monitoring, the commencement of the monitoring exercise would be deferred from March 2018 to October 2019. The scheduling of the monitoring programme as well as the new locations of monitoring stations and level of measurement would be discussed in the latter part of this method statement.

2.2 Monitoring Equipment

2.2.1 Monitoring Equipment

Portable H_2S analyser, type Jerome 631-X H_2S, or equivalent will be used for H_2S sampling. The analyser fulfils the following requirements:

- able to measure H_2S concentration in the range of 1ppb to 50ppm, with resolution of 1ppb;
- operates within a temperature range of 0 to 40^{o}C, at an air flow rate of 0.15 L/min; and
- with built-in suction pump to draw air sample and passed through a gold film sensor.

The H_2S concentration is measured by the analyser through drawing a grab air sample by built-in suction pump of a portable H_2S analyser and passed across a gold film sensor.

2.2.2 Conservative Approach on Reading Interpretation

According to the analyser technical specifications as attached in **Appendix A**, it is noticed that the equipment sensitivity is 0.003ppm H_2S, while the detection range is 3 ppb (0.003ppm) – 50 ppm in four graduated ranges. To cope with the uncertainty of reading below 3ppb, a conservative approach on reading interpretation will be adopted.

During the odour impact monitoring, for readings below 3ppb, it will be recorded as in **Table 2.1**.

Table 2.1: Conservative Approach on Reading Interpretation for Readings Below 3ppb

Reading Shown on Analyser	Reading to be Recorded
0 ppb	0.5 ppb
1 ppb	1.5 ppb
2 ppb	2.5 ppb

2.3 Monitoring Parameters, Frequency and Duration

A 15-min H_2S concentration will be measured every 3 hours for duration of 24 hours at the agreed monitoring locations and level of measurement, including at the exhausted vent pipe from deodorizing unit. Monitoring will not be conducted on rainy days.

Besides, hourly meteorological data including temperature, wind speed and direction during the sampling period will be obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station.

Appendix B shows a sample of Air Quality (H_2S) Monitoring Data Record Sheet.

2.4 Impact Odour Monitoring

In accordance with Section 2.34 of the EM&A Manual, H_2S measurements will be taken at source and outside the premises of the identified ASRs for the impact odour monitoring. As discussed between DSD and EPD, new arrangements for odour monitoring locations and level of measurement for the impact odour monitoring have been established.

Monitoring locations for ASRs and the source are presented in the following paragraphs.

2.4.1 Monitoring Locations for ASRs

For the baseline odour monitoring, it was conducted at the original monitoring location for A5 as given in the EM&A Manual, and the alternative monitoring locations for A1 to A4 which were agreed with the IEC and CEDD and approved by EPD. The measurements were taken from a height of 2m above ground level at the agreed monitoring locations. A plan showing the odour monitoring locations for the baseline odour monitoring is given in **Appendix C.**

However, EPD raised that the odour monitoring stations and level of measurement for the impact odour monitoring should be further reviewed based on the latest site development and locations of potential representative sensitive receivers in the vicinity of TMA54SPS. Having reviewed, the odour measurement for the impact odour monitoring would be taken at a height of 10m above ground level, which is the predicted worst level of the receivers as stated in the EM&A Manual. A truck mounted working platform would be employed for the odour measurement at a height of 10m above ground level. As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently

located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As advised by LandsD (attached in **Appendix D**), the private land resumption (for A3 and A4) are planned to be made in July 2020, while the private land (for A5) will not be resumed. As the monitoring station "A5" which falls within the boundary of private open car park, DSD approached the car park company staff in person in March 2019 to see whether they could give permission for the ET to conduct the odour monitoring at 10m high by using a truck-mounted lifting platform in their car park. However, they turned down our request with a verbal response that any activities other than car parking were not allowed in the car park. As such, the alternative location of odour monitoring station for A5 should be proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station “A5” should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, we propose that a new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1st phase will include the odour monitoring at the locations A1, A2 and new A5, while A3 and A4 will be included in the 2nd phase after the completion of private land resumption in July 2020. A plan showing the proposed locations of odour monitoring stations for the impact odour monitoring is attached in **Appendix E**.

2.4.2 Monitoring at Source

H_2S measurements will be taken at the exhaust vent pipe from the deodourizing unit to obtain H_2S concentrations at source. The selected location is shown in **Appendix F.**

2.5 Monitoring Programme

As stipulated in Section 2.53 of the EM&A Manual, the H_2S monitoring will be conducted every three months for the first year of operation for TM54SPS. However, due to some major technical issues (e.g. review of H_2S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring will be directly compared with that obtained in the baseline odour monitoring without any adjustments/ air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TM54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 2.2**.

Regarding the above requirements, a tentative monitoring programme is shown in **Table 2.3**.

Table 2.2: Action and Limit Levels for Air Quality (Operation Phase)

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)
H_2S	A1	2.5	2.5
	A2	2.3	2.5
	A3	2.5	2.5
	A4	2.5	2.5
	A5	2.5	2.5
Incidents of odour complaints	-	Any incidence of odour complaint received through the Odour Complaint Register	Two or more complaints through the Odour Complaint Register within three months

Note: (1) Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

Table 2.3: Tentative Monitoring Programme

For 1st phase impact odour monitoring at A1, A2 and new A5:

	1st Monitoring Event	2nd Monitoring Event	3rd Monitoring Event	4th Monitoring Event
Monitoring Dates	November 2019	February 2020	May 2020	August 2020

For 2nd phase impact odour monitoring at A3 and A4:

	1st Monitoring Event	2nd Monitoring Event	3rd Monitoring Event	4th Monitoring Event
Monitoring Dates	August 2020	November 2020	February 2021	May 2021

3 Conclusion

Overall, the impact odour monitoring will be implemented in accordance with the recommendations of the approved EIA report (AEIAR-122/2008). The impact odour monitoring will be split into 2 phases. The first monitoring events under the 1st phase and 2nd phase are tentatively scheduled for November 2019 and August 2020, respectively. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TMA54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months).

Appendices

Appendix A Technical Specification of Jerome X631 0003 H2S Analyzer

Jerome X631 0003 Gold Film Hydrogen Sulphide Analyzer
Technical Specifications

Resolution:	0.001 ppm
Detection Range:	3 ppb (0.003 ppm) – 50 ppm in four graduated ranges
Sensitivity:	0.003ppm H_2S
Precision:	5% relative standard deviation
Accuracy:	Range 0: ± 0.003ppm at 0.050ppm H2S Range 1: ± 0.03ppm at 0.50ppm H2S Range 2: ± 0.3ppm at 5.0ppm H2S Range 3: ± 2ppm at 25ppm H2S
Operating Environment:	0 – 40°C Non-Condensing, Non-Explosive
Response Time-Sample Mode:	10 to 50 ppm (Range 3): 13 seconds 1.0 to 10.0 ppm (Range 2): 16 seconds 0.10 to 1.00 ppm (Range 1): 25 seconds 0.001 to 0.100 ppm (Range 0): 30 seconds
Response Time-Survey Mode:	10 to 50 ppm (Range 3): 3 seconds 1.0 to 9.9 ppm (Range 2): 6 seconds 0.10 to 0.99 ppm (Range 1): 15 seconds 0.001 to 0.099 ppm (Range 0): 20 seconds
Flow Rate:	150 ± 10 ml/min (0.15 ± litres/min)
Power Requirements:	100-120 V~, 50/60 Hz, 1 A or 220-240 V~, 50/60 Hz, 1 A
Fuse:	F1A 250V, 5mm X 20mm
Internal Battery Pack:	Rechargeable nickel cadmium
Case Construction:	Aluminium alloy
Dimensions:	33 cm L x 15 cm W x 10 cm H (13" L x 6" W x 4" H)
Weight:	3.18 kilos (7 pounds)
Digital Meter Display:	Liquid crystal display (LCD)
Data Output:	1. RS-232 Serial, Baud Rate 1200 for use with data logger, and/or Jerome® communication program. 2. RS-232 Serial data format with 0 & 20mA current logic levels; Baud Rate 1200 (special industrial applications) and Analog 20 mA output.

Appendix B Sample of Air Quality (H_2S) Monitoring Data Record Sheet

APPENDIX B Air Quality (H_2S) Monitoring Data Record Sheet

General Information					
Monitoring Location					
Date					
Weather					
Monitoring Results					
Sample No.	**Time**	**Wind Speed**	**Wind Direction**	**Temperature**	***Level (ppb)***
Sample 1	Start:				
	Stop:				
Sample 2	Start:				
	Stop:				
Sample 3	Start:				
	Stop:				
Sample 4	Start:				
	Stop:				
Sample 5	Start:				
	Stop:				
Sample 6	Start:				
	Stop:				
Sample 7	Start:				
	Stop:				
Sample 8	Start:				
	Stop:				
Other Observations					

Name & Designation Signature Date

Recorded by:

Checked by:

Appendix C Plan Showing the Odour Monitoring Locations for the Baseline Odour Monitoring

APPENDIX C: PLAN SHOWING THE ODOUR MONITORING LOCATIONS FOR THE BASELINE ODOUR MONITORING

Appendix D Advice on the Programme of Private Land Resumption from Lands Department

☐ Urgent ☐ Return receipt ☐ Sign ☐ Encrypt ☐ Mark Subject Restricted ☐ Expand personal&public groups

Re: Equiry on Land Use Status (Nearby Tuen Mun Area 54 Sewage Pumping Station)

12/07/2019 10:17

From: TW CHOI/LAO/LANDSD/HKSARG@LANDSD
To: Chun Lung LUI/E&MP/DSD/HKSARG@DSD
Serial No.:

Dear Sam,

Please be advised that for Land Nos.1, 2 and 4 as shown at our LSP, the tentative land reversion date is 4/2020 and land clearance date (site handover to CEDD) is 7/2020.

Thank you.

