ATAL-Degrémont-China State Joint Venture

Contract No. DC/2008/03 Design, Build and Operate Pillar Point Sewage Treatment Works: *Thirty-first Monthly EM&A Report*

June 2013

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ATAL-Degrémont-China State Joint Venture

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June 2013

Reference 0119806

For and on behalf of ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed:

Position: Partner

Certified by:
(Environmental Team Leader – Winnie Ko)

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Date: 13 June 2013

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Attn: Mr. Kenley C.K. KWOK (T: 2159 3409)

13 June 2013

Dear Sir,

Contract No. DC/2008/03
Design, Build and Operate
Pillar Point Sewage Treatment Works

Monthly EM&A Report for May 2013

Reference is made to Environmental Team (ET)'s draft of the Monthly EM&A Report for May 2013 provided by email dated 10 and 11 June 2013. We have no further comment.

We hereby verify the said Monthly EM&A Report as having complied with the requirement as set out in the EM&A Manual in accordance with the condition 3.6 of Environmental Permit No. EP-321/2008/A.

Should you have any queries, please feel free to contact the undersigned at 3922 9393.

Yours faithfully,

For and on behalf of
AECOM Asia Co. Ltd.

Y T Tang
Independent Environmental Checker

c.c. AECOM – Mr. Tim Lee (Fax No. 2317 7609)
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EXECUTIVE SUMMARY

The construction works of ***DC/2008/03 of Design, Build and Operate Pillar Point Sewage Treatment Works (the Project)*** commenced on 13 November 2010. This is the 31st monthly Environmental Monitoring and Audit (EM&A) report presenting the EM&A works carried out during the period from 1 to 31 May 2013 in accordance with the EM&A Manual.

Summary of Construction Works undertaken during the Reporting Month

Works undertaken in the reporting month included:

- Construct finishing works at the Administration Building, Sludge Dewatering Building, UV building and the Septic Waste Reception Station;
- Construct the structure, conduct finishing works and install E&M at the PTW and CEPT;
- Construct structure works at the Reuse Water Pump Room;
- Install BS and DO duct at the Deodorisation Units Portion A and Deodorisation Units Portion B;
- Install E&M at the Electrical buildings No.1, No.2 and No.3;
- Construct drainage, cable ducts and boundary walls at P2;
- Construct backfilling at Payment Flow Meter Chamber; and
- Construct backfilling and drainage works for the whole site.

Environmental Monitoring and Audit Progress

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

• 24-hour TSP Monitoring at each monitoring station (AM1 and AM2)	6 sets
• 1-hour TSP Monitoring at each monitoring station (AM1 and AM2)	18 sets
• Joint Environmental Site Inspection	5 times
• Landscape & Visual Monitoring	Once

Air Quality

6 sets of 24-hour TSP and 18 sets of 1-hr TSP measurements were carried out at each of the designated monitoring stations during the reporting period. No exceedance was recorded during the reporting period.

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). In total, 1,443.37 tonnes of inert C&D material were generated from the Project, which were reused in this Contract. 40.00 kg of metals, 43.00 kg of papers/ cardboard packing and 9.00 kg of plastics were sent to recyclers for recycling during the reporting period.

Environmental Site Inspection

Five weekly joint environmental site inspections were carried out by the representatives of the Contractor, SOR and the Environmental Team (ET). Details of the audit findings and implementation status of the mitigation measures are presented in *Section 7.1*.

Landscape & Visual

Review on landscape and visual mitigation measures was performed on 31 May 2013. Details of the audit findings and implementation status of the mitigation measures are presented in *Sections 3.2* and *7.2*.

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.

Future Key Issues

Works to be undertaken in the next reporting month include:

- Construct finishing works at the Administration Building and reuse water pump room;
- Construct finishing works and install E&M at PTW, Chemical Building and CEPT;
- Install BS and DO duct at the Deodorisation Units Portions A and B;
- Construct drainage, cable ducts and boundary walls and water mains at P2;
- Construct finishing works, staircase and fins wall in Sludge Dewatering Building;
- Construct excavation in Sludge Skip Storage Building;
- Construct backfilling at Payment Flow Meter Chamber; and
- Construct backfilling and drainage works for the whole site.

Potential environmental impacts arising from the above construction activities are mainly associated with dust, construction noise, site runoffs, waste management and landscaping issues.

1 INRODUCTION

ERM-Hong Kong, Limited (ERM) was appointed by ATAL – Degrémont – China State Joint Venture (ADC-JV) (the Contractor) as the Environmental Team (ET) to undertake the Environmental Monitoring and Audit (EM&A) programme for the ***Contract No. DC/2008/03 of Design, Build and Operate Pillar Point Sewage Treatment Works (the Project)***.

1.1 PURPOSE OF THE REPORT

This is the 31st EM&A report which summarises the monitoring results and audit findings for the EM&A programme during the reporting period from **1** to **31 May 2013**.

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 the background and scope of the Project, site description, project organization, construction programme, construction works undertaken and status of the Environmental Permits (EP)/licences over the construction phase of the Project.

Section 3: **Environmental Monitoring Requirements**
It summarises the environmental monitoring requirements including monitoring parameters, programmes, methodologies, frequency, 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: **Monitoring Results**
It summarises the monitoring results obtained in the reporting period.

Section 6: **Waste Management**
It summarises the quantity of public fill and construction waste generated in the reporting period

Section 7: **Environmental Site Inspection**
It summarises the audit findings of the weekly site inspections undertaken within the reporting period.

Section 8: **Environmental Non-conformance**
It summarises any exceedance of environmental performance standard, environmental complaints and summons received within the reporting period.

Section 9: **Further Key Issues**
It summarises the impact forecast and monitoring schedule for the next reporting month.

Section 10: **Review of the EM&A Data and Predictions**
It compares the monitoring data and waste quantity against the predictions in the approved Project EIA report.

Section 11 : **Conclusions**

2 PROJECT INFORMATION

2.1 BACKGROUND

The existing Pillar Point Sewage Treatment Works (PPSTW) is located to the north of the Tuen Mun River Trade Terminal and is abutting the Lung Mun Roadin the north. It is a preliminary treatment works with screening and grit removal processes and the treated effluent is discharged to the sea (North Western Water Control Zone) via a twin submarine outfall. The *Review of the Tuen Mun and Tsing Yi Sewerage Master Plan* (RTMTYSMP), commissioned in February 1999, recommended that the sewage treatment capacity be expanded and the plant be upgraded to chemically enhanced primary treatment (CEPT) with disinfection. This is to cater for the projected ultimate population and planned developments in the Tuen Mun area, and to improve the effluent quality reducing pollution loadings to the receiving waters.

The upgrading of the PPSTW comprises the following works:

- expanding the treatment capacity of the existing PPSTW to cope with the increased peak wet-weather sewage flow in Tuen Mun area;
- upgrading the sewage treatment level of the existing PPSTW to incorporate chemical treatment with disinfection at minimum removal rates of 70%, 55% and 99.9% of suspended solids (SS), biochemical oxygen demand (BOD) and *E.coli*, respectively;
- upgrading the existing septic waste reception facilities at PPSTW; and
- providing and upgrading ancillary facilities including the administration building, workshop, laboratory, odour control facilities, sludge handling and dewatering facilities, access roads and minor landscaping works within the STW for the operation and maintenance of the upgraded STW.

The potential environmental impacts of the Project have been studied in the "*Upgrading of Pillar Point Sewage Treatment Works*" (EIAO Register No: AEIAR-145/2008). The EIA was approved on 10 June 2008 under the *Environmental Impact Assessment Ordinance* (EIAO) and an Environmental Permit (EP-321/2008) for the works was granted on 17 November 2008. A variation of an Environmental Permit was granted on 23 April 2013 (EP-321/2008/A). Under the requirements of Condition 3.1 of EP-322/2008/A, an EM&A programme as set out in the EM&A Manual is required to be implemented.

The construction works commenced on 13 November 2010 and are scheduled for completion by 2014.

2.2 GENERAL SITE DESCRIPTION

The open area adjacent to the existing PPSTW has been designated for the upgrading works. 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 in *Table 2.1*. The locations of the construction activities are shown in *Annex B*. The construction programme of the Project in the reporting month and the upcoming month is presented in *Annex L*.

