

Agreement No. SP 05/2012  
Environmental Audit for Sewerage Works at  
Pik Shui Sun Tsuen

Monthly Environmental Audit Report No. 02 – September 2013  
Ref: 322036/ENL/02/02/A

October 2013  
Drainage Services Department



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Drainage Services Department

44/F, Revenue Tower  
5 Gloucester Road  
Wan Chai  
Hong Kong

**Pursuant to Condition 2.2 of Environmental Permit No. EP-435/ 2011,  
this Monthly Environmental Audit Report has been reviewed and  
certified by the Independent Checker (IC)**

**Certified by:**



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Terence Kong  
Independent Checker  
Mott MacDonald Hong Kong Limited

Date 4 October 2013

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# Executive Summary

On 3 May 2013, Mott MacDonald Hong Kong Limited (MMHK) was commissioned by the Drainage Services Department (DSD) under Agreement No. SP 05/2012 to undertake the Independent Checker (IC) services for the Sewerage Works at Pik Shui Sun Tsuen (The Project).

The Environmental Permit (EP) No. EP- 435/2011 for the “Sewerage Works at Pik Shui Sun Tsuen” was granted by the Environmental Protection Department (EPD) on 20 December 2011. The construction works was carried out Welcome Construction Co Ltd. (the Contractor), commenced on 26 August 2013.

In accordance with Section 5.1 and 5.3 of the Brief for the Project and Condition 2.2 of the EP, a Monthly Environmental Audit Report shall be prepared and submitted at monthly intervals to confirm in writing the full implementation of the mitigation measures recommended in the Project Profile (PP) (Register No. PP-454/ 2011) during and upon completion of the construction works. This is the 2<sup>nd</sup> Monthly Environmental Audit Report covering the period from 1 September 2013 and 30 September 2013 (the reporting month).

# 1. Environmental Status during the reporting month

## 1.1 Construction Programme

No construction work was conducted during this reporting month.

The construction works programme of the Project is provided in [Appendix A](#). A layout plan of the Project is provided in [Figure 1.1](#).

## 1.2 Key Issues for the reporting month

No construction work was conducted during this reporting month.

## 1.3 Project Organisation

The organisation chart and lines of communication with respect to the on-site environmental management structure together with the contact information of the key personnel are shown in [Appendix B](#).

## 1.4 Environmental Mitigation Measures - Implementation Status

Since there was no construction work conducted during this reporting month, no environmental site audit was conducted during this reporting month. The implementation status of environmental protection and pollution control/ mitigation measures recommended in the PP would be audited in next reporting month. The checklist of implementation status of the environmental mitigation measures is provided in [Appendix C](#).

## 2. Environmental Site Inspection

### 2.1 Site Inspection

Since no construction activity was conducted during the reporting month, no environmental site inspection was carried out during this reporting month.

### 2.2 Advice on the Solid and Liquid Waste Management Status

The Contractor has been applied for a bill account for disposal. No waste was disposed of in this reporting month.

The waste flow table is present in [Appendix D](#).

### 2.3 Status of Environmental Licenses and Permits

The environmental permits, licenses, and/or notifications on environmental protection for this Project which were valid during the period is summarised in **Table 2-1**.

Table 2-1: Status of Environmental Submissions, Licenses and Permits

Statutory Reference	Description	Permit /Reference No.	Status
EIAO	Environmental Permit	EP- 435/2011	Valid
APCO	Notification of Construction Work under APCO	355015	Valid
WPCO	Discharge License	WT00016437-2013	Valid
WDO	Bill Account for disposal	7016760	Valid

Legend: EIAO – Environmental Impact Assessment Ordinance  
APCO – Air Pollution Control Ordinance  
WPCO – Water Pollution Control Ordinance  
WDO – Waste Disposal Ordinance

## 3. Report on Complaints, Notifications of Summons and Successful Prosecutions

### 3.1 Record on Environmental Complaints Received

No environmental complaint was received this month. The cumulative statistics on complaints were provided in [Appendix E](#).

