



Environmental Monitoring and Audit for the Operation of the Hong Kong Disneyland Resort

Monthly Environmental Monitoring and Audit Report for Operating Month (12 July 2021 – 11 August 2021)

23 August 2021

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Signature Page

23 August 2021

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(12 July 2021 – 11 August 2021)

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EXECUTIVE SUMMARY

Hongkong International Theme Parks Ltd (HKITP) started the operation of the Hong Kong Disneyland Resort on 12 September 2005. This Environmental Monitoring and Audit (EM&A) report presents the EM&A work carried out during the period from 12 July 2021 to 11 August 2021 in accordance with the Operational EM&A Plan (Revision H) and the Environmental Permit EP-01/059/2000/C.

Summary of Major Activities during Reporting Period

The major activities undertaken in the Theme Park were operation of theme attractions, rides, ancillary restaurants, retail shops and servicing facilities. Office work and regular maintenance of machinery within the Theme Park were also undertaken in the Back-of-House Area. A new daytime show (i.e. Follow Your Dreams) has commenced operation since 30 June 2021.

Changes Identified in this Reporting Period

There were no changes in the provision of service and environmental condition.

Summary of Breaches of A/L Levels

No exceedance of the Action or Limit Level for fixed plant noise monitoring was recorded during this reporting period.

Waste Management

HKITP has followed the approved Operational Waste Management Plan (OWMP) (Revision B) for handling of municipal solid waste, chemical waste, grease trap waste, food waste, green waste and fireworks waste. A recycling programme has been implemented to collect various types of recyclables. HKITP has also implemented different waste minimisation measures for preventing waste generation at source.

Environmental Site Inspection

A joint environmental site inspection was carried out on 28 July 2021 by the representatives of the HKITP and the Environmental Team (ET). The restaurants and RCPs of Outdoor Vending Building and Disneyland Hotel were audited and no environmental concern was identified. The environmental performance for the different environmental issues (including air, water, noise, ecology and waste/chemical waste management) complied with environmental requirements and all necessary mitigation measures are properly implemented. No non-compliance in relation to the EIA recommendations was identified during the site inspection in this reporting period.

Environmental Complaint

No environmental complaint was received in this reporting period.

Environmental Non-compliance

No non-compliance associated with the operation of the resort was recorded in this reporting period. No environmental summons was received in this reporting period.

Future Key Issues

Entertainment facilities and associated services within the Theme Park that will be provided in the coming monitoring period are the same as that provided in this reporting period. No potential environmental impacts are anticipated in the coming monitoring period. Due to the opening of the new show on 30 June 2021, the monitoring frequency of the fixed plant noise would be increased accordingly for 1 month until 28 July 2021 in accordance with the approved EM&A plan. Due to the commencement of construction works at the Castle in Hong Kong Disneyland, which is part of the

latest expansion plan of Hong Kong Disneyland Resort, the fireworks show at the Castle has been suspended since 2 January 2018. Fireworks-related noise and air monitoring has also been suspended since 2 January 2018.

1. INTRODUCTION

1.1 Purpose of the Report

This Environmental Monitoring and Audit (EM&A) report summarises the monitoring results and audit findings for the EM&A programme for the operation of the Hong Kong Disneyland Resort (the Resort) during the reporting period from **12 June 2021** to **11 July 2021**.

1.2 Project Information

The project background, duration, site description and management structure are all detailed in Section 2 of the first Monthly EM&A Report, and the organization and lines of communication with respect to environmental matter are shown in Section 1 of the fourteenth Monthly EM&A Report.

1.3 Structure of the Report

Following this introductory section, the remainder of this *Monthly EM&A Report* is organised as follows:

- **Section 1 : Introduction**
details the scope and structure of the report.
- **Section 2 : Environmental Monitoring Requirement**
summarises the monitoring parameters, locations, dates, times, frequencies and durations, monitoring methodology in accordance with the requirement stipulated in the EIA report and Operational EM&A Plan.
- **Section 3 : Monitoring Results**
summarises the monitoring results, weather conditions, QA/QC results and the data analysis for this reporting period.
- **Section 4 : Environmental Site Inspection**
summarises the audit findings of the monthly site inspection undertaken within this reporting period and future key issues.
- **Section 5 : Environmental Non-conformance**
summarises any monitoring exceedances, non-compliances, environmental complaints and environmental summons within this reporting period.
- **Section 6 : Conclusions and Recommendations**

2. ENVIRONMENTAL MONITORING REQUIREMENT

It was recommended in the Environmental Impact Assessment for “*Construction of an International Theme Park in Penny’s Bay of North Lantau and its Essential Associated Infrastructures*” (EIA Report) and stated in the Operational EM&A Plan (Revision H) that operation monitoring associated with Resort operation should be conducted for the following parameters:

- Fireworks Air Quality for the first year of the operation
- Fireworks Noise and Fixed Plant Noise from Resort
- Waste Management
- Terrestrial Ecology (White Bellied Sea Eagles) for a 2–year period when the Theme Park Phase II fireworks displays are launched

The EM&A requirements for these parameters are summarised in this section.

