OSCAR Bioenergy Joint Venture

Contract No. EP/SP/61/10 Organic Waste Treatment Facilities Phase 1:

Eighth Quarterly EM&A Summary Report

1 March 2017 – 31 May 2017

Environmental Resources Management
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Meinhardt Infrastructure and Environment Limited

Organic Waste Treatment Facilities, Phase I

8th Quarterly EM&A Summary Report (1 March 2017 – 31 May 2017)

(June 2017)

Verified by: Helen Cochrane

Position: Independent Environmental Checker

Date: 28 Jun 17

OSCAR Bioenergy Joint Venture

Contract No. EP/SP/61/10 Organic Waste Treatment Facilities Phase 1: *Eighth Quarterly EM&A Summary Report*

1 March 2017 – 31 May 2017

Reference 0279222

For and on behalf of ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:

Position: Partner

Certified by:
(Environmental Team Leader – Mandy To)

Certified by:
(Registered Landscape Architect No. R-150 - Albert Chung)

Date: 20 June 2017

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LIST OF TABLES

LIST OF ANNEXES

EXECUTIVE SUMMARY

The construction works of ***No. EP/SP/61/10 Organic Waste Treatment Facilities Phase I (the Project)*** commenced on 21 May 2015. This is the eighth quarterly Environmental Monitoring and Audit (EM&A) summary report presenting the EM&A works carried out during the period from 1 March 2017 to 31 May 2017 in accordance with the EM&A Manual.

Environmental Monitoring and Audit Progress

A summary of the monitoring activities undertaken in this reporting period is listed below:

- Joint Environmental Site Inspection 13 times
- Landscape & Visual Monitoring 7 times

Waste Management

Waste generated from this Project includes inert construction and demolition (C&D) materials (public fill) and non-inert C&D materials (construction wastes).

Environmental Exceedance/Non-conformance/Compliant/Summons and Prosecution

No exceedance was recorded during the reporting period.

No non-compliance event was recorded during the reporting period.

No environmental complaint and summon/prosecution was received in this reporting period.

1 INTRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by OSCAR Bioenergy Joint Venture (the Contractor) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme for the ***Contract No. EP/SP/61/10 of Organic Waste Treatment Facilities Phase I (the Project)***.

1.1 PURPOSE OF THE REPORT

This is the eighth quarterly EM&A summary report, which summarizes the impact monitoring results and audit findings for the EM&A programme during the reporting period from **1 March 2017 to 31 May2017**.

1.2 STRUCTURE OF THE REPORT

The structure of the report is as follows:

Section 1 : **Introduction**
It details the scope and structure of the report.

Section 2 : **Project Information**
It summarises background and scope of the Project, site description, project organization, construction programme, the construction works undertaken and the status of Environmental Permits (EP)/licences over the construction phase of the Project.

Section 3 : **Environmental Monitoring Requirements**
It summarises the environmental monitoring including monitoring parameters, monitoring programmes, monitoring frequency, monitoring locations, Action and Limit Levels, Event/Action Plans, environmental mitigation measures as recommended in the approved EIA report, EP and relevant environmental requirements stated in the Contract Specification.

Section 4 : **Implementation Status on Environmental Mitigation Measures**
It summarises the implementation of environmental protection measures during the reporting period.

Section 5 : **Waste Management**
It summarises the quantity of public fill and construction waste generated in the reporting period

Section 6 : **Environmental Site Inspection**
It summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 7 : **Environmental Non-conformance**

It summarises any exceedance of environmental performance standard, and environmental complaints and environmental summons received within the reporting period.

Section 8 : **Conclusions**

2 PROJECT INFORMATION

2.1 BACKGROUND

The Organic Waste Treatment Facilities (OWTF) Phase I development (hereinafter referred to as "the Project") is to design, construct and operate a biological treatment facility with a capacity of about 200 tonnes per day and convert source-separated organic waste from commercial and industrial sectors (mostly food waste) into compost and biogas through proven biological treatment technologies.

The environmental acceptability of the construction and operation of the Project had been confirmed by findings of the associated Environmental Impact Assessment (EIA) Study completed in 2009. The Director of Environmental Protection approved this EIA Report under the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499) in February 2010 (Register No.: AEIAR-149/2010) (hereafter referred to as the approved EIA Report). Subsequent Report on Re-assessment on Environmental Implications and Report on Re-assessment on Hazard to Life Implications were completed in 2013, respectively.

An Environmental Permit (EP) (No. EP-395/2010) was issued by the Environmental Protection Department (EPD) to the EPD, the Permit Holder, on 21 June 2010 and varied on 18 March 2013 (No. EP-395/2010/A) and 21 May 2013 (No. EP-395/2010/B), respectively. The Design Build and Operate Contract for the OWTF (Contract No. EP/SP/61/10 Organic Waste Treatment Facilities Phase I (the Contract)) was awarded to SITA Waste Services Limited, ATAL Engineering Limited and Ros-Roca, Sociedad Anonima jointly trading as the OSCAR Bioenergy Joint Venture (OSCAR or the Contractor). A Further EP (No. FEP-01/395/2010/B) was issued by the EPD to the OSCAR on 16 February 2015. Variation to both EPs No. EP-395/2010/B and No. FEP-01/395/2010/B were made in December 2015. The latest EPs, No. EP-395/2010/C and No. FEP-01/395/2010/C, were issued by the EPD on 21 December 2015.

Under the requirements of Condition 5 of the EP (No. FEP-01/395/2010/C), an Environmental Monitoring and Audit (EM&A) programme as set out in the Agreement No. CE7/2008 (EP) EM&A Manual (hereinafter referred to as EM&A Manual) is required to be implemented. ERM-Hong Kong, Ltd (ERM) has been appointed by OSCAR as the Environmental Team (ET) to undertake the EM&A programme for the Contract.

The construction works commenced on 21 May 2015 and are scheduled for completion by September 2017.

2.2 GENERAL SITE DESCRIPTION

The Project Site is located at Siu Ho Wan in North Lantau with an area of about 2 hectares. The layout of the upgrading works is illustrated in *Annex A*.

2.3 CONSTRUCTION ACTIVITIES

A summary of the major construction activities undertaken in the reporting period is shown *Table 2.1*. The locations of the construction activities are shown in *Annex B*. The construction programme of the Project is presented in *Annex C*.

Table 2.1 Summary of Construction Activities Undertaken in the Reporting Period

Construction Activities Undertaken
• Building 1 - ABWF and finishing works, steel roof and covered walkway structure, E&M installation. CAPCS stack structural steelwork, E&M & BS installation. • Building 2 –ABWF and finishing work, covered walkway cladding, installation of GRP ductwork at roof, E&M installation. • Building 3 – ABWF, Electrical and BS installation inside rooms at G/F & LR/F. • Weighbridge and control room structure. • Link bridge steelwork. • Link bridge Bondex steel deck. • Collection chamber 1 excavation. • Collection chamber 1, Primary Sedimentation Tank & Int. Pump Sump construction, backfilling. • NTH mitigation works on slope. • AD Tank –Cladding to AD3. Water drain from AD1. Erect external access platform. Piping work. Erect scaffolding, piping and nozzle inside Tank 2. • Biogas holder installation. • Pipe rack and cable rack installation. • Ammonia Stripping Plant –mechanical erection work. • CHP pipework and accessories installation. • Electrical installation (cable trays, MCC panels installation, B3 LV installation, Energization of Main LV Switch Board, Cabling work to MCC Rooms) • Sitewide – Underground drainage and drawpit work. • Portion 4 – Material handling and storage. • Dry commissioning of star screen unit.

2.4 PROJECT ORGANISATION AND MANAGEMENT STRUCTURE

The project organisation chart and contact details are shown in *Annex D*.

2.5 STATUS OF ENVIRONMENTAL APPROVAL DOCUMENTS

A summary of the valid permits, licences, and/or notifications on environmental protection for this Project is presented in *Table 2.2*.

Table 2.2 Summary of Environmental Licensing, Notification and Permit Status

Permit/ Licenses/ Notification	Reference	Validity Period	Remarks
Environmental Permit	FEP-01/395/2010/C	Throughout the Contract	Permit granted on 21 December 2015
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	Ref No. 386715	Throughout the Contract	-
Effluent Discharge License	WT00021482-2015	21 May 2015 – 31 May 2020	Approved on 21 May 2015
Construction Noise Permit-P1&P2	GW-RW0678-16	12 December 2016-11 June 2017	Approved on 2 December 2016
Construction Noise Permit – P3	GW-RW0628-16	1 December 2016 – 31May 2017	Approved on 8 November 2016
Chemical Waste Producer Registration	WPN 5213-961-O2231-01	Throughout the Contract	Approved on 29 April 2015
Waste Disposal Billing Account	Account number: 702310	Throughout the Contract	-

3 *ENVIRONMENTAL MONITORING REQUIREMENT, ENVIRONMENTAL MITIGATION MEASURES*

All the relevant environmental mitigation measures listed in the EIA Report and EM&A Manual are summarised in *Annex E*.

According to the EM&A Manual and EP requirement, no air quality, noise and water quality monitoring is required.

Bi-weekly landscape and visual audit is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures recommended in the EIA Report are fully achieved.

4 IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS

The Contractor has implemented environmental mitigation measures and requirements as stated in the approved EIA Report and EM&A Manual. The implementation status of the measures during the reporting period is summarised in *Annex E*.

