



South East New Territories (SENT) Landfill Extension

Monthly Environmental Monitoring & Audit Report No.7 for July 2019

April 2020

ERM

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South East New Territories (SENT) Landfill Extension

Environmental Certification Sheet EP-308/2008/B and FEP-01/308/2008/B

Reference Document/Plan

Document/Plan to be Certified/Verified:

Monthly Environmental Monitoring & Audit Report No.7

for July 2019 for South East New Territories (SENT) Landfill

Extension

Date of Report:

28 April 2020

Reference EP Condition

EP Condition:

Condition No. 3.4

Four hard copies and one electronic copy of monthly EM&A Report shall be submitted to the Director within 10 working days after the end of the reporting month. The EM&A Reports shall include a summary of all non-compliance (exceedances) of the environmental quality performance limits (Action and Limit Levels). The submissions shall be verified by the IEC. Additional copies of the submission shall be provided to the Director upon request by the Director.

ET Certification

I hereby certify that the above referenced document/plan complies with the above referenced condition of EP-308/2008/B and FEP-01/308/2008/B.

Warch-AT.

Frank Wan,

Environmental Team Leader:

(ERM Hong-Kong, Limited)

Date:

28 April 2020

IEC Verification

I hereby verify that the above referenced document/plan complies with the above referenced condition of EP-308/2008/B and FEP-01/308/2008/B.

W.K. Chiu,

Independent Environmental Checker:

(Meinhardt Infrastructure and

Environment Limited)

Date: 4 May 2020

South East New Territories (SENT) Landfill Extension

Monthly Environmental Monitoring & Audit Report for July 2019

Environmental Resources Management

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Client:		Project No:				
Green Valley Landfill Ltd.		0465169				
		Date:	Date:			
			oril 2020			
This document presents the Monthly EM&A Report No.7 for July 2019 for South East New Territories (SENT) Landfill Extension		Approved by: Auchit				
		Fran Partn	k Wan er			
2	Monthly EM&A Report No.7 (for July 2019) (Table 2.7 & 2.8, Annex F2 & G1 revised)	AL	FW	FW	28 Apr 20	
1	Monthly EM&A Report No.7 (for July 2019) (Table 2.12 revised)	AL	TS	FW	16 Aug 19	
0	Monthly EM&A Report No.7 (for July 2019)	AL	TS	FW	12 Aug 19	
Revision	Description	Ву	Checked	Approved	Date	
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EXECUTIVE SUMMARY

The SENT Landfill Extension (SENTX) forms an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the Hong Kong for the cost-effective and environmentally satisfactory disposal of waste. ERM-Hong Kong, Limited (ERM) is commissioned to undertake the role of Environmental Team (ET) for the construction, operation/restoration and aftercare of SENTX Project ("the Project") in accordance with the requirements specified in the Environmental Permit (EP), updated Environmental Monitoring and Audit (EM&A) Manual, the approved Environmental Impact Assessment (EIA) Report of the Project taking account of the latest design and other relevant statutory requirements. The construction (not including works related to site clearance and preparation) of the Project commenced on 2 January 2019.

This Monthly EM&A report presents the EM&A works carried out during the period from 1 to 31 July 2019 for the Project in accordance with the updated EM&A Manual.

Exceedance of Action and Limit Levels for Air Quality

No exceedance of Action and Limit Levels for construction air quality monitoring was recorded in the reporting period.

Exceedance of Action and Limit Levels for Noise

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

Exceedance of Action and Limit Levels for Surface Water Quality

3 exceedances of the Limit Level for pH and 3 exceedances of the Limit Level Suspended Solids (SS) were recorded for surface water quality impact monitoring in the reporting period. The pH and SS exceedances at DP4 (Future, temporary) on 4 July 2019, pH and SS exceedance at DP4 (Future, temporary) on 18 July 2019 and pH exceedances at DP4 (Future, temporary) on 25 July 2019 were considered not Project-related upon further investigation. The SS exceedance at DP4T (Future, temporary) on 25 July 2019 was found deemed to Project-related activities.

Environmental Complaints, Summons and Prosecutions

There were no notification of summons or prosecution recorded in the reporting period.

One environmental complaint related to dust nuisance was received during the reporting period. Investigation on the environmental complaint was conducted in accordance with the complaint handling process as stated in the Updated EM&A Manual.

Reporting Change

There was no reporting change in the reporting period.

Future Key Issues

Potential environmental impacts arising from the upcoming construction activities in the next reporting period of August 2019 are mainly associated with dust emission from the exposed area and loading and uploading operation of dusty materials and the potential surface water impact in the rainy season.

1 INTRODUCTION

1.1 BACKGROUND

The SENT Landfill Extension (SENTX) forms an integral part in the Strategic Plan in maintaining the continuity of landfill capacity in the Hong Kong for the cost-effective and environmentally satisfactory disposal of waste. The *Environmental Impact Assessment (EIA) Report* and the associated *Environmental Monitoring and Audit (EM&A) Manual* for the construction, operation, restoration and aftercare of the SENTX (hereafter referred to as "the Project") have been approved under the *Environmental Impact Assessment Ordinance (EIAO)* in May 2008 (Register No.: AEIAR-117/2008) (hereafter referred to as the approved EIA Report) and an Environmental Permit (EP-308/2008) (EP) was granted by the Director of Environmental Protection (DEP) on 5 August 2008.

Since then, applications for Variation of an Environmental Permit (No. VEP-531/2017) were submitted to EPD and the Variation of Environmental Permits (EP-308/2008/A and EP-308/2008/B) were granted on 6 January 2012 and 20 January 2017, respectively, as the Hong Kong SAR Government has decided to reduce the scale of the design scheme of SENTX assessed in the approved EIA Report and SENTX will only receive construction waste. In May 2018, a Further Environmental Permit (FEP) (FEP-01/308/2008/B) was granted to the SENTX's contractor, Green Valley Landfill, Limited (GVL).

ERM-Hong Kong, Limited (ERM) and Meinhardt Infrastructure and Environment Limited (Meinhardt) are commissioned to undertake the roles of Environmental Team (ET) and the Independent Environmental Checker (IEC), respectively, to undertake the EM&A activities for the Project in accordance with the requirements specified in the EP, updated EM&A Manual (1), approved EIA Report (2) taking account of the latest design and other relevant statutory requirements.

1.2 PROJECT DESCRIPTION

The SENTX is a piggyback landfill, occupying the southern part of the existing SENT Landfill (including its infrastructure area) and 13 ha of Tseung Kwan O (TKO) Area 137. A layout plan of the SENTX is shown in *Figure 1.1*. Under the latest design, the SENTX has a net void capacity of about 6.5 Mm³ and provides an additional lifespan of about 6 years, commencing operation upon exhaustion of the SENT Landfill. The SENTX will receive construction waste only.

The key implementation milestones of the Project are indicatively summarised in *Table 1.1*. The construction works of the Project commenced on 2 January 2019.

⁽¹⁾ ERM (2018). South East New Territories (SENT) Landfill Extension: Environmental Monitoring & Audit Manual

⁽²⁾ ERM (2007). South East New Territories (SENT) Landfill Extension - Feasibility Study: Environmental Impact Assessment Report

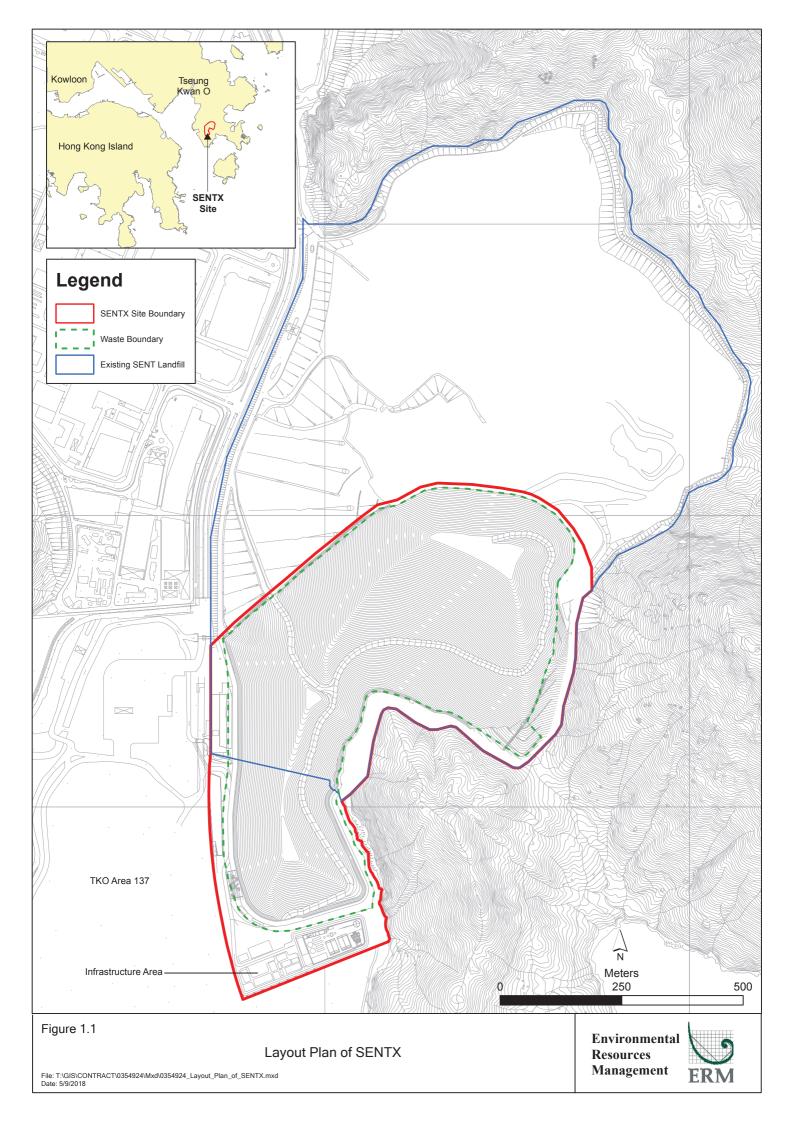


 Table 1.1
 Estimated Key Dates of Implementation Programme

Key Stage of the Project	Indicative Date
Start construction	2 January 2019
Commissioning of new infrastructure facilities	2020
Demolition of existing infrastructure facilities	2021
Start waste intake at SENTX	2021 or upon exhaustion of SENT Landfill
Estimated exhaustion date of SENTX	2027
End of aftercare for SENTX	2057

The major construction works of the SENTX includes:

- Site formation at the TKO Area 137 and the existing infrastructure area at SENT Landfill;
- Construction of surface and groundwater drainage systems;
- Construction of the leachate containment and collection systems;
- Construction of new leachate and landfill gas treatment facilities, site offices, maintenance yards at the new infrastructure area;
- Construction of new pipelines to transfer the leachate and landfill gas
 collected from the existing SENT Landfill to the treatment facilities at the
 new infrastructure area;
- Construction of the site access and new waste reception facilities; and
- Demolition of the facilities at the existing SENT Landfill infrastructure area.

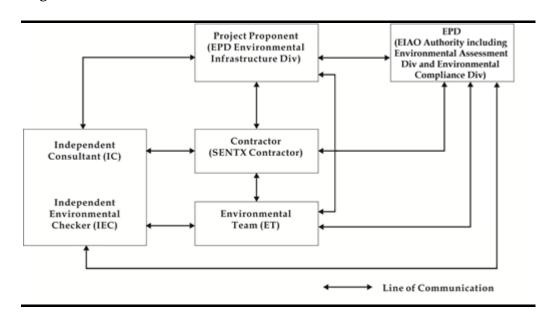
1.3 SCOPE OF THE EM&A REPORT

This is the Monthly EM&A Report for the Project which summarises the key findings of the EM&A programme during the reporting period from 1 to 31 July 2019 for the construction works.

1.4 PROJECT ORGANISATION

The organisation structure of the Project is presented in *Figure 1.2*.

Figure 1.2 Organisation Chart



Contact details of the key personnel are summarised in *Table 1.2* below.

Table 1.2 Contact Information of Key Personnel

Party	Position	Name	Telephone
Contractor	Project Manager	Gary Barnicott	2706 8827
(Green Valley Landfill			
Limited)			
Environmental Team (ET)	ET Leader	Frank Wan	2271 3152
(ERM-Hong Kong, Limited)			
Independent Environmental	IEC	Fredrick Leong	2859 1739
Checker (IEC)			
(Meinhardt Infrastructure			
and Environment Limited)			

1.5 SUMMARY OF CONSTRUCTION WORKS

The programme of the construction is shown in *Annex A*. As informed by the Contractor, the major works carried out in this reporting period include:

- Rebar fixing, concreting and formwork erection for the plinth and control buildings at Landfill Gas Plant area;
- Shotcreting of permanent works at buttress wall area;
- Excavating, removing and replacing unsuitable fill materials;
- Rebar fixing, formwork and concreting to the sediment trap, drop inlet shaft, MHX1, manhole and outlet box culverts;
- Rebar fixing, formwork and concreting to the Leachate Treatment Plant (LTP) area and buildings;

- Rebar, formwork and concreting to the substructure of infrastructure buildings (EPD building, GVL building and Laboratory);
- Construction of perimeter bund for Cell 1X and 2X;
- Installing groundwater pipe works along Eastern perimeter bund; and
- CLP trench works at Area X2.

The implementation schedule of the mitigation measured recommended in the Updated EM&A Manual is presented in *Annex B*.

1.6 SUMMARY OF EM&A PROGRAMME REQUIREMENTS

The status for all environmental aspects are presented in *Table 1.3*. The EM&A requirements remained unchanged during the reporting period.

Table 1.3 Summary of Status for the Environmental Aspects under the Updated EM&A Manual

Parameters	Status
Air Quality	
Baseline Monitoring	The results of baseline air quality monitoring were reported in
· ·	Baseline Monitoring Report and submitted to EPD under EP
	Condition 3.3
Impact Monitoring	On-going On-going
Noise	
Baseline Monitoring	The results of baseline noise monitoring were reported in
	Baseline Monitoring Report and submitted to EPD under EP
	Condition 3.3
Impact Monitoring	On-going On-going
Surface Water Quality	
Baseline Monitoring	The results of baseline surface water quality monitoring were
	reported in Baseline Monitoring Report and submitted to EPD
	under EP Condition 3.3
Impact Monitoring	On-going On-going
Waste Management	
Waste Monitoring	On-going On-going
Landscape and Visual	
Baseline Monitoring	The results of baseline landscape and visual monitoring were
	reported in Baseline Monitoring Report and submitted to EPD
	under EP Condition 3.3
Construction Phase Audit	On-going On-going
Site Environmental Audit	
Regular Site Inspection	On-going
Complaint Hotline and Email	On-going
Channel	
Environmental Log Book	On-going On-going

Taking into account the construction works, impact monitoring of air quality, noise, surface water quality and waste management were carried out in the reporting period. The monitoring schedule of air quality, noise and surface water quality monitoring are provided in *Annex C*.

The EM&A programme also involved environmental site inspections and related auditing conducted by the ET for checking the implementation of the

required environmental mitigation measures recommended in the approved EIA Report and relevant EP submissions. To promote the environmental awareness and enhance the environmental performance of the contractors, environmental trainings and regular environmental management meetings were conducted during the reporting period, which are summarised as below:

- One environmental management meeting was held with the Contractor, ER, ET, IEC and EPD on 11 July 2019; and
- Environmental toolbox trainings on Construction Dust and Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation were provided on 12 July and 19 July 2019 respectively by the Contractor to the workers.

1.7 STATUS OF STATUTORY ENVIRONMENTAL COMPLIANCE WITH THE ENVIRONMENTAL PERMIT

The status of statutory environmental compliance with the EP conditions under the EIAO, submission status under the EP and implementation status of mitigation measures are presented in *Table 1.4*.

Table 1.4 Status of Submissions required under the EP and Implementation Status of Mitigation Measures

EP	Submission/Implementation Status	Status
Condition		
2.3	Management Organisation of Main Construction Companies	Submitted and accepted by EPD.
2.4	Setting up of Community Liaison Group	Community Liaison Group was set up.
2.5	Submission of Detailed Landfill Gas Hazard Assessment Report	Submitted, and accepted by EPD on 10 January 2019.
2.6	Submission of Restoration and Ecological Enhancement Plan	Submitted to EPD on 28 June 2019.
2.7	Setting up of Trial Nursery	To be set up during construction phase.
2.8	Advance Screen Planting	Works commenced on 21 March 2019 and will be completed within 9 months of taking procession of the Project Site (i.e. before September 2019).
2.9	Provision of Multi-layer Composite Liner System	Under implementation.

1.8 STATUS OF OTHER STATUTORY ENVIRONMENTAL REQUIREMENTS

The environmental licenses and permits (including EP, *Water Pollution Control Ordinance* (WPCO) discharge license, registration as a chemical waste producer, and construction noise permit) that are valid in the reporting period are presented in *Table 1.5*. No non-compliance with environmental statutory requirements was identified.

Table 1.5 Status of Statutory Environmental Requirements

Description	Ref No.	Status
Environmental Permit	EP-308/2008	Granted on 5 August 2008
Variation of Environmental Permit	EP-308/2008/A	Granted on 6 January 2012
	EP-308/2008/B	Granted on 20 January 2017
Further Environmental Permit	FEP-01/308/2008/B	Granted on 16 May 2018
Water Discharge License under	Licence No.: WT00033525-	Validity from 27 March
WPCO (Permit Holder: Chun Wo)	2019	2019 to 31 March 2024
Billing Account for Disposal of	Chit Account Number:	Approved on 28 December
Construction Waste	5001692	2005
Registration as a Chemical Waste	5213-839-C3507-10	Issued on 23 August 2018
Producer (Permit Holder: Chun Wo)		
Construction Noise Permit (Permit	GW-RE0404-19	Validity from 28 May 2019
Holder: Chun Wo)		to 22 November 2019
	GW-RE0259-19	Cancelled with effect from
		28 May 2019 at 07:00 hrs
	GW-RE0002-19	Cancelled with effect from
		15 April 2019 at 07:00 hrs

2 EM&A RESULTS

The EM&A programme for the Project required environmental monitoring for air quality, noise and surface water quality as well as environmental site inspections for air quality, noise, surface water quality, waste management, and landscape and visual impacts. The EM&A requirements and related findings for each component are summarised in the following sections.

2.1 AIR QUALITY MONITORING

2.1.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact air quality monitoring (dust, in term of Total Suspended Particulates (TSP)) was carried out at the two designated monitoring locations (i.e. DM1 and DM2) at a 6-day interval. As there are two existing TSP monitoring stations (i.e. TKO-A1 and TKO-A2a) currently operating by the Civil Engineering and Development Department (CEDD) to monitor the 24-hour TSP levels at the proposed dust monitoring stations for the SENTX, it is considered that the CEDD monitoring data can represent the dust condition of the SENTX during the construction phase.

The Action and Limit Levels of the air quality monitoring is provided in *Table 2.1* below.