2.1 Fireworks Air Quality

Air quality monitoring during the first operational year was conducted once every 2 weeks in the first 2 months of operation and once every three months thereafter. Samples for RSP, barium, copper, and dioxins were collected over a 24-hour period, the same as in the baseline sampling. A total of eight sets of air monitoring were conducted in the first year of operation and the monitoring results are available on the Operational EM&A web-site for the Resort (<http://www.themeparkatpennysbay-op.com.hk/>). As recommended in the EIA Report, future monitoring programme after the first operational year should be developed based on the monitoring results in the first year of operation.

The Annual Review Report for the first year of operation with respect to air quality and the proposal of the monitoring program for the second year of operation was submitted to the Environmental Protection Department (EPD) on 21 November 2006, and the revised Operational EM&A Plan (Revision B) was approved by the EPD on 26 January 2007. Air quality monitoring during the third year of operation has been reviewed and the revised Operational EM&A Plan (Revision C) was approved by the EPD on 19 December 2007.

The air quality monitoring on the rooftop of Peng Lai Court, Peng Chau previously conducted in accordance with the approved EM&A Plan (Revision C) could no longer be carried out as the Owner’s Corporation of Peng Lai Court refused the ET to conduct any air quality monitoring at the property. The rooftop of Peng Chau Fire Station was identified as the only suitable location for the air quality monitoring but the proposal was rejected by the Fire Services Department. With suitable monitoring locations in Peng Chau exhausted, only the air quality monitoring location at Discovery Bay would remain. As a result of the above, the location for air quality monitoring in the EM&A programme was reviewed. EPD confirmed in its letter of 11 August 2008 that the department had no objection to the termination of air quality monitoring at Peng Lai Court as proposed in the revised Operational EM&A Plan (Revision D). Operational EM&A Plan (Revision E) and Operational EM&A Plan (Revision F) were subsequently approved by the EPD on 21 November 2008 and 9 November 2009, respectively. The Operational EM&A Plan (Revision G) was submitted on 30 March 2012 for EPD’s approval, and was approved on 11 April 2012. The following sections describe the proposed monitoring programme for air quality during the seventh operational year of the Resort.

2.2 Monitoring Locations

The designated air quality monitoring locations are described in **Table 2.1**.

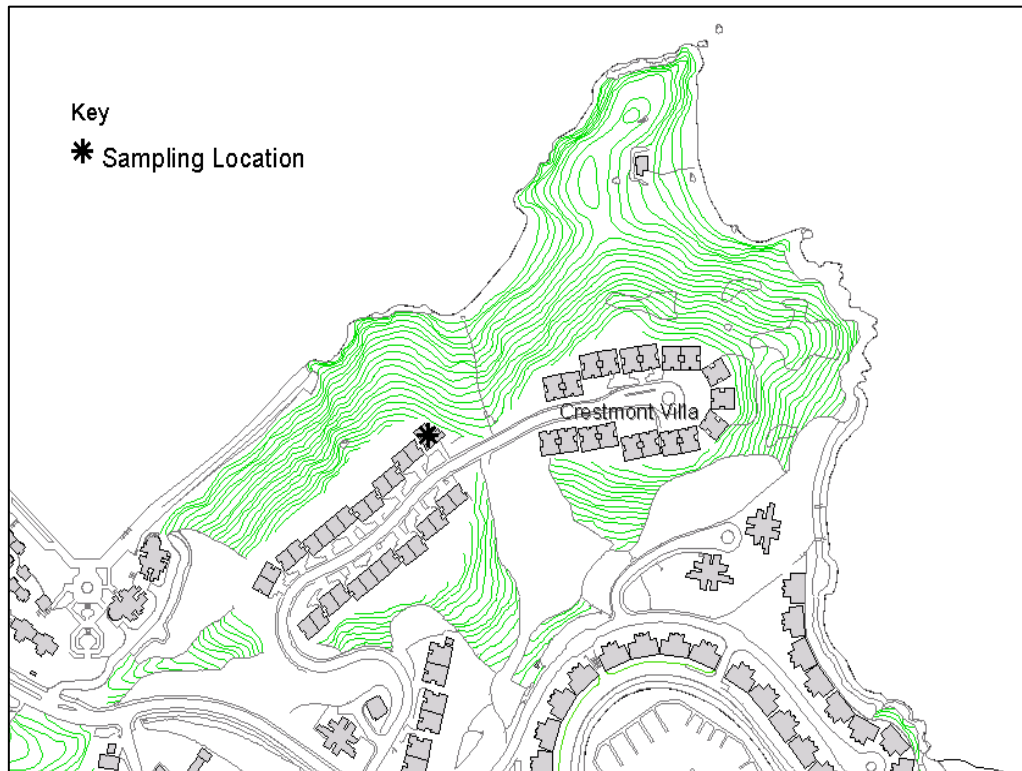
Table 2.1 Air Quality Monitoring Location