Table 2.1 Summary of Construction Activities Undertaken in the Reporting Period

Construction Activities Undertaken
• Construct finishing works at the Administration Building, Sludge Dewatering Building, UV building and the Septic Waste Reception Station;
• Construct the structure, conduct finishing works and install E&M at the PTW and CEPT;
• Construct structure works at the Reuse Water Pump Room;
• Install BS and DO duct at the Deodorisation Units Portion A and Deodorisation Units Portion B;
• Install E&M at the Electrical buildings No.1, No.2 and No.3;
• Construct drainage, cable ducts and boundary walls at P2;
• Construct backfilling at Payment Flow Meter Chamber; and
• Construct backfilling and drainage works for the whole site.

2.4 PROJECT ORGANISATION AND MANAGEMENT STRUCTURE

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

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/ Licences/ Notification	Reference	Validity Period	Remarks
Environmental Permit	EP-321/2008/A	Throughout the Contract	Permit granted on 23 April 2013
Notification of Construction Works under the Air Pollution Control (Construction Dust) Regulation	Ref No. 308136	Throughout the Contract	-
Water Discharge License	WT00008027-2010	Till 31 December 2015	Wastewater discharge licence was issued by EPD on 7 December 2010.
Construction Noise Permit	GW-RW0974-12	28 January 2013-27 July 2013	

Permit/ Licences/ Notification	Reference	Validity Period	Remarks
Chemical Waste Producer Registration	5213-421-A2620-01	Throughout the Contract	Licence approved on 28 October 2010

3 ENVIRONMENTAL MONITORING REQUIREMENTS

3.1 AIR QUALITY MONITORING

3.1.1 Monitoring Location

The proposed air quality monitoring stations for the construction phase of the Project, as recommended in the approved EM&A Manual, are given in *Table 3.1* and shown in *Annex D*. The proposed locations (AM1 and AM2) have been agreed with the Drainage Services Department (DSD), Environmental Protection Department (EPD) and the Independent Environmental Checker (IEC).

Table 3.1 Construction Phase Air Monitoring Locations

Monitoring ID	Air Quality Monitoring Station
AM1	Tuen Mun EMSD Servicing Vehicle Station
AM2	River Trade Terminal Office

3.1.2 Monitoring Parameter and Frequency

The construction phase air quality monitoring has been conducted at the designated monitoring stations in accordance with the requirements stipulated in the EM&A Manual. 1-hour and 24-hour TSP levels have been monitored at the frequency and duration stated in *Table 3.2*. The construction phase TSP monitoring has been conducted as per the schedule presented in *Annex E*.

Table 3.2 Construction Phase Air Quality Monitoring Parameters and Frequency

Parameter	Frequency
24-hour average TSP	Once every 6 days
1-hour average TSP	3 times every 6 days

3.1.3 Action and Limit Levels

The Action and Limit levels have been established and presented in *Table 3.3*.

Table 3.3 Action and Limit Levels for Air Quality

Parameter	Air Monitoring Station	Action Level, μgm^{-3}	Limit Level, μgm^{-3}
24-hour TSP	AM1	183	260
	AM2	192	260
1-hour TSP	AM1	343	500
	AM2	383	500

3.1.4 Monitoring Equipment

Continuous 24-hour and 1-hour TSP monitoring was performed using High Volume Samplers (HVS) with appropriate sampling inlets located at the designated monitoring stations.

The performance specification of HVS complied with the standard method "*Determination of Suspended Particulate Matter in the Atmosphere (High Volume Method)*" as stipulated in *US EPA Standard Title 40, Code of Federation Regulations Chapter 1 (Part 50 Appendix B)*. *Table 3.4* summarises the equipment that were deployed for the 24-hour and 1-hour TSP monitoring respectively.

Table 3.4 TSP Monitoring Equipment

Monitoring Station	Monitoring Equipment (HVS and Calibrator)
24-hr and 1-hr TSP	
AM1	GMW GS-2310 (S/N 7580), CM-AIR-43 (S/N 0438320)
AM2	GMW GS-2310 (S/N 1252), CM-AIR-43 (S/N 0438320)

3.1.5 Monitoring Methodology

The setup locations of the HVSs were listed in *Table 3.1*. All HVSs were free-standing with no obstruction.

The following criteria were considered in the installation of the HVSs:

- appropriate support to secure the samplers against gusty wind were provided at AM1 and AM2;
- a minimum of 2m separation from walls, parapets and penthouses was required for rooftop samplers;
- no furnace or incinerator flues was nearby;
- airflow around the sampler was unrestricted; and
- permission was obtained to set up the samplers and gain access to the monitoring stations.

Preparation of Filter Papers

- glass fibre filters were labelled and sufficient filters that were clean and without pinholes were selected;
- all filters were equilibrated in the conditioning environment for 24 hours before weighing. The conditioning environment temperature was around 25°C and not variable by more than ± 3°C; the relative humidity (RH) was 40%; and
- SGS Hong Kong Ltd, a HOKLAS accredited laboratory, implemented comprehensive quality assurance and quality control programmes.

Field Monitoring

- the power supply was checked to ensure that the HVSs were working properly;

- the filter holder and area surrounding the filter were cleaned;
- the filter holder was removed by loosening the foul bolts and a new filter, with stamped number upward, on a supporting screen was aligned carefully;
- the filter was properly aligned on the screen so that the gasket formed an airtight seal on the outer edges of the filter;
- swing bolts were fastened to hold the filter holder down to the frame. The pressure applied should be sufficient to avoid air leakage at the edges;
- the shelter lid was closed and secured with an aluminium strip;
- the HVSs were warmed-up for about 5 minutes to establish run-temperature conditions;
- a new flowrate record sheet was inserted into the flow recorder;
- the flow rates of the HVSs were checked and adjusted to between 1.22 and 1.37 $m^3 min^{-1}$ which were within the range specified in the EM&A Manual (ie 0.6 to 1.7 $m^3 min^{-1}$);
- the programmable timer was set for a sampling period of 24 hours ± 1 hour, and the starting time, weather condition and the filter number were recorded;
- the initial elapsed time was recorded;
- at the end of sampling, the sampled filter was removed carefully and folded in half l so that only surfaces with collected particulate matter were in contact;
- the filter was placed in a clean plastic envelope and sealed;
- all monitoring information was recorded on a standard data sheet; and
- filters were sent to SGS Hong Kong Ltd for analysis.

Maintenance and Calibration

- the HVSs and their accessories were maintained in good working condition, eg. motor brushes were replaced routinely and electrical wiring was checked to ensure a continuous power supply; and
- the flow rate of each HVS with mass flow controller was calibrated using an orifice calibrator. Initial calibrations of the dust monitoring equipment were conducted upon installation and prior to commissioning. Five-point calibration was carried out for HVSs using CM-AIR-43 Calibration Kit. HVSs are calibrated on a bi-monthly basis. The calibration records for the HVSs are given in *Annex F*.

Wind Data Monitoring

Average wind data (wind speed and wind direction) during the monitoring period were obtained from the meteorological station at Tuen Mun of the Hong Kong Observatory (HKO) and were presented in *Annex G*.

3.1.6 Event and Action Plan

The Event/Action Plan (EAP) for air quality monitoring is presented in *Annex H*.

3.2 LANDSCAPE AND VISUAL MONITORING

In accordance with the EM&A Manual, monthly landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures recommended in the approved EIA Report are fully achieved. The monitoring procedures and criteria as described in the EM&A Manual were adopted.

3.3 ENVIRONMENTAL MITIGATION MEASURES AND ENVIRONMENTAL REQUIREMENTS IN CONTRACT

All the relevant environmental mitigation measures listed in the EIA Report and EM&A Manual as well as the specific environmental requirements stated in the Contract Specification are summarised in *Annex I*. A summary of the key environmental mitigation measures implemented as per the Contract Requirements is also presented in *Annex I*.

4 *IMPLEMENTATION STATUS ON ENVIRONMENTAL PROTECTION REQUIREMENTS*

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

5 MONITORING RESULTS

5.1 AIR QUALITY

A total of 6 sets of 24-hour and 18 sets of 1-hour TSP measurements were taken at each of the monitoring stations (AM1 and AM2) during the reporting period. The monitoring data for 24-hour and 1-hour TSP together with the wind data and graphical presentations for the past 4 months are presented in *Annex G*. The weather conditions during the monitoring period ranged from sunny to cloudy. The local impacts near the monitoring stations of AM1 and AM2 were mainly associated with vehicular emissions. No exceedance of Action and Limit Level of the 1-hr and 24-hr TSP was recorded during the reporting period.