Wastes generated from this Project include inert construction and demolition (C&D) materials (public fill) and non-inert C&D materials (construction waste). Construction waste comprises general refuse, metals and paper/cardboard packaging materials. Metals generated from the Project are also grouped into construction waste as the materials were not disposed of with others at public fill. Reference has been made to the Monthly Summary Waste Flow Table prepared by the Contractor (see *Annex F*). With reference to the relevant handling records and trip tickets of this Project, the quantities of different types of waste generated in the reporting month are summarised in in *Table 5.1.*

Table 5.1 Quantities of Waste Generated from the Project

Month / Year	Quantity			
	Total Inert C&D Materials Generated [a]	Non-inert C&D Materials [b]		
		C&D Materials Recycled [c]	C&D Waste Disposed of at Landfill [d]	Chemical Waste
March 2017	665.93 tonnes	45,430.00 kg	99.59 tonnes	660.00 L
April 2017	553.41 tonnes	34,730.00 kg	81.83 tonnes	700.00 L
May 2017	388.82 tonnes	1,154.00 kg	109.10 tonnes	0.00 L

Notes:

(a) Inert C&D materials (public fill) include bricks, concrete, building debris, rubble and excavated spoil. In total, 1,608.16 tonnes of inert C&D material were generated from the Project, of which 891.00 tonnes were reused in this Contract and the remaining 717.16 tonnes were disposed as public fill to Fill Banks at Tuen Mun Area 38. The detailed waste flow is presented in *Annex F*.

(b) Non-inert C&D materials (construction wastes) include metals, paper / cardboard packaging waste, plastics and other wastes such as general refuse. Metals generated from the Project were grouped into construction wastes as the materials were not disposed of with others at the public fill.

(c) 21,350.00 kg of metals, 55,044.00 kg of papers/ cardboard packing and 4,920.00 kg of plastics were sent to recyclers for recycling during the reporting period.

(d) Construction wastes other than metals, paper/cardboard packaging, plastics and chemicals were disposed of at NENT Landfill by subcontractors.

6 ENVIRONMENTAL INSPECTIONS

6.1 WEEKLY SITE AUDITS

Thirteen site inspections were conducted during the reporting period. There was no non-compliance recorded during the site inspections. Follow-up actions were undertaken as reported by the Contractor and observed in the subsequent weekly site inspections conducted in the reporting period.

March 2017

Joint site inspections were conducted by the representatives of the Contractor, SOR and the ET on 6, 15, 20 and 27 March 2017. The IEC was also present at the joint inspection on 15 March 2017.

April 2017

Joint site inspections were conducted by the representatives of the Contractor, SOR and the ET on 3, 10, 19 and 24 April 2017. The IEC was also present at the joint inspection on 19 April 2017.

May 2017

Joint site inspections were conducted by the representatives of the Contractor, SOR and the ET on 5, 8, 18, 22 and 29 May 2017. The IEC was also present at the joint inspection on 18 May 2017.

6.2 LANDSCAPE AND VISUAL AUDIT

Seven landscape and visual monitoring site inspections were conducted during the reporting period. Follow-up actions needed to be implemented were recommended to the Contractor and the status of the follow-up actions was reviewed during the subsequent weekly site inspections. It was confirmed that most of the necessary landscape and visual mitigation measures as summarised in *Annex E* were implemented by the Contractor.

In accordance with the EM&A Manual, bi-weekly landscape and visual inspection is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures recommended in the EIA Report are fully achieved. The onsite inspection of the landscape and visual mitigation measures has commenced since June 2015 during weekly site inspections.

March 2017

Bi-weekly site inspections were conducted on 6 and 20 March 2017.

April 2017

Bi-weekly site inspections were conducted on 3 and 17 April 2017.

May 2017

Bi-weekly site inspections were conducted on 2, 16 and 30 May 2017.

Key landscape and visual mitigation measures implemented in the reporting period included:

- Provide insect prevention measures to the exposed root of retained tree to prevent potential damage due to the exposure.
- Provide the non-moisture holding material around the trees to prevent potential damage.
- Avoid placing machine near the tree protection zone.

6.3 EFFECTIVENESS OF MITIGATION MEASURES AND MONITORING

The mitigation measures recommended in the EIA report and required by the EP are considered effective in minimizing environmental impacts.

The EM&A for the Project was conducted as scheduled during the reporting period. No non-compliance events were observed during site inspections and no exceedances were recorded during this reporting period. The EM&A programme is considered effective.

7 ENVIRONMENTAL NON-CONFORMANCE

7.1 SUMMARY OF ENVIRONMENTAL NON-COMPLIANCE

No non-compliance event was recorded during the reporting period.

7.2 SUMMARY OF ENVIRONMENTAL COMPLAINT

No complaint was received during the reporting period. The cumulative environmental complaint log is shown in *Annex G*.

7.3 SUMMARY OF ENVIRONMENTAL SUMMON AND SUCCESSFUL PROSECUTION

No summon/prosecution was received during the reporting period. The cumulative summons/prosecution log is shown in *Annex G*.

8 CONCLUSIONS

This EM&A Report presents the EM&A works undertaken during the reporting period from 1 March 2017 to 31 May 2017 in accordance with EM&A Manual and requirements of EP (FEP-01/395/2010/C).

No air quality, noise and water quality monitoring is required.

Bi-weekly landscape and visual monitoring was conducted in this quarterly period. Most of the necessary landscape and visual mitigation measures recommended in the EIA Report were implemented by the Contractor. Follow-up actions would be implemented by the Contractor to improve protection measures on the retained or to-be transplanted trees.

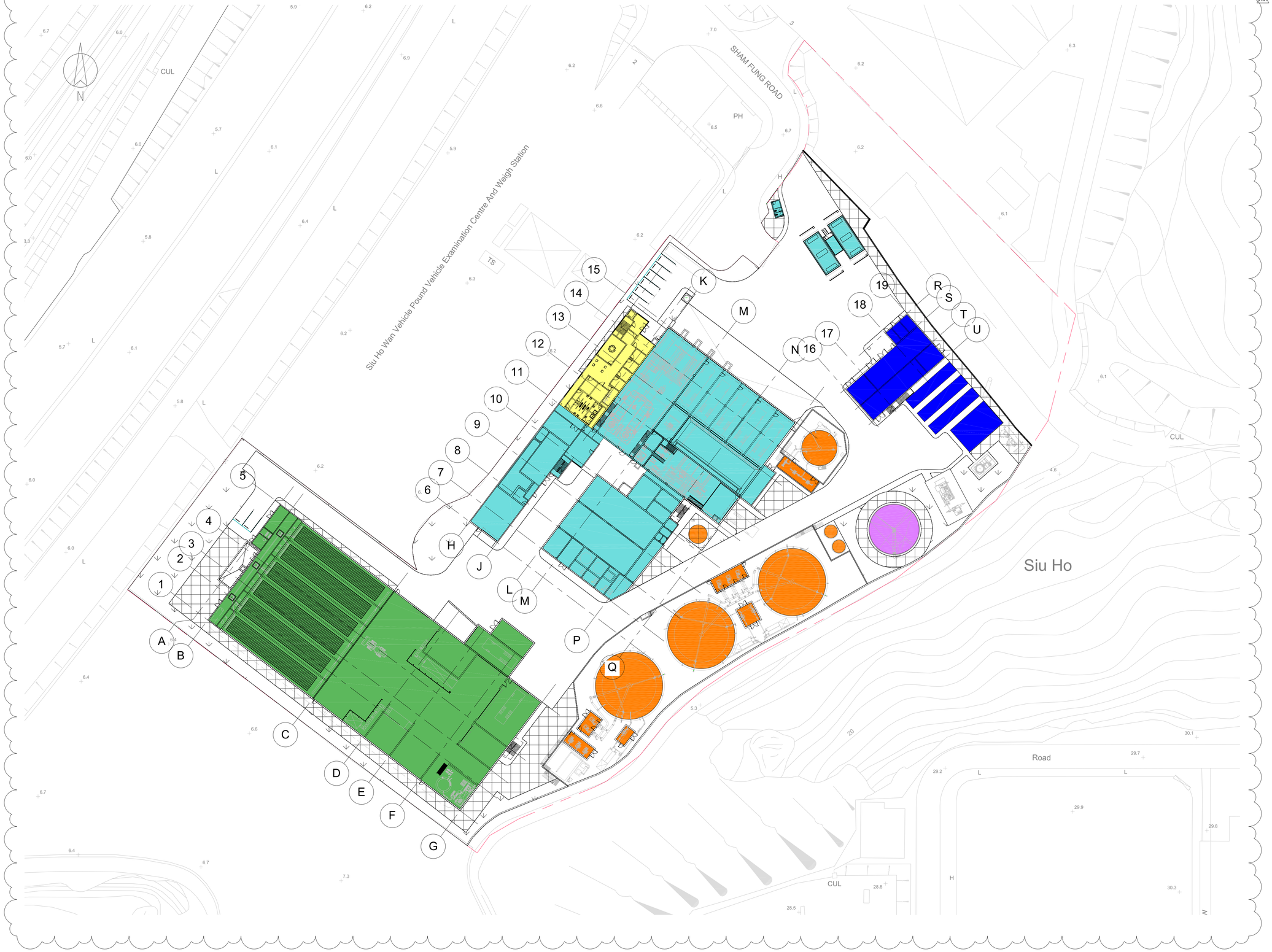
No non-compliance event was recorded during the reporting period.