### 3.2 Record on Notifications of Summons and Successful Prosecution

No notifications of summons or successful prosecution were received this month. The cumulative statistics on notifications of summons and successful prosecutions were provided in [Appendix E](#).

### 3.3 Review of Reasons for and Implications of Non-compliance, Complaints, Summons and Prosecutions

Not applicable.

### 3.4 Follow-up Actions Taken

Not applicable.



## 4. Future Key Issues

### 4.1 Major Site Works for the Coming Month(s)

The major site works scheduled to be commissioned in the coming month include:

- Site preparation for sewerage works at Pik Shui Sun Tsuen

### 4.2 Key Issues for the Coming Month

- Generation of dust from construction works;
- Noise impact from operating equipment and machinery on-site;
- Generation of site surface runoffs and wastewater from activities on-site;
- Sorting, recycling, storage and disposal of general refuse and construction waste; and
- Display of EP at all vehicular site entrances.

## 5. Conclusions and Recommendations

### 5.1 Conclusions

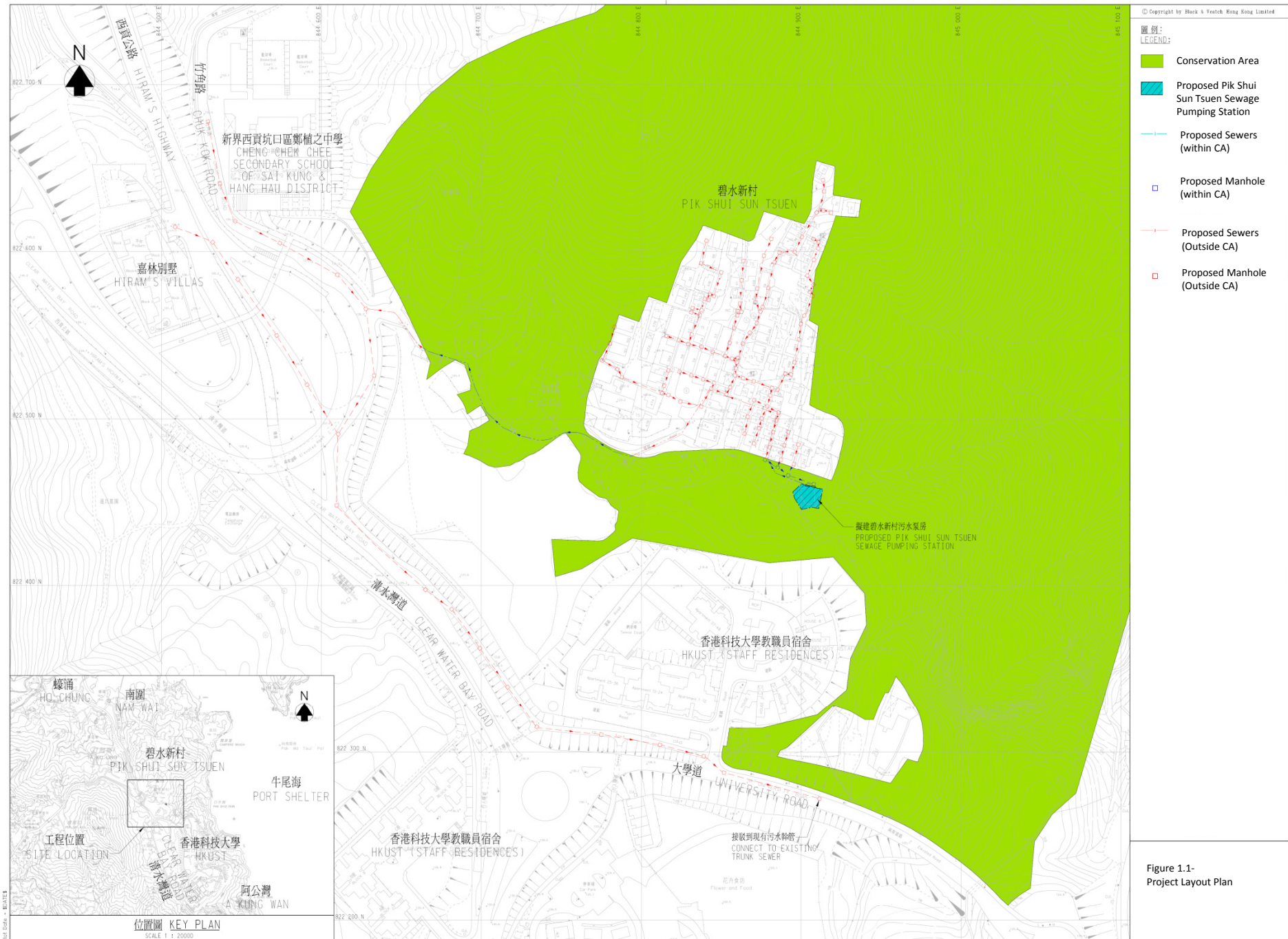
No construction activity was conducted during the reporting month.