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 J*). 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 *Table 6.1*.

Table 6.1 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
May 2013	1,443.37 tonnes	92.00 kg	297.89 tonnes	0 L

Notes:

(a) Inert C&D materials (public fill) include bricks, concrete, building debris, rubble and excavated soil. In total, 1,443.37 tonnes of inert C&D waste were generated from the Project, of which 100.00 tonnes were reused in this Contract and the remaining 1,343.37 tonnes were diposed as public fill. The detailed waste flow is presented in *Annex J*.

(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) 40.00 kg of metals, 43.00 kg of papers/ cardboard packing and 9.00 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 WENT Landfill by subcontractors.

7 ENVIRONMENTAL INSPECTIONS

7.1 WEEKLY SITE AUDITS

Joint site inspections were conducted by representatives of the Contractor, the SOR and the ET on 2, 8, 14, 20 and 31 May 2013. The IEC was also present at the joint inspection on 31 May 2013.

Major observations during the reporting period are summarised as follows:

2 May 2013

- Tree tag was observed missing for the tree beside retained tree 142 and construction materials were observed storing under it. The Contractor was reminded to remove the construction materials and provide a tree tag to ensure the tree is carefully.

- Broken branches were observed hanging on the trees along the Outfall Pumping Station. The Contractor was reminded to remove those broken branches to prevent them from tearing off strips of tissue down the trunk and further damaging the trees.

8 May 2013

- A pH reading of 9.4 was observed in the pH meter at the waste treatment facility. The Contractor was reminded to maintain a neutral pH before discharge.

- A Construction materials and leaves were observed in the U-channel next to the Sludge Dewatering Building. The Contractor was reminded to remove the construction materials and leaves from the U-channel to prevent effluent accumulation in the channel.

- Tree tag was observed missing for retained tree 261 and the tree between retained tree N09 and 278. The Contractor was reminded to provide tree tags for these two trees.

- Construction materials were observed storing under the trees along the Outfall Pumping Station. The Contractor was reminded to remove the construction materials and fence off the protection zone for the trees.

14 May 2013

- The Haul road near the site entrance was observed dried. The Contractor was reminded to provide regular watering at exposed site surfaces and unpaved road, particularly in dry weather.

- Construction materials were observed storing under retained tree 179 and the tree beside the site entrance. The Contractor was reminded to remove the construction materials and fence off the protection zone for the tree beside the site entrance.

20 May 2013

- A crack was found on the tree trunk of tree No. T20. Although the Contractor has arranged a tree specialist to assess the condition of this tree and concluded that the condition of the tree is considered healthy and there is no imminent hazard to the public from it, the Contractor was still reminded to keep closely monitoring the health condition of such tree.

31 May 2013

- Different types of construction waste were observed accumulated in multiple locations in the site. The Contractor was reminded to sort the waste on-site.

Follow-up actions resulting from the last site inspections were taken as reported by the Contractor and their results were observed in the site inspections conducted in the reporting period.

7.2 LANDSCAPE AND VISUAL MONITORING

In accordance with the EM&A Manual, monthly landscape and visual monitoring is required to ensure that the design, implementation and maintenance of landscape and visual mitigation measures recommended in the EIA Report are fully achieved. A review of the landscape and visual mitigation measures was performed on 31 May 2013. It was confirmed that most of the necessary landscape and visual mitigation measures as summarised in *Annex I* were implemented by the Contractor. The major findings are summarised as follow:

31 May 2013

- Tree tags were observed missing for retained tree T17 and T20. The Contractor was reminded to provide tree tags for these trees.

- Construction materials were observed placing near the retained tree 133 and tree protection was observed not being set up. The contractor was reminded to remove the construction materials and fence off the tree protection zone for the tree.

8 ENVIRONMENTAL NON-CONFORMANCE

8.1.1 Summary of Monitoring Exceedance

No exceedances of the Action and Limit Levels of 1-hr and 24-hr TSP was recorded during the reporting period.

8.1.2 Summary of Environmental Non-Compliance

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

8.1.3 Summary of Environmental Complaint

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

8.1.4 Summary of Environmental Summon and Successful Prosecution

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

9.1.1 Key Issues for the Coming Month

Works to be undertaken for the coming monitoring period are summarised in *Table 9.1*.

Table 9.1 Construction Works to be Undertaken in the Next Reporting Period

Work to be undertaken
• Construct finishing works at the Administration Building and reuse water pump room;
• Construct finishing works and install E&M at PTW, Chemical Building and CEPT;
• Install BS and DO duct at the Deodorisation Units Portions A and B;
• Construct drainage, cable ducts and boundary walls and water mains at P2;
• Construct finishing works, staircase and fins wall in Sludge Dewatering Building;
• Construct excavation in Sludge Skip Storage Building;
• Construct backfilling at Payment Flow Meter Chamber; and
• Construct backfilling and drainage works for the whole site.

Potential environmental impacts arising from the above construction activities will be mainly associated with dust, construction noise, site runoffs, waste management and landscaping issues.

9.1.2 Monitoring Schedule for the Next Reporting Period

The tentative schedule of TSP monitoring for the next reporting period was presented in *Annex E*. Environmental monitoring will be conducted at the same monitoring locations in the next reporting period. The monitoring programme has been reviewed and was considered adequate for the nature of works in progress.

9.1.3 Construction Programme for the Next Three Months

The most up-to-date construction programme for the Project is presented in *Annex L*.

10 REVIEW OF THE EM&A DATA AND EIA PREDICTIONS

10.1 AIR QUALITY

Since the EIA has only included a qualitative assessment of dust impact during the construction phase, a comparison was made between the monitoring results from the start of the Project and the Hong Kong Air Quality Objectives (HKAQO) (see *Table 10.1*).

Table 10.1 Comparison of the HKAQO and Air Quality Monitoring Results

Monitoring Station	Corresponding ASR in EIA	HKAQO, μg m^{-3}	Measured 24-hour TSP Monitoring Results, μg m^{-3} [a] [b]	
		24 hour [a]	Average	Range
AM1	A1	260	69	68 - 75
AM2	A7	260	76	69- 86

Notes:

(a) Only 24-hour TSP monitoring results were compared as there is no 1 hour TSP criterion in HKAQO.

(b) The average and range of data were calculated from the period between the commencement of the construction works and this reporting month.

The monitoring results show that the average and range of the 24-hour TSP levels recorded since the commencement of the construction works have been well below the 24-hour TSP criterion in the HKAQO. Recommended mitigation measures in *Section 3.7.1.1* of EIA have been implemented throughout the construction period and were considered effective.

10.2 WASTE MANAGEMENT

The estimated amount of waste generated from the Project and the cumulative quantities of waste generated up to this reporting month are presented in *Table 10.2*. The amount of inert C&D material sent to public fills is higher than the estimated amount in the EIA. With reference to the C&D Material Assessment (Contractor's General Submission (CSF) No.: DC200803/CSF/SAF/060026/A), the difference in quantities is mainly due to the differences in excavation depths and the excavation methods in the Contract Works and that assumed in the Reference Design. Recommended mitigation measures in *Sections 7.5.1.1* to *7.5.1.9* of the EIA will continue to be implemented during the construction stage.

Table 10.2 *Quantity of Amount of C&D Materials, General Wastes and Chemical Wastes Actually Generated and Estimated in the EIA and C&D Material Assessment*

Type of Material	Estimated Amount of Public Fill and Construction Waste in the EIA (inert & non-inert)	Estimated Amount of Public Fill and Construction Waste in C&D Material Assessment (CSF No.: DC200803/CSF/SAF/060026/A) [(c)]	Accumulated Actual Amount of Public Fill and Construction Waste Recorded [(a)] [(b)] (inert & non-inert)
Amount of C&D Materials Arising	61,489.00 m^3	77,600.00 m^3	124,172.98 m^3
Amount of C&D Materials Reused on other site	-	-	3,163.89 m^3
Amount of C&D Materials Reused on site	14,926.00 m^3	18,000.00 m^3	23,893.89 m^3
Amount of C&D Materials Sent to Fill Banks	46,563.00 m^3	59,600.00 m^3	97,114.88 m^3
General Refuse	Small	-	1,897.07 tonnes
Chemical Waste	Small	-	810.00 L

Notes:

(a) The actual amount of C&D Materials has been recorded since the commencement of construction works.