Best Regards,
Jessica T.W. CHOI
LE/SD, DLO/TM
Tel: 2451 3310

Chun Lung LUI	Dear Jessica, We spoke. Grateful for your a...	2019/07/12 上午 10:03:49

From: Chun Lung LUI/E&MP/DSD/HKSARG@DSD
To: TW CHOI/LAO/LANDSD/HKSARG@LANDSD,
Date: 2019/07/12 上午 10:03
Subject: Re: Equiry on Land Use Status (Nearby Tuen Mun Area 54 Sewage Pumping Station)

Dear Jessica,

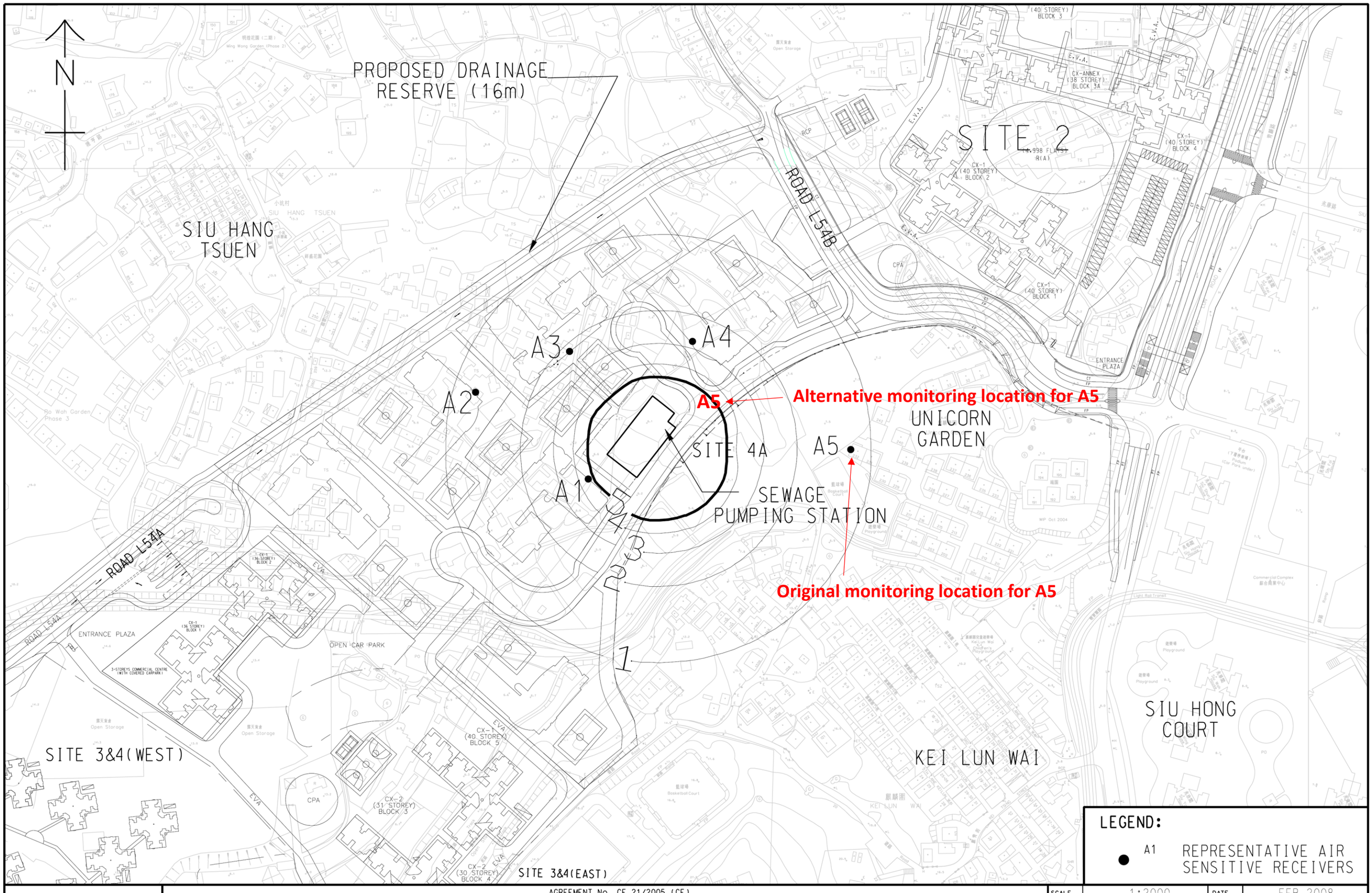
We spoke. Grateful for your advice on the tentative land resumption schedule for Land No. 1, No. 2 and No. 4 as indicated in the attached LSP. Many thanks.

Best Regards,

LUI Chun-lung, Sam
EME/P1/2, E&MP, DSD
Office: 2594 7306
Mobile: 6070 0441

TW CHOI	Dear Sam, Preceding email refers.	04/06/2019 15:38:51
Chun Lung LUI	Dear Ms. CHOI, We spoke. Grateful if you c...	2019/06/04 上午 11:03:45

Appendix E Plan Showing the Proposed Locations of Odour Monitoring Stations for the Impact Odour Monitoring



LEGEND:

● A1 REPRESENTATIVE AIR SENSITIVE RECEIVERS

MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

AGREEMENT No. CE 21/2005 (CE)
FORMATION, ROADS AND DRAINS IN AREA 54, TUEN MUN - PHASES 1 AND 2 -
ENVIRONMENTAL, TRAFFIC AND DRAINAGE IMPACT ASSESSMENT REVIEW - INVESTIGATION
ADDITIONAL SERVICE No.2 - ENVIRONMENTAL IMPACT ASSESSMENT FOR TUEN MUN AREA 54 SEWAGE PUMPING STATION

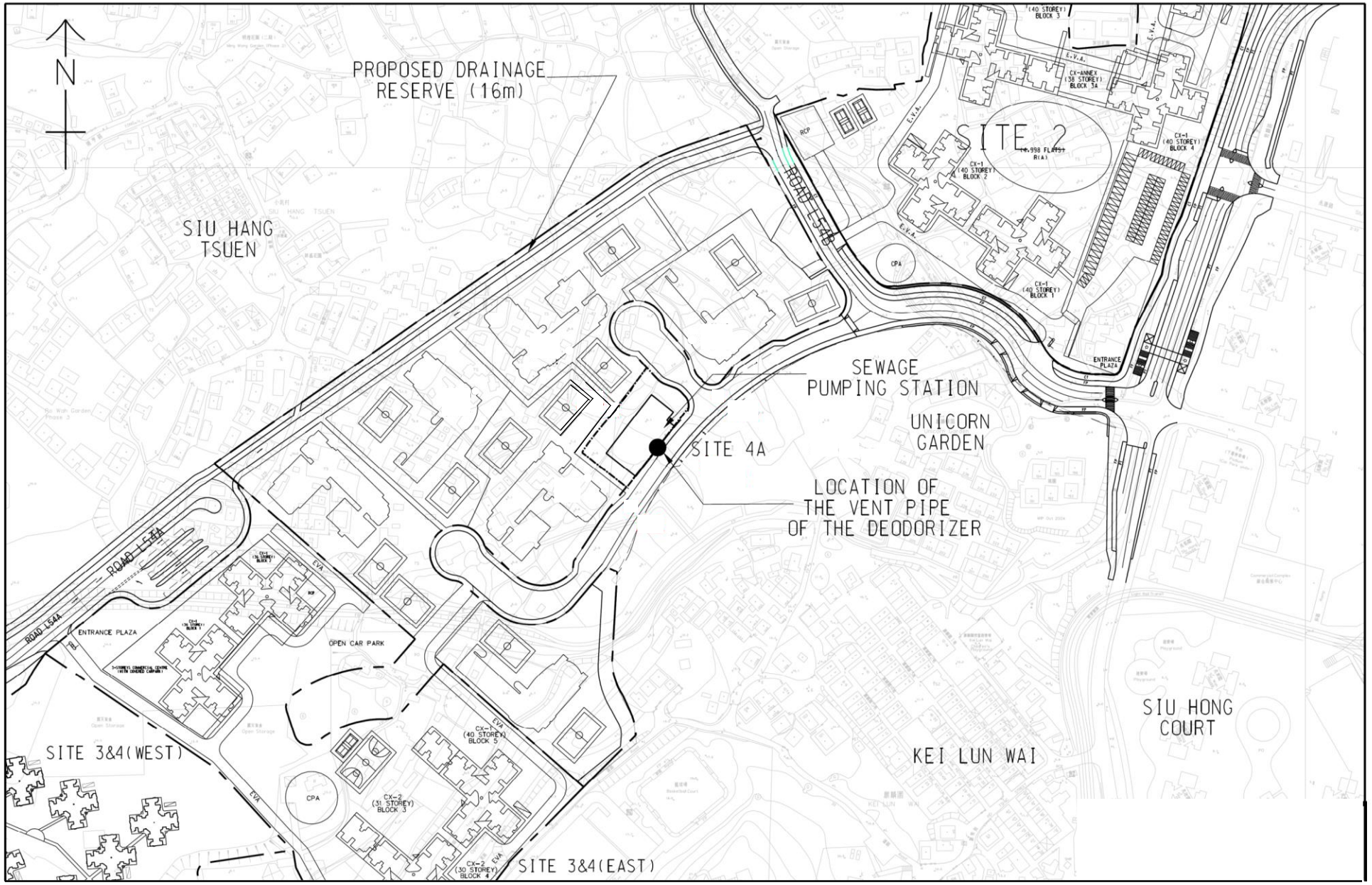
CONTOURS OF ODOUR CONCENTRATION (OU/5-sec avg) AT 10m ABOVE GROUND - MITIGATED SCENARIO

SCALE	1:2000	DATE	FEB 2008
CHECK		DRAWN	SWKY
JOB No.	60021938	DRAWING No.	3.3
		REV	-


Unicorn Garden
A1
A5
Tuen Mun Area 54 SPS
A2
A4
A3
Road L54B
Road L54A

Appendix F Monitoring Location for Exhaust Vent Pipe from the Deodourizing Unit

APPENDIX F: MONITORING LOCATION FOR EXHAUST VENT PIPE FROM THE DEODOURIZING UNIT



mottmac.hk

C. Event and Action Plan for Air Quality (Odour)

Table C.1: Event/Action Plan for Air Quality Monitoring (Operational Phase)

EVENT	ACTION		
	ET	IEC	ER (DSD)
Exceedance of Action level	1. Identify source/ reason of exceedance; 2. Inform IEC and ER(DSD); 3. Carry out investigation to identify the source/reason of exceedance or complaints. Investigation shall be completed within 1 week and advise the findings to IEC and DSD; 4. Repeat measurement to confirm finding after rectification work.	1. Check with ET and ER(DSD) on the operating activities and implementation of odour mitigation measures; 2. Discuss with ER(DSD) on the possible remedial actions; 3. Advise the ER(DSD) on the effectiveness of the proposed remedial measures; 4. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Rectify any unacceptable practice; 3. Amend working methods as required; 4. Implement amended working methods.
Exceedance of Limit level	1. Notify IEC, ER(DSD) and EPD; 2. Identify source of odour; 3. Increase monitoring frequency; 4. Carry out investigation to identify the source/reason of exceedance. Investigation shall be completed within 1 week and advise the findings to IEC and ER(DSD); 5. Arrange meeting with IEC and ER to discuss the remedial actions to be taken; 6. Assess effectiveness of the remedial actions and keep IEC, EPD and ER(DSD) informed of the results.	1. Check with ET and ER(DSD) on the operating activities and implementation of odour mitigation measures; 2. Review the proposed remedial actions whenever necessary to assure their effectiveness and advise the ER(DSD) accordingly; 3. Supervise implementation of remedial measures.	1. Confirm receipt of notification of exceedance in writing; 2. Rectify any unacceptable practice and amend working methods as required; 3. Formulate remedial actions and inform ET and IEC; 4. Ensure amended working methods and remedial actions properly implemented; 5. If exceedance continues, consider what portion of the work is responsible and stop that portion of work until the exceedance is abated.