### 5.2 Recommendations

With considerations on the construction activities in the next reporting month, recommendations on mitigation measures for impacts on air quality, noise, water quality and waste were provided.

# Figures





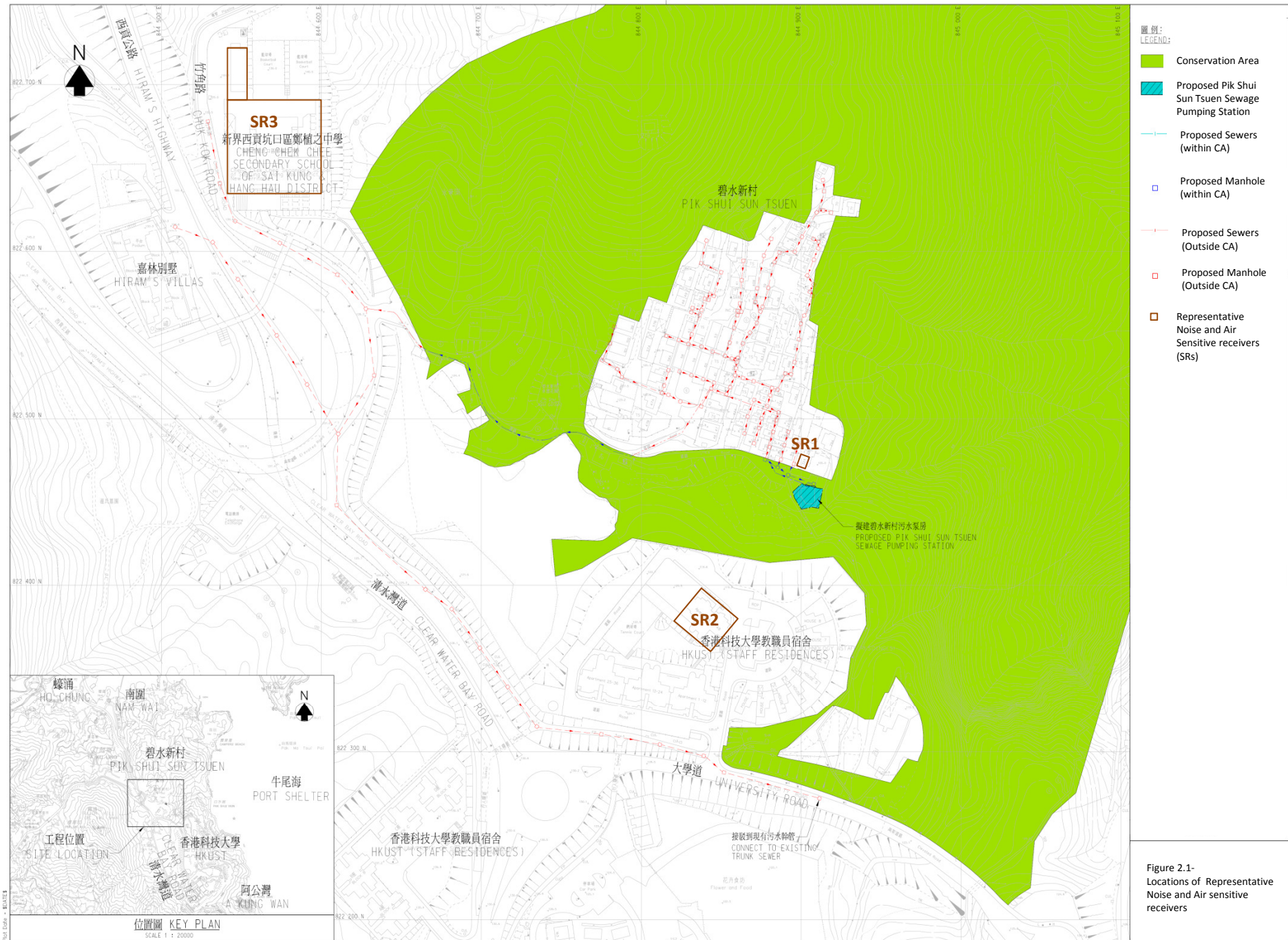


Figure 2.1- Locations of Representative Noise and Air sensitive receivers