Table 2.1 Action and Limit Levels for 24-hour TSP

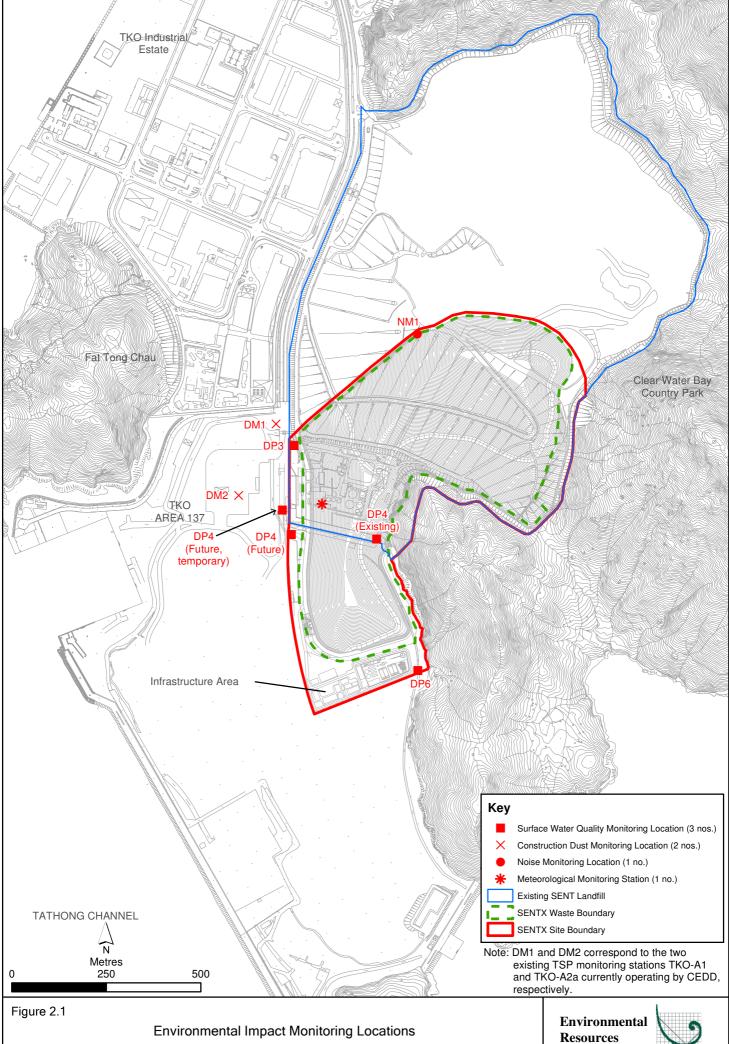
Monitoring Station	Action Level	Limit Level
DM-1 - Site Egress of TKO Area 137 Fill Bank	204 μg m- ³	260 μg m- ³
DM-2A -Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank	193 μg m- ³	260 μg m- ³

High volume air samplers (HVSs) in compliance with the specifications listed under Section 3.2.2 of the updated EM&A Manual were used to measure 24-hour TSP levels at the CEDD dust monitoring stations. The HVSs were calibrated upon installation and thereafter at bi-monthly intervals to check the validity and accuracy of the results.

The equipment used in the impact air quality monitoring programme and monitoring locations are summarised in *Table 2.2* and illustrated in *Figure 2.1* respectively. Copies of the calibration certificates for the equipment are presented in *Annex D1*.

Table 2.2 Dust Monitoring Details

Monitoring Station	Location	Parameter	Frequency and Duration	· ·	Equipment
DM1	Site Egress of TKO Area 137 Fill Bank		,	3, 9, 15, 21, 27 July 2019	HVS Greasby 105 (S/N: 9795 (ET/EA/003/18))



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Management



Monitoring Station	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
DM2	Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank		construction phase of the Project		HVS Andersen G1051 (S/N: 1176 (ET/EA/003/05))

2.1.2 Monitoring Schedule for the Reporting Month

The schedule for air quality monitoring during the reporting period is provided in *Annex C*.

2.1.3 Results and Observations

The monitoring results for 24-hour TSP are summarised in *Table 2.3*. The detailed monitoring results and the graphical presentation of the 24-hour TSP results at each monitoring location are provided in *Annex D2*.

Table 2.3 Summary of 24-hour TSP Monitoring Results in the Reporting Period

Monitoring Station	Average 24-hr TSP Concentration (μg m ⁻³) (Range in bracket)	Action Level (μg/m³)	Limit Level (μg/m³)
DM-1 - Site Egress of TKO Area 137 Fill Bank	88 (74 - 112)	204	260
DM-2A -Combined Reception and Exit Office (CREO) of TKO Area 137 Fill Bank	93 (82 - 111)	193	260

The major dust sources in the reporting period included fugitive dust emission from exposed area in SENTX, as well as nearby operations of the existing SENT landfill and the TKO Area 137 Fill Bank.

All the 24-hour TSP results were below the Action and Limit Levels at the monitoring locations in the reporting period. No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex D*3.

2.1.4 Meteorological Data

Meteorological data obtained from the on-site meteorological monitoring station at the existing SENT landfill (see *Figure 2.1*) were used for the dust monitoring and are shown in *Annex D4*. The meteorological station will be relocated to a new position for SENTX as per the updated EM&A Manual after the new infrastructure area at the SENTX is constructed. It is considered that meteorological data obtained at the existing the on-site meteorological monitoring station are representative of the Project area and could be used for the construction phase dust monitoring programme for the Project.

2.2 Noise Monitoring

2.2.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact noise monitoring was conducted weekly at the monitoring location (i.e. NM1) to obtain one set of 30 minutes measurement between 07:00 and 19:00 hours on normal weekdays.

The Action and Limit Levels for construction noise of the Project are provided in *Table 2.4* below.

Table 2.4 Action and Limit Levels for Construction Noise

Time Period	Action Level (a)	Limit Level (b)
07:00 – 19:00 hrs on normal weekdays	When one documented complaint is received from any one of the noise sensitive receivers (NSRs)	75 dB(A) at NSRs
	or	
	75 dB(A) recorded at the monitoring station	

Notes:

- (a) 75dB(A) along and at about 100m from the SENTX site boundary was set as the Action Level
- (b) Limits specified in the GW-TM and IND-TM for construction and operational noise, respectively.

Noise monitoring was performed by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066) using sound level meter at the designated monitoring station NM1 (see *Figure 2.1*) in accordance with the requirements stipulated in the updated EM&A Manual. Acoustic calibrator was deployed to check the sound level meter at a known sound pressure level. Details of the deployed equipment are provided in *Table 2.5*. Copies of the calibration certificates for the equipment are presented in *Annex E1*.

Table 2.5 Noise Monitoring Details

Monitoring Station (1)	Location	Parameter	Frequency and Duration	Monitoring Dates	Equipment
NM1	SENTX Site Boundary (North)	L _{eq (30 min)} measurement between 07:00 and 19:00 hours on normal weekdays (Monday to	Once per week for 30 mins during	4, 12, 18, 25 July 2019	Sound Level Meter: B&K 2250 (S/N: 3012330) Acoustic Calibrator:
		Saturday)			Rion NC-75 (S/N: 34680623)

2.2.2 Monitoring Schedule for the Reporting Month

The schedule for noise monitoring during the reporting period is provided in *Annex C*.

2.2.3 Results and Observations

Results for noise monitoring are summarised in *Table 2.6*. The monitoring results and the graphical presentation of the data are provided in *Annex E2*.

Table 2.6 Summary of Construction Noise Monitoring Results in the Reporting Period

Monitoring Station	Meast	ured Noise Level L	eq (30 min), dB(A)
	Average	Range	Action and Limit Level
NM1	54.0	52.0 - 56.1	75

Major noise sources identified during the noise monitoring included noise from operations of the existing SENT landfill and the TKO Area 137 Fill Bank, aircrafts and insects.

No Action and Limit Levels exceedance was recorded for construction noise monitoring in the reporting period. No action is thus required to be undertaken in accordance with the Event and Action Plan presented in *Annex E3*.

2.3 SURFACE WATER QUALITY MONITORING

2.3.1 Monitoring Requirements and Equipment

According to the updated EM&A Manual of the Project, impact surface water quality monitoring were carried out at the three designated surface water discharge points (i.e. DP3, DP4 and DP6) weekly to ensure that the SENTX will not cause adverse water quality impact. Temporary relocation of surface water discharge point DP4 to DP4 (Future, temporary) as an interim arrangement due to site constraints and construction sequence was approved by EPD on 14 May 2019. Surface water quality monitoring was carried out at DP4 (Future, temporary) (i.e. DP4T) from the monitoring event on 16 May 2019. In addition, suspension of impact surface water quality monitoring at DP3 was approved under the Baseline Monitoring Report by EPD on 24 July 2019 until the actual commencement of construction works affecting DP3 in 2021.

Dissolved Oxygen (DO) and pH value were measured in-situ whereas the level of suspended solids (SS) were determined by ALS Technichem (HK) Pty Ltd. (HOKLAS Registration No. 066).

The Action and Limit Levels of the surface water quality impact monitoring are provided in *Table 2.7*.

Table 2.7 Action and Limit Levels for Surface Water Quality

Parameters	Action Level	Limit Level
	DP4 & DP6	
DO	< 5.80 mg/L	< 5.42 mg/L
SS	> 11.7 mg/L	> 12.7 mg/L
рН	> 8.39	> 8.40

The locations of the monitoring stations for the Project are shown in *Figure 2.1*. All *in situ* monitoring instruments were checked, calibrated and certified by a laboratory accredited under HOKLAS or other international accreditation scheme before use, and subsequently re-calibrated at 3 monthly intervals throughout all stages of the surface water quality monitoring programme. Calibration for a DO meter was carried out before measurement according to the instruction manual of the equipment model. Details of the equipment used in the impact surface water quality monitoring works are provided in *Table 2.8*. Copies of the calibration certificates for the equipment are presented in *Annex F1*.

Table 2.8 Impact Surface Water Quality Monitoring Details

Monitoring Station	Location	Frequency	Monitoring Dates	Parameter	Equipment
DP4 (Future, temporary)	Surface water discharge point DP4	Weekly	4, 12, 18, 25 July 2019	•pH •DO	YSI Professional Plus (S/N: HK1923829)
DP6	Surface water discharge point DP6	-		•SS	

Notes:

- (a) DP4 was temporary relocated to DP4 (Future, temporary) (i.e. DP4T) as an interim discharge point from the monitoring event on 16 May 2019.
- (b) Impact surface water quality monitoring at DP3 was suspended from the monitoring event on 25 July 2019 until the actual commencement of construction works affecting DP3 in 2021.

2.3.2 Monitoring Schedule for the Reporting Month

The schedule for surface water quality monitoring during the reporting period is provided in *Annex C*.

2.3.3 Results and Observations

A total of 4 monitoring events for impact surface water quality monitoring were scheduled at all designated monitoring stations during the reporting period. However, sampling was not carried out on 4 July 2019 at DP6, on 12 July 2019 at DP4 (Future, temporary) and DP6 and on 18 July 2019 at DP6 due to insufficient flow. Impact water quality monitoring results and graphical presentations are provided in *Annex F2*.

Action and Limit Level exceedances were recorded for surface water quality impact monitoring in the reporting period and actions in accordance with the Event and Action Plan presented in *Annex F3* were undertaken. Investigations on the Action and Limit Levels exceedances were conducted and summarised in *Table 2.9* below. Investigation reports of the exceedances are presented in *Annex F4*.

Table 2.9 Details of Exceedances Recorded for Surface Water Quality Monitoring

Date	Monitoring	Parameter	Type of Exceedance	Remarks
	Location			
4 July 2019	DP4 (Future,	рН	Limit Level	Non Project-related
	temporary)			
4 July 2019	DP4 (Future,	SS	Limit Level	Non Project-related
	temporary)			
18 July 2019	DP4 (Future,	рН	Limit Level	Non Project-related
	temporary)			
18 July 2019	DP4 (Future,	SS	Limit Level	Non Project-related
	temporary)			
25 July 2019	DP4 (Future,	рН	Limit Level	Non Project-related
	temporary)			
25 July 2019	DP4 (Future,	SS	Limit Level	Project-related
	temporary)			

Based on the investigation conducted for each of the monitoring event with potential Action and Limit Levels exceedances with the Contractor, and the IEC, the pH and SS exceedances at DP4 (Future, temporary) on 4 July 2019, pH and SS exceedance at DP4 (Future, temporary) on 18 July 2019 and pH exceedances at DP4 (Future, temporary) on 25 July 2019 were considered not Project-related upon further investigation. The SS exceedance at DP4T (Future, temporary) on 25 July 2019 was found deemed to Project-related activities. The Contractor was reminded to implement all relevant mitigation measures for the construction works and maintain good site practice. The ET will keep track on the monitoring data and ensure Contractor's compliance of the environmental requirements.

2.4 LANDSCAPE AND VISUAL MONITORING

2.4.1 Monitoring Requirements

According to the updated EM&A Manual of the Project, the monthly landscape and visual audit was conducted on 22 July 2019 to monitor the implementation of the landscape and visual mitigation measures during construction phase.

All relevant environmental mitigation measures listed in the approved EIA Report and the updated EM&A Manual and their implementation status are summarised in *Annex B*.

2.4.2 Results and Observations

The Contractor has implemented environmental mitigation measures as stated in the approved EIA Report and the EM&A Manual.

Regarding the landscape and visual audit, the Contractor was reminded to identify the topsoil to be generated from the construction works and plan for the storage and re-use of the topsoil where practical. The Contractor shall consider the mitigation measures during the design phase, including the

preparation of the Construction Drawings and Detailed Landscape Design Drawings.

2.5 EM&A SITE INSPECTION

Site inspections were carried out on a weekly basis with the Contractor, IEC and ER to monitor the implementation of proper environmental pollution control and mitigation measures for air quality, noise, surface water quality and waste management under the Project. In the reporting period, 4 site inspections were carried out on 5, 11, 18 and 25 July 2019.

Key observations during the site inspections are summarised in *Table 2.10*.

Table 2.10 Key Observations Identified during the Site Inspection in this Reporting Month

T (' D (F ' (101 (' 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Inspection Date	Environmental Observations and Recommendations
5 July 2019	 The Contractor shall remove the deposited silt and grit and repair
	the bund at the temporary drain along the western perimeter bund
	and near future EPD building to ensure it is functioning at all times.
	• The Contractor shall fix the geo-textile at the pipes of DP6 channel.
	The Contractor shall improve the concrete berm to avoid leakage
	and overflow of muddy water to DP6 channel.
	The Contractor shall remove stagnant water in the drip trays at Cell
	X1 and near the future GVL building.
	• The Contractor shall avoid the accumulation of water in the rodding
	eye of the concrete block near the Wetsep at Cell X1.
	The Contractor shall remove general refuse and maintain
	housekeeping at the future LTP and near the future GVL building.
	The Contractor shall dispose the waste in the waste skip regularly at
	Cell X1.
11 July 2019	The Contractor shall provide silt fencing/ berm along the DP6
	channel to minimize SS runoff to the channel.
	The Contractor shall maintain site drainage and avoid accumulation
	of stagnant water at the temporary drain near Eastern site boundary
	and at sediment trap.
18 July 2019	The Contractor shall fix the crack at DP4T channel to avoid direct
	discharge of site water to the channel.
	The Contractor shall provide drip tray for the chemical placed near
	DP4T channel.
	The Contractor shall display chemical labels to the chemicals placed
	near LTP and southern site boundary.

Inspection Date	Environmental Observations and Recommendations
25 July 2019	• The Contractor shall maintain DP4T channel to minimise SS run-off.
. ,	The Contractor shall clean up the oil spillage near the wheel-
	washing facilities and handle the clean-up materials as chemical
	waste.
	The Contractor shall repair the temporary drainage along western
	site boundary to avoid direct discharge of site water outside site
	boundary.
	The Contractor shall label the chemical waste in the chemical waste
	cabinet in accordance with the Code of Practice on the Packaging,
	Handling and Storage of Chemical Waste. Also, the Contractor shall
	avoid accumulation of oily liquid in the chemical waste cabinet and
	dispose the clean-up material as chemical waste.
	The Contractor shall dispose the general refuse in the refuse skip
	near the wheel-washing facilities, southern western boundary and
	LTP.
	• The Contractor shall clear the refuse skip regularly to reduce odour,
	pest and littler impacts.
	The Contractor shall also dispose the chemical waste in refuse skip
	and empty chemical containers in the site in the chemical waste
	cabinet.

The Contractor has rectified all of the observations identified during environmental site inspections in the reporting period. Key environmental deficiencies identified and the corresponding rectification actions are presented in *Table 2.11*.

Table 2.11 Summary of Environmental Deficiencies Identified and Corresponding Rectification Actions

Deficiencies	Rect	tifications Implemented		posed Additional Control asures
Surface Water				
Intercepting channels	•	Reviewed drainage plan.	•	Addition of channels.
& drainage system			•	Expedite the construction of
				permanent sediment trap and
				discharge culverts.

Deficiencies	Rectifications Implemented	Proposed Additional Control
DP channels (design & regular silt removal)	 Carried out regular maintenance and cleaning of channels. DP4 channel: Area near the channel was paved with concrete and a bund was built. DP6 channel: Gravel piles on the channel were covered with concrete which serve as blocks for running water and to divide the channel into several sections. A pump was placed in the water zone in the upstream section to pump water to the Wetsep for treatment prior to the discharge to the last section before the weir plate. DP6: Pipes through the gravel piles between different channel sections were covered with geotextiles to block debris and silt. 	N.A.
Stockpiles & exposed soil	 Installed silt fencing near surface water channel along DP6 channel. 	Improve soil covering.Compaction and cover for stockpiles and soil slopes.
Wetsep (treatment capacity & number)	 Reviewed Wetsep capacity. Chemicals dosage of the Wetsep was increased to enhance the efficiency. 	Install additional Wetsep.
Backflow / ponding during heavy rainfall	 Raised with EPD (LDG) and CEDD. 	N.A.

2.6 WASTE MANAGEMENT STATUS

The Contractor has registered as chemical waste producer under the Contract. Sufficient numbers of receptacles were available for general refuse collection and sorting.

As informed by the Contractor, waste generated during this reporting period include mainly non-inert construction waste. Reference has been made to the waste flow table prepared by the Contractor. The quantities of different types of wastes and imported fill materials are summarised in *Table 2.12*.

Table 2.12 Quantities of Different Waste Generated and Imported Fill Materials

Month/ Year	Inert C&D Materials (a) (in '000m³)	Importe (in '000k		Inert Construction Waste Re- used (in '000m³)	Non-inert Construction Waste (b) (in '000m³)	Recyclable Materials ^(c) (in '000kg)	Chemical Wastes (in '000kg)
1 - 31 July 19	0.028	0	6889.13	0	0.049	0	0

Notes:

- (a) Inert construction wastes include hard rock and large broken concrete, and materials disposed as public fill. Density assumption: $1.6 \, (kg/L)$ for public fill.
- (b) Non-inert construction wastes include general refuse disposed at landfill. Density assumption: 0.9 (kg/L) for general refuse.
- (c) Recyclable materials include metals, paper, cardboard, plastics and others.

2.7 IMPLEMENTATION STATUS OF ENVIRONMENTAL MITIGATION MEASURES

A summary of the Environmental Mitigation Implementation Schedule is presented in *Annex B*. The necessary mitigation measures were implemented properly for the Project.