D. Technical Reports for the 2nd Impact Odour Monitoring

Second Operation Phase Odour Impact Monitoring Report

Impact Odour Monitoring - H_2S Measurement for Tuen Mun Area 54 Sewage Pumping Station | Hong Kong

0118/19/ED/0336 01 | 20 February 2020

For review

Mott Macdonald Hong Kong Limited

Executive Summary

Fugro Technical Services Limited (FTS) has been appointed by Mott MacDonald Hong Kong Limited, the Project Environmental Team (ET) of Tuen Mun Area 54 Sewage Pumping Station (TMA54SPS) to undertake the operation phase impact odour monitoring for the project.

This is the second monitoring report for the Odour Impact Monitoring of TMA54SPS, prepared by Fugro Technical Services Limited for submission to Mott MacDonald Hong Kong Limited.

This report presents the results obtained from the second operation phase impact odour monitoring carried out from 18 February 2020 to 19 February 2020 during the operation of TMA54SPS.

Exceedances of Action level of 2.3 ppb and Limit Level of 2.5 ppb H_2S concentration at A2 was recorded. As the majority of the monitoring results of A2 were higher than the results and H_2S concentration at A2 during sample 3 and 4 were 31-44% higher than at Source and no significant odour is recorded at the Source (SPS) during site observation, therefore it is considered that the Source SPS is not the major contributor to H_2S concentration at A2 during sample 3 and 4, and thus the exceedance at A2 is not project related.

In this reporting period, there were no records of odour complaint received.

Contents

Appendices

Tables in the Main Text

Abbreviations

ASRs	Air Sensitive Receivers
DSD	Drainage Services Department
LandsD	Lands Department
ET	Environmental Team
EM&A	Environmental Monitoring and Audit
H_2S	Hydrogen Sulphide
MMHK	Mott MacDonald Hong Kong Limited
FTS	Fugro Technical Services Limited
TMA54SPS	Tuen Mun Area 54 Sewage Pumping Station
OU	Odour Unit

1. Introduction

1.1 Background

To cope with a shortfall in flat supply and a rise in housing demand, Tuen Mun Area 54 was identified by the Government as one of the areas having the potential for housing development. Thus, the New Territories West Development Office of Territory Development Department completed the "Planning and Development Study of Potential Housing Site in Area 54, Tuen Mun" in 1999. The Study put forward proposals on housing types, development parameters and planning layouts and assessed the development impacts on transport network, infrastructural capacities and environmental quality.

According to the Review of Tuen Mun and Tsing Yi Sewerage Master Plans, a new sewage pumping station is needed to convey sewage collected from Tuen Mun Area 54 to existing trunk sewers at Ming Kum Road. Other than Tuen Mun Area 54, TMA54SPS will also collect sewage from four recognized villages within Area 54 including Tsz Tin Tsuen, Po Tong Ha, Kei Lun Wai and Siu Hang Tsuen, and the proposed Tuen Mun North Sewage Pumping Station in Area 52. TMA54SPS has a capacity of about 90,000m^3 per day; the design average dry weather flow is approximately 0.32m^3/s.

TMA54SPS is located in the central part of Site 4A of Tuen Mun Area 54, north of Kei Lun Wai, south of Tsz Tin Tsuen and west of Site 2 of Tuen Mun Area 54. Site 4A is zoned "Government, Institution or Community" on the Tuen Mun Outline Zoning Plan No. S/TM/22 and is reserved for school development. **Appendix A** shows the location of TMA54SPS. Construction work for TMA54SPS is substantially completed and commissioning is anticipated in February 2018.

TMA54SPS is a Designated Project under the Environmental Impact Assessment Ordinance (Cap. 449). A study of Environmental Impact Assessment (EIA) has been carried out to evaluate the environmental impacts associated with the project. An EIA Report and an Environmental Monitoring and Audit (EM&A) Manual were approved by the Environmental Protection Department (EPD) on 12 November 2008. An Environmental Permit (EP) No. EP-381/2009 was issued on 4 January 2010 for TMA54SPS to the Civil Engineering and Development Department as the Permit Holder. The EP stipulates that an EM&A programme is required to ensure mitigation measures recommended in the EIA Report and the EM&A Manual are implemented during the construction and operation of TMA54SPS.

1.2 Project Description

FTS was commissioned to carry out operation phase odour impact monitoring for Mott MacDonald Hong Kong Limited for the project of TMA54SPS.

The EIA study of TMA54SPS has identified odour emissions from the sewage pumping station as the main potential air quality impact. To reduce odour emissions from the operation of TMA54SPS, it is recommended in the EIA Report that wet wells and screen chambers, the main

sources of odour, should be enclosed in a building structure. A deodorizing unit should also be installed; in order to treat vented air before it would be discharged into the atmosphere.

Furthermore, odour monitoring is required as per the EM&A Manual prior to and during the initial operation of TMA54SPS. The purpose of the odour impact monitoring is to indicate whether the odour concentration would be higher or lower than the baseline condition.

1.3 Monitoring Arrangement

According to the EM&A Manual, gaseous hydrogen sulphide (H_2S) is one of the main components of odour emissions. Ambient H_2S concentration can serve as a surrogate indicator for sewage odours as it can be readily monitored at the Air Sensitive Receivers (ASRs).

The odour impact monitoring shall be conducted in the first year upon commissioning of TMA54SPS. Odour Impact Monitoring would be conducted every three months for the first year of operation for TMA54SPS. However, due to some major technical issues (e.g. review of H_2S measurement method, monitoring locations and level of measurement, etc), the commencement of the impact odour monitoring was deferred from March 2018 to October 2019. In addition, as discussed between DSD and EPD, measurement results from the impact odour monitoring will be directly compared with that obtained in the baseline odour monitoring without any adjustments / air modelling applied. If all monitoring results are below the limit levels, the impact monitoring will be ceased. If the monitoring results of detected odour monitoring concentration at any ASR is higher than the limit levels due to operation of the TMA54SPS, the odour monitoring will be extended until the odour concentration at the ASR in consecutive 2 times are below the limit levels (once for 3 months). Action and Limit Levels for Air Quality in operation phase are given in **Table 1.1**.

As regards the locations of odour monitoring stations, it is noticed that there are 3 odour monitoring stations selected in the EM&A Manual (i.e. A3-A5) are currently located in private lots which are not accessible for the ET to conduct the impact odour monitoring at a height of 10m above ground level, while the remaining 2 stations (i.e. A1 and A2) fall within CEDD's construction sites (i.e. Government land). As the monitoring station "A5" which falls within the boundary of private open car park, alternative location of odour monitoring station for A5 was proposed. It is noted that the sites on both sides of the road connecting to TMA54SPS are all private land lots, expect that TMA54SPS and the road itself are on government land. The odour monitoring station "A5" should be relocated to somewhere on the road connecting to TMA54SPS. In addition, according to the contours of odour concentrations at 10m above ground, the original location of A5 is within 1 OU zone which is the furthest measurement point from TMA54SPS. As a prudent approach in determine the alternative location of odour monitoring station for A5, the new A5 is situated on the road connecting to TMA54SPS at a location within 4 OU zone which is close to TMA54SPS. In view of the land resumption programme, the impact odour monitoring will be spilt into two phases. The 1st phase will include the odour monitoring at the locations A1, A2 and new A5.

Regarding the above requirements, a tentative monitoring programme is shown in **Table 1.2**.

Table 1.1 Action and Limit Levels for Air Quality (Operation Phase)

Parameter	ASR	Action Level (ppb)	Limit Level (ppb)
H_2S	A1	2.5	2.5
	A2	2.3	2.5
	A5	2.5	2.5
Incidents of odour complaints	-	Any incidence of odour complaint received through the Odour Complaint Register	Two or more complaints through the Odour Complaint Register within three months

Note: Odour complaints are to be handled in accordance with the complaint registration system as mentioned in Section 2.26-2.29 of the EM&A Manual

Table 1.2 Tentative Monitoring Programme

For 1st phase impact odour monitoring at A1, A2 and new A5:

	1st Monitoring Event	2nd Monitoring Event	3rd Monitoring Event	4th Monitoring Event
Monitoring Dates	November 2019	February 2020	May 2020	August 2020

2. Odour Impact Monitoring

2.1 Methodology

The H_2S analyzer, type Jerome 631-X, was used for the impact monitoring. Grab air sample was drawn by built-in suction pump of the analyzer and passed through a gold film sensor. The electrical resistance of the gold film changes according to the change in mass of hydrogen sulphide in the gas sample.

The details of the equipment used for odour impact monitoring is presented in **Table 2.1**

Table 2.1 Equipment for Baseline Odour Monitoring

Equipment	Manufacturer / Model	Serial Number	Sensor Number	Calibration Date	Next Calibration Date
Gold Film Hydrogen Sulphide Analyzer	JEROME X631 0003	2966	19-8-23-S4AS	17 October 2019	16 October 2020

2.2 Sampling Duration

A 15-min integrated gaseous H_2S sample was collected every 3 hours for a period of 24 hours at monitoring locations, in which five readings were recorded at every monitoring station during each 3-hour session. Maximum and minimum H2S levels for each monitoring station were recorded.

2.3 Monitoring Locations

H_2S measurements was taken at the sources and outside the premises of the identified ASRs as shown in **Table 2.2** and **Appendix A** show the descriptions and locations of the H_2S monitoring stations.

Table 2.2 Monitoring Locations

Monitoring Station	Monitoring Location	Description
A1[1]	Planned Secondary School	ASR
A2[1]	Planned Secondary School	ASR
A5[1]	Road connecting to TMA54SPS	ASR
SPS[1]	Exhausted vent pipe of TMA54SP	Source

Note: [1] 1st phase odour impact monitoring.

According to the EM&A Manual, the monitoring was taken at a height of predicted worst level of the receivers in the EIA (10 m ground level). Photos showing the monitoring setup are included in **Appendix B**.

2.4 Quality Assurance / Quality Control

In order to ensure the analyzer is functioning properly, manual sensor regeneration and zero adjustment were performed before each set of odour monitoring.

Calibration of the analyzer is conducted every year at the laboratory of the manufacturer. The calibration certificates for the analyzers are shown in **Appendix F**.

3. Monitoring Results

3.1 Weather Conditions and Other Factors

The second monitoring event for the second phase operation phase odour impact monitoring for TMA54SPS was conducted from 18 February 2020 (approx. 11:00 am) to 19 February 2020 (approx. 10:59 am).