Sources: Black & Veatch Hong Kong Limited. (2011). *Project Profile for Sewerage Works at Pik Shui Sun Tsuen* [Online]. Available: <http://www.epd.gov.hk/eia/register/profile/latest/dir218/dir218.pdf>



Figure 2.2- Locations of Visually Sensitive Receivers





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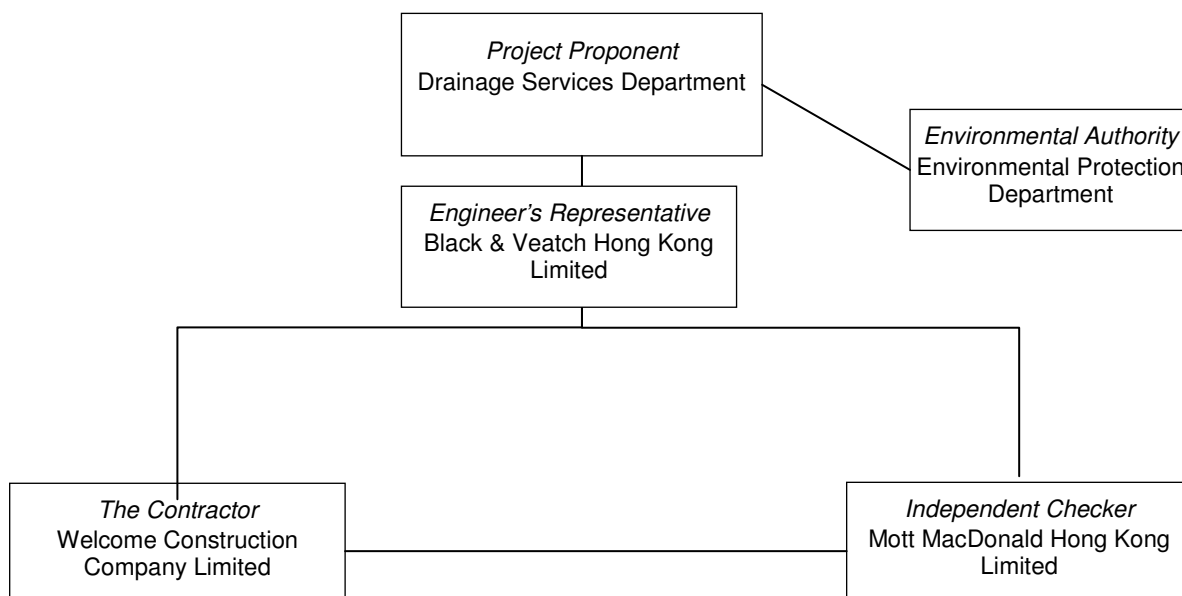