No complaint and summons/prosecution was received during the reporting period.

The ET will keep track on the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all necessary mitigation measures in the coming periods.

Annex A

Project Layout



REV	DATE	BY	APP	DESCRIPTION
A01	05/03/15	CW	MB	IMTECH BACKGROUNDS UPDATED
A00	18/02/15	CW	MB	DRAFT ISSUE

CLIENT

ENVIRONMENTAL PROTECTION DEPARTMENT
GOVERNMENT OF THE HKSAR

CLIENT'S CONSULTANT

AECOM ASIA CO. LTD.

CONTRACTOR

OSCAR BIOENERGY JV

LEAD DESIGNER

ARUP
Ove Arup & Partners Hong Kong Limited

ENVIRONMENTAL TEAM

ERM HONG KONG LIMITED

INDEPENDENT CONSULTANTS

Meinhardt Infrastructure and Environment Limited
邁進基建環保工程顧問有限公司

PROJECT

ORGANIC WASTE TREATMENT FACILITIES
PHASE 1
EP/SP/61/10

STATUS

DRAFT ISSUE

DRAWING TITLE

SITE LAYOUT

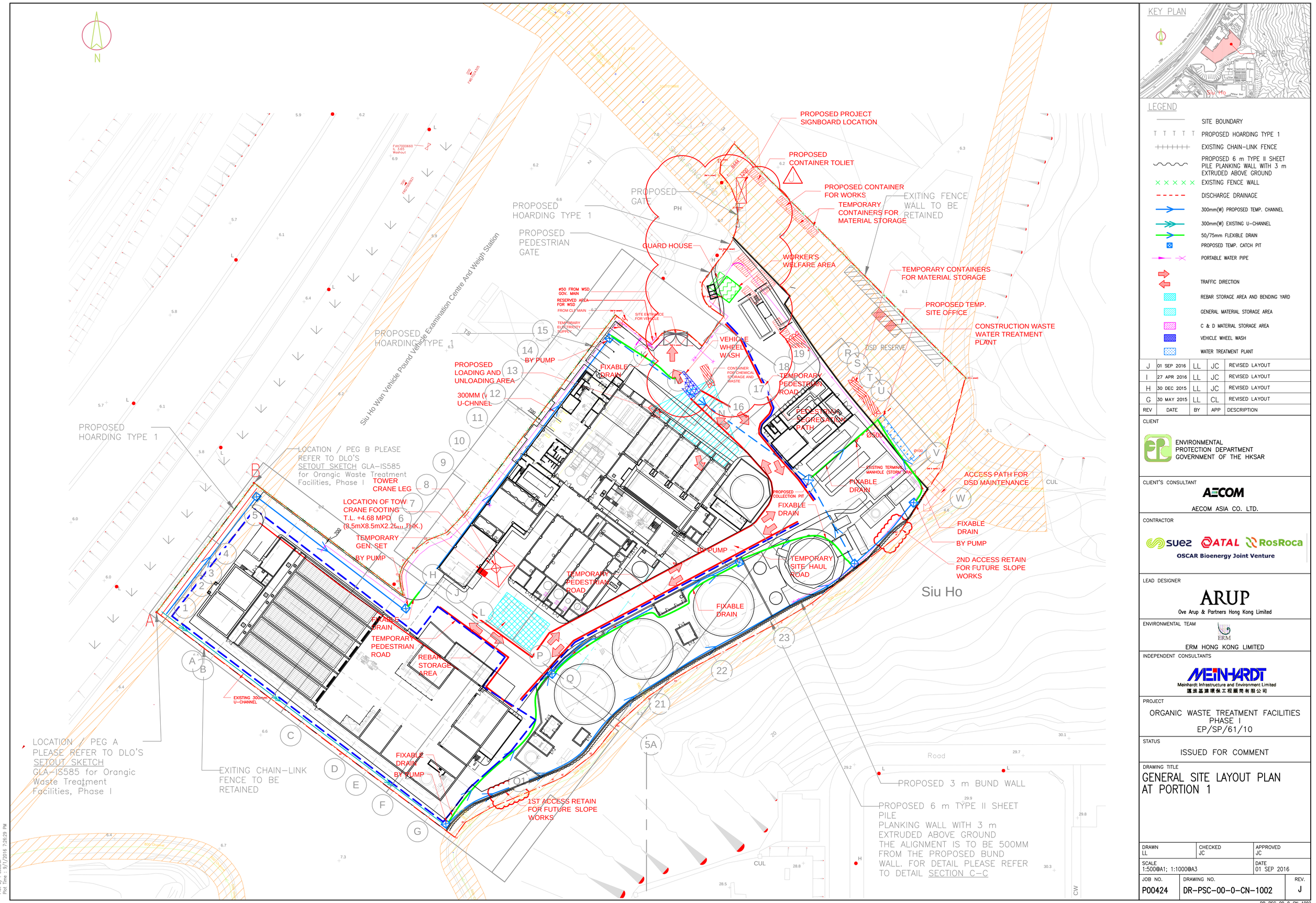
DRAWN	CHECKED	APPROVED
CW	RS	DP

SCALE	DATE
1:500@A1 / 1:1000@A3	12/02/15

JOB NO.	DRAWING NO.	REV.
239956	DR-OAP-20-0-CA-1001	A01

Annex B

Works Location



KEY PLAN

LEGEND

- SITE BOUNDARY
- PROPOSED HOARDING TYPE 1
- EXISTING CHAIN-LINK FENCE
- PROPOSED 6 m TYPE II SHEET PILE PLANKING WALL WITH 3 m EXTRUDED ABOVE GROUND
- EXISTING FENCE WALL
- DISCHARGE DRAINAGE
- 300mm(W) PROPOSED TEMP. CHANNEL
- 300mm(W) EXISTING U-CHANNEL
- 50/75mm FLEXIBLE DRAIN
- PROPOSED TEMP. CATCH PIT
- PORTABLE WATER PIPE
- TRAFFIC DIRECTION
- REBAR STORAGE AREA AND BENDING YARD
- GENERAL MATERIAL STORAGE AREA
- C & D MATERIAL STORAGE AREA
- VEHICLE WHEEL WASH
- WATER TREATMENT PLANT

REV	DATE	BY	APP	DESCRIPTION
J	01 SEP 2016	LL	JC	REVISED LAYOUT
I	27 APR 2016	LL	JC	REVISED LAYOUT
H	30 DEC 2015	LL	JC	REVISED LAYOUT
G	30 MAY 2015	LL	CL	REVISED LAYOUT

CLIENT

ENVIRONMENTAL PROTECTION DEPARTMENT
GOVERNMENT OF THE HKSAR

CLIENT'S CONSULTANT

AECOM
AECOM ASIA CO. LTD.