(b) The density of soil and rock (bulked) is 1.8 tonnes/m^3.

(c) The estimated amount of C&D material generated from the Contract Works was revised in the C&D Material Assessment and submitted to the SO on 9 September 2010 (CSF No.: DC200803/CSF/SAF/060026/A) because of the new plant & facility layout.

10.3 *CONCLUSION OF THE REVIEW*

The EIA predictions and monitoring results since the commencement of the construction works have been reviewed. The EIA concluded that the Project would not cause adverse impacts to the environment, and monitoring results have also confirmed that so far. Mitigation measures recommended in the EP, EIA and EM&A Manual will continue to be implemented throughout the construction phase of the Project.

11 CONCLUSIONS

This EM&A Report presents the EM&A programme undertaken during the reporting period from 1 to 31 May 2013 in accordance with EM&A Manual and requirements of EP (EP-321/2008/A).

No exceedance of Action and Limit Levels of 24-hour TSP and 1-hour TSP was recorded at the monitoring stations during the reporting period.

Monthly landscape and visual monitoring was conducted in the reporting period. Most of the necessary landscape and visual mitigation measures recommended in the EIA Report were implemented by the Contractor. Follow-up actions are required by the Contractor to improve protection of 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 of the EM&A programme to ensure compliance of environmental requirements and the proper implementation of all the necessary mitigation measures in the coming periods.

Annex A

Location of Project

PROPOSED FACILITIES AND BUILDINGS

SECTION 1 INLET PUMPING STATION AND PRELIMINARY TREATMENT WORKS

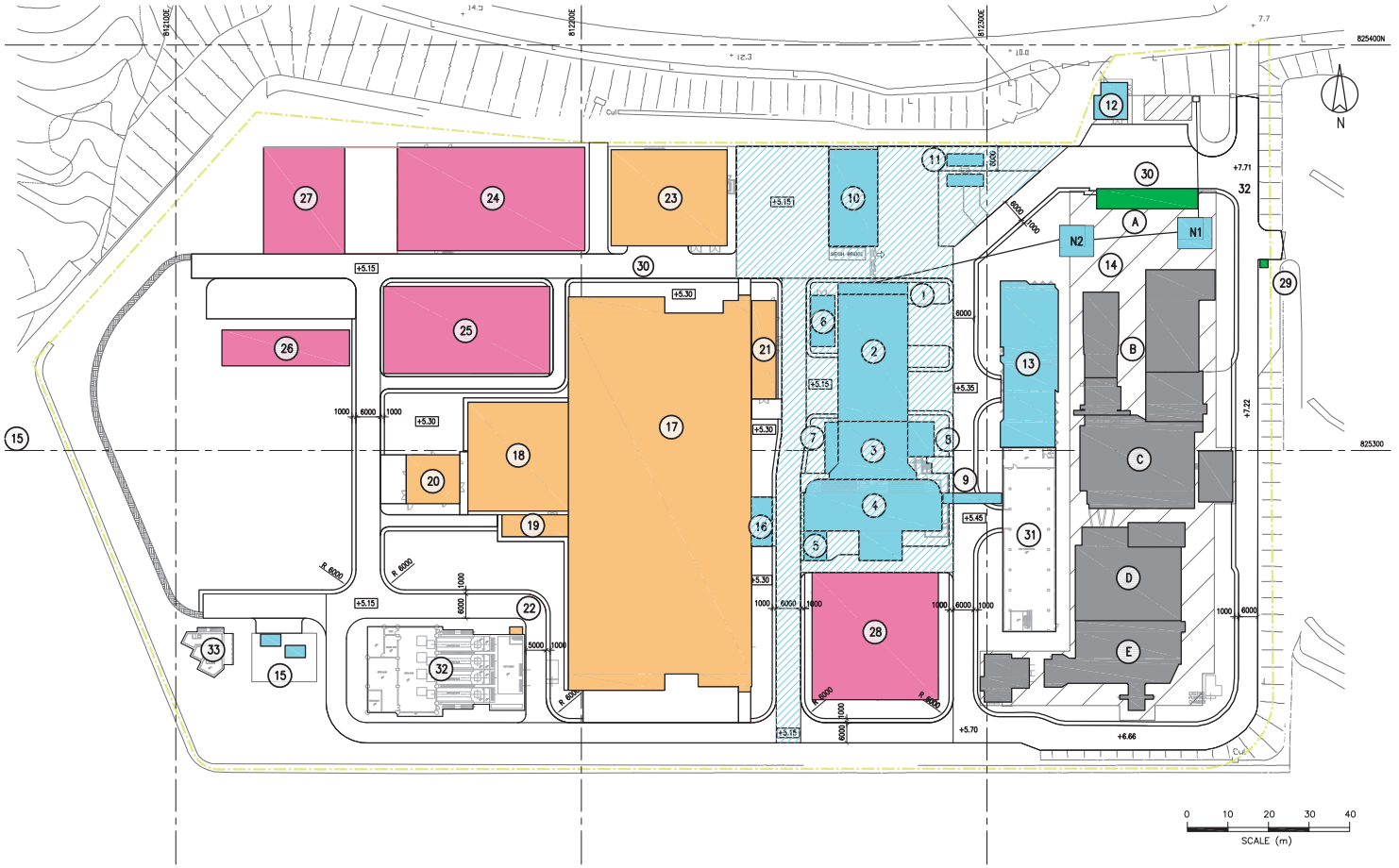
1. INLET CHAMBER
2. COARSE SCREENS AND INLET PUMPING STATION
3. FINE SCREEN CHANNELS
4. GRIT CHAMBERS
5. INLET FLOWMETER CHAMBER
6. PTW MCC ROOM
7. BLOWER ROOM
8. SCREENING SKIP HOUSE
9. ODOR DUCT SUPPORTING BRIDGE
10. SEPTIC WASTE RECEPTION STATION
11. WEIGHBRIDGE
12. ELECTRICAL BUILDING 1
13. ADMINISTRATION BUILDING
14. INLET CHAMBERS
15. PAYMENT FLOWMETER CHAMBER
16. CEPT INLET CHAMBER

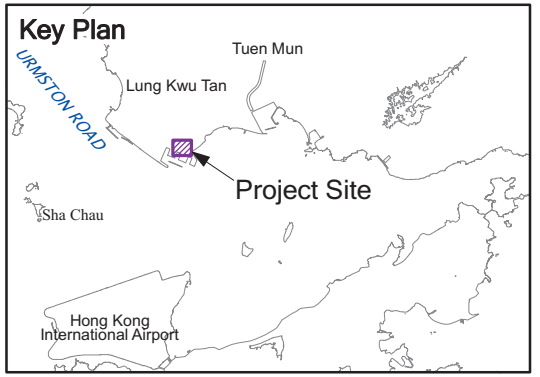
SECTION 2 CEPT TANKS UV DISINFECTION

17. CEPT TANKS
18. UV DISINFECTION CHANNELS
19. REUSE WATER PUMP ROOM
20. ELECTRICAL BUILDING 3
21. ELECTRICAL BUILDING 2
22. OUTFALL PUMPING STATION CONNECTION CHAMBER
23. CHEMICAL BUILDING

SECTION 3 SLUDGE TREATMENT & HANDLING AND ODOUR CONTROL

24. SLUDGE DEWATERING BUILDING
25. DEODORISATION UNITS (B)
26. SLUDGE SKIP STORAGE BUILDING
27. SLUDGE SKIP LOADING AREA
28. DEODORISATION UNITS (A)





SECTION 4 EXISTING BUILDINGS TO BE DEMOLISHED

- A ADMINISTRATION BUILDING
- B INLET SCREW PUMPING STATION AND MOTOR HOUSE
- C COARSE SCREENS
- D BLOWER HOUSE AND GRIT CHANNELS
- E FINE SCREEN CHANNELS AND FLOWMETER CHAMBER

SECTION 5 EXTERNAL WORKS

- 29 GATE HOUSE
- 30 CAR PARK

EXISTING BUILDING TO BE RETAINED

- 31 EXISTING SOLID HANDING BUILDING
- 32 EXISTING OUTFALL PUMPING STATION
- 33 EXISTING TERMINAL MANHOLE

Annex A

Contract No. DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
Layout of Project