| Station ID | Description |
|------------|---|
| AM1 | Rooftop of Crestmont Villa Management Office, Discovery Bay |

AM1 - Crestmont Villa Management Office, Discovery Bay

Crestmont Villa Management Office (AM1) is a single storey high building, located approximately 2.7 km from the main launch area. The monitoring location was set at the rooftop approximately 5 m above the ground level, as shown in **Figure 2-1**.

Figure 2-1 AM1 - Air Quality Monitoring Location at Discovery Bay



2.2.1 Monitoring Parameter and Equipment

Respirable Suspended Particulates

24-hour Respirable Suspended Particulates (RSP) monitoring was performed using an Anderson High Volume Sampler (HVS) equipment with PM₁₀ inlet located at the designated monitoring location in Discovery Bay.

2.2.2 Monitoring Frequency and Duration

Sample for RSP was collected over a 24-hour period in accordance with the schedule as presented in **Table 2.2**.

Table 2.2 Sampling Schedule for Air Quality Monitoring

| Parameters | Sampling Time (hours) | Methodology | Frequency | Locations |
|------------|-----------------------|---------------------|--|-----------|
| RSP | 24 | USEPA Method IO-2.1 | Once every three months from the 2nd year of operation onwards | AM1 |

2.2.3 RSP Sampling and Analytical Method

The measurement of RSP was conducted in accordance with USEPA method IO-2.1 ⁽¹⁾. Air sample was drawn through an 8 x 10 inch glass fibre filter with measured flow rate over duration of 24 hours. The net weight of RSP collected by particulate filter was determined by gravimetric analysis. The level of RSP in $\mu\text{g}/\text{m}^3$ was determined by dividing the total weight of particulate matters collected with the total standard volume of air sample.

A High Volume Sampler (HVS) was calibrated with a certified orifice type calibration kit. The filter was properly labeled and then sent to the laboratory of ALS Technichem (HK) Pty Ltd. The filter was equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25 °C and not variable by more than $\pm 3^\circ\text{C}$; the relative humidity (RH) was < 50% and not variable by more than $\pm 5\%$. A convenient working RH was 40%. Glass fibre filter was conditioned prior to the initial and final weighing.

2.2.4 Compliance Assessment

The Action and Limit levels for 24-hour RSP monitoring are presented in **Table 2.3**.

Table 2.3 Sampling Schedule for Air Quality Monitoring

| Monitoring Station | 24-hour RSP ($\mu\text{g}/\text{m}^3$) | |
|--------------------|--|-------------|
| | Action Level | Limit Level |
| AM1 | 106 | 180 |

2.3 Fireworks Noise and Fixed Plant Noise

During the operational phase, it is recommended that noise monitoring is undertaken at one on-site location and two off-site locations in order to assess fixed plant noise and noise from the fireworks displays respectively. The Operational EM&A Plan was updated (Revision H) for the change in an off-site monitoring location approved by the EPD. The following sections describe the requirements for noise monitoring during the operational phase of the park.

2.3.1 Monitoring Locations

The noise monitoring locations are summarised in **Table 2.4**.

Table 2.4 Noise Monitoring Station

| NSR No. | Identity/Description | Parameters |
|---------|---|----------------------|
| NM1 | Rooftop of Cherish Court, Discovery Bay | Noise from Fireworks |
| NM2_1 | Sea Crest Villa Block D, Peng Chau | Noise from Fireworks |
| NM4 | Rooftop of the Central Maintenance Building | Fixed plant noise |

⁽¹⁾ Reference to <http://www.epa.gov/ttn/amtic/files/ambient/inorganic/mthd-2-1.pdf>

NM1 - Rooftop of Cherish Court, Discovery Bay

Cherish Court is located approximately 2.4 km from the main launch area. The façade measurement location was set at rooftop of Cherish Court approximately 53 m above the ground level, with an unobstructed view over-looking HKDL. The monitoring location of the equipment set up is presented in **Figure 2-2**.