CONTRACTOR

SUEZ ATAL RosRoca
OSCAR Bioenergy Joint Venture

LEAD DESIGNER

ARUP
Ove Arup & Partners Hong Kong Limited

ENVIRONMENTAL TEAM

ERM
ERM HONG KONG LIMITED

INDEPENDENT CONSULTANTS

MEINHARDT
Meinhardt Infrastructure and Environment Limited
邁進基建環保工程顧問有限公司

PROJECT

ORGANIC WASTE TREATMENT FACILITIES
PHASE I
EP/SP/61/10

STATUS

ISSUED FOR COMMENT

DRAWING TITLE

GENERAL SITE LAYOUT PLAN AT PORTION 1

DRAWN	CHECKED	APPROVED
LL	JC	JC

SCALE	DATE
1:500@A1; 1:1000@A3	01 SEP 2016

JOB NO.	DRAWING NO.	REV.
P00424	DR-PSC-00-0-CN-1002	J

Plot by : LeoLAM
Plot Time : 9/1/2016 7:26:29 PM

DR-PSC-00-0-CN-1002

Annex C

Construction Programme of the Project

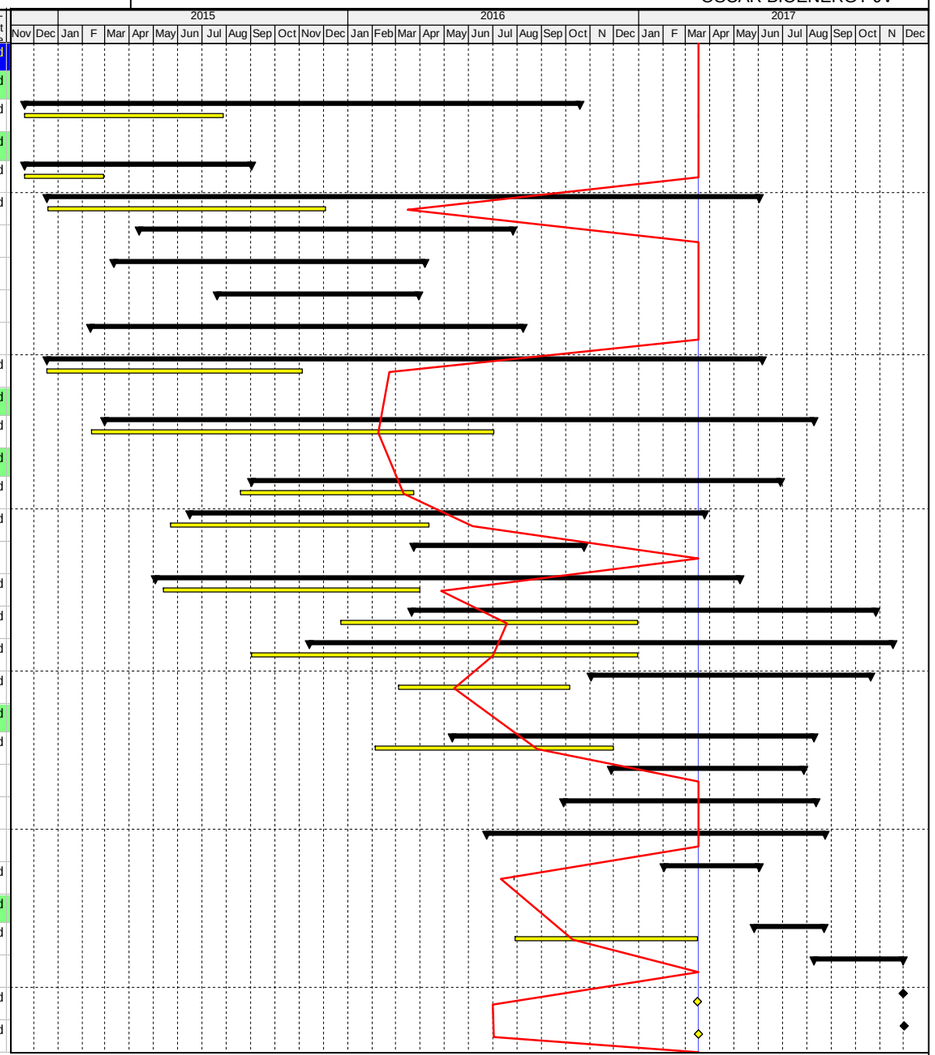
Environmental Protection Department
of the HKSAR

Contract No. EP/SP/61/10
Organic Waste Treatment Facilities Phase 1

Executive Summary Programme Progress Updated on 17-Mar-17

OSCAR BIOENERGY JV

#	Activity Name	BL Project Duration	BL Project Start	BL Project Finish	Remaining Duration	Start	Finish	% Complete	Variance - BL Project Finish Date
1	***Contract No. EP/SP/61/10 - v1.4, Progress updated on 17Mar17 ******	688d	20-Nov-14	17-Mar-17	210d	20-Nov-14 A	01-Dec-17		-210d
2	***Preliminary and Site Establishment***	200d	20-Nov-14	27-Jul-15	0d	20-Nov-14 A	19-Oct-16 A		-366d
3	Preliminary and Site Establishment	200d	20-Nov-14	27-Jul-15	0d	20-Nov-14 A	19-Oct-16 A	100%	-366d
4	***Design***	308d	20-Nov-14	03-Dec-15	60d	20-Nov-14 A	05-Jun-17		-441d
5	Design Criteria and Design Preparation	80d	20-Nov-14	27-Feb-15	0d	20-Nov-14 A	01-Sep-15 A	100%	-151d
6	Detailed Design Submission (DDS) - General, Civil, ABWF and Landscape	236d	19-Dec-14	03-Dec-15	49d	18-Dec-14 A	02-Jun-17	99.55%	-367d
7	Detailed Design Submission (DDS) - Building 1	0d			0d	13-Apr-15 A	27-Jul-16 A	100%	
8	Detailed Design Submission (DDS) - Building 2	0d			0d	12-Mar-15 A	07-Apr-16 A	100%	
9	Detailed Design Submission (DDS) - Building 3	0d			0d	20-Jul-15 A	30-Mar-16 A	100%	
10	Detailed Design Submission (DDS) - Auxilliary Buildings & Facilities	0d			0d	11-Feb-15 A	08-Aug-16 A	100%	
11	Detailed Design Submission (DDS) - E&M and BS	216d	18-Dec-14	04-Nov-15	50d	18-Dec-14 A	05-Jun-17	99.63%	-389d
12	***Procurement***	507d	12-Feb-15	02-Jul-16	146d	01-Mar-15 A	10-Aug-17		-404d
13	Procurement, Manufacturing, F.A.T., Shipment & Delivery of E&M Systems Equipment	507d	12-Feb-15	02-Jul-16	146d	01-Mar-15 A	10-Aug-17	93.05%	-404d
14	***Construction***	489d	13-May-15	31-Dec-16	199d	04-May-15 A	17-Nov-17		-260d
15	Construction of Building #1 (Waste Receiving, Pre-treatment & Administration)	178d	19-Aug-15	23-Mar-16	81d	02-Sep-15 A	28-Jun-17	98.89%	-372d
16	Construction of Building #2 (Composting & Maturation, and Link Bridge)	262d	23-May-15	11-Apr-16	6d	16-Jun-15 A	24-Mar-17	87.13%	-285d
17	Construction of Building #3 (Energy Centre)	0d			0d	24-Mar-16 A	24-Oct-16 A	100%	
18	Construction of Auxiliary Buildings & Facilities	263d	13-May-15	31-Mar-16	38d	04-May-15 A	08-May-17	93.33%	-325d
19	ABWF, Finishing and Fitting-out Works to Building #1, #2, #3 and Auxiliary Buildings & Facilities	303d	23-Dec-15	31-Dec-16	181d	21-Mar-16 A	26-Oct-17	51.56%	-242d
20	Sitewide, Boundary Wall, Landscaping and Roadworks	396d	02-Sep-15	31-Dec-16	199d	13-Nov-15 A	17-Nov-17	66.94%	-260d
21	Statutory and Utilities Works	148d	04-Mar-16	06-Oct-16	176d	02-Nov-16 A	20-Oct-17	42.32%	-308d
22	***E&M and Building Services Installation***	244d	04-Feb-16	30-Nov-16	128d	11-May-16 A	23-Aug-17		-214d
23	E&M Installation - Mechanical	244d	04-Feb-16	30-Nov-16	117d	11-May-16 A	10-Aug-17	55.5%	-203d
24	E&M Installation - Piping	0d			105d	28-Nov-16 A	27-Jul-17	10.84%	
25	E&M Installation - Electrical, Instrumentation & Control	0d			119d	28-Sep-16 A	12-Aug-17	24.41%	
26	Building Services Installation	0d			128d	24-Jun-16 A	23-Aug-17	29.65%	
27	Energisation of Switchboards / MCC with SAT	1d	28-Jul-16	28-Jul-16	59d	02-Feb-17 A	02-Jun-17	36.36%	-249d
28	***Testing & Commissioning and Completion***	232d	29-Jul-16	17-Mar-17	188d	27-May-17	01-Dec-17		-258d
29	Pre-Commissioning	189d	29-Jul-16	16-Mar-17	88d	27-May-17	22-Aug-17	0%	-159d
30	Process Commissioning, Performance & Acceptance Testing	0d			113d	10-Aug-17	30-Nov-17	0%	
31	Completion of the Design and the Works including Testing and Commissioning (Extended Completion Date: 9-Jun-17 noon)	0d		16-Mar-17	0d		30-Nov-17*	0%	-259d
32	Commencement of the Operation	0d	17-Mar-17		0d	01-Dec-17*		0%	-258d