The weather was mainly fine and wind was mainly mild to moderate during the monitoring event. An anemometer was used for measuring wind speed and wind direction presented in the site record in **Appendix D**. Meteorological conditions of 18 February 2020 and 19 February 2020 obtained from the nearest Hong Kong Observatory's Tuen Mun Weather Station are shown in **Appendix G**. Meteorological data was obtained as reference information for the analysis of the exceedance event.

No significant odour sources from the project site were observed during the impact monitoring period.

3.2 Monitoring Results

The monitoring results are summarised in **Table 3.1**. Details of monitoring data are shown in **Appendix C** (24-hour average, maximum and minimum H_2S concentration), **Appendix D** (site record) and **Appendix E** (data logger record).

Table 3.1 Summary of Monitoring Results

Monitoring Station	Monitoring Location	24-hour Average H2S Concentration (ppb)
A1[1]	Planned Secondary School	2.4
A2[1]	Planned Secondary School	2.6
A5[1]	Road connecting to TMA54SPS	2.5
SPS	Exhausted vent pipe of TMA54SP	2.4

Note: [1] Air Sensitive Receiver.

4. Odour Complaint

There were no complaints received in relation to the environmental impact during the reporting period.

5. Conclusion and Recommendations

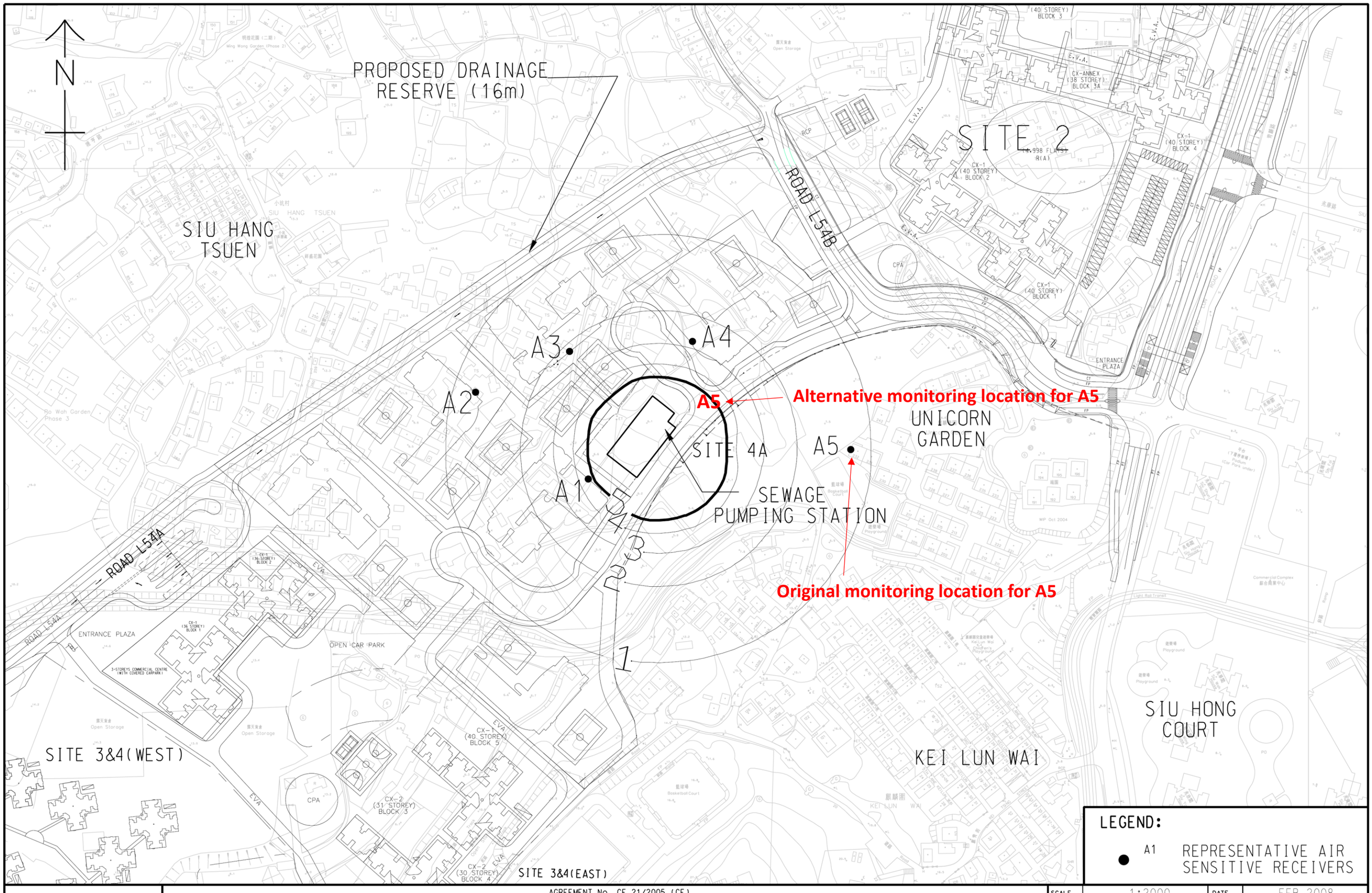
The second monitoring event for the odour impact monitoring was carried out from 18 February 2020 to 19 February 2020.

Odour impact monitoring of H_2S was conducted at four monitoring stations including three Air Sensitive Receivers around TMA54SPS and at Source. Exceedances of Action level of 2.3 ppb and Limit Level of 2.5 ppb H_2S concentration at A2 was recorded.

As the major monitoring results of A2 were higher than the result at Source. Also, at Sample 3 and 4, the H_2S concentration at A2 is 31-44% higher than at Source (SPS) and no significant odour is recorded at Source (SPS). Under the above observations, it is considered that the Source (SPS) is not the major contributor to H_2S concentration at A2 during sample 3 and 4, and thus the exceedance at A2 is not project related.

Appendix A

Monitoring Station



LEGEND:

● A1 REPRESENTATIVE AIR SENSITIVE RECEIVERS

MAUNSELL | AECOM

Maunsell Consultants Asia Ltd

AGREEMENT No. CE 21/2005 (CE)
FORMATION, ROADS AND DRAINS IN AREA 54, TUEN MUN - PHASES 1 AND 2 -
ENVIRONMENTAL, TRAFFIC AND DRAINAGE IMPACT ASSESSMENT REVIEW - INVESTIGATION
ADDITIONAL SERVICE No.2 - ENVIRONMENTAL IMPACT ASSESSMENT FOR TUEN MUN AREA 54 SEWAGE PUMPING STATION

CONTOURS OF ODOUR CONCENTRATION (OU/5-sec avg) AT 10m ABOVE GROUND - MITIGATED SCENARIO

SCALE	1:2000	DATE	FEB 2008
CHECK		DRAWN	SWKY
JOB No.	60021938	DRAWING No.	3.3
		REV	-


Unicorn Garden
Source
A1
A5
Tuen Mun Area 54 SPS
A2
A4
A3
Road L54B
Road L54A

Appendix B

Photographs of Monitoring Stations

A1

A5

A2

Source

Appendix C

Monitoring Results

Monitoring Station	Time Interval	24-hour Average H2S Concentration (ppb) 2nd Event for Phase One Odour Impact Monitoring (18 – 19 February 2020)							
		15-minute integrated average	24-hour average	Maximum	Minimum	Action Level	Exceedance	Limit Level	Exceedance
A1	1100-1400	1.6	2.4	3.2	1.6	2.5	N	2.5	N
	1400-1700	2.4							
	1700-2000	2.8							
	2000-2300	2.8							
	2300-0200	2.0							
	0200-0500	3.2							
	0500-0800	2.4							
	0800-1100	2.2							
A2	1100-1400	1.6	2.6	3.6	1.6	2.3	Y	2.5	Y
	1400-1700	2.4							
	1700-2000	3.6							
	2000-2300	3.2							
	2300-0200	2.0							
	0200-0500	2.4							
	0500-0800	2.4							
	0800-1100	2.8							
A5	1100-1400	1.4	2.5	3.4	1.4	2.5	N	2.5	N
	1400-1700	2.0							
	1700-2000	1.4							
	2000-2300	3.4							
	2300-0200	3.0							
	0200-0500	2.4							
	0500-0800	2.8							
	0800-1100	3.2							
SPS	1100-1400	1.6	2.4	3.6	1.6	N/A	N/A	N/A	N/A
	1400-1700	2.0							
	1700-2000	2.2							
	2000-2300	2.2							
	2300-0200	2.2							
	0200-0500	3.0							
	0500-0800	3.6							
	0800-1100	2.6							

Appendix D

Site Record

Air Quality (H_2S) Monitoring Data Record Sheet

General Information	
Monitoring Station	A1
Date	18/2
Weather	Fine

Monitoring Results

Sample No	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 1148 Stop: 1203	0.3m/s	SW	0.002, 0.002, 0.002 0.001, 0.001
Sample 2	Start: 1436 Stop: 1451	0.2m/s	SW	0.004, 0.002, 0.002 0.002, 0.002
Sample 3	Start: 1739 Stop: 1754	/	/	0.002, 0.002, 0.003 0.005 0.002
Sample 4	Start: 2035 Stop: 2050	0.6m/s	E	0.003, 0.003, 0.003 0.003, 0.002
Sample 5	Start: 2330 Stop: 2345	/	/	0.002, 0.002, 0.002 0.002, 0.002
Sample 6	Start: 0229 Stop: 0244	/	/	0.004, 0.004, 0.003, 0.003, 0.002
Sample 7	Start: 0530 Stop: 0545	0.3m/s	S	0.002, 0.002, 0.002 0.003, 0.003
Sample 8	Start: 0837 Stop: 0852	/	/	0.002, 0.002, 0.003 0.002, 0.002

Other Observations

	Name & Designation	Signature	Date
Recorded by:	Ting Chan To		20/2/2020
Checked by:	Vincent Lu EC		20/02/2020

FUGRO

Air Quality (H_2S) Monitoring Data Record Sheet

General Information	
Monitoring Station	A2
Date	18/12
Weather	Fine

Monitoring Results

Sample No	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: ~~1100~~ 1100	0.2	E	0.002 / 0.002
	Stop: ~~1115~~ 1115			0.002, 0.001, 0.001
Sample 2	Start: 1400	0.1	S	0.003, 0.003, 0.002
	Stop: 1415			0.002, 0.002
Sample 3	Start: 1700	/	/	0.004, 0.004, 0.003
	Stop: 1715			0.004, 0.003
Sample 4	Start: 2000	0.7m/s	SE	0.004, 0.005, 0.003
	Stop: 2015			0.003, 0.003
Sample 5	Start: 2300	/	/	0.002 / 0.002, 0.003
	Stop: 2315			0.002 / 0.001
Sample 6	Start: 0200	/	/	0.002/ 0.002/ 0.002
	Stop: 0215			0.003, 0.003
Sample 7	Start: 0500	/	/	0.003, 0.002, 0.003
	Stop: 0515			0.002, 0.002
Sample 8	Start: 0800	0.3	E	0.003, 0.003, 0.002
	Stop: 0815			0.003, 0.003
Other Observations				