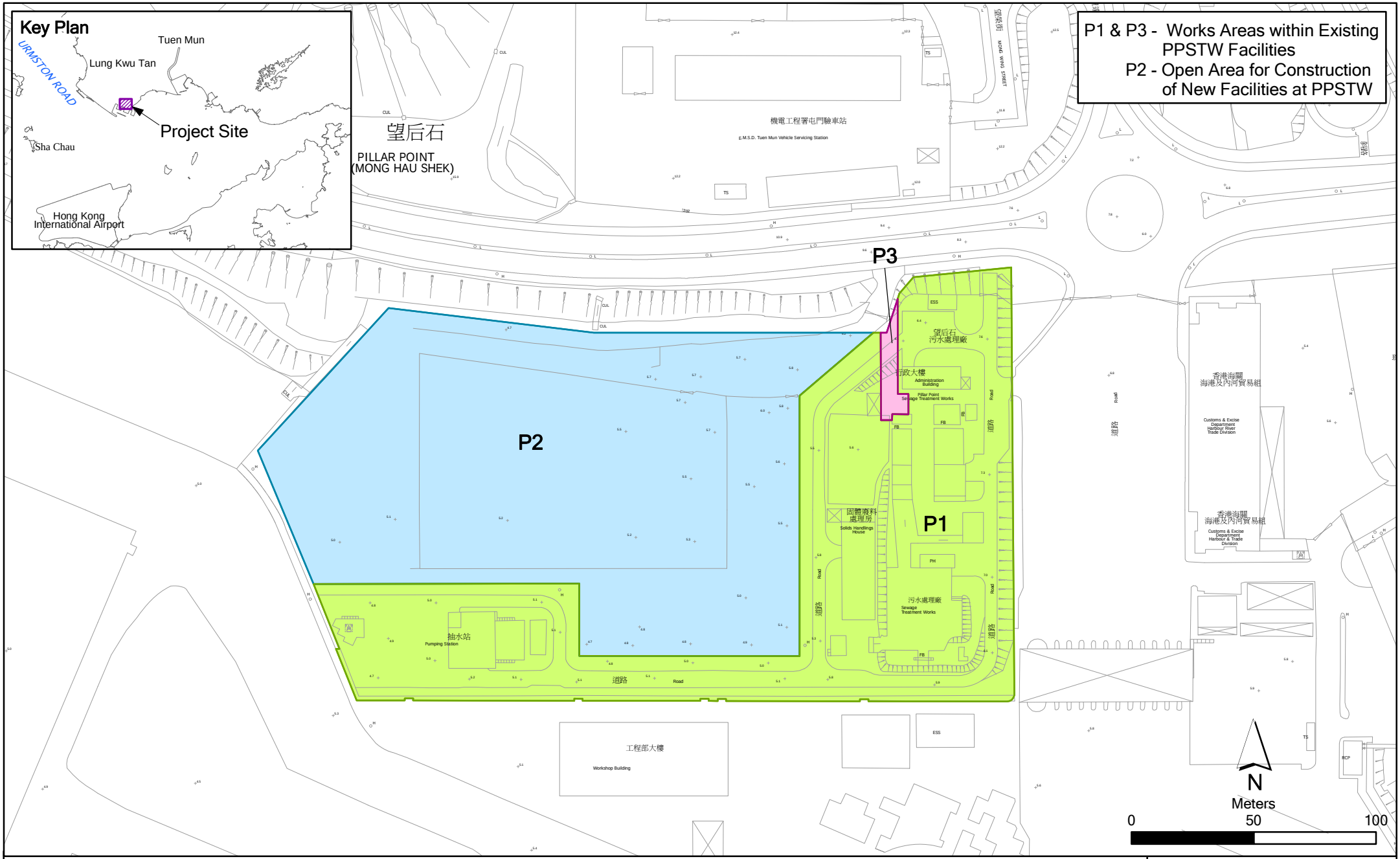
FILE: 0119806c
DATE: 20/12/2010

Environmental Resources Management

ERM

Annex B

Works Location



Annex B

Location of Works Areas

File: 0119806_location of works.mxd
Date: 15/12/2010

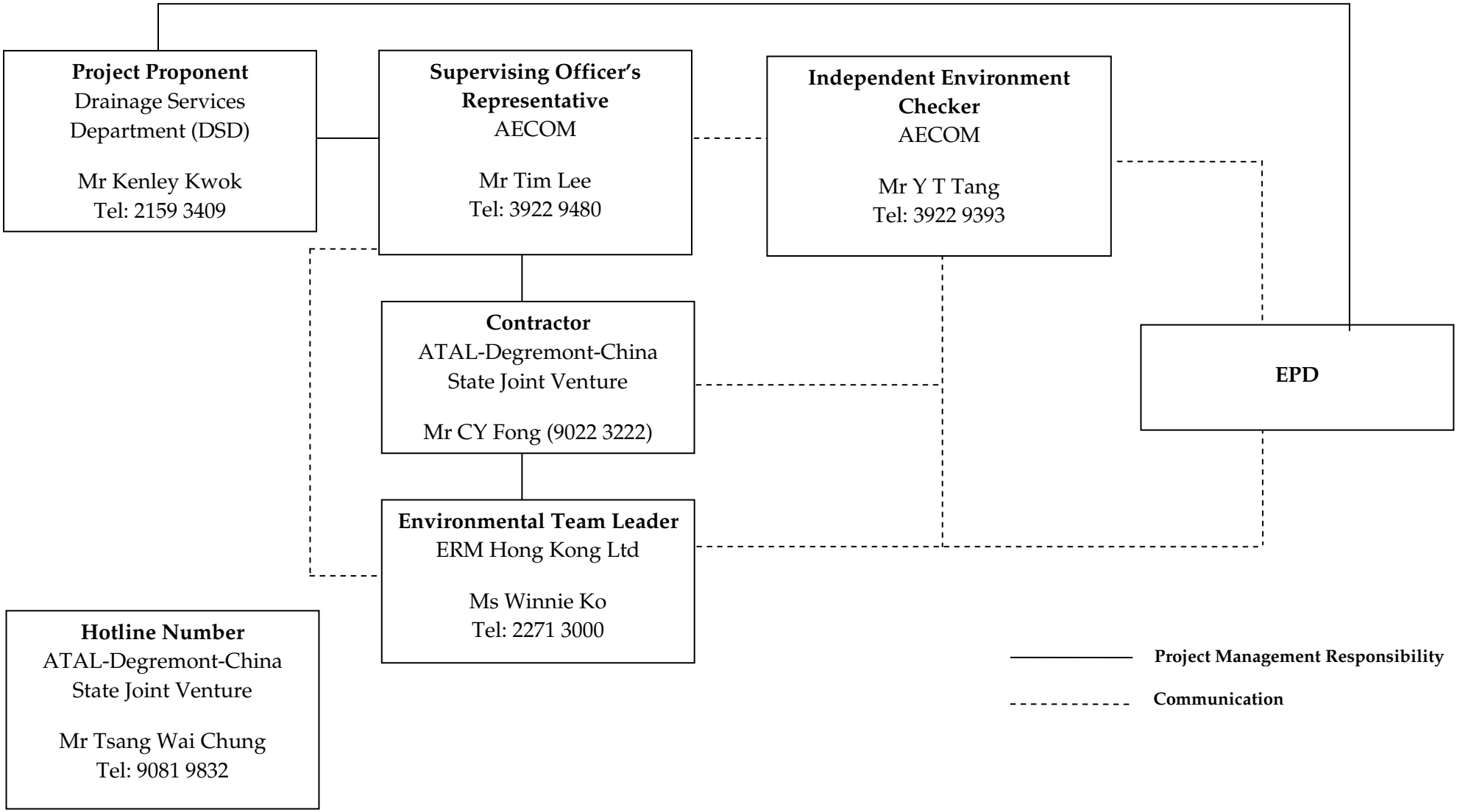
Environmental Resources Management

ERM

Annex C

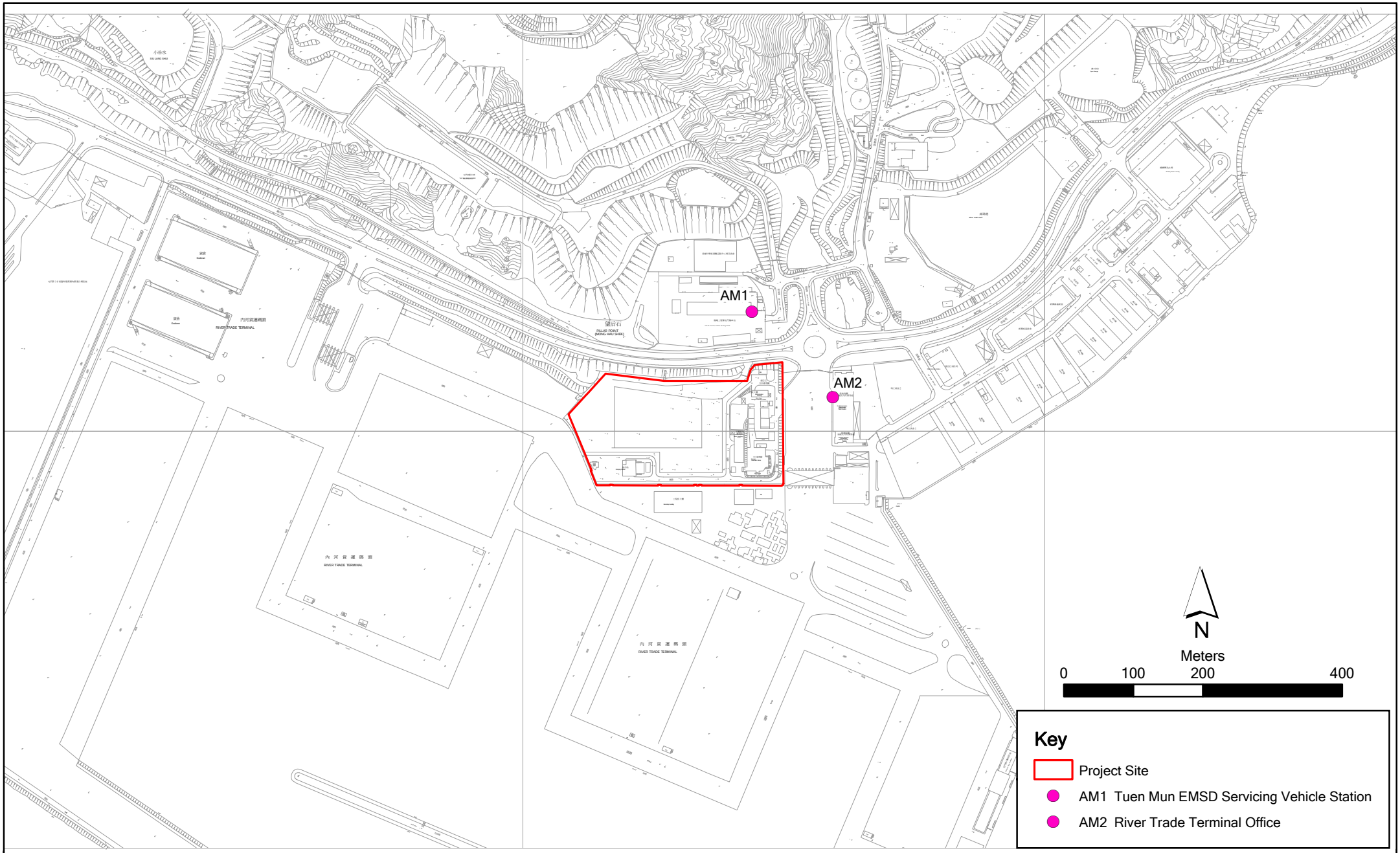
Project Organization Chart with Contact Details

Project Organization During Construction Phase (with contact details)



Annex D

Locations of Air Quality Monitoring Stations



Annex D

Contract No. DC/2008/03 Design, Build and Operate of Pillar Point Sewage Treatment Works

File: 0119806_Site Boundary.mxd
Date: 15/12/2010

Environmental Resources Management

ERM

AM1 – Tuen Mun EMSD Servicing Vehicle Station

AM2 - River Trade Terminal Office

Annex E

Monitoring Schedule of Reporting Month and Next Month

Contract No. DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
(Tuen Mun EMSD Servicing Vehicle Station - AM1 & River Trade Terminal Office - AM2)
May 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			01-May	02-May	03-May	04-May
			Public Holiday		3X1-hr & 1X 24-hr TSP	
05-May	06-May	07-May	08-May	09-May	10-May	11-May
				3X1-hr & 1X 24-hr TSP		
12-May	13-May	14-May	15-May	16-May	17-May	18-May
			3X1-hr & 1X 24-hr TSP		Public Holiday	
19-May	20-May	21-May	22-May	23-May	24-May	25-May
		3X1-hr & 1X 24-hr TSP				
26-May	27-May	28-May	29-May	30-May	31-May	
	3X1-hr & 1X 24-hr TSP				3X1-hr & 1X 24-hr TSP	

Contract No. DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
(Tuen Mun EMSD Servicing Vehicle Station - AM1 & River Trade Terminal Office - AM2)
June 2013

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						01-May
02-May	03-May	04-May	05-May	06-May	07-May	08-May
				3X1-hr & 1X 24-hr TSP		
09-May	10-May	11-May	12-May	13-May	14-May	15-May
		3X1-hr & 1X 24-hr TSP	Public Holiday			
16-May	17-May	18-May	19-May	20-May	21-May	22-May
	3X1-hr & 1X 24-hr TSP				3X1-hr & 1X 24-hr TSP	