Project:v1.4_up_17Mar17
Ref.:WS-OSC-0-0-TM-0084-A, Date: 30-Mar-2017

Milestone | Actual Milestone | Baseline Milestone | BL Summary | Exe. Summary

Baseline: Contract Programme for The Design and Construction Works v1.4

print: 30-Mar-17 10:40

Environmental Protection Department
of the HKSAR

Contract No. EP/SP/61/10
Organic Waste Treatment Facilities Phase 1

Executive Summary Programme Progress Updated on 17-Apr-17

OSCAR BIOENERGY JV

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5	Design Criteria and Design Preparation	80d	20-Nov-14	27-Feb-15	0d	20-Nov-14 A	01-Sep-15 A	100%	-151d
6	Detailed Design Submission (DDS) - General, Civil, ABWF and Landscape	236d	19-Dec-14	03-Dec-15	42d	18-Dec-14 A	19-Jun-17	99.87%	-378d
7	Detailed Design Submission (DDS) - Building 1	0d			0d	13-Apr-15 A	27-Jul-16 A	100%	
8	Detailed Design Submission (DDS) - Building 2	0d			0d	12-Mar-15 A	07-Apr-16 A	100%	
9	Detailed Design Submission (DDS) - Building 3	0d			0d	20-Jul-15 A	30-Mar-16 A	100%	
10	Detailed Design Submission (DDS) - Auxilliary Buildings & Facilities	0d			0d	11-Feb-15 A	08-Aug-16 A	100%	
11	Detailed Design Submission (DDS) - E&M and BS	216d	18-Dec-14	04-Nov-15	48d	18-Dec-14 A	27-Jun-17	99.69%	-405d
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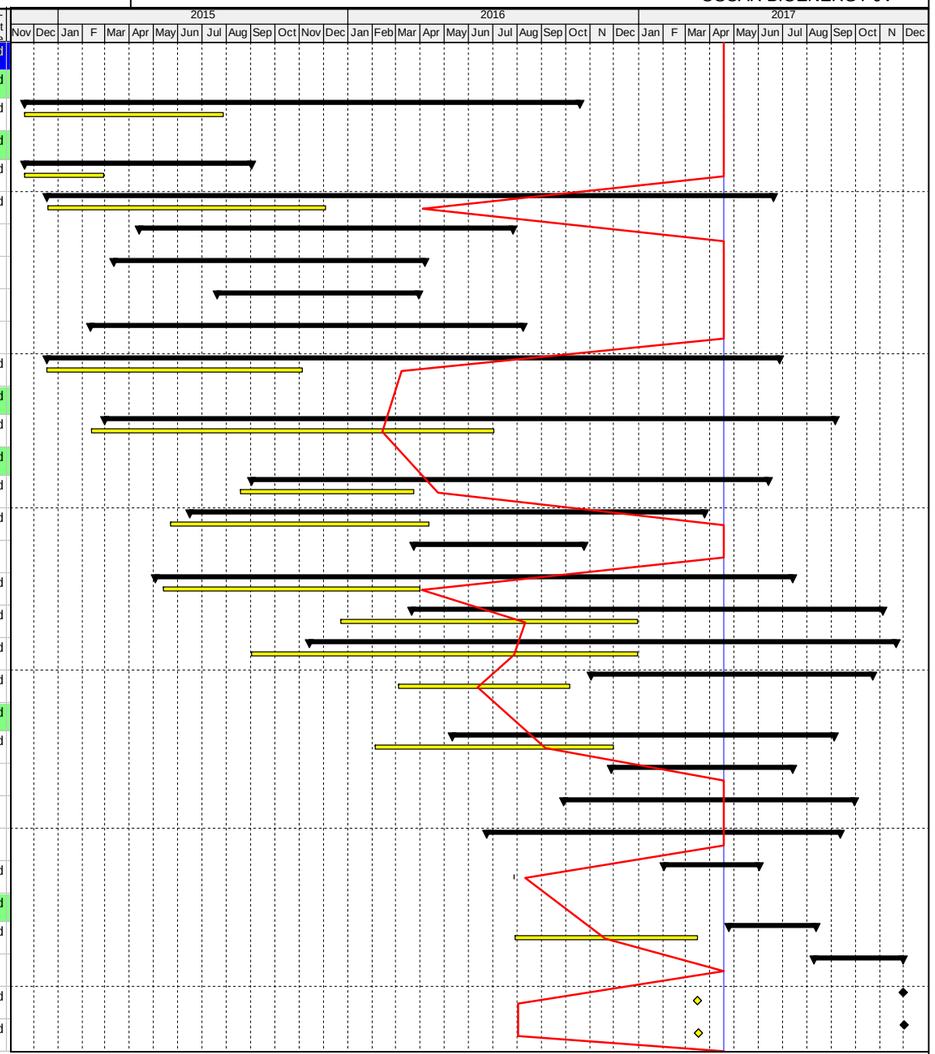
13	Procurement, Manufacturing, F.A.T., Shipment & Delivery of E&M Systems Equipment	507d	12-Feb-15	02-Jul-16	141d	01-Mar-15 A	05-Sep-17	93.81%	-430d
14	***Construction***	489d	13-May-15	31-Dec-16	180d	04-May-15 A	21-Nov-17		-263d
15	Construction of Building #1 (Waste Receiving, Pre-treatment & Administration)	178d	19-Aug-15	23-Mar-16	46d	02-Sep-15 A	13-Jun-17	99.31%	-359d
16	Construction of Building #2 (Composting & Maturation, and Link Bridge)	262d	23-May-15	11-Apr-16	0d	16-Jun-15 A	24-Mar-17 A	100%	-285d
17	Construction of Building #3 (Energy Centre)	0d			0d	24-Mar-16 A	24-Oct-16 A	100%	
18	Construction of Auxiliary Buildings & Facilities	263d	13-May-15	31-Mar-16	71d	04-May-15 A	13-Jul-17	95.24%	-380d
19	ABWF, Finishing and Fitting-out Works to Building #1, #2, #3 and Auxiliary Buildings & Facilities	303d	23-Dec-15	31-Dec-16	166d	21-Mar-16 A	04-Nov-17	57.86%	-249d
20	Sitewide, Boundary Wall, Landscaping and Roadworks	396d	02-Sep-15	31-Dec-16	180d	13-Nov-15 A	21-Nov-17	68.59%	-263d
21	Statutory and Utilities Works	148d	04-Mar-16	06-Oct-16	156d	02-Nov-16 A	23-Oct-17	50.67%	-310d
22	***E&M and Building Services Installation***	244d	04-Feb-16	30-Nov-16	139d	11-May-16 A	30-Sep-17		-247d
23	E&M Installation - Mechanical	244d	04-Feb-16	30-Nov-16	116d	11-May-16 A	04-Sep-17	66.34%	-224d
24	E&M Installation - Piping	0d			71d	28-Nov-16 A	13-Jul-17	23.73%	
25	E&M Installation - Electrical, Instrumentation & Control	0d			139d	28-Sep-16 A	30-Sep-17	30.04%	
26	Building Services Installation	0d			122d	24-Jun-16 A	11-Sep-17	46.56%	
27	Energisation of Switchboards / MCC with SAT	1d	28-Jul-16	28-Jul-16	37d	02-Feb-17 A	02-Jun-17	61.98%	-249d
28	***Testing & Commissioning and Completion***	232d	29-Jul-16	17-Mar-17	221d	24-Apr-17	01-Dec-17		-258d
29	Pre-Commissioning	189d	29-Jul-16	16-Mar-17	111d	24-Apr-17	12-Aug-17	0%	-149d
30	Process Commissioning, Performance & Acceptance Testing	0d			113d	10-Aug-17	30-Nov-17	0%	
31	Completion of the Design and the Works including Testing and Commissioning (Extended Completion Date: 9-Jun-17 noon)	0d		16-Mar-17	0d		30-Nov-17*	0%	-259d
32	Commencement of the Operation	0d	17-Mar-17		0d	01-Dec-17*		0%	-258d



Project:v1.4_up_17Apr17
Ref.:WS-OSC-0-0-TM-0087-A, Date: 27-Apr-2017

Milestone · Actual Milestone · Baseline Milestone
BL Summary · Exe. Summary

Baseline: Contract Programme for The Design and Construction Works v1.4

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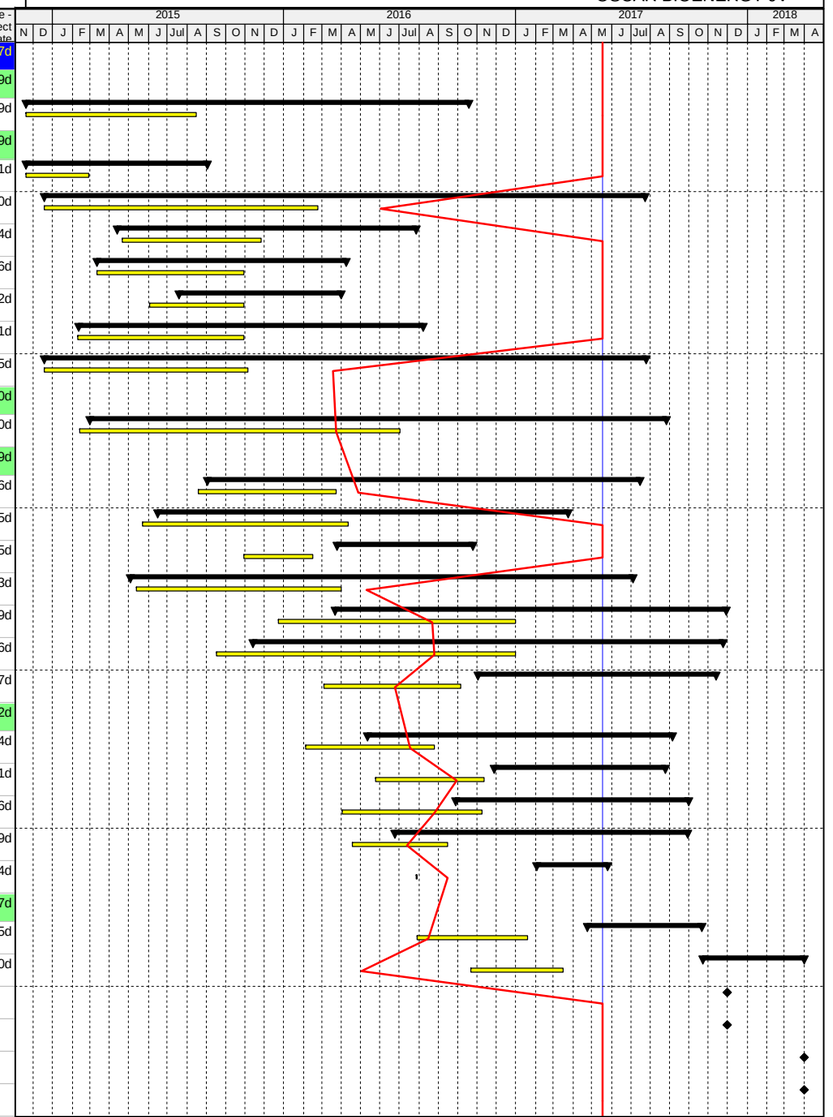
Environmental Protection Department
of the HKSAR