	Name & Designation	Signature	Date
Recorded by:	Ting Chun To		20/12/2020
Checked by:	Vincent Lu EC		20/12/2020

FUGRO

Air Quality (H_2S) Monitoring Data Record Sheet

General Information	
Monitoring Station	A5
Date	18/2
Weather	Fine

Monitoring Results

Sample No	Time	Wind Speed	Wind Direction	Level(ppm)
Sample 1	Start: 1220	0.9m/s	SW	0.002, 0.002, 0.001
	Stop: 1235			0.001, 0.001
Sample 2	Start: 1501	0.3m/s	~~S~~ E	0.002, 0.002, 0.002
	Stop: 1516			0.002 0.002
Sample 3	Start: 1809	/	/	0.002, 0.001 0.002
	Stop: 1824			0.001, 0.001
Sample 4	Start: 2103	/	/	0.004, 0.003, 0.003
	Stop: 2118			0.004, 0.003
Sample 5	Start: 2359	/	/	0.004, 0.003,
	Stop: 0014			0.003, 0.003, 0.002
Sample 6	Start: 0255	/	/	0.003, 0.003, 0.002
	Stop: 0310			0.002, 0.002
Sample 7	Start: 0555	/	/	0.003, 0.003, 0.001
	Stop: 0610			0.003, 0.002
Sample 8	Start: ~~08~~ 0905	/	/	0.003, 0.004, 0.003
	Stop: 0920			0.003, 0.003

Other Observations

	Name & Designation	Signature	Date
Recorded by:	Ting Chan To		20/2/2020
Checked by:	Vincent Lu EC		20/02/2020

FUGRO

Air Quality (H_2S) Monitoring Data Record Sheet

General Information				
Monitoring Station	SPS			
Date	18/2			
Weather	Fine			
Monitoring Results				
Sample No	**Time**	**Wind Speed**	**Wind Direction**	**Level(ppm)**
Sample 1	Start: 1238 Stop: 1253	0.1	SW	0.002, 0.002, 0.002, 0.002, 0.002
Sample 2	Start: 1520 Stop: 1535	/	/	0.002, 0.002, 0.002, 0.002, 0.002
Sample 3	Start: 1830 Stop: 1845	/	/	0.002, 0.003, 0.002, 0.002, 0.002
Sample 4	Start: 2123 Stop: 2138	0.3m/s	SE	0.002, 0.003, 0.002, 0.002, 0.002
Sample 5	Start: 0020 Stop: 0035	/	/	0.003, 0.002, 0.002, 0.002, 0.002,
Sample 6	Start: 0313 Stop: 0328	/	/	0.003, 0.003, 0.003, 0.003, 0.003
Sample 7	Start: 0614 Stop: 0629	0.4m/s	S	0.004, 0.003, 0.003, 0.004, 0.004
Sample 8	Start: 0925 Stop: 0940	0.3m/s	E	0.003, 0.003, 0.003, 0.002, 0.002
Other Observations				

	Name & Designation	**Signature**	**Date**
Recorded by:	Ting Chan To		20/2/2020
Checked by:	Vincent Lu EC		20/02/2020

FUGRO

Appendix E

Data Logger Record

Site Name: Tuen Mun Area 54 SPS
Address: Tuen Mun Area 54 SPS

Sample Location: Inlet
Technician:
Instrument: 631-1, 631-X, SN 2966
Comment:
Date/Time: 二月-20-2020 09:12am
Alarm Setpoint: **0 (ppm)**

	DATE/TIME		RESULT (ppm)		
1	二月-18-2020	11:00:29am	0.002	A2	
2	二月-18-2020	11:03:29am	0.002	A2	
3	二月-18-2020	11:06: 29am	0.002	A2	Session 1
4	二月-18-2020	11:09: 29am	0.001	A2	
5	二月-18-2020	11:12: 29am	0.001	A2	
6	二月-18-2020	11:48:52am	/III		End Of Session
7	二月-18-2020	11:48:52am	0.002	A1	
8	二月-18-2020	11:51:52am	0.002	A1	
9	二月-18-2020	11:54:52am	0.002	A1	Session 1
10	二月-18-2020	11:57:52am	0.001	A1	
11	二月-18-2020	12:00:52pm	0.001	A1	
12	二月-18-2020	12:20:33pm	/III		End Of Session
13	二月-18-2020	12:20:33pm	0.002	A5	
14	二月-18-2020	12:23:33pm	0.002	A5	
15	二月-18-2020	12:26:33pm	0.001	A5	Session 1
16	二月-18-2020	12:29:33pm	0.001	A5	
17	二月-18-2020	12:32:33pm	0.001	A5	
18	二月-18-2020	12:38:42pm	/III		End Of Session
19	二月-18-2020	12:38:42pm	0.002	S	
20	二月-18-2020	12:41:42pm	0.001	S	
21	二月-18-2020	12:44:42pm	0.001	S	Session 1
22	二月-18-2020	12:47:42pm	0.002	S	
23	二月-18-2020	12:50:42pm	0.002	S	
24	二月-18-2020	02:00:21pm	/III		End Of Session
25	二月-18-2020	02:00:21pm	0.003	A2	
24	二月-18-2020	02:03:21pm	0.003	A2	
25	二月-18-2020	02:06:21pm	0.002	A2	Session 2
28	二月-18-2020	02:09:21pm	0.002	A2	
29	二月-18-2020	02:12:21pm	0.002	A2	
30	二月-18-2020	02:36:44pm	/III		End Of Session
31	二月-18-2020	02:36:44pm	0.004	A1	
32	二月-18-2020	02:39:44pm	0.002	A1	
33	二月-18-2020	02:42:44pm	0.002	A1	Session 2
34	二月-18-2020	02:45:44pm	0.002	A1	
35	二月-18-2020	02:48:44pm	0.002	A1	
36	二月-18-2020	03:01:08pm	/III		End Of Session
37	二月-18-2020	03:01:08pm	0.002	A5	
38	二月-18-2020	03:04:08pm	0.002	A5	
39	二月-18-2020	03:07:08pm	0.002	A5	Session 2
40	二月-18-2020	03:10:08pm	0.002	A5	
41	二月-18-2020	03:13:08pm	0.002	A5	
42	二月-18-2020	03:20:22pm	/III		End Of Session
43	二月-18-2020	03:20:22pm	0.002	S	
44	二月-18-2020	03:23:22pm	0.002	S	Session 2
45	二月-18-2020	03:26:22pm	0.002	S	

Site Name: Tuen Mun Area 54 SPS
Address: Tuen Mun Area 54 SPS

Sample Location: Inlet
Technician:
Instrument: 631-1, 631-X, SN 2966
Comment:
Date/Time: 二月-20-2020 09:12am
Alarm Setpoint: **0 (ppm)**

	DATE/TIME		RESULT (ppm)		
46	二月-18-2020	03:29:22pm	0.002	S	Session 2
47	二月-18-2020	03:32:22pm	0.002	S	
48	二月-18-2020	05:00:36pm	/III		End Of Session
49	二月-18-2020	05:00:36pm	0.004	A2	
50	二月-18-2020	05:03:36pm	0.004	A2	
51	二月-18-2020	05:06:36pm	0.003	A2	Session 3
52	二月-18-2020	05:09:36pm	0.004	A2	
53	二月-18-2020	05:12:36pm	0.003	A2	
54	二月-18-2020	05:39:51pm	/III		End Of Session
55	二月-18-2020	05:39:51pm	0.002	A1	
56	二月-18-2020	05:42:51pm	0.002	A1	
57	二月-18-2020	05:45:51pm	0.003	A1	Session 3
58	二月-18-2020	05:48:51pm	0.005	A1	
59	二月-18-2020	05:51:51pm	0.002	A1	
60	二月-18-2020	06:09:24pm	/III		End Of Session
61	二月-18-2020	06:09:24pm	0.002	A5	
62	二月-18-2020	06:12:24pm	0.001	A5	
63	二月-18-2020	06:15:24pm	0.002	A5	Session 3
64	二月-18-2020	06:18:24pm	0.001	A5	
65	二月-18-2020	06:21:24pm	0.001	A5	
66	二月-18-2020	06:30:15pm	/III		End Of Session
67	二月-18-2020	06:30:15pm	0.002	S	
68	二月-18-2020	06:33:15pm	0.003	S	
69	二月-18-2020	06:36:15pm	0.002	S	Session 3
70	二月-18-2020	06:39:15pm	0.002	S	
71	二月-18-2020	06:42:15pm	0.002	S	
72	二月-18-2020	08:00:39pm	/III		End Of Session
73	二月-18-2020	08:00:39pm	0.004	A2	
74	二月-18-2020	08:03:39pm	0.003	A2	
75	二月-18-2020	08:06:39pm	0.003	A2	Session 4
76	二月-18-2020	08:09:39pm	0.003	A2	
77	二月-18-2020	08:12:39pm	0.003	A2	
78	二月-18-2020	08:35:41pm	/III		End Of Session
79	二月-18-2020	08:35:41pm	0.003	A1	
80	二月-18-2020	08:38:41pm	0.003	A1	
81	二月-18-2020	08:41:41pm	0.003	A1	Session 4
82	二月-18-2020	08:44:41pm	0.003	A1	
83	二月-18-2020	08:47:41pm	0.002	A1	
84	二月-18-2020	09:03:16pm	/III		End Of Session
85	二月-18-2020	09:03:16pm	0.004	A5	
86	二月-18-2020	09:06:16pm	0.003	A5	
87	二月-18-2020	09:09:16pm	0.003	A5	Session 4
88	二月-18-2020	09:12:16pm	0.004	A5	
89	二月-18-2020	09:15:16pm	0.003	A5	
90	二月-18-2020	09:23:27pm	/III		End Of Session
91	二月-18-2020	09:23:27pm	0.002	S	Session 4

Site Name: Tuen Mun Area 54 SPS
Address: Tuen Mun Area 54 SPS

Sample Location: Inlet
Technician:
Instrument: 631-1, 631-X, SN 2966
Comment:
Date/Time: 二月-20-2020 09:12am
Alarm Setpoint: **0 (ppm)**