2.8 SUMMARY OF EXCEEDANCES OF THE ENVIRONMENTAL QUALITY PERFORMANCE LIMIT

The 24-hour TSP monitoring results and construction noise monitoring results complied with the Action and Limit Levels in the reporting period. 3 exceedances of the Limit Level for pH and 3 exceedances of the Limit Level Suspended Solids (SS) were recorded for surface water quality impact monitoring in the reporting period. The pH and SS exceedances at DP4 (Future, temporary) on 4 July 2019, pH and SS exceedance at DP4 (Future, temporary) on 18 July 2019 and pH exceedances at DP4 (Future, temporary) on 25 July 2019 were considered not Project-related upon further investigation. The SS exceedance at DP4T (Future, temporary) on 25 July 2019 was found deemed to Project-related activities.

Cumulative statistics on exceedances is provided in *Annex G1*.

2.9 SUMMARY OF COMPLAINTS, NOTIFICATION OF SUMMONS AND SUCCESSFUL PROSECUTIONS

There were no notification of summons or prosecution recorded in the reporting period.

One environmental complaint related to dust nuisance was received during the reporting period. Investigation on the environmental complaint was conducted in accordance with the complaint handling process as stated in the Updated EM&A Manual. The implementation of the relevant mitigation measures recommended in the updated EM&A Manual by the Contractor might suggest that the dust nuisance was deemed to activities that are not

related to the Project. Investigation report of the complaint is presented in *Annex G2*.

Statistics on complaints, notifications of summons, successful prosecutions are summarised in *Annex G1*.

3 FUTURE KEY ISSUES

3.1 CONSTRUCTION PROGRAMME FOR THE COMING MONTH

As informed by the Contractor, the major works for the Project in July 2019 will be:

- Construction of buttress wall;
- Site clearance, preparation and formation of Area X1 and X2;
- Excavation and removal of unsuitable fill materials;
- Filling of perimeter bund for Cell 1X and 2X;
- Construction of Drop Inlet and Culvert X9;
- Construction of edge wall and plinths at LTP area and substructure at bioplant;
- Construction of CLP trench;
- Excavation and construction of discharge box culvert;
- Construction of substructure and superstructure of new Infrastructure Building;
- Construction of substructure and superstructure at Landfill Gas Plant area;
- Construction of X12 channel;
- Construction of groundwater pipe from East to South in Cell 1X and 2X perimeter bund; and

Construction of substructure and superstructure at Maintenance Building.

3.2 KEY ISSUES FOR THE COMING MONTH

Potential environmental impacts arising from the above upcoming construction activities in the next reporting period of August 2019 are mainly associated with dust emission from the exposed area and loading and uploading operation of dusty materials and the potential surface water impact in the rainy season. The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

3.3 MONITORING SCHEDULE FOR THE COMING MONTH

The tentative schedules for environmental monitoring in August 2019 are provided in $Annex\ H.$

4 CONCLUSION AND RECOMMENDATION

This EM&A Report presents the findings of the EM&A activities undertaken during the period from 1 to 31 July 2019 in accordance with the updated EM&A Manual and the requirements of the Environmental Permit (*EP*-308/2008/B).

Air quality (24-hour TSP), noise and water quality (DO, pH and SS) monitoring were carried out in the reporting period. Results for air quality monitoring (24-hour TSP) complied with the Action and Limit Levels in the reporting period. No Action and Limit Levels exceedances were recorded for construction noise monitoring. 3 exceedances of the Limit Level for pH and 3 exceedances of the Limit Level Suspended Solids (SS) were recorded for surface water quality impact monitoring in the reporting period. The pH and SS exceedances at DP4 (Future, temporary) on 4 July 2019, pH and SS exceedance at DP4 (Future, temporary) on 18 July 2019 and pH exceedances at DP4 (Future, temporary) on 25 July 2019 were considered not Project-related upon further investigation. The SS exceedance at DP4T (Future, temporary) on 25 July 2019 was found deemed to Project-related activities.

Environmental site inspections were carried out during the reporting period. Recommendations on remedial actions were given to the Contractor for the deficiencies identified during the site inspections.

There were no notification of summons or prosecution recorded in the reporting period. One environmental complaint related to dust nuisance was received during the reporting period. Investigation on the environmental complaint was conducted in accordance with the complaint handling process as stated in the Updated EM&A Manual.

The ET will keep track on the construction works to confirm compliance of environmental requirements and the proper implementation of all necessary mitigation measures.

Annex A

Work Programme

# WB	S Path Activity Name	Dur Start Finish Total Predecessor Details Float	Successor Details	2018 Q2 Q3 Q4 Q1	2019 2020 Q2 Q3 Q4 Q1 Q2 Q3	Q4 Q1	2021 Q2 Q3 Q4 Q1	2022 2023 Q2 Q3 Q4 Q1 Q2 Q3
337 338 339								
338 339 340 341 342 343 344 345 346 347 348 349 350								
343 344 345								
345 346 347								
348 349 350								
351	SA2.5 Construction (Initial Works)	1153 12-Apr-18 07-Jun-21 705						
353 354 355	SA2.5.02 Advance Works & Site Establishment SA2.5.02.01 Site Establishment & Mobilization 5.02.01 Site Mobilization for Parts X1 & X2	1148 12-Apr-18 02-Jun-21 35 333 12-Apr-18 10-Mar-19 820 30 31-Dec-18 29-Jan-19 820 11-1100: FS, 11-1200: FS						
356 357 358	5.02.01 52-1100 Site Mobilization for Parts X3, X4 & X5 5.02.01 52-1200 Temporary Office for Employer / ER / IC 5.02.01 52-1300 Hoarding and Fencing Works	30 12-Apr-18 11-May-18 1083 11-1300: FS, 11-1400: FS 60 10-Oct-18 08-Dec-18 0 23-1300: FS 40 30-Jan-19 10-Mar-19 820 52-1000: FS, 52-1100: FS	11-1700: SS, M 3. 1: FS					
359 360	SA2.5.02.02 Site Survey & Investigation Works for Parts X1 & X2 5.02.02 52-1400 Condition Survey	50 31-Dec-18 18-Feb-19 840 25 31-Dec-18 24-Jan-19 840 11-1100: FS, 11-1200: FS						
361 362	5.02.02 52-1500 Topographic Survey 5.02.02 52-1600 Site inspection, Review of Condition Survey Report	20 31-Dec-18 19-Jan-19 845 11-1100: FS, 11-1200: FS 25 25-Jan-19 18-Feb-19 840 52-1500: FS, 52-1400: FS	52-1600: FS					
363 364 365	SA2.5.02.03 Site Survey & Investigation Works for Parts X3, X4 & X5 5.02.03 52-1700 Condition Survey 5.02.03 52-1800 Topographic Survey	50 12-Apr-18 31-May-18 1103 25 12-Apr-18 06-May-18 1103 11-1300: FS, 11-1400: FS 20 12-Apr-18 01-May-18 1108 11-1300: FS, 11-1400: FS	·					
366 367 368	5.02.03 52-1900 Site inspection, Review of Condition Survey Report SA2.5.02.04 Environmental Monitoring 5.02.04 52-2000 Installation of Monitoring Stations & Wells (GP & GW)	25 07-May-18 31-May-18 1103 52-1700: FS, 52-1800: FS 975 02-Oct-18 02-Jun-21 35 120 02-Oct-18 29-Jan-19 0 23-1600: FS	32-1500: FS 52-2200: SS 60					
369	5.02.04 52-2100 Installation of Monitoring Stations & Wells (GP & GW) on Buttress Wall 5.02.04 52-2200 Conduct Baseline Monitoring for Construction (one month)	120 02-Oct-18 29-Jan-19 0 23-1600: FS 30 01-Dec-18 30-Dec-18 0 52-2000: SS 60, 52-2100	52-2200: SS 60					
371 372 373	5.02.04 52-2300 Conduct Baseline Monitoring for Operation (one year) SA2.5.03 Civil Engineering Works SA2.5.03.0 Buttress Wall	365 03-Jun-20 02-Jun-21 35 32-1500: FS -400, 53-450 748 13-Jan-19 29-Jan-21 834 475 02-Mar-19 18-Jun-20 83	0: FS 12-1400: FS					
374	5.03.0 53-1000 Section adj. SENT 5.03.0 53-1100 Diversion of SENT Landfill Gas Pipe	300 13-Apr-19 06-Feb-20 96 11-1300: FS, 23-2500: FS 11-1400: FS 45 07-Feb-20 22-Mar-20 96 23-2500: FS, 53-1000: FS	7: FS	13.				
376	5.03.0 53-1200 Section at Cell 4 5.03.0 53-1300 Install Landfill Gas Pipe on Buttress Wall	400 02-Mar-19 04-Apr-20 83 11-1300: FS, 23-2500: FS 75 05-Apr-20 18-Jun-20 83 41-1500: FS, 53-1100: FS						
378 379	SA2.5.03.1 Landfill Cell 1 5.03.1 53-1400 Earth bund (Eastern)	503 13-Jan-19 29-May-20 214 90 04-Aug-19 01-Nov-19 9 11-1100: FS, 23-2500: FS	53-2000: FS, 53-2300: FS, 53-3400: FS, 63-1000: FS, 63-1100: FS, 63-1200: FS, 63-1300: FS, M 4. 2: FS					
380	5.03.1 53-1500 Earth bund (Southern)	90 26-Apr-19 24-Jul-19 314 11-1100: FS, 23-2500: FS						
381	5.03.1 53-1600 Earth bund (Western) 5.03.1 53-1700 Intercell bund (Cell 1/2)	90 13-Jan-19 12-Apr-19 417 11-1100: FS, 23-2500: FS						
383	5.03.1 53-1800 Site Formation 5.03.1 53-1900 Pump Station (PS#1X)	90 13-Jan-19 12-Apr-19 217 11-1100: FS, 23-2500: FS	FS -45					
385	5.03.1 53-2000 Lining Works 5.03.1 53-2100 Protective Stone Laying & Leachate Collection Pipe	135 02-Nov-19* 15-Mar-20 214 41-1500: FS, 53-1400: FS 53-1700: FS 75 16-Mar-20 29-May-20 214 53-2000: FS, 41-1500: FS	5, 53-1500: FS, 53-1600: FS, 53-2100: FS					
387	5.03.1 53-2200 Install Leachate Force Main 5.03.1 53-2300 Install Landfill Gas Pipe on earth bund	75 25-Jul-19 07-Oct-19 449 53-1500: FS, 53-1600: FS	5, 41-1500: FS, 53-1900: FS 54-2800: FS					
388 389 390	5.03.1 53-2400 Leachate Pipe Connection (Cell 1 to LTP) SA2.5.03.4 Landfill Cell 4	30 09-Mar-20 07-Apr-20 266 23-2500: FS, 54-1000: SS 30 09-Jul-20 07-Aug-20 144	54-2800: FS					
391 392 393	5.03.4 53-2500 Provide Temporary Leachate Pipe on Cell 4 Area SA2.5.03.5 Drainage - Surface Run-Off 5.03.5 53-2600 Construct Cut-Off Channel 12A	30 09-Jul-20 07-Aug-20 144 23-2500: FS, 63-2600: SS 740 16-Jan-19 24-Jan-21 839 60 16-Jan-19 16-Mar-19 9 11-1100: FS, 23-2800: FS						
394	5.03.5 53-2700 Connect Cut-Off Channel 12A to DP6 5.03.5 53-2800 Diversion from Existing Trapezoidal Channel into Channel 12A	20 17-Mar-19 05-Apr-19 9 53-2600: FS, 31-1400: FS 20 06-Apr-19 25-Apr-19 9 53-2700: FS						
396 397	5.03.5 53-2900 Removal of Existing Trapezoidal Channel along Eastern Bund 5.03.5 53-3000 Cut-Off Channel C4 Diversion to Cut-Off Channel 17-2	30 26-Apr-19 25-May-19 9 53-2800: FS 45 16-Jan-19 01-Mar-19 83 11-1300: FS, 23-2800: FS	53-4200: FS 53-1000: FS, 53-1200: FS					
398 399 400	5.03.5 53-3100 Cut-Off Channel X5 on Buttress Wall, Cell 4, Cell 3 5.03.5 53-3200 Temporary Diversion Cut-Off Channel X5 to 12A 5.03.5 53-3300 Culvert X5 (5m long) & Perm Connection of Cut-Off Channel X5	90 05-Apr-20 03-Jul-20 289 53-1000: FS, 53-1200: FS 20 04-Jul-20 23-Jul-20 289 53-3100: FS, 23-1900: FS 30 26-Dec-20 24-Jan-21 134 53-4100: FF, 63-1900: FS	53-3300: FS, M 3. 4: FS					
401	5.03.5 53-3400 Construct Perimeter Channel X6 on Eastern Bund & Southern Bund of Cell 1 5.03.5 53-3500 Construct Perimeter Channel X6 on Eastern Bund of Cell 2	50 02-Nov-19 21-Dec-19 249 53-1400: FS, 53-1500: FS 50 20-Feb-20 09-Apr-20 189 63-1000: FS, 53-3400: FS	53-3500: FS 53-3600: FS					
403 404 405	 5.03.5 53-3600 Construct Perimeter Channel X6 Eastern Bund of Cell 3 5.03.5 53-3700 Culvert X6 (25m long) at Cell 1 Southern Bund 5.03.5 53-3800 Perimeter Channel (X9B) at Cell 1 Southern & Western Bund 	50 09-Jun-20 28-Jul-20 129 63-1900: FS, 53-3500: FS 75 25-Jul-19 07-Oct-19 1314 53-1500: FS 45 25-Jul-19 07-Sep-19 1344 53-1500: FS, 53-1600: FS						
406	5.03.5 53-3900 Drop Inlet & Culvert (X9) - 21m long 5.03.5 53-4000 Sediment Trap (ST)	180 29-Jul-20 24-Jan-21 129 11-1100: FS, 23-1900: FS	5, 53-3600: FS 53-4000: FF, 53-4100: FF, 53-6000: FS, M 9. 1: FS -90, M 9. 2: FS	9.				
408	5.03.5 53-4100 Dual Culvert 74m long (connect to DP4)	180 29-Jul-20 24-Jan-21 129 11-1100: FS, 11-1200: FS						
410	SA2.5.03.6 Drainage - Ground Water 5.03.6 53-4200 Construct Groundwater Collection Pipe along Cells X1 & X2 Eastern Bund 5.03.6 53-4300 Construct Groundwater Collection Pipe along Cell X3 Eastern Bund	200 26-May-19 11-Dec-19 209 70 26-May-19 03-Aug-19 9 11-1100: FS, 23-1600: FS						
412	 5.03.6 53-4300 Construct Groundwater Collection Pipe along Cell X3 Eastern Bund 5.03.6 53-4400 Construct Groundwater Collection Pipe along Intercell Bund X2/X3 5.03.6 53-4500 Construct Manhole MH-X1 	50 04-Aug-19 22-Sep-19 159 53-4200: FS 50 23-Sep-19 11-Nov-19 209 53-4300: FS 30 12-Nov-19 11-Dec-19 209 53-4400: FS	53-4400: FS, 63-1900: FS 53-4500: FS, 63-1200: FS 52-2300: FS, M 9. 5: FS					
414 415 416	SA2.5.03.7 Utilities - Distribution within New Infrastructure Area 5.03.7 53-4600 Power Supply HV Works (Transformer & HV switchgear) 5.03.7 53-4700 Power Distribution, LV Power Supply Works	391 11-Aug-19 04-Sep-20 276 5 30-Jun-20 04-Jul-20 0 54-3000: FS 2 05-Jul-20 06-Jul-20 0 54-3100: FS, 12-1200: FS	12-1200: FS					
417	5.03.7 Sewerage (Collection to LTP)	60 07-Jul-20 04-Sep-20 271 54-1000: FS, 54-3100: FS	s, 54-3300: FS, 54-4100: FS 12-1100: FS, 53-6100: FS					
419	5.03.7 53-4900 Sewerage (Discharge to Site Boundary) 5.03.7 53-5000 Lighting Provision 5.03.7 53-5100 Fire Services	60 07-Jul-20 04-Sep-20 271 54-1000: FS, 54-4100: FS 30 07-Jul-20 05-Aug-20 6 54-1000: FS, 54-4100: FS 115 12-Mar-20 04-Jul-20 2 53-6800: FS						
421	5.03.7 53-5200 Water Supply (Fresh & Salt) 5.03.7 53-5300 Telecom & Network	115 12-Mar-20 04-Jul-20 338 53-6600: FS, 53-6700: FS 45 11-Aug-19 24-Sep-19 622 53-6400: FS	12-1100: FS					
423 424 425	5.03.7 53-5400 Gas Network (LFG to LTP) SA2.5.03.8 Utilities - Works Associated with Utilities Undertakers SA2.5.03.8.U1 CLP	15 22-Jun-20 06-Jul-20 176 54-1000: FF 703 27-Feb-19 29-Jan-21 129 459 27-Feb-19 30-May-20 43	54-2800: FS					
426	5.03.8.U1 53-5500 Excavate Trench for CLP Cable 5.03.8.U1 53-5600 Backfill Trench after CLP Cable Laying	100 13-May-19 20-Aug-19 194 23-2900: FS 30 01-May-20 30-May-20 43 53-5800: FS	53-5800: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10. 1: FS -60, M10. 2: FS -30, M10. 3: FS 54-1000: FF, 54-4100: FF, 54-4600: FF					
428	5.03.8.U1 53-5600 Backfill Trench after CLP Cable Laying 5.03.8.U1 53-5700 CLP Cable Laying (from CLP Substation to Site Boundary) 5.03.8.U1 53-5800 CLP Cable Laying (from Site Boundary to HV Switchroom)	200 27-Feb-19 14-Sep-19 229 32-2400: FS 60 02-Mar-20 30-Apr-20 0 53-5500: FS, 54-2900: FS	54-3000: FS					
430	5.03.8.U1 53-5900 CLP HV associated equipment installation SA2.5.03.8.U2 DSD F 03.8.U2 F 3.6000 Corposition to Storm Projections	120 18-Dec-19 15-Apr-20 0 54-2900: FS, 32-2400: FS 147 05-Sep-20 29-Jan-21 129						
432 433 434	5.03.8.U2 53-6000 Connection to Storm Drain System 5.03.8.U2 53-6100 Connection to Foul Drain System SA2.5.03.8.U3 Telecom	5 25-Jan-21 29-Jan-21 129 53-4100: FS, 53-4000: FS 5 05-Sep-20 09-Sep-20 271 53-4800: FS, 53-4900: FS 100 13-May-19 20-Aug-19 327						
435	5.03.8.U3 53-6200 Excavate Trench for PCCW	60 13-May-19 11-Jul-19 307 23-2900: FS	53-6400: FS, 54-1000: SS, 54-4100: SS, 54-4600: SS, M10. 1: FS -40, M10. 2: FS -20, M10. 3: FS					
436 437 438	5.03.8.U3 53-6300 Backfill Trench after PCCW Cable Laying 5.03.8.U3 53-6400 Laying Cables & Connection SA2.5.03.8.U4 WSD	10 11-Aug-19 20-Aug-19 327 53-6400: FS 30 12-Jul-19 10-Aug-19 327 53-6200: FS 304 13-May-19 11-Mar-20 338	54-1000: FF, 54-4100: FF, 54-4600: FF 53-5300: FS, 53-6300: FS					
439	5.03.8.U4 53-6500 Install Watermain & Piping for Water Supplies 5.03.8.U4 53-6600 Connection for Fresh Water & Meter Installation	60 13-May-19 11-Jul-19 216 23-2900: FS 30 11-Feb-20 11-Mar-20 338 53-6500: FS, 32-2300: FS	53-6600: FS, 53-6700: FS, 53-6800: FS, 53-6900: FS 53-5200: FS					
441	5.03.8.U4 53-6700 Connection for Salt Water 5.03.8.U4 53-6800 Connection for Fire Services	30 11-Feb-20 11-Mar-20 338 53-6500: FS, 32-2300: FS 30 11-Feb-20 11-Mar-20 2 53-6500: FS, 32-2300: FS	53-5200: FS 53-5100: FS					
443	5.03.8.U4 53-6900 Connection for Cooling Tower & Meter Installation SA2.5.03.8.U5 HyD Lighting 5.03.8.U5 53-7000 Installation of Public Street Lighting / Handover	30	,					
446 447 448	SA2.5.04 Building Construction, incl. E&M and System Installation, and T&C SA2.5.04.A Part X1 Area A 5.04.A 54-1000 General Area & Access Road	890 31-Dec-18 07-Jun-21 0 554 31-Dec-18 06-Jul-20 36 120 09-Mar-20 06-Jul-20 6 23-1300: FS, 53-5500: SS 53-6300: FF, 12-1000: FF	5, 53-5600: FF, 53-6200: SS, , 11-1100: FS, 54-1100: FF, 53-5000: FS, 53-5400: FS, 53-7000: FS, 68-1700: FS					
449	5.04.A 54-1100 Carpark & Supporting Area	53-6300: FF, 12-1000: FF 54-1800: FF 60 31-Dec-18 28-Feb-19 64 23-1300: FS, 11-1100: FS						
450	5.04.A 54-1200 Diesel Fuel Tanks 5.04.A 54-1300 EPD Building	60 08-May-20 06-Jul-20 36 23-1300: FS, 23-5200: FS 270 30-Apr-19 24-Jan-20 44 23-1300: FS, 23-5200: FS	32-2200: FS 32-2200: FS 32-2100: FS, M 5. 4: FS -135, M 5. 5: FS, 12-1000: FS,					
452	5.04.A 54-1400 Fire Service Tank	270 29-Jun-19 24-Mar-20 44 23-1300: FS, 23-5200: FS	54-1400: SS 60 5, 11-1100: FS, 54-1300: SS 60 32-2100: FS, M 5.10: FS, 12-1000: FS, 54-1600: SS 60					
453	5.04.A 54-1500 GVL Building 5.04.A 54-1600 Laboratory Building	300 31-Dec-18 26-Oct-19 44 23-1300: FS, 23-5200: FS 270 28-Aug-19 23-May-20 44 23-1300: FS, 23-5200: FS	54-1700: SS 60					
455	5.04.A 54-1700 Maintenance Building & Area 5.04.A 54-1800 Storage Facility & Area	270 01-Mar-19 25-Nov-19 44 23-1300: FS, 23-5200: FS	32-2100: FS, M 5. 8: FS -135, M 5. 9: FS, 12-1000: FS, 54-1300: SS 60 32-2100: FS, M 5. 8: FS -135, M 5. 9: FS, 12-1000: FS, 54-1300: SS 60 32-1500: FS, M 5.11: FS -30, M 5.12: FS, 54-1000: FF,					
457	5.04.A 54-1900 Waste Oil Tanks	90 08-Apr-20 06-Jul-20 36 23-1300: FS, 23-5200: FS	54-2000: FS 5, 12-1000: FF, 11-1100: FS 32-2200: FS					
459	5.04.A 54-2000 Water Service House SA2.5.04.B Part X1 Area B SA2.5.04.B.1 BioPlant Building	60 30-Apr-19 28-Jun-19 64 23-1300: FS, 23-5200: FS 890 31-Dec-18 07-Jun-21 0 330 17-Jan-19 12-Dec-19 243	32-2100: FS, M 5.10: FS, 12-1000: FS, 54-4400: FS					
461	SA2.5.04.B.1 BioPlant Building 5.04.B.1 54-2100 LTP BioPlant Building SA2.5.04.B.2 Leachate Treatment Plant	330 17-Jan-19 12-Dec-19 243 330 17-Jan-19 12-Dec-19 243 23-1300: FS, 23-5200: FS 31-1000: FS 31-Dec-18 10-Aug-20 21	32-2100: FS, 32-2200: FS, M 6. 2: FS -165, M 6. 3: FS					
463	5.04.B.2 54-2200 Main Plant Area included Civil works	274 31-Dec-18 30-Sep-19 0 23-1300: FS, 23-3200: FS	SF 30, M 6. 4: FS -137, M 6. 5: FS					
464	5.04.B.2 54-2300 MEP Installation 5.04.B.2 54-2400 SBR Tanks	220 01-Oct-19 07-May-20 0 41-2100: FS, 41-1800: FS 11-1100: FS 110	M 6. 9: FS, 32-2200: FS 54-2600: FS, M 6. 6: FS	,				
466 467 468	5.04.B.2 54-2500 Ammonia Stripper SA2.5.04.B.3 LTP - Test & Commission 5.04.B.3 54-2600 Dry testing	315 01-Oct-19 10-Aug-20 21 41-3000: FS, 54-2200: FS 301 11-Aug-20 07-Jun-21 0 45 11-Aug-20 24-Sep-20 21 54-2300: FS, 54-2400: FS						
469	5.04.B.3 54-2700 Wet testing 5.04.B.3 54-2800 Operational testing	75 25-Sep-20 08-Dec-20 21 54-2600: FS, 12-1200: FS 23-6800: FS 160 30-Dec-20 07-Jun-21 0 54-2700: FS, 53-2400: FS						
471	SA2.5.04.C Part X1 Area C	53-2200: FS, 63-1700: FS 54-4000: FS	i, 53-2500: FS, 53-2100: FS, ii, 63-2600: FS, 53-5400: FS, iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii					
472	SA2.5.04.C.1 LFG - Power Supply Building 5.04.C.1 54-2900 LFG Building (with Transformer Room)	530 17-Jan-19 29-Jun-20 5 335 17-Jan-19 17-Dec-19 0 23-1300: FS, 23-3500: FS	FS	6:				
474	5.04.C.1 54-3000 Transformer & HV Swtichgear Installation 5.04.C.1 54-3100 MEP Installation, with T&C	60 01-May-20 29-Jun-20 0 54-2900: FS, 41-1200: FS 75 18-Dec-19 01-Mar-20 125 54-2900: FS	53-4600: FS, M 7. 4: FS -30, M 7. 5: FS, M 7. 5: FF 32-1400: FS, 32-2100: FS, 53-4700: FS, 53-4800: FS, M 7. 4 FS -30, M 7. 5: FS	4:				
476	SA2.5.04.C.2 LFG Treatment Plant 5.04.C.2 54-3200 Main Plant Area included Civil Works	554 31-Dec-18 06-Jul-20 0 384 31-Dec-18 18-Jan-20 0 23-3500: FS, 11-1100: FS	54-3300: FS, 54-3400: FS, 54-3500: FS, 54-3600: FS, 54-3700: FS, 54-3800: FS, M 7. 1: SF 30, M 7. 2: FS -200, M	м				
478	5.04.C.2 54-3300 MEP Installation 5.04.C.2 54-3400 GHS600 Blower 601 A&B Relocation	170 19-Jan-20 06-Jul-20 0 54-3200: FS, 12-1000: FF	7. 3: FS 32-2000: FS, 53-4800: FS, 54-3900: FS, M 7. 4: FS -80, M 7. 5: FS					
480	5.04.C.2 54-3400 GHS600 Blower 601 A&B Relocation 5.04.C.2 54-3500 Pre-treatment 5.04.C.2 54-3600 Flares (incl. PLC control, interlink to Towngas PF & LTP)	15 19-Jan-20 02-Feb-20 155 23-5800: FS, 54-3200: FS 60 19-Jan-20 18-Mar-20 110 41-3900: FS, 54-3200: FS 125 19-Jan-20 22-May-20 45 41-3300: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -30, M 7. 5: FS					
482	5.04.C.2 54-3700 LFG Engine (incl. on-grid protection, PLC control, turning) 5.04.C.2 54-3800 Cooling System	110 21-Feb-20 09-Jun-20 27 41-3600: FS, 54-3200: FS 45 19-Jan-20 03-Mar-20 125 22-1500: FS, 54-3200: FS	54-3900: FS, M 7. 4: FS -60					
484 485	SA2.5.04.C.3 LFG - Test & Commission 5.04.C.3 54-3900 MEP Testing	176 07-Jul-20 29-Dec-20 0 65 07-Jul-20 09-Sep-20 0 54-3400: FS, 54-3500: FS 54-3800: FS, 12-1200: FS 54-3300: FS	23-7000: SS -150, 23-7300: SS, 54-4000: FS, M11. 1: FS -30 5, 53-6900: FS, 31-2200: FS, M11. 2: FS	30,				
486	5.04.C.3 54-4000 Operational Testing	111 10-Sep-20 29-Dec-20 0 53-1300: FS, 63-2700: FS 53-1100: FS, 54-3900: FS						
487	SA2.5.04.D Part X1 Area D 5.04.D 54-4100 General Area & Access Road	374 29-Jun-19 06-Jul-20 6 120 09-Mar-20 06-Jul-20 6 23-1300: FS, 53-5500: SS 53-6300: FF, 12-1000: FF						
489	5.04.D 54-4200 VWF Building 5.04.D 54-4300 Weighbridge	120 28-Oct-19 24-Feb-20 63 23-1300: FS, 23-5200: FS 54-4300: SS 60 75 29-Aug-19 11-Nov-19 63 41-4200: FS, 23-1300: FS	FS, 54-4500: SS 60	0:				
491	5.04.D 54-4400 Weighmaster House	54-4400: SS 60 120 29-Jun-19 26-Oct-19 64 23-1300: FS, 23-5200: FS	32-2100: FS, M 8. 1: FS, 12-1000: FS, 54-4300: SS 60					
492	5.04.D 54-4500 Wheel Wash Bath SA2.5.04.E Part X1 Area E & Part X2	75 27-Dec-19 10-Mar-20 63 23-1300: FS, 23-5200: FS 54-4200: SS 60 163 26-Jan-20 06-Jul-20 6						
494	5.04.E 54-4600 General Area & Access Road	120 09-Mar-20 06-Jul-20 6 53-5500: SS, 53-5600: FF 12-1000: FF, 11-1100: FS	, 11-1200: FS					
495 496 497	5.04.E 54-4700 Guard House & Entrance Gate SA2.5.08 Landscape Works - Advance Screen Planting in CWB Country Park SA2.5.08.N Area N	100 26-Jan-20 04-May-20 63 23-1300: FS, 23-5200: FS 54-4500: SS 30 270 01-Apr-19 26-Dec-19 529 270 01-Apr-19 26-Dec-19 529	32-2100: FS, M 8. 2: FS, 12-1000: FS					
498	SA2.5.08.N Area N 5.08.N 58-1000 Advance Screen Planting 5.08.N 58-1100 Establishment of Screen Planting	270 01-Apr-19 26-Dec-19 529 90 01-Apr-19* 29-Jun-19 529 23-7900: FS, 31-1100: FS 270 01-Apr-19* 26-Dec-19 529 58-1000: SS, 14-1800: FS						
500 501	SA2.5.08.S Area S 5.08.S 58-1200 Advance Screen Planting	270 01-Apr-19 26-Dec-19 529 90 01-Apr-19* 29-Jun-19 529 23-7900: FS, 31-1100: FS	i, 11-1500: FS 58-1300: SS, M 3. 2: FS					
502 503 504	5.08.S 58-1300 Establishment of Screen Planting SA2.6 Construction (Remaining Works) SA2.6.02 Advance Works	270 01-Apr-19* 26-Dec-19 529 58-1200: SS 1474 01-Apr-19 13-Apr-23 30 80 09-Jul-21 26-Sep-21 339	32-1500: FS					
505 506	SA2.6.02.9 Demolition of SENT Infrastructure Area 6.02.9 62-1000 Existing SENT General Infrastructure Facility & Building	80 09-Jul-21 26-Sep-21 339 60 09-Jul-21 06-Sep-21 239 32-2100: FS, 12-1300: FS	23-2000: SS -90, 63-2800: FS, 63-2900: FS, 63-3000: FS, 63-4300: FS, M12. 4: FS -30, M12. 5: FS					
507	6.02.9 62-1100 Existing SENT LTP 6.02.9 62-1200 Existing SENT LFG	60 29-Jul-21 26-Sep-21 339 32-1500: FS, 12-1300: FS						
		23 20-00F21 20-0 0 P-21 338 32-1500: FS, 12-1300: FS		Townitowice I and Fill Fill Fill Fill Fill Fill Fill Fil	TV)		Date	Revision Checked Approved
	The same of the sa	Page : 3 of 4	South-East New	Territories Land Fill Extension (SA2-SENT Baseline Programme	I <i>^)</i>	GREEN VALLEY LANDFILL, LIMITED	11-May-18 SENTX-GVL-W-PB-ZZ-00 20-Jul-18 SENTX-GVL-W-PB-ZZ-00	01 Rev. I01
•	◆ Milestone							