Contract No. EP/SP/61/10
Organic Waste Treatment Facilities Phase 1

Executive Summary Programme Progress Updated on 17-May-17

OSCAR BIOENERGY JV

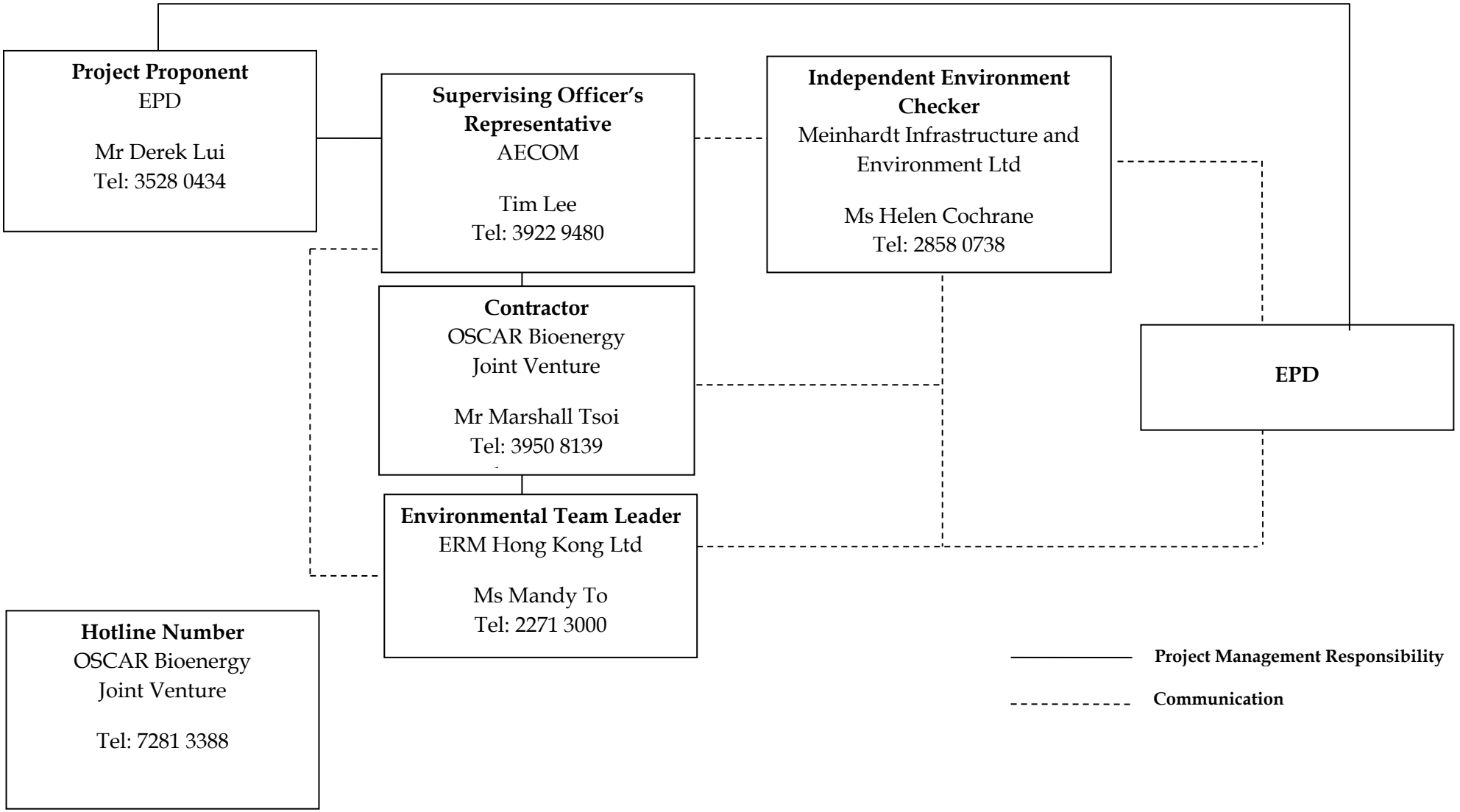
#	Activity ID	Activity Name	BL Project Duration	BL Project Start	BL Project Finish	Remaining Duration	Start	Finish	% Complete	Variance - BL Project Finish Date
1		***Contract No. EP/SP/61/10 - v1.4, Progress updated on 17May17 *****	687d	20-Nov-14	16-Mar-17	260d	20-Nov-14 A	01-Apr-18		-307d
2		***Preliminary and Site Establishment***	217d	20-Nov-14	15-Aug-15	0d	20-Nov-14 A	19-Oct-16 A		-349d
3	ESum110	Preliminary and Site Establishment	217d	20-Nov-14	15-Aug-15	0d	20-Nov-14 A	19-Oct-16 A	100%	-349d
4		***Design***	372d	20-Nov-14	23-Feb-16	57d	20-Nov-14 A	25-Jul-17		-419d
5	ESum120	Design Criteria and Design Preparation	80d	20-Nov-14	27-Feb-15	0d	20-Nov-14 A	01-Sep-15 A	100%	-151d
6	ESum130	Detailed Design Submission (DDS) - General, Civil, ABWF and Landscape	289d	19-Dec-14	23-Feb-16	47d	18-Dec-14 A	24-Jul-17	99.91%	-350d
7	ESum132	Detailed Design Submission (DDS) - Building 1	151d	21-Apr-15	25-Nov-15	0d	13-Apr-15 A	27-Jul-16 A	100%	-164d
8	ESum134	Detailed Design Submission (DDS) - Building 2	158d	12-Mar-15	30-Oct-15	0d	12-Mar-15 A	07-Apr-16 A	100%	-106d
9	ESum136	Detailed Design Submission (DDS) - Building 3	103d	03-Jun-15	29-Oct-15	0d	20-Jul-15 A	30-Mar-16 A	100%	-102d
10	ESum138	Detailed Design Submission (DDS) - Auxilliary Buildings & Facilities	177d	10-Feb-15	29-Oct-15	0d	11-Feb-15 A	08-Aug-16 A	100%	-191d
11	ESum140	Detailed Design Submission (DDS) - E&M and BS	216d	18-Dec-14	04-Nov-15	48d	18-Dec-14 A	25-Jul-17	99.73%	-425d
12		***Procurement***	507d	12-Feb-15	02-Jul-16	101d	01-Mar-15 A	26-Aug-17		-420d
13	ESum150	Procurement, Manufacturing, F.A.T., Shipment & Delivery of E&M Systems Equipment	507d	12-Feb-15	02-Jul-16	101d	01-Mar-15 A	26-Aug-17	95.34%	-420d
14		***Construction***	489d	13-May-15	31-Dec-16	162d	04-May-15 A	28-Nov-17		-269d
15	ESum160	Construction of Building #1 (Waste Receiving, Pre-treatment & Administration)	178d	19-Aug-15	23-Mar-16	49d	02-Sep-15 A	15-Jul-17	99.31%	-386d
16	ESum170	Construction of Building #2 (Composting & Maturation, and Link Bridge)	262d	23-May-15	11-Apr-16	0d	16-Jun-15 A	24-Mar-17 A	100%	-285d
17	ESum175	Construction of Building #3 (Energy Centre)	87d	30-Oct-15	15-Feb-16	0d	24-Mar-16 A	24-Oct-16 A	100%	-205d
18	ESum180	Construction of Auxiliary Buildings & Facilities	263d	13-May-15	31-Mar-16	40d	04-May-15 A	05-Jul-17	96.74%	-373d
19	ESum190	ABWF, Finishing and Fitting-out Works to Building #1, #2, #3 and Auxiliary Buildings & Facilities	303d	23-Dec-15	31-Dec-16	162d	21-Mar-16 A	28-Nov-17	62.32%	-269d
20	ESum200	Sitewide, Boundary Wall, Landscaping and Roadworks	383d	17-Sep-15	31-Dec-16	159d	13-Nov-15 A	24-Nov-17	70.72%	-266d
21	ESum210	Statutory and Utilities Works	148d	04-Mar-16	06-Oct-16	149d	02-Nov-16 A	13-Nov-17	52.25%	-327d
22		***E&M and Building Services Installation***	229d	04-Feb-16	12-Nov-16	115d	11-May-16 A	30-Sep-17		-262d
23	ESum220	E&M Installation - Mechanical	164d	04-Feb-16	25-Aug-16	92d	11-May-16 A	04-Sep-17	73.5%	-304d
24	ESum222	E&M Installation - Piping	144d	24-May-16	12-Nov-16	84d	28-Nov-16 A	25-Aug-17	44.07%	-231d
25	ESum224	E&M Installation - Electrical, Instrumentation & Control	181d	02-Apr-16	08-Nov-16	115d	28-Sep-16 A	30-Sep-17	33.14%	-266d
26	ESum226	Building Services Installation	125d	18-Apr-16	14-Sep-16	114d	24-Jun-16 A	29-Sep-17	57.63%	-309d
27	ESum230	Energisation of Switchboards / MCC with SAT	1d	28-Jul-16	28-Jul-16	8d	02-Feb-17 A	26-May-17	89.74%	-244d
28		***Testing & Commissioning and Completion***	189d	29-Jul-16	16-Mar-17	260d	24-Apr-17 A	01-Apr-18		-307d
29	ESum240	Pre-Commissioning	144d	29-Jul-16	19-Jan-17	157d	24-Apr-17 A	21-Oct-17	1%	-275d
30	ESum250	Process Commissioning, Performance & Acceptance Testing	119d	22-Oct-16	16-Mar-17	160d	23-Oct-17	31-Mar-18	0%	-380d
31	PS900955	Substantial Completion - 100 Tons/Day	0d			0d	30-Nov-17			
32	PS900957	Soft Opening / Operation of Plant	0d			0d	30-Nov-17			
33	KD110310	Remaining Works to Achieve Plant Operation at Full Capacity	0d			0d		31-Mar-18*	0%	
34	KD110330	Plant Operation at Full Capacity	0d			0d	01-Apr-18*		0%	