	DATE/TIME		RESULT (ppm)		
92	二月-18-2020	09:26:27pm	0.003	S	
93	二月-18-2020	09:29:27pm	0.002	S	Session 4
94	二月-18-2020	09:32:27pm	0.002	S	
95	二月-18-2020	09:35:27pm	0.002	S	
96	二月-18-2020	11:00:42pm	/III		End Of Session
97	二月-18-2020	11:00:42pm	0.002	A2	
98	二月-18-2020	11:03:42pm	0.002	A2	
99	二月-18-2020	11:06:42pm	0.003	A2	Session 5
100	二月-18-2020	11:09:42pm	0.002	A2	
101	二月-18-2020	11:12:42pm	0.001	A2	
102	二月-18-2020	11:30:29pm	/III		End Of Session
103	二月-18-2020	11:30:29pm	0.002	A1	
104	二月-18-2020	11:33:29pm	0.002	A1	
105	二月-18-2020	11:36:29pm	0.002	A1	Session 5
106	二月-18-2020	11:39:29pm	0.002	A1	
107	二月-18-2020	11:42:29pm	0.002	A1	
108	二月-18-2020	11:59:58pm	/III		End Of Session
109	二月-18-2020	11:59:58pm	0.004	A5	
110	二月-19-2020	00:02:58am	0.003	A5	
111	二月-19-2020	00:05:58am	0.003	A5	Session 5
112	二月-19-2020	00:08:58am	0.003	A5	
113	二月-19-2020	00:11:58am	0.002	A5	
114	二月-19-2020	00:20:33am	/III		End Of Session
115	二月-19-2020	00:20:33am	0.003	S	
116	二月-19-2020	00:23:33am	0.002	S	
117	二月-19-2020	00:26:33am	0.002	S	Session 5
118	二月-19-2020	00:29:33am	0.002	S	
119	二月-19-2020	00:32:33am	0.002	S	
120	二月-19-2020	02:00:28am	/III		End Of Session
121	二月-19-2020	02:00:28am	0.002	A2	
122	二月-19-2020	02:03:28am	0.002	A2	
123	二月-19-2020	02:06:28am	0.002	A2	Session 6
124	二月-19-2020	02:09:28am	0.003	A2	
125	二月-19-2020	02:12:28am	0.003	A2	
126	二月-19-2020	02:29:20am	/III		End Of Session
127	二月-19-2020	02:29:20am	0.004	A1	
128	二月-19-2020	02:32:20am	0.004	A1	
129	二月-19-2020	02:35:20am	0.003	A1	Session 6
130	二月-19-2020	02:38:20am	0.003	A1	
131	二月-19-2020	02:41:20am	0.002	A1	
132	二月-19-2020	02:55:08am	/III		End Of Session
133	二月-19-2020	02:55:08am	0.003	A5	
134	二月-19-2020	02:58:08am	0.003	A5	
135	二月-19-2020	03:01:08am	0.002	A5	Session 6
136	二月-19-2020	03:04:08am	0.002	A5	
137	二月-19-2020	03:07:08am	0.002	A5	

Site Name: Tuen Mun Area 54 SPS
Address: Tuen Mun Area 54 SPS

Sample Location: Inlet
Technician:
Instrument: 631-1, 631-X, SN 2966
Comment:
Date/Time: 二月-20-2020 09:12am
Alarm Setpoint: **0 (ppm)**

	DATE/TIME		RESULT (ppm)		
138	二月-19-2020	03:13:17am	/III		End Of Session
139	二月-19-2020	03:13:17am	0.003	S	
140	二月-19-2020	03:16:17am	0.003	S	
141	二月-19-2020	03:19:17am	0.003	S	Session 6
142	二月-19-2020	03:22:17am	0.003	S	
143	二月-19-2020	03:25:17am	0.003	S	
144	二月-19-2020	05:00:47am	/III		End Of Session
145	二月-19-2020	05:00:47am	0.003	A2	
146	二月-19-2020	05:03:47am	0.002	A2	
147	二月-19-2020	05:06:47am	0.003	A2	Session 7
148	二月-19-2020	05:09:47am	0.002	A2	
149	二月-19-2020	05:12:47am	0.002	A2	
150	二月-19-2020	05:30:24am	/III		End Of Session
151	二月-19-2020	05:30:24am	0.002	A1	
152	二月-19-2020	05:33:24am	0.002	A1	
153	二月-19-2020	05:36:24am	0.002	A1	Session 7
154	二月-19-2020	05:39:24am	0.003	A1	
155	二月-19-2020	05:42:24am	0.003	A1	
156	二月-19-2020	05:55:07am	/III		End Of Session
157	二月-19-2020	05:55:07am	0.003	A5	
158	二月-19-2020	05:58:07am	0.003	A5	
159	二月-19-2020	06:01:07am	0.003	A5	Session 7
160	二月-19-2020	06:04:07am	0.003	A5	
161	二月-19-2020	06:07:07am	0.002	A5	
162	二月-19-2020	06:14:32am	/III		End Of Session
163	二月-19-2020	06:14:32am	0.004	S	
164	二月-19-2020	06:17:32am	0.003	S	
165	二月-19-2020	06:20:32am	0.003	S	Session 7
166	二月-19-2020	06:23:32am	0.004	S	
167	二月-19-2020	06:26:32am	0.004	S	
168	二月-19-2020	08:00:36am	/III		End Of Session
169	二月-19-2020	08:00:36am	0.003	A2	
170	二月-19-2020	08:03:36am	0.003	A2	
171	二月-19-2020	08:06:36am	0.002	A2	Session 8
172	二月-19-2020	08:09:36am	0.003	A2	
173	二月-19-2020	08:12:36am	0.003	A2	
174	二月-19-2020	08:37:44am	/III		End Of Session
175	二月-19-2020	08:37:44am	0.002	A1	
176	二月-19-2020	08:40:44am	0.002	A1	
177	二月-19-2020	08:43:44am	0.003	A1	Session 8
178	二月-19-2020	08:46:44am	0.002	A1	
179	二月-19-2020	08:49:44am	0.002	A1	
180	二月-19-2020	09:05:29am	/III		End Of Session
181	二月-19-2020	09:05:29am	0.003	A5	
182	二月-19-2020	09:08:29am	0.004	A5	Session 8
183	二月-19-2020	09:11:29am	0.003	A5	

Site Name: Tuen Mun Area 54 SPS
Address: Tuen Mun Area 54 SPS

Sample Location: Inlet
Technician:
Instrument: 631-1, 631-X, SN 2966
Comment:
Date/Time: 二月-20-2020 09:12am
Alarm Setpoint: **0 (ppm)**

	DATE/TIME		RESULT (ppm)		
184	二月-19-2020	09:14:29am	0.003	A5	Session 8
185	二月-19-2020	09:17:29am	0.003	A5	
186	二月-19-2020	09:25:52am	/III		End Of Session
187	二月-19-2020	09:25:52am	0.003	S	Session 8
188	二月-19-2020	09:28:52am	0.003	S	
189	二月-19-2020	09:31:52am	0.003	S	
190	二月-19-2020	09:34:52am	0.002	S	
191	二月-19-2020	09:37:52am	0.002	S	

Readings:	160
Minimum:	0.001
Maximum:	0.005
Average:	0.00246
SD:	0.00079

Appendix F

Calibration Certificates

3375 N. Delaware Street, Chandler, AZ 85225
800.528.7411 | (f) 602.281.1745 | azic.com

Certification of Instrument Calibration

Guyline (Asia) Ltd
Rm 1611, Eastern Harbour Centre
Quarry Bay,

RMA # 2694299

This is to certify that the Jerome **X631 0003** Gold Film Hydrogen Sulfide Analyzer, Serial Number **2966**, with Sensor Number **19-8-23-S4AS**, was calibrated with standard units traceable to NIST.

Calibration Status as Received: **Out of Calibration**

		Actual		Calibration Gas		Allowable Range
Incoming:	Range 1	0.094	ppm H2S	0.500	ppm H2S	+/- 6%
	RSD %	11.33				<5%
Outgoing:	Range 1	0.518	ppm H2S	0.500	ppm H2S	+/- 6%
	RSD %	2.11				<5%

Calibration Status as Left: **In Calibration**

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 17-Oct-2019 Recalibration Date: 16-Oct-2020

Temperature °F: 70.60 % Relative Humidity: 32.90

Approved By: Jackie Kreitlow Date Approved: 18-Oct-2019
Title: Jackie Kreitlow - Quality Control

Equipment Used:

H2S Calibration Standard: CC-75664 **NIST#:** 1467976
Calibration Date: 25-Sep-2018 **Calibration Date Due:** 25-Sep-2021

Mass Flow Controller B: 124604 **NIST#:** 215457
Calibration Date: 13-Dec-2018 **Calibration Date Due:** 13-Dec-2019

Mass Flow Controller D: 124602 **NIST#:** 215454
Calibration Date: 13-Dec-2018 **Calibration Date Due:** 13-Dec-2019

Digital Multimeter: 74620505 **NIST#:** 7003079
Calibration Date: 05-Apr-2019 **Calibration Date Due:** 05-Apr-2020

Flowmeter: US04I26032 **NIST#:** 1813; 1817; 1796
Calibration Date: 12-Aug-2019 **Calibration Date Due:** 12-Aug-2020

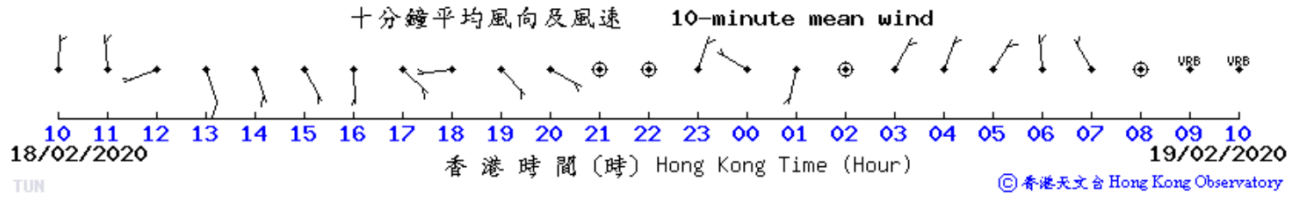
Calibration Procedure Used: 730-0032

AMETEK Brookfield certifies that the above listed instrument meets or exceeds all published specifications and has been calibrated using standards whose accuracy are traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY within the limitations of the Institute's calibration services, or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of self-calibration techniques.
Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and, further, AMETEK Brookfield WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.
As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