/BS Path								,
	A IC		Activity Name	Dur	Start		Total Predecessor Details Float	Successor Details
SA2.6.0 SA2.6.0			eering Works			9 13-Apr-23 9 23-Jan-21		
			Earth bund (Eastern)				9 11-1100: FS, 23-2500: FS, 53-4200: FS, 53-1400: FS,	
							53-2800: FS	63-2000: FS, 63-2100: FS, 63-2200: FS, M12. 1: FS -50, M12. 2: FS, 63-1100: FS
6.03.2	2 63	3-1100 E	Earth bund (Western)	110	20-Feb-2	0 08-Jun-20	84 11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS,	63-1400: FS, 63-1500: FS, 63-1700: FS, 63-3500: FS,
			·				63-1000: FS	63-3600: FS, 63-1200: FS
6.03.2	2 6	3-1200 I	Intercell bund (Cell 2/3)	90	09-Jun-20	06-Sep-20	734 11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS, 53-4400: FS, 63-1100: FS	63-1500: FS
6.03.2	2 63	3-1300	Site Formation	75	02-Nov-19	15-Jan-20	14 11-1100: FS, 23-2500: FS, 53-1800: FS, 53-1400: FS	63-1400: FS, 63-4200: FS
6.03.2	2 63	3-1400 F	Pump Station (PS#2X)	45	09-Jun-20	J 23-Jul-20	84 63-1300: FS, 63-1100: FS	63-1600: FS, 63-1700: FS
6.03.2	2 63	3-1500 L	Lining Works	90	01-Oct-20*	* 29-Dec-20	710 41-1500: FS, 63-1000: FS, 63-1100: FS, 63-1200: FS	63-1600: FS, M12. 3: FS, 63-2400: FS
6.03.2	2 63	3-1600 F	Protective Stone Laying & Leachate Collection Pipe	25	30-Dec-2 ^f	0 23-Jan-21	810 63-1500: FS, 41-1500: FS, 63-1400: FS	32-1600: FS, M12. 3: FS
6.03.2	2 63	3-1700 I	Install Leachate Force Main	75	24-Jul-2	06-Oct-20	84 63-1100: FS, 41-1500: FS, 63-1400: FS	54-2800: FS, M12. 3: FS
6.03.2	2 63	3-1800 I	Install Landfill Gas Pipe on earth bund	35	20-Feb-20	J 25-Mar-20	168 41-1500: FS, 63-1000: FS	54-4000: FS, M12. 3: FS
SA2.6.0			Earth bund (Eastern)			0 02-Feb-22	435 9 11-1100: FS, 53-4200: FS, 63-1000: FS, 53-4300: FS,	53-3300: FS, 53-3600: FS, 63-2400: FS, 63-2700: FS, M12. 1:
6.03.3	3 0.	5-1900 [Eattii buriu (Easteiri)	110	20-reb-20	00-Juli-20	53-2800: FS, 63-4200: FS 53-2800: FS, 63-4200: FS	FS -50, M12. 2: FS, 63-2000: FS -45, 63-2200: FS
6.03.3	3 6:	3-2000 F	Earth bund (Western)	110	25-Anr-2	0 12-Aug-20	19 11-1100: FS, 63-1000: FS, 63-1900: FS -45	63-2300: FS, 63-2400: FS, 63-2600: FS, 63-3700: FS.
			· · ·			_		63-2100: FS -45
6.03.3	3 63	3-2100 I	Intercell bund (Cell 3/4)	105	29-Jun-20	11-Oct-20	789 11-1100: FS, 63-1000: FS, 63-4200: FS, 63-2000: FS 4	45 63-2400: FS
6.03.3	3 63	3-2200	Site Formation	75	09-Jun <i>-</i> 2/	ປ 22-Aug-20	9 11-1100: FS, 63-1000: FS, 63-1900: FS	63-2300: FS
6.03.3	3 63	3-2300 F	Pump Station (PS#3X)	45	23-Aug-20	J 06-Oct-20	9 63-2200: FS, 63-2000: FS	63-2500: FS, 63-2600: FS
6.03.3	3 63	3-2400 L	Lining Works	100	01-Oct-21	* 08-Jan-22	435 41-1500: FS, 63-1900: FS, 63-2000: FS, 63-2100: FS,	63-2500: FS, M12. 3: FS
6.03.3	3 6:	3-2500 F	Protective Stone Laying & Leachate Collection Pipe	25	09-Jan-2	2 02-Feb-22	63-1500: FS 435 63-2400: FS, 41-1500: FS, 63-2300: FS	32-1700: FS, M12. 3: FS
			Install Leachate Force Main				9 63-2000: FS, 41-1500: FS, 63-2300: FS	53-2500: SS -90, 54-2800: FS, M12. 3: FS
			Install Landfill Gas Pipe on earth bund				58 41-1500: FS, 63-1900: FS	54-4000: FS, M12. 3: FS
SA2.6.0	.03.4 La	ndfill Cel	eli 4	584	07-Sep-21	1 13-Apr-23	30	
			Remaining Portion of Buttress Wall				494 62-1000: FS	
6.03.4	4 63	3-2900 E	Earth bund (Western) incl. MSE Wall	120	07-Sep-21	04-Jan-22	239 62-1000: FS	63-3000: FS, 63-3100: FS, 63-3200: FS, 63-3400: FS, 63-3800: FS, 63-3900: FS, 63-4100: SS -90, M 9. 6: FS -60,
								M 9. 7: FS -30, M 9. 8: FS
6.03.4	4 6:	3-3000	Site Formation	120	05-Jan-2	2 04-May-22	239 62-1000: FS, 62-1100: FS, 62-1200: FS, 63-2900: FS,	63-3100: FS
						,	63-4100: FS	
			Pump Station (PS#4X)		•		239 63-3000: FS, 63-2900: FS	63-3300: FS, 63-3400: FS
			Lining Works				0 41.1500: FS, 63-2900: FS	63-3300: FS, M12. 6: FS
			Protective Stone Laying & Leachate Collection Pipe				0 41-1500: FS, 63-3200: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS
			Install Leachate Force Main & Remove Temporary Leachate Pipe Surface Run-Off			2 18-Jul-22 0 03-Feb-22	269 41-1500: FS, 63-2900: FS, 63-3100: FS	12-1900: FS, 32-1800: FS, M12. 6: FS
			Perimeter Channel (X9A) at Cell 2 Western Bund				1054 63-1100: FS	12-1900: FS
			Perimeter Channel (X10A) at Cell 2 Western Bund				1029 63-1100: FS	63-4000: FS
6.03.5	5 63	3-3700 F	Perimeter Channel (X10A) at Cell 3 Western Bund	30	13-Aug-20	J 11-Sep-20	964 63-2000: FS	63-4000: FS
6.03.5	5 63	3-3800 F	Perimeter Channel (X10A) at Cell 4 Western Bund	20	05-Jan-27	24-Jan-22	464 63-2900: FS	63-4000: FS
			Perimeter Channel (X10C) at Cell 4 Western Bund				469 63-2900: FS	63-4000: FS
6.03.5	5 63	3-4000	Connection to Existing DP3	10	25-Jan-27	03-Feb-22	464 63-3900: FS, 63-3600: FS, 63-3700: FS, 63-3800: FS	12-1900: FS
6.03.5	5 63	3-4100 F	Remove Cut-Off Channel C-7 at bottom of Buttress Wall	30	09-Jun-2	1 08-Jul-21	419 63-2900: SS -90	63-3000: FS
			Temporary Channel (X7T) at SENT Infrastructure Area				14 63-1300: FS	63-1900: FS, 63-2100: FS
			Ground Water			1 30-Nov-21		
			Construct Temporary Channel (TC-1), from MH-1 to Existing UC-825		'		529 23-1900: FS, 11-1300: FS, 62-1000: FS	63-4400: FS
			Divert GW at MH-1 to TC-1 Reconnection of GWCP across Cell 4				529 63-4300: FS 529 62-1100: FS 62-1200: FS 63-4400: FS	63-4500: FS, M 9. 9: FS 12-1900: FS
			Reconnection of GWCP across Cell 4 Works Associated with Utilities Undertakers			1 30-Nov-21 0 27-Jul-21	529 62-1100: FS, 62-1200: FS, 63-4400: FS	12-1300. F3
SA2.6.	6.03.8. <u>U1</u>	CLP		210	30-Dec-20	0 27-Jul-21	655	
			LFG Generator On-grid Testing	180	30-Dec-20	0 27-Jun-21	655 32-2500: FS, 12-1200: FS, 54-4000: FS	63-4700: FS
			LFG Generator On-grid Inspection & Verify				655 63-4600: FS	12-1900: FS
	6.03.8.U6		Gas Laying Gas Mains (from LFG to Town Gas PF)	55 45	15-Nov-20 15-Nov-2	0 08-Jan-21 0 29-Dec-20	855 54-4000: FF	63-4900: FS
			Gas Meter Relocation & Connection at LFG				855 63-4800: FS, 54-4000: FS	12-1900: FS
							· · · · · · · · · · · · · · · · · · ·	
SA2.6.0	i.04.C Pa	rt X1 Are	ea C	661	01-Oct-19	9 22-Jul-21	660	
								12-1900: FS
								12-1900: FS
			· · · · · · · · · · · · · · · · · · ·					
SA2.6.0	.08.1 SE	NT Area	a - Tree Removal & Transplanting	240	01-Apr-19	9 26-Nov-19	1264	20.440. 50.00.00.00
								68-1100: FS, 68-1200: FS, 68-1400: FS
			·		•			68-1200: SS 68-1300: FS
			<u> </u>			_		68-1300: FS 12-1900: FS
			·					12-1900: FS 12-1900: FS
0.00.1					•			.2.0000
SA2.6.0								12-1900: FS, M 3. 2: FS
								12-1900: FS
SA SA 66 66 66 66	A2.6 6.04 6.04 2.6 A2.6 .08 .08 .08 .08 .08 .08	A2.6.04.C Pa A2.6.04.C.02 6.04.C.02 6.04.C.02 6.04.C.02 6.04.C.02 6.04.C.02 6.04.C.02 6.08.1 SE A2.6.08.1 SE .08.1 6.08.1 6.08.1 6.08.1 6.08.1 6.08.1 6.08.1 6.08.1 6.08.1 6.08.1 6.08.1 5.08.1 6.0	A2.6.04.C Part X1 Ar A2.6.04.C.02 LFG T 6.04.C.02 64-1000 6.04.C.02 64-1100 2.6.08 Landscape A2.6.08.1 SENT Area .08.1 68-1000 .08.1 68-1200 .08.1 68-1300 .08.1 68-1400 A2.6.08.2 SENTX Area .08.2 68-1600	2.6.04 Building & E&M Works A2.6.04.C Part X1 Area C A2.6.04.C.02 LFG Treatment Plant 6.04.C.02 64-1000 GHS600 Blower 601 C Relocation 6.04.C.02 64-1100 Absorption Chiller (Optional) 2.6.08 Landscape Works A2.6.08.1 SENT Area - Tree Removal & Transplanting .08.1 68-1000 Access trees condition and select for transplanting .08.1 68-1100 Prepare new site to receive trees .08.1 68-1200 Transplant selected trees .08.1 68-1300 Prune trees prior to removal from Cell 4 .08.1 68-1400 Tree Felling - Part X3 A2.6.08.2 SENTX Area - Trial Nursery & Tree Planting .08.2 68-1600 Trial Nursery	A2.6.04.C Part X1 Area C 661 A2.6.04.C.02 LFG Treatment Plant 661 6.04.C.02 64-1000 GHS600 Blower 601 C Relocation 15 6.04.C.02 64-1100 Absorption Chiller (Optional) 90 2.6.08 Landscape Works 613 A2.6.08.1 SENT Area - Tree Removal & Transplanting 240 .08.1 68-1000 Access trees condition and select for transplanting 30 .08.1 68-1100 Prepare new site to receive trees 90 .08.1 68-1200 Transplant selected trees 120 .08.1 68-1300 Prune trees prior to removal from Cell 4 90 .08.1 68-1400 Tree Felling - Part X3 90 A2.6.08.2 SENTX Area - Trial Nursery & Tree Planting 583 .08.2 68-1600 Trial Nursery 300	A2.6.04.C Part X1 Area C 661 01-Oct-19 A2.6.04.C.02 LFG Treatment Plant 661 01-Oct-19 6.04.C.02 64-1000 GHS600 Blower 601 C Relocation 15 08-Jul-21 6.04.C.02 64-1100 Absorption Chiller (Optional) 90 01-Oct-19 2.6.08 Landscape Works 613 01-Apr-19 A2.6.08.1 SENT Area - Tree Removal & Transplanting 240 01-Apr-19 .08.1 68-1000 Access trees condition and select for transplanting 30 01-Apr-19* .08.1 68-1100 Prepare new site to receive trees 90 01-May-19 .08.1 68-1200 Transplant selected trees 120 01-May-19 .08.1 68-1300 Prune trees prior to removal from Cell 4 90 29-Aug-19 .08.1 68-1400 Tree Felling - Part X3 90 01-May-19 .08.2 SENTX Area - Trial Nursery & Tree Planting 583 01-May-19	A2.6.04.C Part X1 Area C 661 01-Oct-19 22-Jul-21 A2.6.04.C.02 LFG Treatment Plant 661 01-Oct-19 22-Jul-21 6.04.C.02 64-1000 GHS600 Blower 601 C Relocation 15 08-Jul-21 22-Jul-21 6.04.C.02 64-1100 Absorption Chiller (Optional) 90 01-Oct-19 29-Dec-19 2.6.08 Landscape Works 613 01-Apr-19 03-Dec-20 A2.6.08.1 SENT Area - Tree Removal & Transplanting 240 01-Apr-19 26-Nov-19 0.08.1 68-1000 Access trees condition and select for transplanting 30 01-Apr-19* 30-Apr-19 0.08.1 68-1200 Transplant selected trees 90 01-May-19 29-Jul-19 0.08.1 68-1300 Prune trees prior to removal from Cell 4 90 29-Aug-19 26-Nov-19 0.08.1 68-1400 Tree Felling - Part X3 90 01-May-19 29-Jul-19 0.08.2 SENTX Area - Trial Nursery & Tree Planting 583 01-May-19 24-Feb-20 0.08.2 68-1600 Trial Nursery 300 01-May-19 24-Feb-20	A2.6.04.C. Part X1 Area C 661 01-Oct-19 22-Jul-21 660 A2.6.04.C. Description of the part X1 Description of the p