Annex D

Project Organization Chart with Contact Details

Project Organization During Construction Phase (with contact details)



Annex E

Implementation Schedule of Mitigation Measures

Annex E Summary of Mitigation Measures Implementation Schedule

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
Summary of Environmental Mitigation Measures in the EIA and EM&A Manual				
A. Air Quality				
3.73	2.5	<u>*Air Pollution Control (Construction Dust) Regulation & Good Site Practices*</u> • Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather. • Use of frequent watering for particularly dusty construction areas and areas close to ASRs. • Side enclosure and covering of any aggregate or dusty material storage piles to reduce emissions. Where this is not practicable owing to frequent usage, watering should be applied to aggregate fines. • Open stockpiles should be avoided or covered. Where possible, prevent placing dusty material storage piles near ASRs. • Tarpaulin covering of all dusty vehicle loads transported to, from and between site locations. • Establishment and use of vehicle wheel and body washing facilities at the exit points of the site. • Provision of wind shield and dust extraction units or similar dust mitigation measures at the loading points, and use of water sprinklers at the loading area where dust generation is likely during the loading process of loose material, particularly in dry seasons/ periods. • Imposition of speed controls for vehicles on unpaved site roads. 8 kilometers per hour is the recommended limit. • Where possible, routing of vehicles and positioning of construction plant should be at the maximum possible distance from ASRs. • Every stock of more than 20 bags of cement or dry pulverised fuel ash (PFA) should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides. • Cement or dry PFA delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line and no overfilling is allowed. • Loading, unloading, transfer, handling or storage of bulk cement or dry PFA should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system.	Construction Site / During Construction Period	<>
B. Hazard to Life				
4.102	3.3	<u>*Construction Phase*</u> • The number of workers on site during construction stage should be kept at the same level as	Construction Site / During Construction Period	√

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
		the assessment. • Construction works should be suspended when delivery of chlorine takes place. • 3m high fence should be constructed along the boundary facing the SHWWTW. • Emergency evacuation procedures should be formulated and the Contractor should ensure all workers on site should be familiar with these procedures as well as the route to escape in case of gas release incident. Relevant Departments, such as Fire Services Department (FSD), should be consulted during the development of Emergency procedures. Diagram showing the escape routes to a safe place should be posted in the site notice boards and at the entrance/exit of site. A copy of the latest version emergency procedures should be dispatched to Tung Chung Fire Station for reference once available. • The emergency procedures should specify means of providing a rapid and direct warning (e.g. Siren and Flashing Light) to construction workers in the event of chlorine gas release in the SHWWTW. • The Contractor should establish a communication channel with the SHWWTW operation personnel and FSD during construction stage. In case of any hazardous incidents in the treatment works, operation personnel of SHWWTW should advise the Contractor to inform construction workers to proceed with emergency procedure. The Contractor should appoint a Liaison Officer to communicate with FSD Incident Commander on site in case of emergency. • Introduction training should be provided to any staff before carryout construction works at the Project site. • Periodic drills should be coordinated and conducted to ensure all construction personnel are familiar with the emergency procedures. Upon completion of the drills, a review on every step taken should be conducted to identify area of improvement. Prior notice of periodic drills should be given to Station Commander of Tung Chung Fire Station. Joint operational exercise with FSD and SHWWTW is recommended.		
C. Water Quality				
5.44	4.5	*Construction site run-off and general construction activities:* The mitigation measures as outlined in the ProPECC PN 1/94 Construction Site Drainage should be adopted where applicable.	Construction Site / During Construction Period	√
5.45	4.5	*Excavation of Soil Materials* The construction programme should be properly planned to minimise soil excavation, if any, in rainy seasons. This prevents soil erosion from exposed soil surfaces. Any exposed soil surfaces should also be properly protected to minimise dust emission. In areas where a large amount of exposed soils exist, earth bunds or sand bags should be provided. Exposed stockpiles should be covered with tarpaulin or impervious sheets at all times. The stockpiles of	Construction Site / During Construction Period	<>

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
		materials should be placed at locations away from any stream courses so as to avoid releasing materials into the water bodies. Final surfaces of earthworks should be compacted and protected by permanent work.		
5.46	4.5	*Accidental spillage of chemicals:* Contractor must register as a chemical waste producer if chemical wastes would be produced from the construction activities. The Waste Disposal Ordinance (Cap 354) and its subsidiary regulations in particular the Waste Disposal (Chemical Waste) (General) Regulation should be observed and complied with for control of chemical wastes.	Construction Site / During Construction Period	<>
5.47	4.5	Maintenance of vehicles and equipments involving activities with potential for leakage and spillage should only be undertaken within the areas which appropriately equipped to control these discharges.	Construction Site / During Construction Period	<>
5.48	4.5	Oils and fuels should only be used and stored in designated areas which have pollution prevention facilities. All fuel tanks and storage areas should be sited on sealed areas in order to prevent spillage of fuels and solvents to the nearby watercourses. All waste oils and fuels should be collected in designated tanks prior to disposal.	Construction Site / During Construction Period	<>
5.49	4.5	Disposal of chemical wastes should be carried out in compliance with the Waste Disposal Ordinance. The Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes published under the Waste Disposal Ordinance details the requirements to deal with chemical wastes. General requirements are given as follows: • Suitable containers should be used to hold the chemical wastes to avoid leakage or spillage during storage, handling and transport. • Chemical waste containers should be suitably labeled, to notify and warn the personnel who are handling the wastes, to avoid accidents. • Storage area should be selected at a safe location on site and adequate space should be allocated to the storage area.	Construction Site / During Construction Period	<>
5.50		Construction solid waste, debris and rubbish on site should be collected, handled and disposed of properly to avoid entering to the nearby watercourses. Stockpiles of cement and other construction materials should be kept covered when not being used. Rubbish and litter from construction sites should also be collected to prevent spreading of rubbish and litter from the site area. It is recommended to clean the construction sites on a regular basis.	Construction Site / During Construction Period	<>
5.51	4.5	*Sewage Effluent*	Work site/During the	√

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
		The presence of construction workers generates sewage. It is recommended to provide sufficient chemical toilets in the works areas. The toilet facilities should be more than 30m from any watercourse. A licensed waste collector should be deployed to clean the chemical toilets on a regular basis.	construction period	
5.52	4.5	Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment during the construction phase of the project. Regular environmental audit on the construction site can provide an effective control of any malpractices and can achieve continual improvement of environmental performance on site.	Work Site / During Construction Period	√
5.53	4.5	<u>*Nullah Decking*</u> To minimize the potential water quality impacts from the nullah reconstruction works, the practices outlined below should be adopted where applicable: • The proposed works should be carried out within the dry season between October and March when the flow in the open nullah is low. • The use of less or smaller construction plants may be specified to reduce the disturbance to the nullah bed. • Temporary storage of materials (e.g. equipment, filling materials, chemicals and fuel) and temporary stockpile of construction materials should be located well away from the nullah and any water courses during carrying out of the construction works. • Stockpiling of construction materials and dusty materials should be covered and located away from the nullah any water courses. • Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nullah and nearby water receivers. • Construction activities, which generate large amount of wastewater, should be carried out in a distance away from the nullah, where practicable. • Construction effluent, site run-off and sewage should be properly collected and/or treated. • Any works site inside the nullah should be temporarily isolated, such as by placing of sandbags or silt curtains with lead edge at bottom and properly supported props to prevent adverse impact on the water quality. • Proper shoring may need to be erected in order to prevent soil/mud from slipping into the nullah and nearby watercourse. • Supervisory staff should be assigned to station	Work Site / During Construction Period	N/A
D. Waste Management				
6.41	5.4	<u>*Good Site Practices*</u>	Work Site / During	<>

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
		Recommendations for good site practices during the construction phase would include: • Obtain relevant waste disposal permits from appropriate authorities, in accordance with the Waste Disposal Ordinance (Cap. 354) and subsidiary Regulations and the Land (Miscellaneous Provisions) Ordinance (Cap. 28); • Provide staff training for proper waste management and chemical handling procedures; • Provide sufficient waste disposal points and regular waste collection; • Provide appropriate measures to minimize windblown litter and dust during transportation of waste by either covering trucks or by transporting wastes in enclosed containers; • Carry out regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors; • Separate chemical wastes for special handling and disposed of to licensed facility for treatment; and • Employ licensed waste collector to collect waste.	Construction Period	
6.42	5.5	*Waste Reduction Measures* Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include: • Design foundation works that could minimise the amount of excavated material to be generated; • Provide training to workers on the importance of site cleanliness and appropriate waste management procedures, including waste reduction, reuse and recycling; • Sort out demolition debris and excavated materials from demolition works to recover reusable/ recyclable portions (i.e. soil, broken concrete, metal etc.); • Segregate and store different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal; • Encourage the collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the workforce; and • Plan and stock construction materials carefully to minimize the amount of waste to be generated and to avoid unnecessary generation of waste.	Work Site/During Design & Construction Period	<>
6.44	5.7	*Excavated and C&D Materials* In order to minimise the impact resulting from collection and transportation of C&D material for off-site disposal, the excavated material arising from site formation and foundation works should be reused on-site as backfilling material and for landscaping works as far as practicable. Other mitigation requirements are listed below: • A WMP, which becomes part of the Environmental Management Plan (EMP), should be prepared in accordance with ETWB TCW No.19/2005;	Work Site/During Design & Construction Period	√