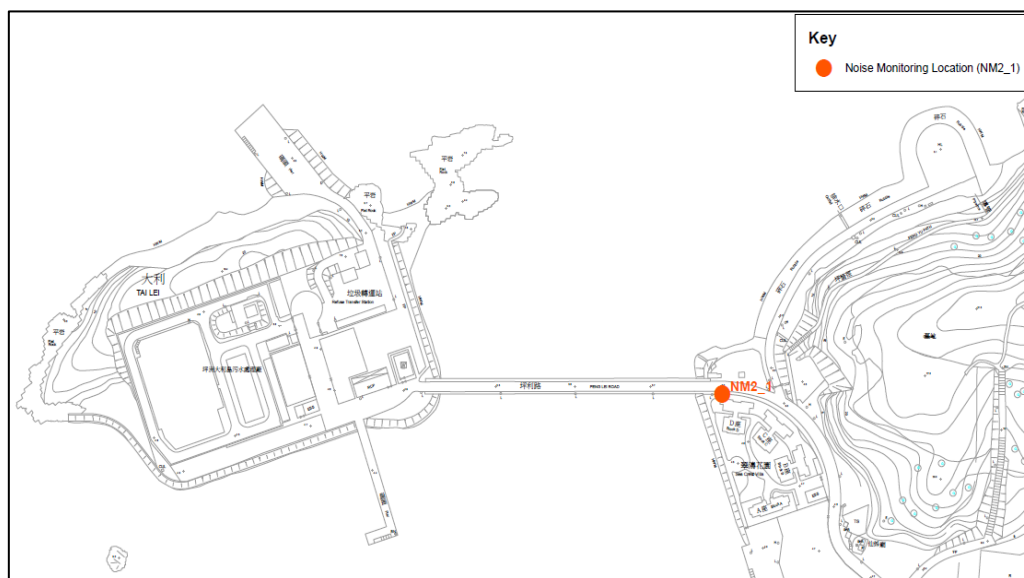
Figure 2-2 NM1 – Rooftop of Cherish Court, Discovery Bay



NM2_1 – Sea Crest Villa Block D, Peng Chau

Sea Crest Villa Block D, Peng Chau is located approximately 2.7 km from the main launch area. The facade measurement location was set at 1.2 m above the ground level with a direct view over looking the HKDL. The monitoring location of the equipment set up is presented in **Figure 2-3**.

Figure 2-3 NM2_1 – Sea Crest Villa Block D, Peng Chau



NM4 – Rooftop of the Central Maintenance Building

The rooftop of the Central Maintenance Building is about 9m above ground levels and will have an unshielded position overlooking the Resort. The monitoring location of the equipment set up is presented in **Figure 2-4**.

Figure 2-4 NM4 – Rooftop of Central Maintenance Building



2.3.2 Monitoring Parameters

Fixed Plant Noise

For fixed plant noise, six consecutive monitoring of $L_{Aeq, 5 \text{ min}}$ reading were carried out to calculate the $L_{Aeq, 30 \text{ min}}$ noise level.

Fireworks Noise

For fireworks noise, a $L_{Aeq, 15 \text{ min}}$ measurement was taken for the 15 minutes timeframe that included all fireworks noise levels. Any significant influences on the measured noise levels were taken into account in accordance with standard acoustical principles and practices. The Corrected Noise Level created by the fireworks was computed based on the Background Noise Level and Measured Noise Level.

2.3.3 Monitoring Frequency and Duration

Following any significant changes to the park's operations or fireworks displays (such as the introduction of a new ride or a change in the type or number of fireworks included within the display), fixed plant noise and fireworks noise monitoring will be undertaken once every six days for one month to ensure compliance with the noise criteria. At all other times, noise monitoring of fixed plant and fireworks noise will be undertaken once a month.

The monitoring programme is presented in **Table 2.5**.