Annex B

Environmental Mitigation Implementation Schedule

Annex B Environmental Mitigation Implementation Schedule

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the n	neast	impleme ure? ⁽¹⁾ O/R A	or standards for the	Implementation Status and Remarks
Air Quali	ty - Cons	truction Phase								
4.8.1	AQ1	Blasting	To minimise potential dust nuisance	Blasting area and 30m of blasting area	SENTX Contractor		✓		Air Pollution Control	Not applicable. Blasting is not required in the latest landfill design
		• The area within 30m of the blasting area will be wetted prior to blasting.							(Construction Dust) Regulations	
		 Blasting will not be carried out when the strong wind signal or tropical cyclone warning signal No. 3 or higher is hoisted, unless this is with the express prior permission of the Commissioner of Mines. 								
		 loose material and stones in the Site will be removed prior to the blast operation 								
		 During blasting, blast nets, screens and other protective covers will be used to prevent the projection of flying fragments and material resulting from blasting 								
4.8.1	AQ2	Rock Drilling		Rock drilling area	SENTX Contractor		✓		Air Pollution Control (Construction Dust) Regulations	Not applicable. Rock drilling is not required in the latest landfill design
		 Watering will be carried out at the rock drilling activities to avoid fugitive dust emissions. 								
(1) D=Desig	gn; C=Const	ruction; O/R=Operation/Restoration; A=Aftercare								

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?			implement sure? (1)	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
						D	С	O/R A		
4.8.1	AQ3	Site Access Road	To minimise potential dust nuisance	Main haul road	SENTX Contractor		✓		Air Pollution Control	Implemented
		The main haul road will be kept clear of dusty materials or sprayed with water.							(Construction Dust) Regulations	
		The main haul road will be paved							HKAQO and EIAO- TM Annex 4	
		with aggregate or gravel.								
		• Vehicle speed will be limited to 10kph.								
4.8.1	AQ4	Stockpiling of Dusty Materials	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓		Air Pollution Control	Implemented
		• Any stockpile of dusty materials will be covered entirely by impervious							(Construction Dust) Regulations	
		sheeting or placed in an area sheltered on the top and three sides or sprayed with water so as to ensure that the entire surface is wet.							HKAQO and EIAO- TM Annex 4	
4.8.1	AQ5	Loading, unloading or transfer of dusty materials	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓		Air Pollution Control (Construction Dust)	Implemented
		All dusty materials will be sprayed							Regulations	
		with water immediately prior to any loading, unloading or transfer operation so as to maintain the dusty material wet.							HKAQO and EIAO- TM Annex 4	
4.8.1	AQ6	Site Boundary and Entrance	dust nuisance	Site boundary and entrance	SENTX Contractor		✓		Air Pollution Control	Not applicable
		Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of height not less than 2.4m from							(Construction Dust) Regulations	
									HKAQO and EIAO-	

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the n		impler sure? ⁽¹⁾ O/R	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		ground level will be provided along the entire length of that portion of the site boundary except for the site entrance or exit.							TM Annex 4	
4.8.1	AQ7	 Excavation Works Working area of any excavation or earth moving operation will be sprayed with water immediately before, during and immediately after the operation so as to ensure that the entire surface is wet. 	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	Implemented
4.8.1	AQ8	 Building Demolition The area where the demolition works are planned to take place will be sprayed with water immediately prior to, during and immediately after the demolition activities. Any dusty materials remaining after a stockpile is removed will be wetted with water and cleared from the surface of roads or street. 	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	Not applicable
4.8.1	AQ9	 Construction of the Superstructure of Building Effective dust screens, sheeting or netting will be provided to enclose the scaffolding from the ground level up to the highest level of the scaffolding. 	To minimise potential dust nuisance	All construction works area	SENTX Contractor		✓		Air Pollution Control (Construction Dust) Regulations HKAQO and EIAO- TM Annex 4	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			impler sure? ⁽¹⁾		What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R	A	measure to achieve?	
4.8.1	AQ10	Should a stone crushing plant be needed on site, the control measures recommended in the <i>Best Practicable Means Requirement for Mineral Works</i> (<i>Stone Crushing Plants</i>) <i>BPM 11/1</i> should be implemented.	To minimise potential dust nuisance	Stone crushing plant/ construction phase	SENTX Contractor		✓			Best Practicable Means Requirement for Mineral Works (Stone Crushing Plants) BPM 11/1	Not applicable. Stone crushing plant is not required in the latest landfill design
4.8.1	AQ11	Good site practices such as regular maintenance and checking of the diesel powered mechanical equipment will be adopted to avoid any black smoke emissions and to minimize gaseous emissions.	To minimise potential dust nuisance	All construction works area	SENTX Contractor		√			HKAQO and EIAO- TM Annex 4	Implemented
4.10.1	AQ12	Dust monitoring once every 6 days	Ensure the dust generated from the project meets the air quality requirement	At monitoring locations shown in <i>Figure 3.2a</i>	SENTX Contractor		✓			HKAQO and EIAO- TM Annex 4	Implemented
4.10.2	AQ41	Monitoring of ambient TSP once every 6 days	Ensure the dust emission from the project meets the dust requirement	At monitoring locations shown in Figure 11.3a	SENTX Contractor		✓	✓		HKAQO and EIAO- TM Annex 4	Implemented
4.10.2	AQ46	Monitoring of meteorological station, continuously	Collect site specific meteorological data	At meteorologica l station shown in Figure 11.3a	SENTX Contractor		✓	✓	✓	-	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the r		implemen sure? ⁽¹⁾ O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
5.7.1	N1	Adopt good site practice listed below: Only well-maintained plant will be operated on-site and plant should be serviced regularly during the construction program;	To minimise potential construction noise nuisance.	All construction works area	SENTX Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	Implemented
		Silencers or mufflers on construction equipment should be utilized and will be properly maintained during the construction program;								
		 Mobile plant, if any, will be sited as far from NSRs as possible; 								
		Machines and plant (such as trucks) that may be in intermittent use will be shut down between work periods or should be throttled down to a minimum;								
		Plant known to emit noise strongly in one direction will, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and								
		 Material stockpiles and other structures will be effectively utilised, wherever practicable, in screening noise from on-site construction activities. 								

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			implement sure? (1)	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R A	measure to achieve?	
5.8	N2	Weekly noise monitoring	Ensure noise generated from the project meets the criteria	At monitoring locations shown in Figure 6.4a	SENTX Contractor		✓		Noise Control Ordinance (NCO) and EIAO-TM Annex 5	Implemented
Water Qua	ality - Co	nstruction Phase								
6.8.1	WQ1	Construction Runoff								
		• Exposed soil areas will be minimised	To minimise potential		SENTX		✓		ProPECC PN 1/94	Deficiency of
		to reduce the contamination of runoff and erosion.	water quality impacts arising from the construction works	construction works area	Contractor				EIAO-TM Annex 6	mitigation measures but rectified by the Contractor
6.8.1	WQ2	Perimeter channels will be	To minimise potential		SENTX	✓	✓		ProPECC PN 1/94	Implemented
		constructed in advance of site formation works and earthworks and intercepting channels will be provided	water quality impacts arising from the construction works	construction works area	Contractor				Water Pollution Control Ordinance (WPCO)	
		for example along the edge of excavation.							EIAO-TM Annex 6	
6.8.1	WQ3	Silt removal facilities, channels and	To minimise potential	All	SENTX		✓		ProPECC PN 1/94	Deficiency of
		manholes will be maintained and the deposited silt and grit should be	water quality impacts arising from the	construction works area	Contractor				WPCO	mitigation measures but rectified by the
		removed regularly to ensure they are functioning properly at all times.	construction works	works area					EIAO-TM Annex 6	Contractor
6.8.1	WQ4	Temporary covers such as tarpaulin	To minimise potential		SENTX		✓		ProPECC PN 1/94	Implemented
		will also be provided to minimise the generation of high SS runoff.	water quality impacts arising from the construction works	construction works area	Contractor				WPCO	
6.8.1	WQ5	The surface runoff contained any oil	To minimise potential	All	SENTX		✓		ProPECC PN 1/94	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			implement ure? ⁽¹⁾	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	C	O/R A	measure to achieve?	
		and grease will pass through the oil	water quality impacts	construction	Contractor				WPCO	
		interceptors.	arising from the construction works	works area					EIAO-TM Annex 6	
6.8.1	WQ6	• All sewer and drains will be sealed to	To minimise potential				✓		ProPECC PN 1/94	Not applicable
		prevent building debris, soil etc from entering public sewers/drains before	water quality impacts arising from the	area at existing SENT	Contractor				WPCO	
		commencing any demolition works	demolition works	Landfill					EIAO-TM Annex 6	
6.8.1	WQ7	During the excavation works for the	To minimise potential	Tunnel boring	SENTX		✓		ProPECC PN 1/94	Not applicable.
		twin drainage tunnels, the recycle water for cooling the cutter head of	water quality impacts arising from the	sites	Contractor				WPCO	Excavation of drainage tunnels is not required
		the TBM will be conveyed to the sedimentation tanks for treatment and most of the treated water will be reused, where applicable and as much as possible, in the boring operations.	tunnel works						EIAO-TM Annex 6	in the latest landfill design.
6.8.1	WQ8	• The fuel and waste lubricant oil from	To minimise potential	SENTX Site	SENTX		✓		ProPECC PN 1/94	Not applicable
		the on-site maintenance of machinery and equipment will be collected by a	water quality impacts arising from improper		Contractor				WPCO	
		licensed chemical waste collector.	handling of fuel and oil						Waste Disposal Ordinance (WDO)	
6.8.1	WQ9	Implementation of excavation	To minimise	All	SENTX		✓		ProPECC PN 1/94	Not applicable
		schedules, lining and covering of excavated stockpiles	contaminated stormwater run-off	construction works	Contractor				WPCO	
		excavated stockplies	from the SENTX Site	WOIRS					EIAO-TM Annex 6	
6.13	WQ10	Monitoring of surface water quality	To minimise potential	SENTX Site	SENTX		✓		WPCO	Implemented
		will be conducted on a regular basis as stated in the EM&A Manual.	water quality impacts on surface water arising from the construction works		Contractor				Water-TM	

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?			o implement sure? ⁽¹⁾ O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
6.8.2	WQ11	Sewage Effluents								
		 Sufficient chemical toilets will be provided for the construction workforce. 	To minimise potential water quality impacts arising from the sewage effluents	SENTX Site	SENTX Contractor		✓		WPCO	Implemented
6.8.2	WQ12	• Untreated sewage will not be allowed	To minimise potential	SENTX Site	SENTX		✓		WPCO	Deficiency of
		to discharge into the surrounding water body.	water quality impacts arising from the sewage effluents		Contractor				WDO	mitigation measures but rectified by the Contractor
6.8.2	WQ13	A licensed waste collector will be	To minimise potential	SENTX Site	SENTX		✓		WPCO	Implemented
		employed to clean the chemical toilets on a regular basis.	water quality impacts arising from the sewage effluents		Contractor				WDO	
Waste Ma	nagement	t - Construction Phase								
7.6.1	WM1	All the necessary waste disposal permits are obtained prior to the commencement of construction work.	To ensure compliance with relevant statutory requirements	Before construction works commence	SENTX Contractor	✓	✓		WDO	Implemented
7.6.1	WM2	Management of Waste Disposal								
		The construction contractor will open a	To ensure that	SENTX Site	SENTX		✓		WDO	Implemented
		billing account with the EPD. Every construction waste or public fill load to be transferred to the Government waste disposal facilities such as public fill	adverse environmental impacts are prevented		Contractor				Waste Disposal (Charges for Disposal of Construction Waste) Regulation;	
		reception facilities, sorting facilities, landfills will required a valid "chit" which contains the information of the account holder to facilitate waste							Works Bureau Technical Circular No.31/2004; and	