23-May	24-May	25-May	26-May	27-May	28-May	29-May
				3X1-hr & 1X 24-hr TSP		
30-May						

Annex F

Calibration Reports for HVSs

TSP Monitoring Equipment

Monitoring Station ID	Location	Monitoring Equipment		Last Calibration Date	Next Calibration Date
24-hr and 1-hr TSP		**HVS**	**Calibrator**		
AM1	Tuen Mun EMSD Vehicle Servicing Station	GMW GS-2310 (S/N 7580)	CM-AIR-43 (S/N 0438320)	03 May 2013	03 July 2013
AM2	River Trade Terminal Office	GMW GS-2310 (S/N 1252)	CM-AIR-43 (S/N 0438320)	03 May 2013	03 July 2013

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	EMSD
Calibrated by	:	K.T.Ho
Date	:	03/05/2013

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 7580

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2323
Service Date	:	26 Dec 2012
Slope (m)	:	2.09107
Intercept (b)	:	-0.02838
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1016
Ta(K)	:	294

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.3	3.389	1.634	54	54.4
2	13 holes	9.5	3.108	1.500	48	48.4
3	10 holes	7.1	2.687	1.298	40	40.3
4	7 holes	4.5	2.139	1.036	28	28.2
5	5 holes	2.6	1.626	0.791	18	18.1

Sampler Calibration Relationship

Slope(m): 43.159 Intercept(b): -16.125 Correlation Coefficient(r): 0.9998

Checked by: Magnum Fan Date: 05/05/2013

High-Volume TSP Sampler
5-Point Calibration Record

Location	:	River Trade
Calibrated by	:	P.F.Yeung
Date	:	03/05/2013

Sampler

Model	:	GMWS-2310 ACCU-VOL
Serial Number	:	S/N 1252

Calibration Orfice and Standard Calibration Relationship

Serial Number	:	2323
Service Date	:	26 Dec 2012
Slope (m)	:	2.09107
Intercept (b)	:	-0.02838
Correlation Coefficient(r)	:	0.99996

Standard Condition

Pstd (hpa)	:	1013
Tstd (K)	:	298.18

Calibration Condition

Pa (hpa)	:	1016
Ta(K)	:	294

Resistance Plate		dH [green liquid] (inch water)	Z	X=Qstd (cubic meter/min)	IC	Y
1	18 holes	11.2	3.374	1.627	64	64.5
2	13 holes	9.1	3.042	1.468	56	56.5
3	10 holes	7.2	2.705	1.307	48	48.4
4	7 holes	4.6	2.162	1.048	36	36.3
5	5 holes	2.6	1.626	0.791	22	22.2