# Appendix A. Tentative Construction Programme

Welcome Constuction Co Ltd.  
 Contract No. DC/2012/06  
 Sewerage at Clear Water Bay Road, Pik Shui Sun Tsuen and West of Sai Kung Town  
 Detailed Program for Pik Shui Sun Tsuen Pumping Station

ID	Task Name	Duration	Start	Finish	Gantt Chart																											
					2013				2014								2015								2016							
					3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter														
1	<b>Pik Shui Sun Tsuen Pumping Station (PSST SPS) &amp; Associated Works</b>	<b>1095 days</b>	<b>Mon 26/8/13</b>	<b>Wed 24/8/16</b>																												
2	Tree survey	7 days	Mon 26/8/13	Sun 1/9/13																												
3	Site Clearance	7 days	Mon 26/8/13	Sun 1/9/13																												
4	Pruning & Protection of existing trees	10 days	Mon 2/9/13	Wed 11/9/13																												
5	UU Detection & Trial Pits to locate UU	10 days	Mon 2/9/13	Wed 11/9/13																												
6	Erection of Temporary Hoarding, Fencing & Gate	20 days	Thu 12/9/13	Tue 1/10/13																												
7	<b>Structure of PSST SPS</b>	<b>334 days</b>	<b>Wed 2/10/13</b>	<b>Sun 31/8/14</b>																												
8	Shoring & Excavation	30 days	Wed 2/10/13	Thu 31/10/13																												
9	Construction of Base Slab (B/F)	30 days	Fri 1/11/13	Sat 30/11/13																												
10	Construction of Walls (B/F to G/F)	40 days	Sun 1/12/13	Thu 9/1/14																												
11	Construction of Slab (G/F)	35 days	Fri 10/1/14	Thu 13/2/14																												
12	Construction of Valve Chamber Base Slab	15 days	Fri 14/2/14	Fri 28/2/14																												
13	Construction of Valve Chamber Walls & Slab over Compacted Fill (B/F to G/F)	30 days	Sat 1/3/14	Sun 30/3/14																												
14	Dismantle Shoring & Backfill Excavation	30 days	Mon 31/3/14	Tue 29/4/14																												
15	Laying Concrete Benching at Inlet Chamber (between B/F & G/F)	3 days	Wed 30/4/14	Fri 2/5/14																												
16	Laying Concrete Plinth for Deodourizing Unit (G/F)	3 days	Thu 1/5/14	Sat 3/5/14																												
17	Construction of Concrete Columns, Walls & Canopy (G/F to 1/F)	60 days	Sun 4/5/14	Wed 2/7/14																												
18	Construction of Roof Slab & Beams (R/F)	40 days	Thu 3/7/14	Mon 11/8/14																												
19	Construction of Parapet Walls (R/F)	20 days	Tue 12/8/14	Sun 31/8/14																												
20	<b>Metal Works, Plumibing &amp; Irrigation Works in PSST SPS</b>	<b>145 days</b>	<b>Mon 1/9/14</b>	<b>Fri 23/1/15</b>																												
21	Installation of Ladder, Basket Screen, Chequer Plates, Muti-span Covers & etc	55 days	Mon 1/9/14	Sat 25/10/14																												
22	Installation of Irrigation System (G/F to R/F) & Plumbing System (G//F)	40 days	Sun 26/10/14	Thu 4/12/14																												
23	Installation of Metal Works & Glass Panels (G/F)	50 days	Fri 5/12/14	Fri 23/1/15																												
24	<b>E &amp; M Works in PSST SPS</b>	<b>365 days</b>	<b>Sat 24/1/15</b>	<b>Sat 23/1/16</b>																												
25	Handover to Other Cotractors for E & M Works	1 day	Sat 24/1/15	Sat 24/1/15																												
26	E & M Works carried out by other Contractors	365 days	Sat 24/1/15	Sat 23/1/16																												
27	<b>Finishes Works, Landscaping Works &amp; External Works</b>	<b>214 days</b>	<b>Sun 24/1/16</b>	<b>Wed 24/8/16</b>																												
28	Formation of External Ground Area	5 days	Sun 24/1/16	Thu 28/1/16																												
29	Drainage & Sewerage Works in External Area	30 days	Fri 29/1/16	Sat 27/2/16																												
30	Erection of Permanent Fence & Gate	40 days	Sun 28/2/16	Thu 7/4/16																												
31	Installation of Irrigation System in External Area	30 days	Fri 8/4/16	Sat 7/5/16																												
32	Formation of Planting Area in External Area	20 days	Sun 8/5/16	Fri 27/5/16																												
33	Planting of Trees & Shrubs in External Area	34 days	Sat 28/5/16	Thu 30/6/16																												