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?		to impleme easure? ⁽¹⁾ O/R	or standards for the	Implementation Status and Remarks
		transaction recording and billing to the waste producer. A trip-ticket system will also be established to monitor the disposal of construction waste at the SENT Landfill and to control fly-tipping. The trip-ticket system will be included as one of the contractual requirements and implemented by the contractor.						Annex 5 and Annex 6 of Appendix G of ETWBTC No. 19/2005)	
		A recording system for the amount of waste generated, recycled and disposed of (including the disposal sites) will be established.							
7.6.1	WM3	Measures for the Reduction of Construction Waste Generation							
		Inert and non-inert construction waste will be segregated and stored in different containers or skips to facilitate reuse or recycling of the inert waste and proper disposal of the non-inert construction waste. Specific areas of the work site will be designated for such segregation and storage if immediate use is not practicable.	To reduce construction waste generation	SENTX Site	SENTX Contractor	•		WDO EIAO-TM Annex 7	Implemented
7.6.1	WM4	<u>Chemical Waste</u>							
		The construction contractor will register as a chemical waste producer with the EPD. Chemical waste will be handled in accordance with the <i>Code of Practice on the Packaging, Handling and Storage of</i>	To ensure proper handling of chemical waste	SENTX Site	SENTX Contractor	√		WDO Code of Practice on the Packaging, Handling and Storage of Chemical Wastes	Deficiency of mitigation measures but rectified by the Contractor

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the n		implement ure? ⁽¹⁾ O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		Chemical Wastes.								
7.6.1	WM5	<u>Sewage</u>								
		An adequate number of portable toilets will be provided at the site to ensure that sewage from site staff is properly collected. The portable toilets will be desludged and maintained regularly by a specialist contractor.	To ensure proper handling of sewage	SENTX Site	SENTX Contractor		✓		WDO EIAO-TM Annex 7	Implemented
7.6.1 and	WM6	General Refuse								
SENTX latest design		General refuse will be stored in enclosed bins separately from construction and chemical wastes. The general refuse will be delivered to a transfer station or other landfill, separately from construction and chemical wastes, on a daily basis to reduce odour, pest and litter impacts.	To ensure proper handling of general refuse	SENTX Site	SENTX Contractor		✓		WDO EIAO-TM Annex 7	Deficiency of mitigation measures but rectified by the Contractor
		Recycling bins will be provided at strategic locations to facilitate recovery of aluminium can and waste paper from the SENTX Site. Materials recovered will be sold for recycling.								
7.6.1	WM7	Staff Training								
		At the commencement of the construction works, training will be provided to workers on the concepts of site cleanliness and on appropriate waste management procedures, including	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor		✓			Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?	the n		implement ure? ⁽¹⁾ O/R A	What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		waste reduction, reuse and recycling.								
7.8	WM8	Environmental Monitoring & Audit Requirements Weekly audits of the waste management practices will be carried out during the construction phase. The audits examine all aspects of waste management including waste generation, storage, recycling, transport and disposal.	To ensure that adverse environmental impacts are prevented	SENTX Site	SENTX Contractor		✓		WDO	Implemented
Landfill G	as Hazar	ds - Design and Construction Phase								
8.6.2 and SENTX latest design	LFG1	Precautionary measures to be adopted by the contractors at the Project site and the adjacent development site within the landfill consultation zone are outlined in Paragraphs 8.3 to 8.49 of EPD's Landfill Gas Hazard Assessment Guidance Notes (the Guidance Note). Those precautionary measures applicable to the SENTX will be confirmed in the detailed Qualitative Landfill Gas Hazard Assessment to be submitted by the contractor.	-	All construction works area	SENTX Contractor		✓		Paragraphs 8.3 to 8.49 of EPD's Landfill Gas Hazards Assessment Guidance Note EIAO-TM Annex 7	Implemented
8.6.2	LFG2	Monitoring will be undertaken when construction works are carried out in confined space within the consultation zone with reference to the monitoring requirements and procedures specified in Paragraphs 8.23 to 8.28 of EPD's <i>Guidance Note</i> will be followed.	To protect workers from landfill gas risk	Confined space within the construction works area	SENTX Contractor		✓			Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			imple		What requirements or standards for the	Implementation Status and Remarks
	TC1	Trinigation freusures	Measure & Main Concerns to address	the Measures	the measure?		С	O/R		measure to achieve?	Status and Remarks
		In the event of the trigger levels being exceeded, it is recommended that a person, such as the Safety Officer, is nominated, with deputies, to be responsible for dealing with any emergency which may occur due to landfill gas. In an emergency situation, the nominated person, or his deputies, shall have the necessary authority and shall ensure that the confined space is evacuated and the necessary works implemented for reducing the concentrations of gas. The appropriate organisations shall be contact.									
8.6.3	LFG4	Implementation of engineering measures according to Contract Specification requirements. These measures will include the placement of liner and installation of landfill gas management system to contain, manage and control landfill gas.	To protect workers from landfill gas risk	SENTX Site	SENTX Contractor	√	✓	✓	✓	EIAO-TM Annex 7	Not applicable
8.6.3	LFG5	Engineering measures to significant engineering measures will be required in the design of the SENTX to protect the staff working in the infrastructure area. These measures include a combination of passive and active systems (examples are recommended in EPD's <i>Guidance Notes</i>). Landfill gas monitoring boreholes will be installed at the edge of the waste slope	To protect workers from landfill gas risk	Infrastructure Area	SENTX Contractor	✓	✓			EPD's Landfill Gas Hazards Assessment Guidance Note EIAO-TM Annex 7	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Location of the Measures	Who to implement the measure?		asure? (1)	t What requirements or standards for the measure to achieve?	Implementation Status and Remarks
		between the waste and the new infrastructure area to monitor the migration of landfill gas, if any.							
Ecology –	Construc	tion Phase							
9.10.2	EC1	Measures to control construction runoff:	To minimise potential		SENTX	✓		EIAO-TM Annex 16	Deficiency of
		• Exposed soil areas will be	water quality impacts affecting ecological	construction works area	Contractor			ProPECC PN 1/94	mitigation measures but rectified by the
		minimised to reduce the contamination of runoff and erosion;	resources					Water Pollution Control Ordinance (WPCO)	Contractor
								EIAO-TM Annex 6	
		 To prevent stormwater runoff from washing across exposed soil surfaces, perimeter channels will be constructed in advance of site formation works and earthworks and intercepting channels will be provided for example along the edge of excavation; 							Implemented
		 Silt removal facilities, channels and manholes will be maintained and the deposited silt and grit will be removed regularly to ensure they are functioning properly at all times; 						-	Deficiency of mitigation measures but rectified by the Contractor
		 Temporary covers such as tarpaulin will also be provided to minimise the generation of high suspended solids runoff; 						-	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement		mplen re? ⁽¹⁾	nent	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?		O/R	A	measure to achieve?	
		The surface runoff contained any oil and grease will pass through the oil interceptors; and,							-	Not applicable
		 Control measures, including implementation of excavation schedules, lining and covering of excavated stockpiles will be implemented to minimise contaminated stormwater run-off from the SENTX site. 							-	Not applicable
9.10.2 and	EC2	Good Construction Practice:								
SENTX latest design		 Fences along the boundary of the SENTX Site will be erected before the commencement of works to prevent vehicle movements, and encroachment of personnel, onto adjacent areas. 	To minimise potential ecological impacts arising from the Project	SENTX Site	SENTX Contractor	✓			EIAO-TM Annex 16	Implemented
		 The work site boundaries will be regularly checked to ensure that they are not breached and that damage does not occur to surrounding areas. 								
9.12.1	EC9	Environmental Monitoring & Audit Requirements	m	CENTEN.	OED HED	,	,	,	FIAO TM A 16	
		The implementation of the ecological mitigation measures should be checked as part of the environmental monitoring and audit procedures during the	To ensure that adverse ecological impacts are prevented	SENTX	SENTX Contractor	√	✓	✓	EIAO-TM Annex 16	Implemented

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement	the	meas	implement ture? (1)	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R A	measure to achieve?	
		construction period.								
Landscape	e and Visu	aal - Construction Phase								
10.6.5	LV1	CM1 - The construction area and area allowed for the contractor's office, leachate treatment plant and laboratory areas will be minimised to a practical minimum, to avoid impacts on adjacent landscape.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor		✓		EIAO-TM Annex 18 and ETWBC 3/2006	Not applicable
10.6.5	LV2	CM2 - Topsoil, where identified, will be stripped and stored for re-use in the construction of the soft landscape works, where practical. The Contract Specification will include storage and reuse of topsoil as appropriate.	To minimise the landscape and visual impacts	All construction works area	SENTX Contractor		✓		EIAO-TM Annex 18	Implemented
10.6.5	LV3	CM3 - All existing trees at the edges of the landfill will be carefully protected during construction. Detailed Tree Protection Specification will be provided in the Contract Specification. Under this Specification, the Contractor will be required to submit, for approval, a detailed working method statement for the protection of trees prior to undertaking any works adjacent to all retained trees, including trees in Contractor's works areas.	To minimise the landscape and visual impacts	Potential impacted area	SENTX Contractor		•		EIAO-TM Annex 18 and ETWBC 3/2006	Implemented
10.6.5	LV4	CM4 - Trees unavoidably affected by the works will be transplanted, where necessary and practical. A detailed Tree	landscape and visual	Potential impacted area	SENTX Contractor	✓	✓		EIAO-TM Annex 18 and ETWBC 3/2006	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			implement ure? (1)	What requirements or standards for the	Implementation Status and Remarks
		_	Measure & Main Concerns to address		the measure?	D	С	O/R A	measure to achieve?	
		Transplanting Specification will be provided in the Contract Specification, if applicable. Sufficient time for necessary tree root and crown preparation periods will be allowed in the project programme.								
10.6.5 and SENTX latest design	LV5	CM5 - Within 3 months of taking possession of the SENTX Site, the Contractor will plant advance screen planting of native species at Light Standard size at 1.5m centres along the High Junk Peak Trail so as to screen views of the Works from the trail. Tree planting locations will be agreed with AFCD. Works will be completed within 9 months of taking possession of the SENTX Site.	To minimise the landscape and visual impacts	At High Junk Peak Hiking Trail	SENTX Contractor		•		EIAO-TM Annex 18	Implemented
10.6.5	LV6	CM6 - The Contractor's office, leachate treatment plant and laboratory will be given an aesthetic treatment in earth tones to reduce their visual impact and albedo and blend them into the surrounding landscape.	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	✓	✓		EIAO-TM Annex 18	Not applicable
10.6.5	LV7	CM7 - The Contractor's office, leachate treatment plant and laboratory will be surrounded by a minimum of 5m wide and 0.75m high earth bund on the west and south sides planted with a dense screen of tree and shrub vegetation. Additional tree planting will be provided in unused spaces with thin infrastructure	To minimise the landscape and visual impacts	Infrastructure area	SENTX Contractor	✓	✓		EIAO-TM Annex 18 and ETWBC 7/2002	Not applicable

EIA Ref.	EM&A Ref	Environmental Protection Measures/ Mitigation Measures	Objectives of the Recommended	Location of the Measures	Who to implement			implement sure? (1)	What requirements or standards for the	Implementation Status and Remarks
			Measure & Main Concerns to address		the measure?	D	С	O/R A	measure to achieve?	
		site, along access roads and in and around car parks. This will be supplemented with shrub planting, where appropriate.								
10.6.5	LV8	CM8 - Planting trials will be carried out in an on-site nursery prior to implementation of the first phase of restoration to establish the best planting matrix and management intensity of the recommended plant materials for the restoration.	To minimise the landscape and visual impacts	SENTX Site	SENTX Contractor		✓		EIAO-TM Annex 18	Not applicable
11.4.1 and SENTX latest design	LV9	During the preparation of the detailed landscape design plan, the design submission will be audited against the recommendation proposed in the <i>ER Report</i> by the Registered Landscape Architect from the ET.	To ensure the implementation of mitigation measures proposed in this EIA Report	SENTX Site	SENTX Contractor/E T	✓	✓		EIAO-TM Annex 18	Implemented

Annex C

Monitoring Schedule for This Reporting Period

South East New Territories (SENT) Landfill Extension EM&A Impact Monitoring Schedule during Construction Phase

July 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2	Dust Monitoring	4 Surface Water Monitoring (pm) Noise Monitoring (pm)	5	6
7	8	9 Dust Monitoring	10	11	Surface Water Monitoring (pm) Noise Monitoring (pm)	13
14	Dust Monitoring	16	17	Surface Water Monitoring (pm) Noise Monitoring (pm)	19	20
Dust Monitoring	22	23	24	25 Surface Water Monitoring (pm) Noise Monitoring (pm)	26	27 Dust Monitoring
28	29	30	31			

Note

Impact dust monitoring will be conducted at two monitoring stations (DM1 and DM2) under the on-going EM&A programme TKO Area 137 Fill Bank and the results will be shared with SENTX.

Air Quality

Calibration Certificates for Dust Monitoring Equipment



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Calibration Report of High Volume Air Sampler

Manufacturer

Graseby 105

Date of Calibration

31 May 2019

Serial No.

: 9795 (ET/ÉA/003/18)

Calibration Due Date

30 July 2019

Method

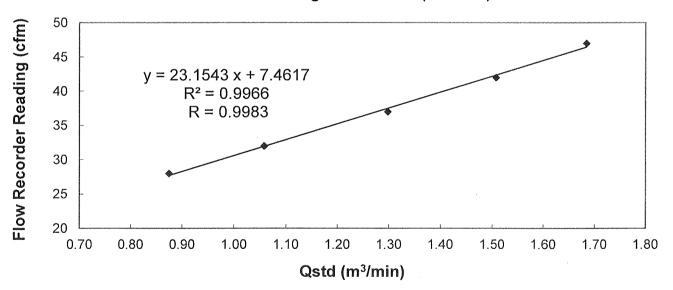
Five-point calibration by using standard calibration kit Tisch TE-5025A refer to the

Operations Manual

Results

Flow recorder rea	ding (cfm)	47	42	37	32	28
Qstd (Actual flow	rate, m³/min)	1.68	1.51	1.30	1.06	0.87
Pressure :	768.81 mm Hg		Temp.:	299	K .	

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



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

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

Calibrated by :

LIAO, Yun Chac (Technician) Checked by

LAU, Chi Leung

(Environmental Team Leader)

- END OF REPORT -



東業德勤測試顧問有限公司 ETS-TESTCONSULT LTD.

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

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

Calibration Report of High Volume Air Sampler

Andersen G1051

Date of Calibration

31 May 2019

Serial No.

Manufacturer

1176 (ET/EA/003/05)

Calibration Due Date

30 July 2019

Method

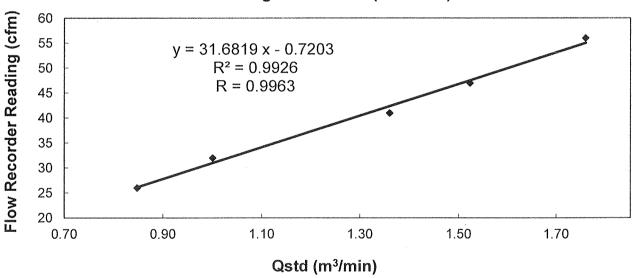
Based on Operations Manual for the 5-point calibration using standard calibration kit

manufactured by Tisch TE-5025 A

Results

Flow recorder rea	ding (cfm)	56	47	41	32	26
Qstd (Actual flow	rate, m³/min)	1.76	1.52	1.36	1.00	0.85
Pressure :	768.81 mm Hg		Temp. :	299	K	

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



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

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

Calibrated by:

LÍAO, Yun Chao

(Technician)

Checked by

LAU, Chi Leung

(Environmental Team Leader)

- END OF REPORT -

24-hour TSP Monitoring Results

Table D2.1 24-hour TSP Monitoring Results at DM1

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (μg/m3)
3 Jul 19	8:50	4 Jul 19	8:50	Rainy	79
9 Jul 19	8:00	10 Jul 19	8:00	Fine	84
15 Jul 19	10:40	16 Jul 19	10:40	Sunny	112
21 Jul 19	8:00	22 Jul 19	8:00	Fine	74
27 Jul 19	8:00	28 Jul 19	8:00	Cloudy	93
				Average	88
				Min	74
				Max	112

Note:

 $\,$ DM1 corresponds to the existing TSP monitoring station TKO-A1 currently operating by CEDD.

Figure D2.1 Graphical Presentation for 24-hr TSP Monitoring at DM1

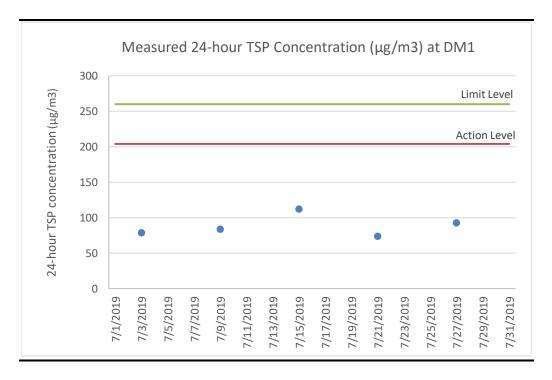


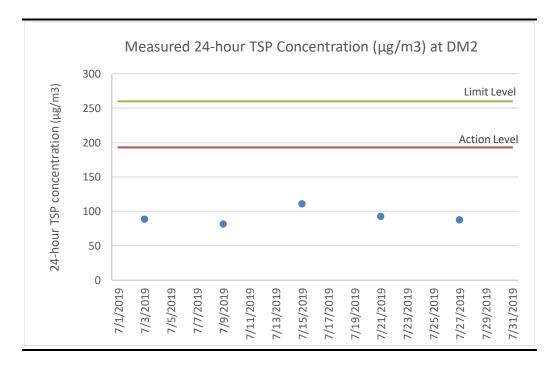
Table D2.2 24-hour TSP Monitoring Results at DM2

Start Date	Start Time	Finish Date	Finish Time	Weather	24-hour TSP (μg/m3)
3 Jul 19	9:00	4 Jul 19	9:00	Rainy	89
9 Jul 19	8:00	10 Jul 19	8:00	Fine	82
15 Jul 19	10:45	16 Jul 19	10:45	Sunny	111
21 Jul 19	8:00	22 Jul 19	8:00	Fine	93
27 Jul 19	8:00	28 Jul 19	8:00	Cloudy	88
				Average	93
				Min	82
				Max	111

Note:

DM2 corresponds to the existing TSP monitoring station TKO-A2a currently operating by CEDD.