Sampler Calibration Relationship

Slope(m):50.144 Intercept(b): -17.022 Correlation Coefficient(r): 0.9996

Checked by: Magnum Fan Date: 05/05/2013

Annex G

24-hour and 1-hour TSP Monitoring Results

Annex G - 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM1

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed * (m/s)	Sampler ID	Filter ID
03-05-2013	13:10	14:10	Cloudy	95	343	500	Construction work in progress	20.0	*	7580	7162
	14:10	15:10	Cloudy	89	343	500	Construction work in progress	20.0	*	7580	7163
	15:10	16:10	Cloudy	100	343	500	Construction work in progress	20.0	*	7580	7164
09-05-2013	13:10	14:10	Sunny	91	383	500	Construction work in progress	25.0	*	7580	7251
	14:10	15:10	Sunny	91	383	500	Construction work in progress	25.0	*	7580	7252
	15:10	16:10	Sunny	95	383	500	Construction work in progress	25.0	*	7580	7253
15-05-2013	13:10	14:10	Cloudy	73	343	500	Construction work in progress	18.0	*	7580	7279
	14:10	15:10	Cloudy	80	343	500	Construction work in progress	18.0	*	7580	7280
	15:10	16:10	Cloudy	70	343	500	Construction work in progress	18.0	*	7580	7281
21-05-2013	13:10	14:10	Cloudy	78	343	500	Construction work in progress	26.0	*	7580	7353
	14:10	15:10	Cloudy	70	343	500	Construction work in progress	26.0	*	7580	7354
	15:10	16:10	Cloudy	81	343	500	Construction work in progress	26.0	*	7580	7355
27-05-2013	13:10	14:10	Cloudy	102	343	500	Construction work in progress	28.5	*	7580	7376
	14:10	15:10	Cloudy	100	343	500	Construction work in progress	28.5	*	7580	7377
	15:10	16:10	Cloudy	89	343	500	Construction work in progress	28.5	*	7580	7378
31-05-2013	13:10	14:10	Sunny	106	343	500	Construction work in progress	30.0	*	7580	7504
	14:10	15:10	Sunny	105	343	500	Construction work in progress	30.0	*	7580	7505
	15:10	16:10	Sunny	98	343	500	Construction work in progress	30.0	*	7580	7506
			Min.	**70**							
			Max.	**106**							
			Average	**90**							

* Wind Speed data is presented in the Meteorological Data table

Annex G - 24-hour and 1-hour TSP Monitoring Results

1-hour TSP Monitoring Results

Station AM2

Date	Start Time	Finish Time	Weather	TSP Concentration ($\mu g/m^3$)	Action Level ($\mu g/m^3$)	Limit Level ($\mu g/m^3$)	Site Conditions / Observations / Remarks	Temperature (℃)	Wind Speed * (m/s)	Sampler ID	Filter ID
03-05-2013	13:00	14:00	Cloudy	110	383	500	Construction work in progress	20.0	*	1252	7158
	14:00	15:00	Cloudy	98	383	500	Construction work in progress	20.0	*	1252	7159
	15:00	16:00	Cloudy	95	383	500	Construction work in progress	20.0	*	1252	7160
09-05-2013	13:00	14:00	Sunny	101	383	500	Construction work in progress	25.0	*	1252	7176
	14:00	15:00	Sunny	121	383	500	Construction work in progress	25.0	*	1252	7177
	15:00	16:00	Sunny	101	383	500	Construction work in progress	25.0	*	1252	7249
15-05-2013	13:00	14:00	Cloudy	83	383	500	Construction work in progress	18.0	*	1252	7275
	14:00	15:00	Cloudy	72	383	500	Construction work in progress	18.0	*	1252	7276
	15:00	16:00	Cloudy	92	383	500	Construction work in progress	18.0	*	1252	7277
21-05-2013	13:00	14:00	Cloudy	87	383	500	Construction work in progress	26.0	*	1252	7349
	14:00	15:00	Cloudy	91	383	500	Construction work in progress	26.0	*	1252	7350
	15:00	16:00	Cloudy	79	383	500	Construction work in progress	26.0	*	1252	7351
27-05-2013	13:00	14:00	Cloudy	114	383	500	Construction work in progress	28.5	*	1252	7372
	14:00	15:00	Cloudy	114	383	500	Construction work in progress	28.5	*	1252	7373
	15:10	16:10	Cloudy	107	383	500	Construction work in progress	28.5	*	1252	7374
31-05-2013	13:00	14:00	Sunny	88	383	500	Construction work in progress	30.0	*	1252	7395
	14:00	15:00	Sunny	112	383	500	Construction work in progress	30.0	*	1252	7501
	15:00	16:00	Sunny	116	383	500	Construction work in progress	30.0	*	1252	7502
			Min.	**72**							
			Max.	**121**							
			Average	**99**							

* Wind Speed data is presented in the Meteorological Data table

Annex G - 24-hour and 1-hour TSP Monitoring Results

24-hour TSP Monitoring Results

Station AM1

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(μg/m^3)	(μg/m^3)	(μg/m^3)		ID	ID
03-05-2013	16:10	04-05-2013	16:10	Cloudy	2.7009	2.8471	14410.18	14434.18	24	1.35	1.35	1.35	75	183	260	Construction work in progress	7580	7165
09-05-2013	16:10	10-05-2013	16:10	Sunny	2.6900	2.8215	14437.18	14461.18	24	1.35	1.35	1.35	68	183	260	Construction work in progress	7580	7254
15-05-2013	16:10	16-05-2013	16:10	Cloudy	2.6691	2.7919	14438.18	14462.18	24	1.35	1.35	1.35	63	183	260	Construction work in progress	7580	7282
21-05-2013	16:10	22-05-2013	16:10	Cloudy	2.6879	2.8191	14465.18	14489.18	24	1.35	1.35	1.35	67	183	260	Construction work in progress	7580	7356
27-05-2013	16:10	28-05-2013	16:10	Cloudy	2.6851	2.8317	14492.18	14516.18	24	1.35	1.35	1.35	75	183	260	Construction work in progress	7580	7379
31-05-2013	16:10	01-06-2013	16:10	Sunny	2.6774	2.8097	14519.18	14543.18	24	1.35	1.35	1.35	68	183	260	Construction work in progress	7580	7507
												Min.	**63**					
												Max.	**75**					
												Average	**69**					