Table 2.5 Sampling Schedule for Noise Monitoring

| Parameters | Sampling Time | Methodology | Frequency | Locations |
|-------------------|--|------------------------------------|--|-------------|
| Firework Noise | L _{Aeq, 15min} before, during and after the firework show within the period of 19:00 to 21:30 hrs | IEC 651:1979 and 804:1985 (Type 1) | <ul style="list-style-type: none"> ■ once every 6 days for the first month of operation, thereafter once every month throughout the operation. ■ monitoring will be undertaken once every six days for one month when there is a new ride or a change in the type or number of fireworks included within the display | NM1 & NM2_1 |
| Fixed Plant Noise | 6 consecutive monitoring of L _{Aeq, 5 min} | IEC 651:1979 and 804:1985 (Type 1) | | NM4 |

2.3.4 Monitoring Methodology

Facade noise measurements were carried out at the monitoring stations. The sound level meters and calibrator used for the noise monitoring, as listed in **Table 2.6** below, complies with IEC 651: 1979 and 804:1985 (Type 1) specification. Both microphones were positioned at 1m from a facade, which have a direct line of sight to the Resort perimeter.

Fixed plant noise monitoring was conducted within non-fireworks hours in accordance with the methodology stated in the Operational EM&A Plan (Revision H).

Table 2.6 Noise Measurement Equipment

| Monitoring Location | Monitoring Equipment |
|--|---|
| NM1 Cherish Court, Discovery Bay | Solo 01 Premium Sound Level Meter 01dB-Stell Cal 21 calibrator |
| NM2_1 Sea Crest Villa Block D, Peng Chau | Rion NL-52 sound level meter Rion NC-75 calibrator |
| NM4 Central Maintenance Building | Rion NL-52 Sound Level Meter Rion NC-75 calibrator |

Noise monitoring was conducted with reference to the calibration and measurement procedures as stated in the Technical Memorandum for the Assessment of Noise from Places other than Domestic Premises, Public Places or Construction Sites (IND-TM). Immediately prior to and following each noise measurement the accuracy of the monitoring equipments was checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements were accepted as the calibration level from before and after the noise measurement agree to within 1.0 dB.

The sound level meters and acoustic calibrator were complied with the IEC 651: 1979 and 804:1985 (Type 1) specification and were calibrated at the frequency of every two years. The relevant calibration certificates are presented in **Appendix A**.

Noise measurements were made without the presence of fog and rain, and with steady wind speed and gusts not exceeding 5ms⁻¹ and 10 ms⁻¹, respectively in accordance with international standards and practices ⁽¹⁾. Broadband measurement of L_{Aeq}, L₁₀, L₉₀, L_{max} and L_{min} has been recorded at 100ms interval.

2.3.5 Compliance Assessment

Fireworks Displays

During monitoring, a detailed log of noise event was undertaken to record down any significant extraneous noise activities. The noise measurement was conducted in accordance with the agreed monitoring methodology which was adopted in the monitoring during trial fireworks displays. Any significant influences on the measured noise levels were taken into account in accordance with standard acoustical principles and practices. The corrected noise level, which will be the noise level

⁽¹⁾ ISO 11819-1:1997 and ISO/FDIS 13472-1:2001

generated by the Fireworks Show at HKDL, will then be compared against the maximum noise level of $L_{eq, 15 \text{ min}} 55\text{dB(A)}$ at NM1 and NM2_1 as recommended in the EIA and stated in the Operational EM&A Plan (Revision H). HKITP will adopt $L_{eq, 15 \text{ min}} 55\text{dB(A)}$ as the Limit Level.

Fixed Plant Noise

As recommended in the EIA and stated in the Operational EM&A Plan (Revision H), HKITP will adopt the maximum fixed plant site perimeter noise level (ie Limit Level) of $L_{Aeq(30 \text{ min})} 75 \text{ dB(A)}$ at the perimeter of the Resort (NM4). HKITP will follow the Action and Limit (A/L) Levels as recommended in EIA which are summarised in **Table 2.7**.

Table 2.7 Action and Limit Levels for Fixed Plant Noise Monitoring

| Parameter | Action Level | Limit Level |
|-------------------|---|--|
| Fixed Plant Noise | When one documented complaint is received from any one of the sensitive receivers | $L_{Aeq(30 \text{ min})} 75 \text{ dB(A)}$ |

2.4 Waste Management

The potential environmental impacts associated with the handling and disposal of waste arising from the resort operations have been assessed in the EIA. In accordance with the requirement stipulated in Condition 3.21 of the EP-01/059/2000/B (EP), an Operation Waste Management Plan (OWMP) shall be submitted to EPD for approval at least one month before the Project commences operation. The OWMP was prepared by the HKITP and submitted to EPD and obtained approval on 12 August 2005. Subsequently, the OWMP (Revision A) was submitted on 30 March 2012 for EPD's approval under Condition 1.10 of the EP, and was approved on 11 April 2012. The OWMP (Revision A) included waste avoidance measures, material recovery and recycling programme and waste management audit framework. The OWMP (Revision B) included an update of additional refuse collection points (RCPs) in new areas of the theme park and was approved by EPD on 26 April 2013. With the implementation of the OWMP (Revision B), the EIA has concluded that minimal environmental impacts are anticipated for the handling, storage, treatment and disposal of waste arising from the Resort operations.