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
		• A recording system for the amount of wastes generated, recycled and disposed of (including the disposal sites) should be adopted for easy tracking; and • In order to monitor the disposal of excavated and C&D material at public filling facilities and landfills and to control fly-tipping, a trip-ticket system should be adopted (refer to ETWB TCW No. 31/2004).		
6.45 – 6.46	5.8 – 5.9	An EMP should be prepared and implemented in accordance with ETWB TCW No. 19/2005 which describes the arrangements for avoidance, reuse, recovery, recycling, storage, collection, treatment and disposal of different categories of waste to be generated from construction activities. The EMP should be submitted to the Supervising Officer (SO) and Supervising Officer's Representative (SOR) for approval. The EMP should be reviewed regularly and updated, preferably on a monthly basis. A system should be devised to work for on-site sorting of excavated and C&D materials and promptly removing all sorted and process materials arising from the construction activities to minimize temporary stockpiling on-site. The system should be included in the EMP identifying the source of generation, estimated quantity, arrangement for on-site sorting, collection, temporary storage areas and frequency of collection by recycling Contractors or frequency of removal off-site.	Work Site/During Design & Construction Period	√
6.47	5.10	<u>*Chemical Waste*</u> Should chemical wastes be produced at the construction site, the Contractor would be required to register with EPD as a Chemical Waste Producer and to follow the guidelines stated in the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes. Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste (such as explosive, flammable, oxidizing, irritant, toxic, harmful, or corrosive). The Contractor should employ a licensed collector to transport and dispose of the chemical wastes, to either the CWTC in Tsing Yi, or any other licensed facilities, in accordance with the Waste Disposal (Chemical Waste) General) Regulation.	Work Site / During Construction Period	<>
6.48	5.11	<u>*General Refuse*</u> General refuse should be stored in enclosed bins or compaction units separated from C&D material. A licensed waste collector should be employed by the contractor to remove general refuse from the site, separately from C&D material. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.	Work Site / During Construction Period	<>
E. Landscape and Visual				
7.99 & Table 7.7	Table 6.1	<u>*Construction Phase*</u> • Topsoil, where identified, should be stripped and stored for re-use in the construction of the	Work site/During Design & Construction Stages	√

EIA Ref.	EM&A Log Ref.	Environmental Protection Measures	Location/ Timing	Status
		soft landscape works, where practical ・Compensatory tree planting should be provided to compensate for felled trees. - Compensation tree species shall be chosen from both indigenous and ornamental species - Compensatory tree planting quantities shall be as per DLO approved requirement. ・Control of night-time lighting ・Erection of decorative screen hoarding compatible with the surrounding setting		
F. Noise				
8.25	7.3	Good Site Practice: ・Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction program; ・Mobile plant, if any, should be sited as far from noise sensitive receivers (NSRs) as possible; ・Machines and plant (such as trucks) that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum; ・Plant known to emit noise strongly in one direction should, wherever possible, be orientated so that the noise is directed away from the nearby NSRs; and ・Material stockpiles and other structures should be effectively utilized, wherever practicable, in screening noise from on-site construction activities.	Work site/During Design & Construction Stages	√

Remark:

√	Compliance of Mitigation Measures
<>	Compliance of Mitigation but need improvement
x	Non-compliance of Mitigation Measures
▲	Non-compliance of Mitigation Measures but rectified by OSCAR Bioenergy JV
Δ	Deficiency of Mitigation Measures but rectified by OSCAR Bioenergy JV
N/A	Not Applicable in Reporting Period

Annex F

Waste Flow Table

No. EP/SP/61/10 of Organic Waste Treatment Facilities Phase I
Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated					Actual Quantities of Non-inert C&D Materials (Construction Waste) Generated				
	Total Quantity Generated	Reused in the Contract	Reused in other Projects	Hard Rocks & Large Broken Concrete	Disposed as Public Fill	Metals (see Note 1)	Paper/ cardboard packaging (see Note 1)	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse (see Note 3)
	tonne	tonne	tonne	tonne	tonne	kilogram	kilogram	kilogram	Litre	tonne
May 2015	29.58	0.00	0.00	0.00	29.58	0.00	0.00	0.00	0.00	0.00
June 2015	2226.90	0.00	0.00	0.00	2226.90	0.00	0.00	0.00	0.00	9.66
July 2015	2832.27	0.00	0.00	0.00	2832.27	0.00	0.00	0.00	0.00	33.68
August 2015	6657.25	0.00	0.00	0.00	6657.25	0.00	20.00	0.00	0.00	55.06
September 2015	5467.05	0.00	0.00	0.00	5467.05	3480.00	0.00	0.00	0.00	83.81
October 2015	5419.04	0.00	0.00	0.00	5419.04	18710.00	0.00	0.00	0.00	20.45
November 2015	1375.26	0.00	0.00	0.00	1375.26	21610.00	0.00	0.00	0.00	17.38
December 2015	2199.56	75.28	0.00	0.00	2124.28	0.00	41.00	0.00	0.00	21.83
January 2016	4601.43	0.00	0.00	0.00	4601.43	18140.00	50.00	0.00	640.00	20.86
February 2016	4167.01	0.00	0.00	0.00	4167.01	510.00	79.00	0.00	0.00	16.57
March 2016	299.92	41.28	0.00	0.00	258.64	22320.00	75.00	0.00	0.00	22.69
April 2016	3186.37	98.37	0.00	0.00	3088.00	60690.00	77.00	0.00	255.00	37.63
May 2016	1612.33	63.41	0.00	0.00	1548.92	13490.00	35000.00	0.00	0.00	40.76
June 2016	1144.73	30.43	0.00	0.00	1114.30	14600.00	120.00	0.00	0.00	58.34
July 2016	662.76	0.00	0.00	0.00	662.76	13370.00	0.00	0.00	0.00	40.48
August 2016	391.88	0.00	0.00	0.00	391.88	18660.00	84.00	0.00	0.00	61.91
September 2016	324.35	0.00	0.00	0.00	324.35	56800.00	2780.00	0.00	0.00	138.25
October 2016	1561.82	39.00	0.00	0.00	1522.82	40000	9.30	0.00	700.00	114.47
November 2016	897.23	507.94	00.00	0.00	389.76	0.00	123.00	0.00	0.00	154.22
December 2016	2477.95	489.00	0.00	0.00	1988.95	2960.00	93.00	0.00	0.00	136.80

Month	Actual Quantities of Inert C&D Materials Generated					Actual Quantities of Non-inert C&D Materials (Construction Waste) Generated				
	Total Quantity Generated	Reused in the Contract	Reused in other Projects	Hard Rocks & Large Broken Concrete	Disposed as Public Fill	Metals (see Note 1)	Paper/ cardboard packaging (see Note 1)	Plastics (see Note 2)	Chemical Waste	Others, e.g. general refuse (see Note 3)
	tonne	tonne	tonne	tonne	tonne	kilogram	kilogram	kilogram	Litre	tonne
January 2017	2150.92	503.60	0.00	0.00	1647.32	31240.00	21051.00	3630.00	0.00	127.43
February 2017	553.80	440.00	0.00	0.00	113.80	14940.00	18820.00	2880.00	460.00	83.46
March 2017	665.93	460.00	0.00	0.00	205.93	11660.00	29370.00	4400.00	660.00	99.59
April 2017	553.41	220.00	0.00	0.00	333.41	8600.00	25610.00	520.00	700.00	81.83
May 2017	388.82 (See Note 4)	211.00	0.00	0.00	177.82	1090.00	64.00	0.00	0.00	109.10
Total	51864.95	3178.84	0.00	0.00	48686.11	372870.00	133466.30	11430.00	3415.00	1586.26

Notes:
(1) Metal and paper/cardboard packaging were collected by recycler for recycling.
(2) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material collected by recycler for recycling.
(3) General refuse was disposed of at NENT by subcontractors.
(4) In total, 388.82 tonnes of inert C&D material were generated from the Project, of which the 177.82 tonnes were disposed as public fill to Fill Bank at Tuen Mun Area 38 in reporting period and the 211.00 tonnes were reused in this contract.

Annex G

Environmental Complaint, Environmental Summons and Persecution Log

Annex G Cumulative Complaint and Summons/Prosecutions Log

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
May 2015	0	0
June 2015	0	0
July 2015	0	0
August 2015	0	0
September 2015	0	0
October 2015	0	0
November 2015	0	0
December 2015	0	0
January 2016	0	0
February 2016	0	0
March 2016	0	0
April 2016	0	0
May 2016	0	0
June 2016	0	0
July 2016	0	0
August 2016	0	0
September 2016	0	0
October 2016	0	0

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
November 2016	0	0
December 2016	0	0
January 2017	0	0
February 2017	0	0
March 2017	0	0
April 2017	0	0
May 2017	0	0
Overall Total	**0**	**0**