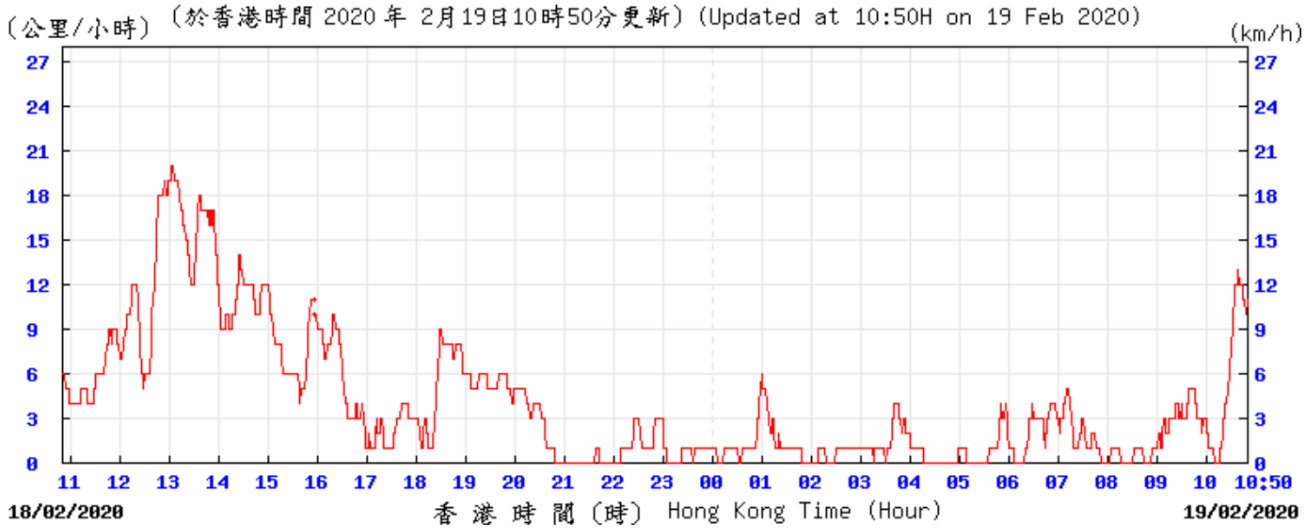
Appendix G

Meteorological Conditions

10-Minute Mean Wind Direction at the nearest Hong Kong Observatory's Tuen Mun Weather Station:



10-Minute Mean Wind Speed at the nearest Hong Kong Observatory's Tuen Mun Weather Station:



Meteorological conditions during the second operation phase odour impact monitoring

Date	Time	Weather Parameters		
		Temperature	Wind Direction	Wind Speed (km/hour)
18 February 2020	1100	16	N	4.0
	1200	17	SW	7.0
	1300	17	SE	18.0
	1400	17	SE	9.0
	1500	18	SE	12.0
	1600	18	S	9.0
	1700	17	SE	1.0
	1800	16	W	3.0
	1900	14	SE	6.0
	2000	13	SE	4.0
	2100	13	--	0.0
	2200	12	--	0.0
	2300	12	N	1.0
	2400	13	NW	1.0
19 February 2020	0100	14	S	6.0
	0200	14	--	0.0
	0300	14	N	1.0
	0400	14	N	1.0
	0500	13	N	1.0
	0600	13	N	1.5
	0700	14	N	2.0
	0800	14	--	0.0
	0900	15	--	1.5
	1000	17	--	3.0

PRESS WEATHER NO. 078 - HOURLY READINGS

****

HOURLY READINGS

AT 11 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 50 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16 DEGREES;
WONG CHUK HANG	16 DEGREES;
TA KWU LING	15 DEGREES;
LAU FAU SHAN	14 DEGREES;
TAI PO	15 DEGREES;
SHA TIN	15 DEGREES;
TUEN MUN	16 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	16 DEGREES;
TSUEN WAN HO KOON	15 DEGREES;
TSUEN WAN SHING MUN VALLEY	16 DEGREES;
HONG KONG PARK	16 DEGREES;
SHAU KEI WAN	16 DEGREES;
KOWLOON CITY	16 DEGREES;
HAPPY VALLEY	17 DEGREES;
WONG TAI SIN	17 DEGREES;
STANLEY	16 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	16 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	17 DEGREES;
TAI MEI TUK	18 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 11:02 HKT ON 18.02.2020

PRESS WEATHER NO. 084 - HOURLY READINGS

****

HOURLY READINGS

AT NOON AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 51 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 5. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16 DEGREES;
WONG CHUK HANG	16 DEGREES;
TA KWU LING	17 DEGREES;
LAU FAU SHAN	15 DEGREES;
TAI PO	15 DEGREES;
SHA TIN	16 DEGREES;
TUEN MUN	17 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	16 DEGREES;
SHEK KONG	17 DEGREES;
TSUEN WAN HO KOON	16 DEGREES;
TSUEN WAN SHING MUN VALLEY	17 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	16 DEGREES;
KOWLOON CITY	17 DEGREES;
HAPPY VALLEY	17 DEGREES;
WONG TAI SIN	16 DEGREES;
STANLEY	16 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	17 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	18 DEGREES;
TAI MEI TUK	19 DEGREES.

NO RAINFALL WAS RECORDED AT THE HONG KONG OBSERVATORY BETWEEN MIDNIGHT LAST NIGHT AND MIDDAY TODAY.

DISPATCHED BY HONG KONG OBSERVATORY AT 12:02 HKT ON 18.02.2020

PRESS WEATHER NO. 092 - HOURLY READINGS

****

HOURLY READINGS

AT 1 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 48 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16 DEGREES;
WONG CHUK HANG	16 DEGREES;
TA KWU LING	17 DEGREES;
LAU FAU SHAN	18 DEGREES;
TAI PO	15 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	17 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	18 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	17 DEGREES;
SHEK KONG	18 DEGREES;
TSUEN WAN HO KOON	17 DEGREES;
TSUEN WAN SHING MUN VALLEY	18 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	16 DEGREES;
KOWLOON CITY	17 DEGREES;
HAPPY VALLEY	16 DEGREES;
WONG TAI SIN	17 DEGREES;
STANLEY	16 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	18 DEGREES;
TAI MEI TUK	19 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 13:02 HKT ON 18.02.2020

PRESS WEATHER NO. 096 - HOURLY READINGS

****

HOURLY READINGS

AT 2 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 48 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 6. THE INTENSITY OF UV RADIATION WAS HIGH.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	18 DEGREES;
LAU FAU SHAN	17 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	17 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	18 DEGREES;
CHEK LAP KOK	18 DEGREES;
TSING YI	18 DEGREES;
SHEK KONG	19 DEGREES;
TSUEN WAN HO KOON	18 DEGREES;
TSUEN WAN SHING MUN VALLEY	19 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	16 DEGREES;
KOWLOON CITY	18 DEGREES;
HAPPY VALLEY	17 DEGREES;
WONG TAI SIN	17 DEGREES;
STANLEY	17 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	19 DEGREES;
TAI MEI TUK	20 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 14:02 HKT ON 18.02.2020

PRESS WEATHER NO. 100 - HOURLY READINGS

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HOURLY READINGS

AT 3 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 18 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 49 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 4. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	19 DEGREES;
LAU FAU SHAN	17 DEGREES;
TAI PO	17 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	18 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	16 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	18 DEGREES;
SHEK KONG	19 DEGREES;
TSUEN WAN HO KOON	18 DEGREES;
TSUEN WAN SHING MUN VALLEY	19 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	18 DEGREES;
HAPPY VALLEY	18 DEGREES;
WONG TAI SIN	17 DEGREES;
STANLEY	17 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	19 DEGREES;
TAI MEI TUK	20 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 15:02 HKT ON 18.02.2020

PRESS WEATHER NO. 104 - HOURLY READINGS

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HOURLY READINGS

AT 4 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 18 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 50 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 3. THE INTENSITY OF UV RADIATION WAS MODERATE.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	19 DEGREES;
LAU FAU SHAN	18 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	18 DEGREES;
TSEUNG KWAN O	17 DEGREES;
SAI KUNG	16 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	18 DEGREES;
SHEK KONG	19 DEGREES;
TSUEN WAN HO KOON	18 DEGREES;
TSUEN WAN SHING MUN VALLEY	18 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	16 DEGREES;
KOWLOON CITY	18 DEGREES;
HAPPY VALLEY	18 DEGREES;
WONG TAI SIN	18 DEGREES;
STANLEY	17 DEGREES;
KWUN TONG	17 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	17 DEGREES;
YUEN LONG PARK	19 DEGREES;
TAI MEI TUK	17 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 16:02 HKT ON 18.02.2020

PRESS WEATHER NO. 118 - HOURLY READINGS

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HOURLY READINGS

AT 5 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 17 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 51 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 1. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	17 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	18 DEGREES;
LAU FAU SHAN	17 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	17 DEGREES;
TUEN MUN	17 DEGREES;
TSEUNG KWAN O	15 DEGREES;
SAI KUNG	16 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	18 DEGREES;
SHEK KONG	18 DEGREES;
TSUEN WAN HO KOON	17 DEGREES;
TSUEN WAN SHING MUN VALLEY	18 DEGREES;
HONG KONG PARK	17 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	17 DEGREES;
HAPPY VALLEY	17 DEGREES;
WONG TAI SIN	18 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	18 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	17 DEGREES;
TAI MEI TUK	16 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 17:02 HKT ON 18.02.2020

PRESS WEATHER NO. 124 - HOURLY READINGS

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HOURLY READINGS

AT 6 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 16 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 60 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.2. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME.
THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	15 DEGREES;
WONG CHUK HANG	16 DEGREES;
TA KWU LING	16 DEGREES;
LAU FAU SHAN	16 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	15 DEGREES;
TUEN MUN	16 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	17 DEGREES;
SHEK KONG	17 DEGREES;
TSUEN WAN HO KOON	16 DEGREES;
TSUEN WAN SHING MUN VALLEY	16 DEGREES;
HONG KONG PARK	16 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	16 DEGREES;
HAPPY VALLEY	16 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	16 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	16 DEGREES;
TAI MEI TUK	15 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 18:02 HKT ON 18.02.2020

PRESS WEATHER NO. 132 - HOURLY READINGS

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HOURLY READINGS

AT 7 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 62 PER CENT.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	14 DEGREES;
LAU FAU SHAN	15 DEGREES;
TAI PO	13 DEGREES;
SHA TIN	14 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	12 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	16 DEGREES;
SHEK KONG	15 DEGREES;
TSUEN WAN HO KOON	12 DEGREES;
TSUEN WAN SHING MUN VALLEY	14 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	14 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	15 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	14 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 19:02 HKT ON 18.02.2020

PRESS WEATHER NO. 138 - HOURLY READINGS
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HOURLY READINGS

AT 8 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 66 PER CENT.