2.4.1 Monitoring and Audit on the Implementation of Mitigation Measures

It is recommended that auditing of each waste stream should be carried out periodically to determine if wastes are being managed in accordance with the approved OWMP (Revision B). The objectives of the waste management monitoring and audit are:

- to ensure the wastes are handled, collected, stored and transferred and disposed of in compliance with the Waste Disposal Ordinance and the relevant regulations, and
- to ensure the waste management plan, in particular the environmental mitigation measures, is implemented properly and effectively.

The monitoring and audit covered the waste handling, recycling and disposal procedures within the Resort, as well as off-site sorting facility and the composting facility. Records identifying the waste arisings, the nature and composition of materials, the quantities of materials reduced, reused, recycled and otherwise recovered were kept for monitoring to check the effectiveness of waste reduction measures implemented. Summary of the waste monitoring and audit results for this reporting period is given in **Section 3.3**.

2.5 Terrestrial Ecology

The EIA summarised that during the operational phase there exists the potential for the White-bellied Sea Eagles to abandon their nesting site due to noise from the laser shows (which will not be undertaken on opening day program) and the fireworks shows. The EIA also stated that "human interference impact identified may be mitigated by the further prohibition of human access during

Project operation by secure fencing of the site”. It was also recommended to extend the monitoring programme to monitor the reaction of these birds to the fireworks shows.

It was agreed between HKITP, CEDD and EPD that monitoring of White-bellied Sea Eagle would be conducted by CEDD and the monitoring results will be distributed to HKITP until completion of Government’s works in the Penny’s Bay Development Area. Construction works for Penny’s Bay Reclamation Stage 2 were completed in February 2008. Monthly terrestrial ecological monitoring by CEDD was terminated after February 2008 with the approval from EPD. The need for the monitoring of White-bellied Sea Eagles by HKITP after completion of CEDD’s works was agreed with EPD on 27 June 2008, and the monitoring of White-bellied Sea Eagles will be conducted for a 2-year period when the Theme Park Phase II fireworks displays are launched.

2.6 Marine Ecology

The EIA concluded that operational impacts to marine ecological resources may occur through disturbances to water quality due to changes in the hydrodynamic regime (note however that the water quality assessment in the EIA predicted “no adverse impacts”). It was also predicted in the EIA that there will be an increase in the number of vessels travelling between Victoria Harbour and Penny’s Bay. The EIA concluded that these vessels will not be travelling at high speed and as the area is not identified as critical habitat to the Indo-Pacific Humpback Dolphin, unacceptable impacts are not predicted with the implementation of mitigation measures.

The EIA proposed a construction/operation dolphin/porpoise monitoring programme be established to evaluate whether the works had any effect on the mammals. It has been agreed between HKITP, CEDD and EPD that monitoring of dolphin/porpoise will be conducted by CEDD and the monitoring results will be distributed to HKITP until completion of Government’s works in the Penny’s Bay Development Area. Dredging activities for Penny’s Bay Reclamation Stage 2 was completed in December 2005. Filling of sand and sorted public fill was also completed on 30 July 2007 and 13 June 2007 respectively. Monthly marine ecological monitoring by CEDD was terminated after December 2007 with the approval from EPD. The need for continued monitoring of marine mammals by HKITP after the completion of CEDD’s works was agreed with EPD on 27 June 2008, and further monitoring of marine ecology (dolphin/porpoise) would be continued for one year starting from the 35th reporting period to the 46th reporting period (inclusive). HKITP has proposed, in consultation with AFCD, to terminate the monitoring of marine mammals after July 2009. The proposal was submitted on 6 August 2009 for EPD’s approval. The Operational EM&A Plan (Revision F) was submitted on 27 October 2009 to EPD for approval, and was approved on 9 November 2009.

3. MONITORING RESULTS

3.1 Air Quality

Due to the commencement of construction works at the Castle in Hong Kong Disneyland, the fireworks show at the Castle has been temporarily suspended from 2 January 2018 onwards. Therefore, air quality monitoring has also been suspended from 2 January 2018. The past air quality monitoring results since the operation of the Hong Kong Disneyland Resort is plotted in **Appendix B**.