Figure D2.2 Graphical Presentation for 24-hr TSP Monitoring at DM2



Event and Action Plan for Dust Monitoring

Annex D3 Event and Action Plan for Dust Monitoring During Construction Phase

		Action	
Event	ET	IEC	Contractor
Action Level			
Exceedance for one sample	 Identify the source(s) and investigate the cause(s) of exceedance Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project Repeat measurement to confirm finding if exceedance is due to the Project Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below action level 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Check Contractor's working methods 	 Rectify any unacceptable practice Amend working methods if appropriate
Exceedance for two or more consecutive samples	 Identify the source(s) and investigate the cause(s) of exceedance Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented If exceedance continues, arrange meeting with Contractor & IEC Continue monitoring at daily intervals if exceedance is due to the Project If no exceedance for 3 consecutive days, cease additional monitoring 	Check monitoring data submitted by ET	 Submit proposals for remedial measures to IEC Implement the agreed proposals Amend proposal if appropriate

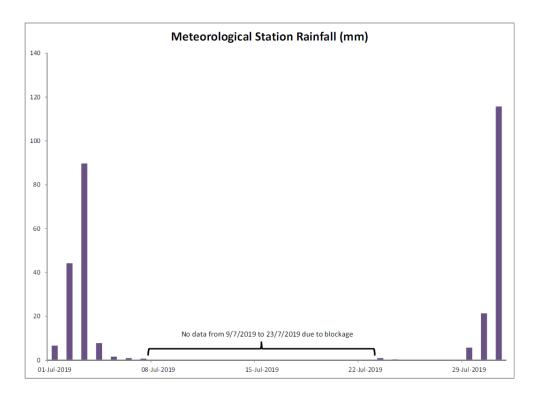
		Action	
Event	ET	IEC	Contractor
Limit Level			
Exceedance for one sample	 Identify the source(s) and investigate the cause(s) of exceedance Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Repeat measurement to confirm finding if exceedance is due to the Project Increase monitoring frequency to daily if exceedance is due to the Project and continue until the monitoring results reduce to below limit level 	Check monitoring data submitted by ETCheck Contractor's working methods	 Take immediate action to avoid further exceedance Submit proposals for remedial measures to IEC Implement the agreed proposals Amend proposal if appropriate
Exceedance for two or more consecutive samples	 Identify source(s) and investigate the cause(s) of exceedance Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC, Project Proponent and EPD the causes & actions taken for the exceedances Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Continue monitoring at daily intervals if exceedance is due to the Project If no exceedance for 3 consecutive days, cease additional monitoring If exceedance due to the Project continues, consider what portion of the work is responsible and stop that portion of work until the exceedance is abated 		 Take immediate action to avoid further exceedance Submit proposals for remedial measures to IEC Implement the agreed proposals Resubmit proposals if problem still not under control

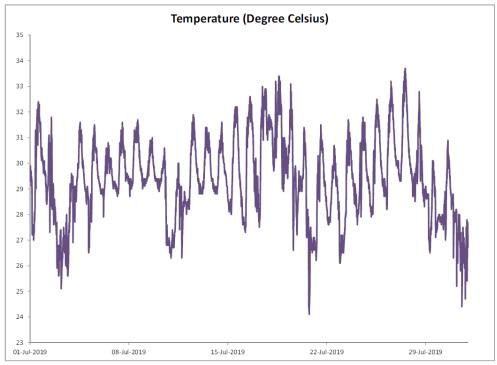
ENVIRONMENTAL RESOURCES MANAGEMENT

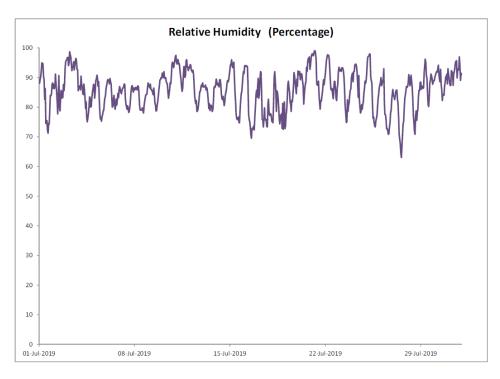
GREEN VALLEY LANDFILL LTD.

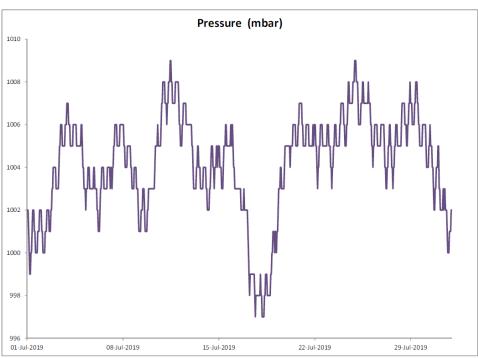
Meteorological Data

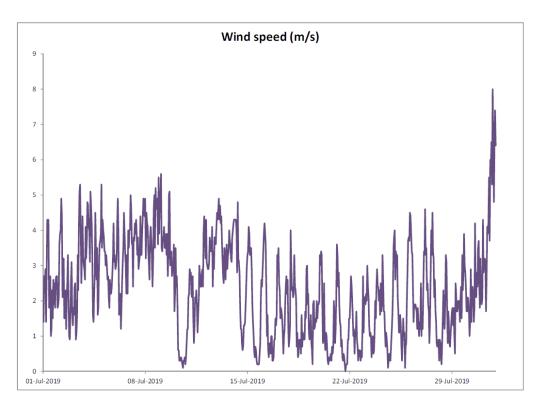
Annex D4 Meteorological Data

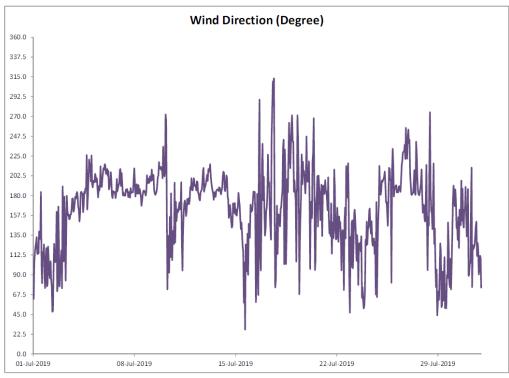


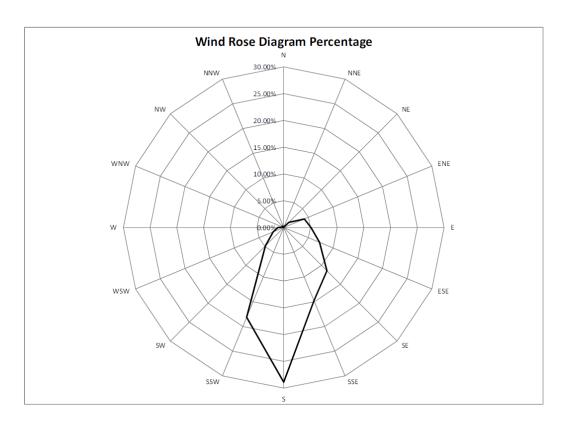












Manual Rain Gauge Readings

July 2019

Date	Rainfall
	(mm)
1 Jul 19	1.6
2 Jul 19	105.2
3 Jul 19	69.4
4 Jul 19	2.6
5 Jul 19	4.0
6 Jul 19	1.1
7 Jul 19	0.4
8 Jul 19	0.0
9 Jul 19	4.8
10 Jul 19	6.2
11 Jul 19	19.0
12 Jul 19	0.0
13 Jul 19	0.3
14 Jul 19	0.2
15 Jul 19	0.0
16 Jul 19	0.0
17 Jul 19	0.0
18 Jul 19	0.0
19 Jul 19	2.8
20 Jul 19	24.0
21 Jul 19	0.6
22 Jul 19	0.4
23 Jul 19	0.0
24 Jul 19	1.4
25 Jul 19	0.4
26 Jul 19	0.0
27 Jul 19	0.0
28 Jul 19	6.2
29 Jul 19	3.8
30 Jul 19	31.6
31 Jul 19	153.4
TOTAL RAINFALL	439.4

Annex E

Noise

Annex E1

Calibration Certificates for Noise Monitoring Equipment



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 校正證書

Certificate No.:

C186448

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC18-0867)

Date of Receipt / 收件日期: 8 November 2018

Description / 儀器名稱

Sound Calibrator (EQ089)

Manufacturer / 製造商

Rion

Model No. / 型號 Serial No. / 編號

NC-75 34680623

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 温度 : $(23 \pm 2)^{\circ}$ C Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$

Line Voltage / 電壓

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期

24 November 2018

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Rohde & Schwarz Laboratory, Germany
- Fluke Everett Service Center, USA

Tested By 測試

H T Wong

Technical Officer

Certified By 核證

Lee Engineer Date of Issue 簽發日期

27 November 2018

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory 本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。

Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 — 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓

Tel/電話: (852) 2927 2606 Fax/傳真: (852) 2744 8986 E-mail/電郵: callab@suncreation.com

Website/網址: www.suncreation.com



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration 松正證書

Certificate No.:

C186448

證書編號

1. The unit-under-test (UUT) was allowed to stabilize in the laboratory for over 12 hours before the commencement of the test.

2. The results presented are the mean of 3 measurements at each calibration point.

3. Test equipment:

Equipment ID CL130 CL281 TST150A <u>Description</u>
Universal Counter
Multifunction Acoustic Calibrator
Measuring Amplifier

Certificate No. C183775 CDK1806821 C181288

4. Test procedure: MA100N.

5. Results:

5.1 Sound Level Accuracy

UUT	Measured Value	Mfr's Spec.	Uncertainty of Measured Value
Nominal Value	(dB)	(dB)	(dB)
94 dB, 1 kHz	94.0	± 0.25	± 0.2

5.2 Frequency Accuracy

UUT Nominal Value	Measured Value	Mfr's	Uncertainty of Measured Value
(kHz)	(kHz)	Spec.	(Hz)
1	1.000 0	$1 \text{ kHz} \pm 0.1 \%$	± 0.1

Remark: The uncertainties are for a confidence probability of not less than 95 %.

Note

Only the original copy or the laboratory's certified true copy is valid.

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

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

本證書所載校正用之測試器材均可溯源至國際標準。局部複印本證書需先獲本實驗所書面批准。



輝創工程有限公司

Sun Creation Engineering Limited

Calibration & Testing Laboratory

Certificate of Calibration

校正證書

Certificate No.:

C192957

證書編號

ITEM TESTED / 送檢項目 (Job No. / 序引編號: IC19-1098)

Date of Receipt / 收件日期: 30 May 2019

Description / 儀器名稱

Sound Level Meter (EQ017) Brüel & Kjær

Manufacturer / 製造商 Model No. / 型號

2250

Serial No. / 編號

3012330

Supplied By / 委託者

Action-United Environmental Services and Consulting

Unit A, 20/F., Gold King Industrial Building, 35-41 Tai Lin Pai Road, Kwai Chung, N.T.

TEST CONDITIONS / 測試條件

Temperature / 溫度 :

 $(23 \pm 2)^{\circ}$ C

Relative Humidity / 相對濕度 :

 $(50 \pm 25)\%$

Line Voltage / 電壓 :

TEST SPECIFICATIONS / 測試規範

Calibration check

DATE OF TEST / 測試日期

7 June 2019

TEST RESULTS / 測試結果

The results apply to the particular unit-under-test only.

The results do not exceed manufacturer's specification.

The results are detailed in the subsequent page(s).

The test equipment used for calibration are traceable to National Standards via:

- The Government of The Hong Kong Special Administrative Region Standard & Calibration Laboratory
- The Bruel & Kjaer Calibration Laboratory, Denmark
- Agilent Technologies / Keysight Technologies
- Fluke Everett Service Center, USA

Tested By 測試

HT Wong Technical Officer

Certified By 核證

C Lee

Date of Issue

12 June 2019

Engineer

簽發日期

The test equipment used for calibration are traceable to the Nation Standards as specified in this certificate. This certificate shall not be reproduced except in full, without the prior written approval of this laboratory.

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Sun Creation Engineering Limited – Calibration & Testing Laboratory c/o 4/F, 1 Hing On Lane, Tuen Mun, New Territories, Hong Kong 輝創工程有限公司 一 校正及檢測實驗所 c/o 香港新界屯門興安里一號四樓

Annex E2

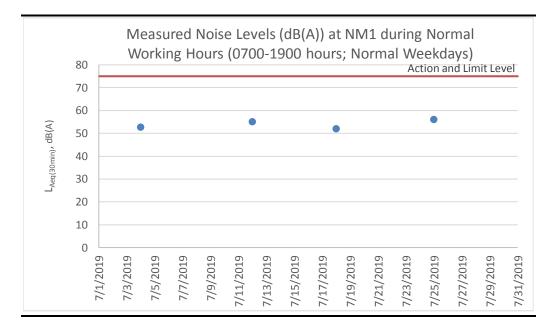
Noise Monitoring Results

Table E2.1 Measured Noise Levels (dB(A)) at NM1 during Normal Working Hours (0700-1900 hours; Normal Weekdays)

Date	Start Time	Finish Time	Weather	L _{10 (30min)}	L _{90 (30min)}	Leq (30min)
4-Jul-19	15:31	16:01	Sunny	54.3	50.8	52.7
12-Jul-19	15:30	16:00	Sunny	56.7	53.0	55.1
18-Jul-19	15:48	16:18	Sunny	53.7	50.1	52
25-Jul-19	15:38	16:08	Sunny	57.5	54.1	56.1
					Average	e 54.0
					Miı	n 52.0
					Max	x 56.1

Correction of +3 dB(A) was made for free field measurements.

Figure E2.1 Graphical Presentation for Noise Monitoring at NM1



Annex E3

Event and Action Plan for Noise Monitoring

Annex E3 Event and Action Plan for Construction Noise

Event	Action								
	ET	IEC	Contractor						
Action Level	 Identify the source(s) and investigate the cause(s) of exceedance and complaint Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Discuss with ET and Contractor on proposed remedial measures Review proposals on remedial measures Audit the implementation of the remedial measures Audit the effectiveness of the implemented remedial measures 	 Submit proposals for remedial measures to IEC Implement the agreed proposals 						
Limit Level	 Identify the source(s) and investigate the cause(s) of exceedance and complaint Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project Analyse the operation of SENTX and investigate the causes of exceedance Provide interim report to Contractor, IEC, Project Proponent and EPD the causes of the exceedances Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Report the remedial measures implemented and the additional monitoring results to Contactor, IEC, Project Proponent and EPD Have additional monitoring if exceedance is due to the Project. If exceedance stops, cease additional monitoring 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Discuss with ET and Contractor on proposed remedial measures Review proposals on remedial measures Audit the implementation of the remedial measures Audit the effectiveness of the implemented remedial measures 	 Take immediate measures to avoid further exceedance Submit proposals for remedial measures to IEC within 3 working days of notification Implement the agreed proposals Resubmit proposals if problem still not under control Stop the relevant activity of works as determined by the Project Proponent until the exceedance is abated 						

Annex F

Surface Water Quality

Annex F1

Calibration Certificates for Surface Water Quality Monitoring Equipment



ALS Technichem (HK) Pty Ltd

11/F, Chung Shun Knitting Centre 1-3 Wing Yip Street, Kwai Chung N.T., Hong Kong T: +852 2610 1044 | F: +852 2610 2021

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

CONTACT: MR IVAN LEUNG WORK ORDER: HK1923829

CLIENT: ALS TECHNICHEM (HK) PTY LTD

ADDRESS: 11/F., CHUNG SHUN KNITTING CENTRE, SUB-BATCH: C

1-3 WING YIP STREET, LABORATORY: HONG KONG KWAI CHUNG, N.T. DATE RECEIVED: 05-Jun-2019 HONG KONG DATE OF ISSUE: 05-Jun-2019

COMMENTS

The performance of the equipment stated in this report is checked with independent reference material and results compared against a calibrated secondary source.

The "Tolerance Limit" quoted is the acceptance criteria applicable for similar equipment used by the ALS Hong Kong laboratory or quoted from relevant international standards.

The "Next Calibration Date" is recommended according to best practice principle as practised by the ALS Hong Kong laboratory or quoted from relevant international standards.

Scope of Test: Conductivity, Dissolved Oxygen, pH Value, Salinity and Temperature

Equipment Type: Multifunctional Meter

Brand Name: YSI

Model No.: Professional Plus

Serial No.: JC024046
Equipment No.: HK1274
Date of Calibration: 05-Jun-2019

NOTES

This is the Final Report and supersedes any preliminary report with this batch number.

Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Si

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REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1923829

SUB-BATCH: (

DATE OF ISSUE: 05-Jun-2019

CLIENT: ALS TECHNICHEM (HK) PTY LTD

Equipment Type: Multifunctional Meter

Brand Name: YSI

Model No.: Professional Plus

Serial No.: JC024046 Equipment No.: HK1274

Date of Calibration: 05-Jun-2019 Date of Next Calibration: 05-Sep-2019

PARAMETERS:

Conductivity Method Ref: APHA (21st edition), 2510B

Expected Reading (µS/cm)	Displayed Reading (μS/cm)	Tolerance (%)
146.9	141.6	-3.6
6667	6150	-7.8
12890	12730	-1.2
58670	57983	-1.2
	Tolerance Limit (%)	±10.0

Dissolved Oxygen

Method Ref: APHA (21st edition), 4500-O: G

Expected Reading (mg/L)	Displayed Reading (mg/L)	Tolerance (mg/L)
2.28	2.28	+0.00
5.26	5.22	-0.04
7.53	7.60	+0.07
	Tolerance Limit (mg/L)	±0.20

pH Value Method Ref: APHA (21st edition), 4500H:B

Expected Reading (pH unit)	Displayed Reading (pH unit)	Tolerance (pH unit)
4.0	4.09	+0.09
7.0	7.05	+0.05
10.0	9.90	-0.10
	Tolerance Limit (pH unit)	±0.20

Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless of equipment precision or significant figures.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Ship

REPORT OF EQUIPMENT PERFORMANCE CHECK/CALIBRATION

WORK ORDER: HK1923829

SUB-BATCH: C

DATE OF ISSUE: 05-Jun-2019

CLIENT: ALS TECHNICHEM (HK) PTY LTD

Equipment Type: Multifunctional Meter

Brand Name: YSI

Model No.: Professional Plus

Serial No.: JC024046 Equipment No.: HK1274

Date of Calibration: 05-Jun-2019 Date of Next Calibration: 05-Sep-2019

PARAMETERS:

Salinity Method Ref: APHA (21st edition), 2520B

Expected Reading (ppt)	Displayed Reading (ppt)	Tolerance (%)
0	0.00	
10	9.84	-1.6
20	19.79	-1.1
30	30.58	+1.9
	Tolerance Limit (%)	±10.0

Temperature

Method Ref: Section 6 of International Accreditation New Zealand Technical

Guide No. 3 Second edition March 2008: Working Thermometer Calibration Procedure.

Expected Reading (°C)	Displayed Reading (°C)	Tolerance (°C)
9.5	9.7	+0.2
23.0	22.7	-0.3
40.5	39.7	-0.8
	Tolerance Limit (°C)	±2.0

 $\hbox{Remark: "Displayed Reading" presents the figures shown on item under calibration / checking regardless}$

of equipment precision or significant figures.