## Appendix B. Project Organization



Company / Department	Position	Name	Telephone / Mobile
Drainage Services Department	Project Proponent	Mr Chow Sui Ping	2594 7453
Black & Veatch Hong Kong Limited	Engineer's Representative	Mr Eugene Chan	6075 8606
Mott MacDonald Hong Kong Ltd.	Independent Checker	Mr Terence Kong	2828 5919
Welcome Construction Company Limited	Project Director	Mr Sunny Ngan	6109 5569
Welcome Construction Company Limited	Site Agent	Mr Frankie Lui	6021 7973
Welcome Construction Company Limited	Assistant Environmental Officer	Mr Sze Ming Fung	6018 6936





## Appendix C. Environmental Mitigation Measures- Implementation Status

Table C1: Construction Noise – Recommended Mitigation Measures

* PP / ^ EP ref:	Recommended measures	Implementation Status
*5.2.6	<ul style="list-style-type: none"> <li>Only well-maintained plant should be operated on-site and plant should be serviced regularly during the construction works.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Machines and plant that may be in intermittent use should be shut down between work periods or should be throttled down to a minimum.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from nearby NSRs.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Silencers or mufflers on construction equipment should be utilised and should be properly maintained during the construction works.</li> </ul>	N/A
	<ul style="list-style-type: none"> <li>Mobile plant should be sited as far away from NSRs as possible.</li> </ul>	N/A
*5.2.2, 5.2.6	<ul style="list-style-type: none"> <li>Use of temporary noise barrier, mobile barrier</li> </ul>	N/A
*5.2.6	<ul style="list-style-type: none"> <li>Material stockpiles and other structures should be effectively utilised, where practicable, to screen noise from on-site construction activities</li> </ul>	N/A
*5.2.6	<ul style="list-style-type: none"> <li>Noisy construction activities such as road breaking, should be scheduled to less sensitive hours during the day</li> </ul>	N/A
*5.2.6	<ul style="list-style-type: none"> <li>Liaise with the affected noise sensitive receivers on the anticipated construction activities, possible impacts, expected duration and communication channel with the project office.</li> </ul>	N/A
*5.2.1,*Table 6.1	<ul style="list-style-type: none"> <li>Adoption of quiet powered mechanical equipment (QPME) during construction</li> </ul>	N/A
*5.2.4, ^2.3	<ul style="list-style-type: none"> <li>For the sewer works located less than 15 m away from Cheng Chek Chee Secondary School, construction works can only be conducted after school hours or during school breaks. For the sewer works located between 15 m – 30 m away from the School, the contractor should liaise with the school and/or the Examination Authority to ascertain the exact dates and times of all examination periods and to avoid noisy construction activities during these periods.</li> </ul>	N/A