PLEASE BE REMINDED THAT:

THE FIRE DANGER WARNING IS RED AND THE FIRE RISK IS EXTREME. THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	13 DEGREES;
TA KWU LING	13 DEGREES;
LAU FAU SHAN	14 DEGREES;
TAI PO	13 DEGREES;
SHA TIN	14 DEGREES;
TUEN MUN	13 DEGREES;
TSEUNG KWAN O	11 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	14 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	13 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 20:02 HKT ON 18.02.2020

PRESS WEATHER NO. 146 - HOURLY READINGS

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HOURLY READINGS

AT 9 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 66 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	13 DEGREES;
TA KWU LING	12 DEGREES;
LAU FAU SHAN	13 DEGREES;
TAI PO	13 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	13 DEGREES;
TSEUNG KWAN O	11 DEGREES;
SAI KUNG	12 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	14 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	12 DEGREES;
HONG KONG PARK	13 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	13 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	12 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 21:02 HKT ON 18.02.2020

PRESS WEATHER NO. 152 - HOURLY READINGS

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HOURLY READINGS

AT 10 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 68 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	12 DEGREES;
TSEUNG KWAN O	11 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	11 DEGREES;
HONG KONG PARK	13 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	13 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	12 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 22:02 HKT ON 18.02.2020

PRESS WEATHER NO. 156 - HOURLY READINGS

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HOURLY READINGS

AT 11 P.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	15 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	10 DEGREES;
LAU FAU SHAN	11 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	12 DEGREES;
TUEN MUN	12 DEGREES;
TSEUNG KWAN O	12 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	12 DEGREES;
TSUEN WAN SHING MUN VALLEY	12 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 23:02 HKT ON 18.02.2020

PRESS WEATHER NO. 004 - HOURLY READINGS

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HOURLY READINGS

AT MIDNIGHT AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 71 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	15 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	10 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	12 DEGREES;
TUEN MUN	13 DEGREES;
TSEUNG KWAN O	12 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	16 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	13 DEGREES;
TSUEN WAN SHING MUN VALLEY	12 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	16 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	12 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 00:02 HKT ON 19.02.2020

PRESS WEATHER NO. 010 - HOURLY READINGS

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HOURLY READINGS

AT 1 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 74 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	16 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	13 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	15 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	15 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 01:02 HKT ON 19.02.2020

PRESS WEATHER NO. 014 - HOURLY READINGS

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HOURLY READINGS

AT 2 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	12 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	14 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	16 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	13 DEGREES;
TSUEN WAN SHING MUN VALLEY	14 DEGREES;
HONG KONG PARK	15 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	15 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	10 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 02:02 HKT ON 19.02.2020

PRESS WEATHER NO. 018 - HOURLY READINGS

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HOURLY READINGS

AT 3 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	14 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	12 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	15 DEGREES;
SHAU KEI WAN	15 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	15 DEGREES;
WONG TAI SIN	14 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 03:02 HKT ON 19.02.2020

PRESS WEATHER NO. 024 - HOURLY READINGS

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HOURLY READINGS

AT 4 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	12 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	12 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	14 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	14 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	13 DEGREES;
HAPPY VALLEY	15 DEGREES;
WONG TAI SIN	14 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	13 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 04:02 HKT ON 19.02.2020

PRESS WEATHER NO. 032 - HOURLY READINGS

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HOURLY READINGS

AT 5 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 78 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	13 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	13 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	14 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	13 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	14 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	13 DEGREES;
SHAM SHUI PO	13 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	11 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 05:02 HKT ON 19.02.2020

PRESS WEATHER NO. 044 - HOURLY READINGS

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HOURLY READINGS

AT 6 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 14 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 80 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	13 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	12 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	13 DEGREES;
TSEUNG KWAN O	12 DEGREES;
SAI KUNG	12 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	14 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	12 DEGREES;
HONG KONG PARK	13 DEGREES;
SHAU KEI WAN	13 DEGREES;
KOWLOON CITY	12 DEGREES;
HAPPY VALLEY	13 DEGREES;
WONG TAI SIN	13 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	13 DEGREES;
SHAM SHUI PO	13 DEGREES;
KAI TAK RUNWAY PARK	14 DEGREES;
YUEN LONG PARK	12 DEGREES;
TAI MEI TUK	12 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 06:02 HKT ON 19.02.2020

PRESS WEATHER NO. 052 - HOURLY READINGS

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HOURLY READINGS

AT 7 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 14 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 79 PER CENT.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	13 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	12 DEGREES;
SHA TIN	12 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	12 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	14 DEGREES;
SHEK KONG	11 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	13 DEGREES;
SHAU KEI WAN	13 DEGREES;
KOWLOON CITY	12 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	13 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	13 DEGREES;
SHAM SHUI PO	13 DEGREES;
KAI TAK RUNWAY PARK	14 DEGREES;
YUEN LONG PARK	12 DEGREES;
TAI MEI TUK	13 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 07:02 HKT ON 19.02.2020

PRESS WEATHER NO. 060 - HOURLY READINGS

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HOURLY READINGS

AT 8 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 14 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 77 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.1. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	14 DEGREES;
TA KWU LING	11 DEGREES;
LAU FAU SHAN	12 DEGREES;
TAI PO	13 DEGREES;
SHA TIN	13 DEGREES;
TUEN MUN	14 DEGREES;
TSEUNG KWAN O	13 DEGREES;
SAI KUNG	13 DEGREES;
CHEUNG CHAU	13 DEGREES;
CHEK LAP KOK	15 DEGREES;
TSING YI	14 DEGREES;
SHEK KONG	12 DEGREES;
TSUEN WAN HO KOON	11 DEGREES;
TSUEN WAN SHING MUN VALLEY	13 DEGREES;
HONG KONG PARK	14 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	13 DEGREES;
HAPPY VALLEY	14 DEGREES;
WONG TAI SIN	13 DEGREES;
STANLEY	14 DEGREES;
KWUN TONG	13 DEGREES;
SHAM SHUI PO	14 DEGREES;
KAI TAK RUNWAY PARK	14 DEGREES;
YUEN LONG PARK	12 DEGREES;
TAI MEI TUK	14 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 08:02 HKT ON 19.02.2020

PRESS WEATHER NO. 066 - HOURLY READINGS

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HOURLY READINGS

AT 9 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 15 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 76 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 0.3. THE INTENSITY OF UV RADIATION WAS LOW.

PLEASE BE REMINDED THAT:

THE COLD WEATHER WARNING IS NOW IN FORCE. COLD WEATHER MIGHT CAUSE ADVERSE HEALTH EFFECTS. MEMBERS OF THE PUBLIC SHOULD TAKE CARE TO KEEP WARM.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	14 DEGREES;
WONG CHUK HANG	15 DEGREES;
TA KWU LING	14 DEGREES;
LAU FAU SHAN	14 DEGREES;
TAI PO	14 DEGREES;
SHA TIN	15 DEGREES;
TUEN MUN	15 DEGREES;
TSEUNG KWAN O	14 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	15 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	15 DEGREES;
SHEK KONG	14 DEGREES;
TSUEN WAN HO KOON	13 DEGREES;
TSUEN WAN SHING MUN VALLEY	15 DEGREES;
HONG KONG PARK	15 DEGREES;
SHAU KEI WAN	14 DEGREES;
KOWLOON CITY	14 DEGREES;
HAPPY VALLEY	15 DEGREES;
WONG TAI SIN	15 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	14 DEGREES;
SHAM SHUI PO	15 DEGREES;
KAI TAK RUNWAY PARK	15 DEGREES;
YUEN LONG PARK	15 DEGREES;
TAI MEI TUK	15 DEGREES.

BETWEEN MIDNIGHT AND 9 A.M. THE MINIMUM TEMPERATURE WAS 14.0 DEGREES CELSIUS AT THE HONG KONG OBSERVATORY.

DISPATCHED BY HONG KONG OBSERVATORY AT 09:02 HKT ON 19.02.2020

PRESS WEATHER NO. 082 - HOURLY READINGS

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HOURLY READINGS

AT 10 A.M. AT THE HONG KONG OBSERVATORY THE AIR TEMPERATURE WAS 16 DEGREES CELSIUS AND THE RELATIVE HUMIDITY 69 PER CENT.
DURING THE PAST HOUR THE MEAN UV INDEX RECORDED AT KING'S PARK WAS 1. THE INTENSITY OF UV RADIATION WAS LOW.

THE AIR TEMPERATURES AT OTHER PLACES WERE:

KING'S PARK	16 DEGREES;
WONG CHUK HANG	17 DEGREES;
TA KWU LING	16 DEGREES;
LAU FAU SHAN	16 DEGREES;
TAI PO	16 DEGREES;
SHA TIN	16 DEGREES;
TUEN MUN	17 DEGREES;
TSEUNG KWAN O	16 DEGREES;
SAI KUNG	15 DEGREES;
CHEUNG CHAU	17 DEGREES;
CHEK LAP KOK	17 DEGREES;
TSING YI	16 DEGREES;
SHEK KONG	16 DEGREES;
TSUEN WAN HO KOON	15 DEGREES;
TSUEN WAN SHING MUN VALLEY	17 DEGREES;
HONG KONG PARK	16 DEGREES;
SHAU KEI WAN	16 DEGREES;
KOWLOON CITY	17 DEGREES;
HAPPY VALLEY	17 DEGREES;
WONG TAI SIN	17 DEGREES;
STANLEY	15 DEGREES;
KWUN TONG	16 DEGREES;
SHAM SHUI PO	17 DEGREES;
KAI TAK RUNWAY PARK	16 DEGREES;
YUEN LONG PARK	17 DEGREES;
TAI MEI TUK	17 DEGREES.

DISPATCHED BY HONG KONG OBSERVATORY AT 10:02 HKT ON 19.02.2020

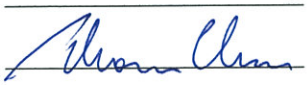
E. Incident Report on Action Level or Limit Level Exceedance

Incident Report on Action Level or Limit Level Exceedance

Project	Tuen Mun Area 54 Sewage Pumping Station
Date	From 18 Feb 2020 (11am) to 19 Feb 2020 (10:59am), Total 24hrs
Time	From 18 Feb 2020 (11am) to 19 Feb 2020 (10:59am), Total 24hrs
Monitoring Location	A2 (Planned Primary School)
Parameter	Odour (H_2S concentration)
Action & Limit Levels	Action Level: 2.3 ppb Limit Level: 2.5 ppb
Measured Level	24-hr average H_2S conc.: 2.6 ppb
Possible reason for Action or Limit Level Non-compliance	1. At A2, it is observed that half of the sampling events throughout the 24-hrs monitoring period, the H_2S conc. at A2 is higher than at source. 2. Also, at Sample 3 & 4, the H_2S conc. at A2 is 31-44% higher than at source. 3. Under the above observations, it is considered that the source is not the major contributor to H_2S conc. at A2 during sample 3 & 4, and thus the exceedance at A2 is not project related.
Actions taken / to be taken	Since the exceedance at A2 is not project related, therefore, no remedial actions is recommended.
Remarks / Other Observations	1. Refer to the site observation at A2 during the monitoring period, no significant H_2S source was identified. 2. Detailed monitoring data will be presented in the Second Operation Phase Odour Impact Monitoring Report and to be deposit to EPD for record.

Prepared by: Thomas CHAN

Designation: Environmental Team Leader (ETL)

Signature: 

Date: 24 Feb 2020

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