Mr Chan Siu Ming, Vico Manager - Inorganic

Ma Sig

Annex F2

Surface Water Quality Monitoring Results

Table F2.1 Surface Water Quality Monitoring Results at DP4T

Date	Time	Weather	Water	Water	Water	Dissolved	pН	Suspended	Remarks
		Condition	Appearance	Condition	Temperature	Oxygen (DO)		Solids (SS)	
					(°C)	(mg/L)		(mg/L)	
4-Jul-19	15:09	Sunny	Yellow	Turbid	30.2	5.96	8.53	68.5	-
4-Jul-19	15:09	Sunny	Yellow	Turbid	30.1	5.81	8.56	-	DP4 (Future, temporary) (Remeasurement)
12-Jul-19	15:04	Sunny		Unable to	collect water sam	ple due to insuff	icient flow		-
18-Jul-19	15:04	Sunny	Pale yellow	Semi-clear	37	13.59	9.4	14.2	-
18-Jul-19	15:04	Sunny	Pale yellow	Semi-clear	37.1	13.5	9.41	-	DP4 (Future, temporary) (Remeasurement)
25-Jul-19	15:08	Sunny	Pale yellow	Semi-clear	34	9.58	9.11	21.8	-
25-Jul-19	15:08	Sunny	Pale yellow	Semi-clear	34.1	9.32	9.11	-	DP4 (Future, temporary) (Remeasurement)
					Average	9.63	9.02	34.8	-
					Min	5.81	8.53	14.2	-
					Max	: 13.59	9.41	68.5	-

Notes: DP4 was temporary relocated to DP4 (Future, temporary) (i.e. DP4T) as an interim discharge point from the monitoring event on 16 May 2019.

Table F2.2 Surface Water Quality Monitoring Results at DP6

Date	Time	Weather	Water	Water	Water	Dissolved	pН	Suspended	Remarks
		Condition	Appearance	Condition	Temperature	e Oxygen (DO)		Solids (SS)	
					(°C)	(mg/L)		(mg/L)	
4-Jul-19	14:53	Sunny		Unable to	collect water sa	mple due to insuffi	cient flow		-
12-Jul-19	14:55	Sunny		Unable to	collect water sa	imple due to insuffi	cient flow		-
18-Jul-19	14:34	Sunny	Pale yellow	Semi-clear	34.3	8.48	7.08	5.7	-
18-Jul-19	14:42	Sunny	Pale yellow	Semi-clear	34.4	8.63	7.21	6.1	DP6 (Duplicate)
25-Jul-19	14:38	Sunny	Pale yellow	Semi-clear	34.1	6.39	7.48	10.8	-
25-Jul-19	14:46	Sunny	Pale yellow	Semi-clear	34.2	6.6	7.54	11.2	DP6 (Duplicate)
					Average	7.53	7.33	8.45	-
					Min	6.39	7.08	5.70	-
					Max	8.63	7.54	11.20	-

Figure F2.1 Graphical Presentation for Surface Water Quality Monitoring (DO)

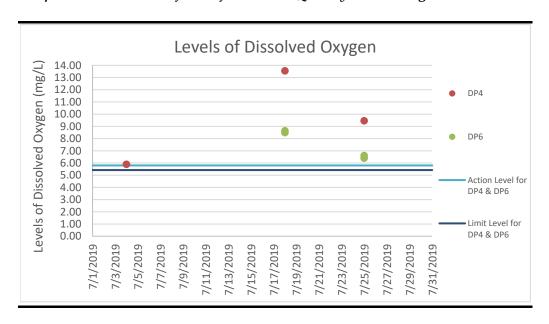


Figure F2.2 Graphical Presentation for Surface Water Quality Monitoring (pH)

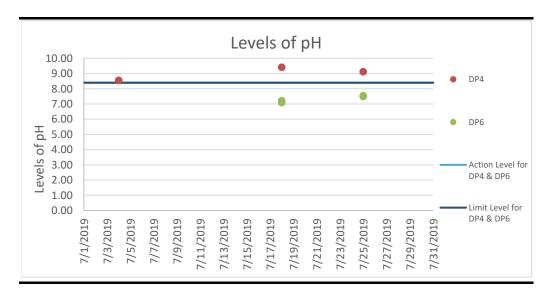
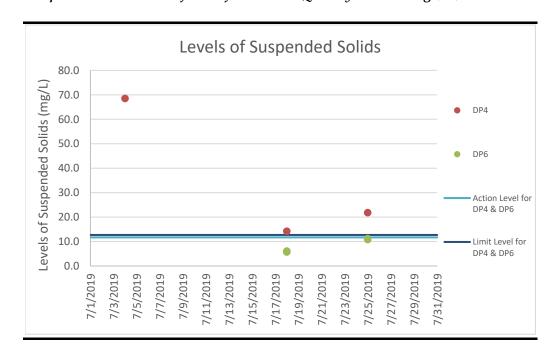


Figure F2.3 Graphical Presentation for Surface Water Quality Monitoring (SS)



Annex F3

Event and Action Plan for Surface Water Quality Monitoring

Annex F3 Event and Action Plan for Surface Water Quality During Construction Phase

Event	Action							
	ET	IEC	Contractor					
Action Level being exceeded by one sampling day	 Repeat <i>in situ</i> measurement to confirm findings Identify the source(s) and investigate the cause(s) of exceedance Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project Repeat measurement on the next day of exceedance if exceedance is due to the Project 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Check Contractor's working methods 	Rectify any unacceptable practice Amend working methods if appropriate					
Action Level being exceeded by two consecutive sampling days	 Repeat <i>in situ</i> measurement to confirm findings Identify the source(s) and investigate the cause(s) of exceedance Prepare Notification of Exceedance within 24 hours Inform Contractor, IEC and Project Proponent whether the cause of exceedance is due to the Project Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Increase the monitoring frequency to daily if exceedance is due to the Project and continue until no exceedance of Action Level 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Check Contractor's working methods Discuss with ET Leader and Contractor on proposed remedial measures Review proposals on remedial measures Audit the implementation of the remedial measures Audit the effectiveness of the implemented remedial measures 	 Submit proposals for remedial measures to IEC Implement the agreed proposals Amend proposal if appropriate 					

Event	Action							
	ET	IEC	Contractor					
Limit Level being exceeded by two consecutive sampling days	 Repeat <i>in situ</i> measurement to confirm findings Identify source(s) of impact and cause(s) of exceedance Prepare the Notification of Exceedance within 24 hours Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project Discuss with Contractor and IEC for remedial measures required Ensure remedial measures are properly implemented Increase the monitoring frequency to daily if exceedance is due to the Project until no exceedance of Limit Level 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Check Contractor's working methods Discuss with ET and Contractor on proposed remedial measures Review proposals on remedial measures Audit the implementation of the remedial measures Audit the effectiveness of the implemented remedial measures 	 Critically review the working methods Rectify unacceptable practice Check all plant and equipment Consider changes of working methods Discuss with the ET and IEC and propose mitigation measures to the IEC Implement the agreed mitigation measures 					
Limit Level being exceeded by more than two consecutive sampling days	 Repeat <i>in situ</i> measurement to confirm findings Identify source(s) of impact and cause(s) of exceedance Prepare the Notification of Exceedance within 24 hours Inform Contractor, IEC, Project Proponent and EPD whether the cause of exceedance is due to the Project Check monitoring data, all plant, equipment and Contractor's working methods Discuss with Contractor and IEC for remedial measures required Ensure mitigation measures are implemented Increase the monitoring frequency to daily if exceedance is due to the Project until no exceedance of Limit Level for two consecutive days 	 Verify the Notification of Exceedance Check monitoring data submitted by ET Check Contractor's working methods Discuss with ET and Contractor on proposed remedial measures Review proposals on remedial measures Audit the implementation of the remedial measures Audit the effectiveness of the implemented remedial measures 	 Critically review the working methods Rectify unacceptable practice Check all plant and equipment Consider changes of working methods Discuss with the ET and IEC and propose mitigation measures Implement the agreed mitigation measure As directed by the Project Proponent, slow down or stop all or part of the construction activities 					

ENVIRONMENTAL RESOURCES MANAGEMENT

GREEN VALLEY LANDFILL LTD.

Annex F4

Investigation Reports of Environmental Quality Limit Exceedance

Project	South East New Territories (SENT) Landfill Extension
Date	4 July 2019
Time	DP4T: 15:09
Monitoring Location	DP4T
Parameter	Surface Water (pH)
Action / Limit Levels	DP4T: Action level: >8.39
	Limit level: >8.40
Measured Level	DP4T: 8.53 & 8.56
Possible reason	During the sampling event, the water level was observed to be above the weir plate for sampling. As there was flow of water from upstream to downstream, it was agreed on-site with IEC and GVL representatives that water monitoring and sampling should be carried out. From the on-site rainfall record of July 2019, heavy rainfall event was recorded on 2 July 2019. Amber rainstorm warning signal was also issued by the Hong Kong Observatory on 3 July 2019 before the sampling event on 4 July 2019. During the heavy rainfall events, backflow of muddy water from downstream might well passed DP4T along the channel. The site rainfall record showed that there was little rainfall on 4 July 2019. It is therefore a high possibility that the high level of water observed at DP4T was due to backflow water from the downstream area. The sample taken at DP4T on the day might not represent the surface water runoff from SENTX and further upstream. In addition, no works which may lead to potential pH increase (e.g. concreting works) was conducted in the vicinity of surface water channel leading to DP4T on and before the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the Wetsep operation record on 4 July 2019 and the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. Due to presence of the influencing factor from the downstream and no potential source leading to pH increase from the Project-related
	activities, with the implementation of relevant mitigation measures, there is no adequate evidence showing that the pH

	exceedance at DP4T was deemed to Project-related activities.	
Action Taken / Action to be Taken	Action to Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.	
	In addition, the Contractor shall review the drainage system of the site and discuss the drainage issues of the TKO Fill Bank with CEDD so that there will be no backflow of surface water runoff from TKO Fill Bank to the SENTX boundary.	
Remarks	-	

Prepared by: Tina Siu
Designation: Environmental Team

18 July 2019 Date:

Project	South East New Territories (SENT) Landfill Extension	
Date	4 July 2019	
Time	DP4T: 15:09	
Monitoring Location	DP4T	
Parameter	Surface Water (Suspended Solids (SS))	
Action / Limit Levels	DP4T: Action level: >11.7 mg/L	
	Limit level: >12.7 mg/L	
Measured Level	DP4T: 68.5 mg/L	
Possible reason	During the sampling event, the water level was observed to be above the weir plate for sampling. As there was flow of water from upstream to downstream, it was agreed on-site with IEC and GVL representatives that water monitoring and sampling should be carried out. From the on-site rainfall record of July 2019, heavy rainfall event was recorded on 2 July 2019. Amber rainstorm warning signal was also issued by the Hong Kong Observatory on 3 July 2019 before the sampling event on 4 July 2019. During the heavy rainfall events, backflow of muddy water from downstream might well passed DP4T along the channel. The site rainfall record showed that there was little rainfall on 4 July 2019. It is therefore a high possibility that the high level of water observed at DP4T was due to backflow water from the downstream area. The sample taken at DP4T on the day might not represent the surface water runoff from SENTX and further upstream. In addition, no works which may lead to potential SS increase was conducted in the vicinity of surface water channel leading to DP4T on the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the Wetsep operation record on 4 July 2019 and the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual.	
	Due to presence of the influencing factor from the downstream and no potential source leading to SS increase from the Project-related activities, with the implementation of relevant mitigation measures, there is no adequate evidence showing that the SS	

	exceedance at DP4T was deemed to Project-related activities.
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level. In addition, the Contractor shall review the drainage system of the site and discuss the drainage issues of the TKO Fill Bank with CEDD so that there will be no backflow of surface water runoff from TKO Fill Bank to the SENTX boundary.
Remarks	

Prepared by:

Tina Siu
Environmental Team
18 July 2019 Designation:
Date:

Project	South East New Territories (SENT) Landfill Extension		
Date	18 July 2019		
Time	DP4T: 15:04		
Monitoring Location	DP4T		
Parameter	Surface Water (pH)		
Action / Limit Levels	DP4T: Action level: >8.39		
	Limit level: >8.40		
Measured Level	DP4T: 9.40 & 9.41		
Possible reason	No works which may lead to potential pH increase (e.g. concreting works) was conducted in the vicinity of surface water channel leading to DP4T on and before the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the Wetsep operation record on 18 July 2019 and the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. As no potential source from the Project-related activities which may lead to pH increase was identified, and the Contractor has implemented the relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the pH exceedance at DP4T was deemed to Project-related activities.		
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.		
Remarks	-		

Prepared by:	Abbey Lau
Designation:	Environmental Team
Date:	19 July 2019

Project	South East New Territories (SENT) Landfill Extension		
Date	18 July 2019		
Time	DP4T: 15:04		
Monitoring Location	DP4T		
Parameter	Surface Water (Suspended Solids (SS))		
Action / Limit Levels	DP4T: Action level: >11.7 mg/L		
	Limit level: >12.7 mg/L		
Measured Level	DP4T: 14.2 mg/L		
Possible reason	No works which may lead to potential SS increase was conducted in the vicinity of surface water channel leading to DP4T on the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the Wetsep operation record on 18 July 2019 and the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. As no potential source from the Project-related activities which		
	may lead to SS increase was identified, and the Contractor has implemented relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the SS exceedance at DP4T was deemed to Project-related activities.		
Action Taken / Action to be Taken	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.		
Remarks	-		

Prepared by: Abbey Lau

Designation: Environmental Team

Date: 24 July 2019

Project	South East New Territories (SENT) Landfill Extension		
Date	25 July 2019		
Time	DP4T: 15:08		
Monitoring Location	DP4T		
Parameter	Surface Water (pH)		
Action / Limit Levels	DP4T: Action level: >8.39		
	Limit level: >8.40		
Measured Level	DP4T: 9.11 & 9.11		
Action Taken / Action to be Taken	No works which may lead to potential pH increase (e.g. concreting works) was conducted in the vicinity of surface water channel leading to DP4T on and before the sampling day based on on-site observations and construction activities described by the Contractor. During the sampling event, no potential surface water discharge or overflow to the DP4T channel was observed. Water from wheel-washing area discharged to the DP4T channel was treated by the Wetsep prior to discharge. Wetsep near DP4T was functioning properly with reference to the on-site checking of the treated water at the outlet of the Wetsep during the sampling event. The Contractor has complied with the recommendations and conditions outlined in the updated EM&A Manual. As no potential source from the Project-related activities which may lead to pH increase was identified, and the Contractor has implemented the relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the pH exceedance at DP4T was deemed to Project-related activities. Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is		
be Taken	continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.		
Remarks	-		

Prepared by: Angela Yung
Designation: Environmental Team
Date: 31 July 2019

Project	South East New Territories (SENT) Landfill Extension
Date	25 July 2019
Time	DP4T: 15:08
Monitoring Location	DP4T
Parameter	Surface Water (Suspended Solids (SS))
Action / Limit Levels	DP4T: Action level: >11.7 mg/L
	Limit level: >12.7 mg/L
Measured Level	DP4T: 21.8 mg/L
Possible reason	During the weekly site inspection in the morning and the sampling event, it was observed that soil along the bank of DP4T channel next to the surface water sampling point was exposed. Topsoil was observed to have leaked into the water and muddy water was observed around the DP4 sampling point. Based on the above observation, the SS exceedance at DP4T was deemed to Project-related activities. It should be noted that the Water Pollution Control Ordinance (WPCO) water discharge licence has been obtained by the Contractor for the operation of the Wetsep near DP4T and the allowable discharge limit for SS to DP4T channel is 30 mg/L. The treated water with the allowable discharge limit from the Wetsep might also be a source leading to SS exceedance.
Action Taken / Action to be Taken	The Contractor shall maintain the DP4T channel by covering the exposed soil with concrete in order to avoid SS run-off to DP4T channel. Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.
Remarks	-

Prepared by: Angela Yung
Designation: Environmental Team
Date: 31 July 2019

Annex G1

Cumulative Statistics on Exceedances, Environmental Complaints, Notification of Summons and Status of Prosecutions

 Table G1
 Cumulative Statistics on Exceedances

		Total No. recorded in this reporting period	Total No. recorded since project commencement
Air Quality (24-hr TSP)	Action	0	0
	Limit	0	0
Noise	Action	0	0
	Limit	0	0
Surface Water Quality	Action	0	0
	Limit	6	26

Table G2 Cumulative Statistics on Complaints, Notifications of Summons and Successful Prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of Summons	Prosecutions
This Reporting Period (1 – 31 July 2019)	1	0	0
Total no. received since project commencement	1	0	0

Annex G2

Investigation Reports of Environmental Complaint

Investigation Report of Environmental Complaint

Project	South East New Territories (SENT) Landfill Extension
Date	15 July 2019
Time	-
EPD Reference No	N08/RE/00019726-19
Date of Notification	23 July 2019
Description of the Enquiry/Complaint	A complaint was referred by Employer's Representative through above letter reference regarding dust nuisance in the vicinity of SENT landfill and TKO Area 137. The Complainant observed dust around the SENT landfill and TKO Area 137 areas including the roads without watering under sunny weather.
Site Activity	Based on the site record on 15 July 2019, the following dust-related work
Summary	in SENTX were conducted:
	1. Import soil material
	2. Fill up soil at Perimeter Bund
	3. Backfilling at Culvert Bay D
	4. Excavation for Outlet Culvert Bay E
	5. Site clearance (at GVL's Building and LTP Area)
	(
Action Taken / Action to be Taken	 The following mitigation measures and monitoring were taken: Relevant mitigation measures, including regular dust suppression by water truck, wheel washing for outgoing vehicles at the vehicle exit and the compaction of fill material, were implemented to minimise dust generation within site area. The impact dust monitoring data on 15 July 2019 at the two dust monitoring locations DM1 (112 μg m⁻³) and DM2 (111 μg m⁻³) were reviewed and the dust levels are both well below the corresponding action/limit level (i.e. 204 μg m⁻³/260 μg m⁻³ for DM1 and 193 μg m⁻³/260 μg m⁻³ for DM2). Weekly site inspections were jointly conducted by the Environmental Team, Independent Environmental Checker and Contractor on 11 and 18 July 2019, and no significant dust generation from the SENTX site were observed.
	As the Contractor has implemented the relevant mitigation measures recommended in the updated EM&A Manual, there is no adequate evidence showing that the dust nuisance was caused by SENTX activities. Besides, the Contractor has installed new sprinkler system along the main haul road which has started operation since 17 July 2019. The Contractor is reminded to review the number and effectiveness of the sprinkler system throughout the site.
	Examination of environmental performance of the Project will be continued during the weekly inspections. The Contractor is reminded to

	implement relevant and appropriate mitigation measures according to the updated EM&A Manual to avoid any exceedance of the Action and Limit Level.
Remarks	-

Prepared by: Angela Yung
Designation: Environmental Team
Date: 6 Aug 2019

Annex H

Monitoring Schedule for the Next Reporting Period

South East New Territories (SENT) Landfill Extension EM&A Impact Monitoring Schedule during Construction Phase

August 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
				Surface Water Monitoring (pm)	Dust Monitoring	
				Noise Monitoring (pm)		
4	5	6	7	8	9	10
				Surface Water Monitoring (pm)		
				Noise Monitoring (pm)		
				Dust Monitoring		
11	12	13	14	15	16	17
			Dust Monitoring	Surface Water Monitoring (pm)		
				Noise Monitoring (pm)		
18	19	20	21	22	23	24
		Dust Monitoring		Surface Water Monitoring (pm)		
				Noise Monitoring (pm)		
25	26	27	28	29	30	31
	Dust Monitoring			Surface Water Monitoring (pm)		
				Noise Monitoring (pm)		

Note

Impact dust monitoring will be conducted at two monitoring stations (DM1 and DM2) under the on-going EM&A programme TKO Area 137 Fill Bank and the results will be shared with SENTX.