3.2 Fireworks Noise and Fixed Plant Noise

Due to the commencement of construction works at the Castle in Hong Kong Disneyland, the fireworks show at the Castle has been temporarily suspended from 2 January 2018 onwards. Fireworks noise monitoring has therefore also been suspended from 2 January 2018 and no fireworks noise monitoring was conducted during the reporting period. The past firework noise monitoring is illustrated in **Appendix C**.

In accordance with the sampling schedule for noise monitoring as presented in **Table 2.5**, one round of fixed plant noise monitoring was conducted during this reporting period. A new daytime show (i.e. Follow Your Dreams) has commenced operation since 30 June 2021. Additional fixed plant noise monitoring is required to be carried out once every six days for one month after the operation of a new attraction (referring to **Section 2.3.3**). Additional fixed plant noise monitoring events were carried out during the reporting period. The fixed plant noise levels measured at the monitoring location are given in **Table 3.1** and graphically presented in **Appendix D** respectively.

No exceedance of the Action or Limit Level of fixed plant noise was recorded at the monitoring station.

Table 3.1 Fixed Plant Noise Monitoring Results

| Location | Date | Time Period, hrs | Measured Noise Levels, dB(A) | | | | |
|------------------------------------|--------------|---------------------|------------------------------|------------------|------------------|-----------------|-----------------|
| | | | L _{Aeq} | L _{min} | L _{max} | L ₉₀ | L ₁₀ |
| NM4 - Central Maintenance Building | 14 July 2021 | 15:15:00 – 15:45:00 | 66.5 | 58.8 | 79.3 | 63.3 | 70.1 |
| | 19 July 2021 | 15:15:00 – 15:45:00 | 58.7 | 52.9 | 81.2 | 55.9 | 61.9 |
| | 23 July 2021 | 15:15:00 – 15:45:00 | 63.4 | 59.0 | 77.0 | 61.4 | 66.2 |
| | 28 July 2021 | 15:15:00 – 15:45:00 | 64.5 | 60.5 | 73.2 | 62.8 | 67.2 |

3.3 Waste Monitoring

HKITP has followed the approved Operational Waste Management Plan (OWMP) (Revision B) on procedures for handling of municipal solid waste, chemical waste, grease trap waste, food waste, green waste and fireworks waste.

Reference has been made to the waste flow tables prepared by waste collectors and the quantities of different wastes collected, disposed of or recycled are summarised in **Table 3.2**.

Apart from the above quantities of waste recycled, HKITP has implemented various waste minimisation measures from the start of operation, which prevented waste generation at source. These contributed to the overall amount of waste “diverted” from landfill disposal. These measures include use of reusable utensils, tableware & trays instead of disposables in some of the fast-food outlets; use of fast-action hand dryers in lieu of paper towels in most public wash room facilities; use of reusable delivery cages, totes and wagons as opposed to wooden pallets and paper cardboard box for distribution of merchandise and food materials from the central distribution center to various outlets

within the Theme Park; use of rechargeable batteries rather than disposable ones wherever possible; and recycle used rechargeable batteries; etc.

Table 3.2 Quantities of Different Waste

| Month / Year | Municipal Solid Waste ^(a) | Recyclable Materials ^(b) | Quantity, tonnes / kg | | | | |
|--------------------------|--------------------------------------|-------------------------------------|---|---------------|-------------------------------|-------------------------------|--------|
| | | | Food and green waste collected for recycling ^(c) | | Wastes Avoided ^(d) | Chemical Waste ^(e) | |
| | | | Food Waste | Green Waste | | Solid | Liquid |
| 12 July – 15 August 2021 | 319.6 tonnes | 53.63 tonnes | 42.81 tonnes | 34.304 tonnes | 5.814 tonnes | 380 kg | 790 L |

Notes:

- Waste disposal reports dated between 12 July 2021 and 15 August 2021 were provided by HKITP's waste management vendor on weekly basis.
- Recyclable materials (paper, cardboard, plastics, metals, used kitchen oil, toner cartridges, electronic wastes and glass beverage bottles) were collected by third party recyclers. Additionally, no hotel amenities (shower gel, shampoo) were donated during the reporting period.
- 41.87 tonnes of food waste was collected by recycler between 12 July 2021 and 15 August 2021, and 945 kg of surplus food was donated during the reporting period. 34,304 kg of green waste was collected for recycling during the reporting period.
- The quantity of wastes avoided in this reporting period is estimated based on a few selected representative measures being implemented which include: the use of reusable containers instead of disposables in the fast food outlets; minimisation of packaging provided for the merchandise items; and the provision of electric hand dryers instead of paper towels in washrooms in the theme park.
- A registered chemical waste collector has been engaged for the collection of chemical wastes for disposal or recycling at licensed facilities.