Table C2: Air Quality – Recommended Mitigation Measures

* PP / ^ EP ref:	Recommended measures	Implementation Status
*5.2.8, ^1.2	<ul style="list-style-type: none"> <li>Comply with the control measures in the Air Pollution Control (Construction dust) Ordinance.</li> </ul>	N/A
*5.2.8	<ul style="list-style-type: none"> <li>Excavated dusty materials should be covered by impervious sheeting or sprayed with water to keep the entire surface wet.</li> </ul>	N/A
*5.2.8	<ul style="list-style-type: none"> <li>Use of regular watering, with complete coverage, to reduce dust emissions from exposed site surfaces and unpaved roads, particularly during dry weather.</li> </ul>	N/A



Table C3: Water Quality – Recommended Mitigation Measures

* PP / ^ EP ref:	Recommended measures	Implementation Status
*5.2.10, * Table 6.1	• Follow the guidelines in ProPECC PN 1/94 “Construction Site Drainage”.	N/A
	• Silt removal facilities should be provided according to the guidelines stipulated in EPD’s ProPECC PN 1/94.	N/A
	• Cover open stockpiles of construction materials with tarpaulin or similar fabric during rainstorms.	N/A

Table C4: Waste Management – Recommended Mitigation Measures

* PP / ^ EP ref:	Recommended measures	Implementation Status
*5.2.12, *Table 6.1	• Sort all C&D materials and waste into different categories for reuse on site, recycling and disposal at designated public fill reception facilities or landfills.	N/A
	• C&D material and excavated materials should be reused on-site as fill material as far as possible.	N/A
	• Disposal of C&D materials should be managed through the trip ticket system for disposal of C&D materials.	N/A
*5.2.12	• All Chemical waste should be handled, stored and disposed of in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	N/A

Table C5: Landscape and Visual Impact – Recommended Mitigation Measures

* PP / ^ EP ref:	Recommended measures	Implementation Status
*5.2.14, *Table 6.2	• Retain and protect existing trees near works site.	N/A
	• Erect site hoarding compatible with the surrounding environment for the pumping station works area	N/A
	• Maintain site cleanliness and tidiness in accordance with the requirements stipulated in DEVB TCW No. 8/2010.	N/A
	• Properly manage construction waste in the works area.	N/A
	• Minimize the number and size of temporary works area.	N/A
	• Promptly reinstate each section of the trench upon completion of the sewer works.	N/A
	• Control of night-time security lightning to minimize night-time glare to nearby village.	N/A





Table C6: Others

* PP / ^ EP ref:	Recommended measures	Implementation Status
^1.5	<ul style="list-style-type: none"> <li>A copy of the valid Environmental Permit shall be displayed conspicuously on the Project site(s) at all vehicular site entrances/exits or at a convenient location for public information at all times. The most updated information about the Permit, including any amended Permit, shall be displayed at such locations. If the Permit Holder surrenders a part or whole of the Permit, the notice he send to the Director shall also be displayed at the same locations as the original Permit. The suspended, varied or cancelled Permit shall be removed from display at the Project site(s).</li> </ul>	N/A
n/a	<ul style="list-style-type: none"> <li>The required licenses should be obtained by the Contractor (including CNP (if any), WPCO license, etc.)</li> </ul>	✓

Legend:

- ✓ Implemented
- x Not implemented
- P Partially implemented
- N/A Not applicable
- N/O Not observed



## Appendix D. [Waste Flow Table](#)



## Appendix E. Cumulative statistics on complaints, notifications of summons and successful prosecutions

Cumulative statistics for complaints, notifications of summons and successful prosecutions for the Project account for period starting from the date of commencement of construction works (i.e. 26 August 2013) to the end of the reporting month and are summarized in the **Table F1** below.

Table F1: Statistics for complaints, notifications of summons and successful prosecutions

Reporting Period	Cumulative Statistics		
	Complaints	Notifications of summons	Successful prosecutions
This reporting month	0	0	0
From 26 August 2013 to end of the reporting month	0	0	0