3.4 Terrestrial Ecology

The need for the monitoring of White-bellied Sea Eagles by HKITP after completion of CEDD's works was agreed with EPD on 27 June 2008, and the monitoring of White-bellied Sea Eagles will be conducted for a 2-year period when the Theme Park Phase II fireworks displays are launched.

3.5 Marine Ecology

The need for continued monitoring of marine mammals by HKITP after the completion of CEDD's works was agreed with EPD on 27 June 2008, and the monitoring of dolphin/porpoise would be continued twice per month for one year starting from the 35th reporting period to the 46th reporting period (inclusive) following the monitoring methodology adopted by CEDD. HKITP has proposed, in consultation with AFCD, to terminate the monitoring of marine mammals after July 2009. The proposal was submitted on 6 August 2009 for EPD's approval. The Operational EM&A Plan (Revision F) was submitted on 27 October 2009 to EPD for approval, and was approved on 9 November 2009.

4. ENVIRONMENTAL SITE INSPECTION

Based on the Operational EM&A Plan (Revision H), site inspection is to be carried out by the ET once per reporting period. A joint environmental site inspection was, therefore, carried out by the representatives of the HKITP and ET on 28 July 2021.

The major activities undertaken in the Theme Park are the operation of theme park attractions, rides, fireworks displays, ancillary restaurants, retail shops and servicing facilities. Office work and regular maintenance of machinery within the Theme Park is also undertaken in the Back-of-House Area.

The environmental performance for the different environmental issues (including air, water, noise, ecology and waste/chemical waste management) complied with environmental requirements and all necessary mitigation measures were properly implemented. The HKITP has implemented environmental mitigation measures and requirements as stated in the EIA Report, the Environmental Permit and Operational EM&A Plan (Revision H). The implementation status of recommended mitigation measures under the EP during this reporting period is summarised in **Appendix E**.

The restaurants and RCPs of Outdoor Vending Building and Disneyland Hotel were audited and no environmental concern was identified during the site inspection in the reporting period.

No non-compliance in relation to the EIA recommendations was identified during the site inspection in this reporting period and therefore no further actions are required. The ET will keep track of the EM&A programme to check compliance with environmental requirements and the proper implementation of all necessary mitigation measures.

4.1 Future Key Issues

Entertainment facilities and associated services within the Hong Kong Disneyland Resort to be provided in the coming monitoring period will be the same as that provided in this reporting period. No potential environmental impacts are anticipated in the coming monitoring period. Due to the commencement of construction works at the Castle in Hong Kong Disneyland, which is part of the latest expansion plan of Hong Kong Disneyland Resort, the fireworks show at the Castle has been suspended since 2 January 2018. Subsequently, fireworks-related noise and air monitoring has also been suspended since 2 January 2018.

5. ENVIRONMENTAL NON-CONFORMANCE

5.1 Summary of Monitoring Exceedance

No monitoring exceedance was recorded in this reporting period.

5.2 Summary of Environmental Complaint

No environmental complaint was received in this reporting period.

5.3 Summary of Environmental Summons and Successful Prosecution

No summons was received in this reporting period.

6. CONCLUSIONS

This Environmental Monitoring and Audit (EM&A) Report presents the EM&A work undertaken during the period from 12 July 2021 to 11 August 2021 in accordance with Operational EM&A Plan (Revision H) and the requirement under Environmental Permit EP-01/059/2000/C.

Monitoring of fixed plant noise was carried out at designated monitoring station during this reporting period and there were no monitoring exceedances recorded in this reporting period.

Waste management procedures recommended in the approved Operational Waste Management Plan (OWMP) (Revision B) were implemented.

The environmental performance for the different environmental issues (including air, water, noise, ecology and waste/chemical waste management) complied with environmental requirements and all necessary mitigation measures were properly implemented. No non-compliance in relation to the EIA recommendations was identified during the site inspection in this reporting period. No complaint or summons was received during this reporting period.

APPENDIX A CALIBRATION CERTIFICATES FOR HVS AND SOUND LEVEL METERS

APPENDIX B GRAPHICAL PRESENTATION OF THE AIR QUALITY MONITORING RESULTS

APPENDIX C GRAPHICAL PRESENTATION OF THE FIREWORKS NOISE MONITORING RESULTS

APPENDIX D GRAPHICAL PRESENTATION OF THE FIXED NOISE MONITORING RESULTS

APPENDIX E SUMMARY OF IMPLEMENTATION STATUS

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| | |
|------------|-----------------|
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