24-hour TSP Monitoring Results

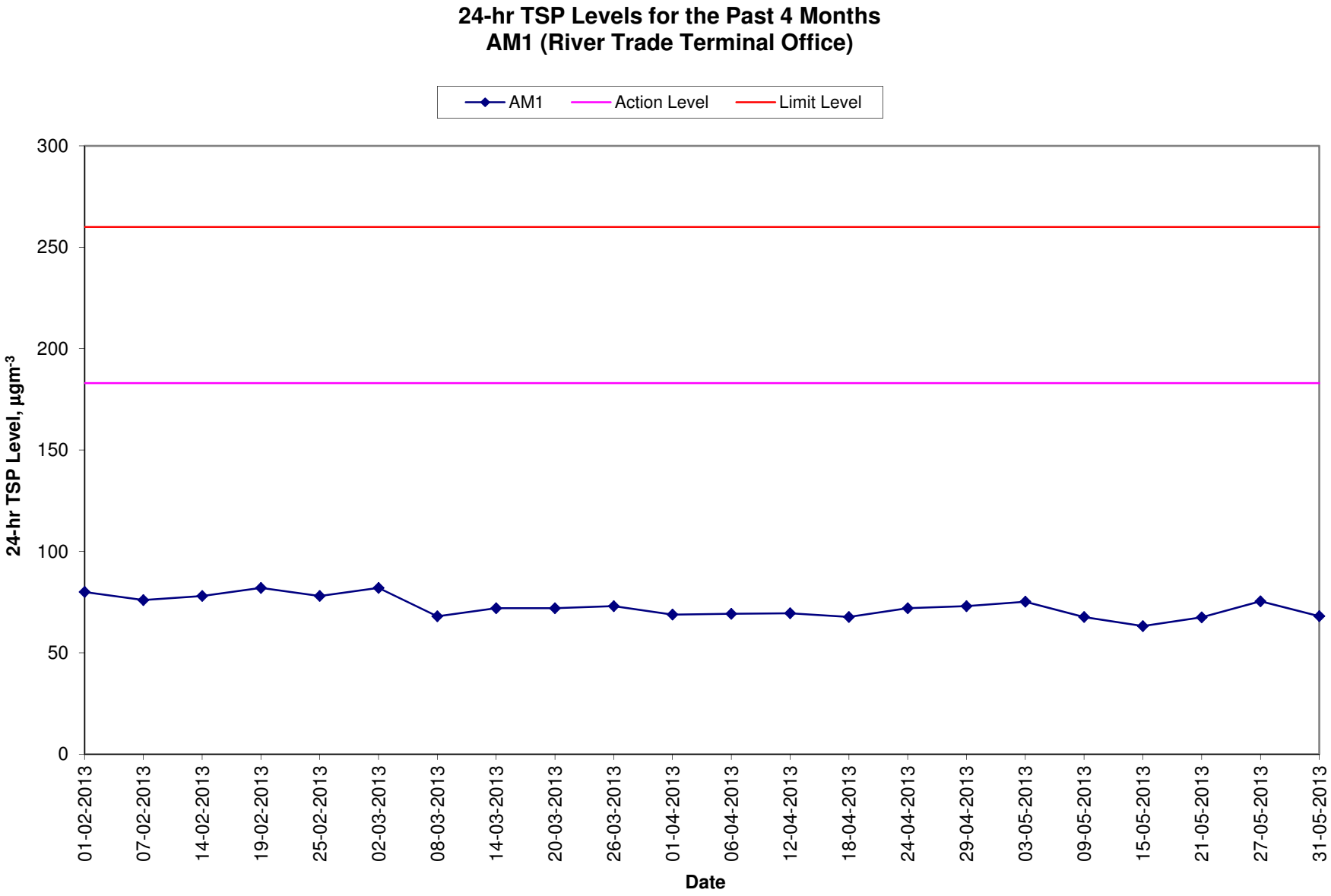
Station AM2

Start		Finish		Weather	Filter Weight (g)		Elapsed Time Reading		Sampling Time	Flow Rate (m^3/min)			TSP Conc.	Action Level	Limit Level	Observations / Remarks	Sampler	Filter
Date	Time	Date	Time		Initial	Final	Initial	Final	(hrs)	Initial	Final	Average	(*μg/m^3*)	(μg/m^3)	(μg/m^3)		ID	ID
03-05-2013	16:00	04-05-2013	16:00	Cloudy	2.7004	2.8511	22428.20	22452.20	24	1.21	1.21	1.21	86	192	260	Construction work in progress	1252	7161
09-05-2013	16:00	10-05-2013	16:00	Sunny	2.6833	2.8211	22455.20	22479.20	24	1.21	1.21	1.21	79	192	260	Construction work in progress	1252	7250
15-05-2013	16:00	16-05-2013	16:00	Cloudy	2.6691	2.7899	22482.20	22506.20	24	1.21	1.21	1.21	69	192	260	Construction work in progress	1252	7278
21-05-2013	16:00	22-05-2013	16:00	Cloudy	2.6891	2.8110	22509.20	22533.20	24	1.21	1.21	1.21	70	192	260	Construction work in progress	1252	7352
27-05-2013	16:00	28-05-2013	16:00	Cloudy	2.6911	2.8247	22536.20	22560.20	24	1.21	1.21	1.21	77	192	260	Construction work in progress	1252	7375
31-05-2013	16:00	01-06-2013	16:00	Sunny	2.6871	2.8219	22537.20	22561.20	24	1.21	1.21	1.21	77	192	260	Construction work in progress	1252	7503
												Min.	**69**					
												Max.	**86**					
												Average	**76**					

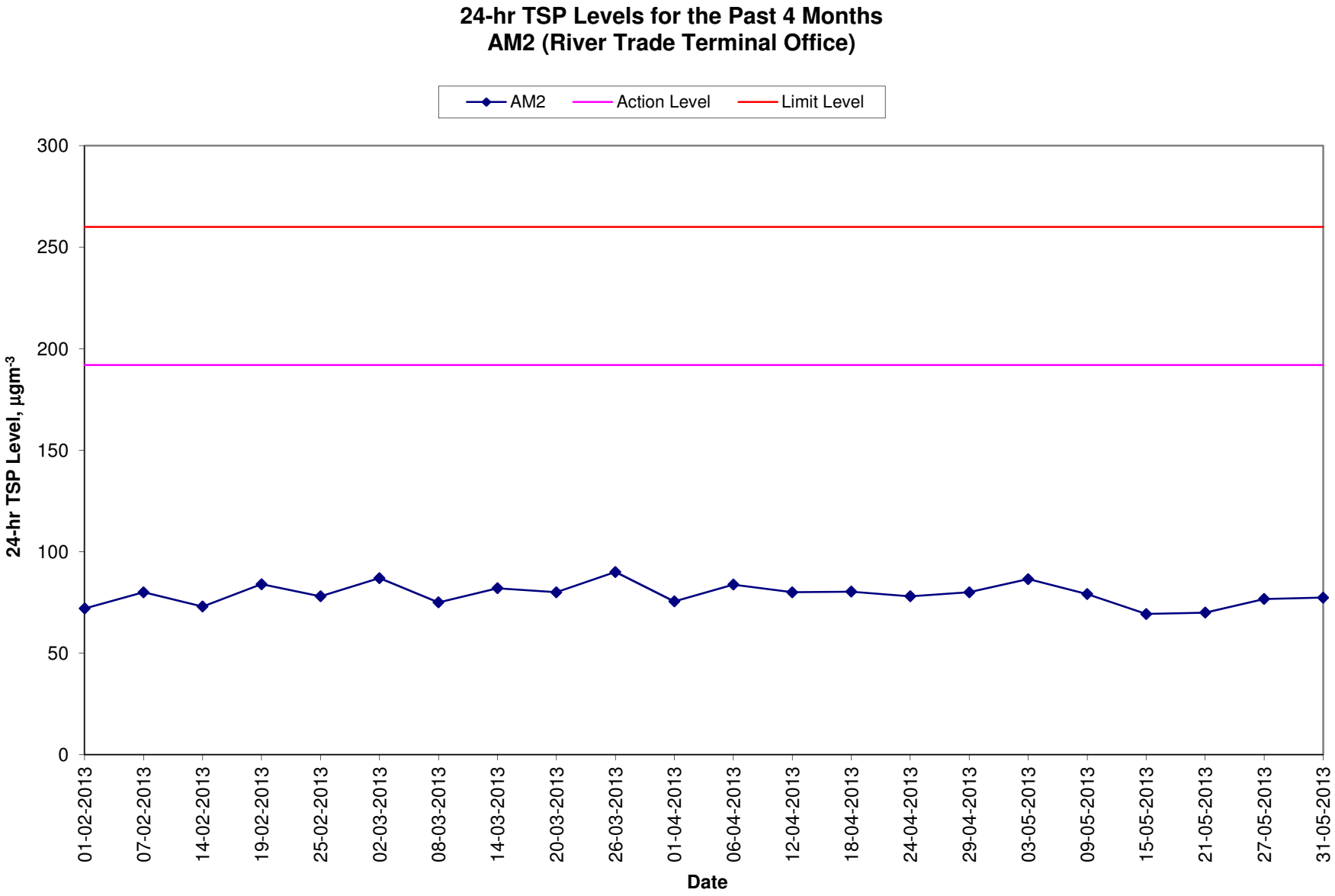
Meteorological Data Extracted from the Hong Kong Observatory

		Tuen Mun Station				
Date	Weather	Average Air Temperature (°C)	Average Relative Humiditiy (%)	Total Rainfall (mm)	Average Wind Speed (km/h)	Wind Direction
03-05-2013	Cloudy	20.0	67-99	33.8	10.0	N
04-05-2013	Cloudy	23.0	72-94	Trace	8.0	N
09-05-2013	Sunny	25.0	74-100	31.3	12.0	S-SE
10-05-2013	Sunny	25.0	80-97	23.4	9.0	SW-S
15-05-2013	Cloudy	28.5	78-95	Trace	13.0	SE
16-05-2013	Cloudy	28.0	79-96	5.4	14.0	SE
21-05-2013	Cloudy	26.0	83-97	26.3	7.0	SW-S
22-05-2013	Cloudy	24.5	86-100	230.8	N/A	S-SE
27-05-2013	Cloudy	28.5	77-89	0.1	N/A	SW-SE
28-05-2013	Cloudy	30.0	76-91	Trace	10.0	N/A
31-05-2013	Cloudy	30.0	62-88	0.0	N/A	SW-SE
01-06-2013	Cloudy	30.0	61-86	0.0	9.0	N/A

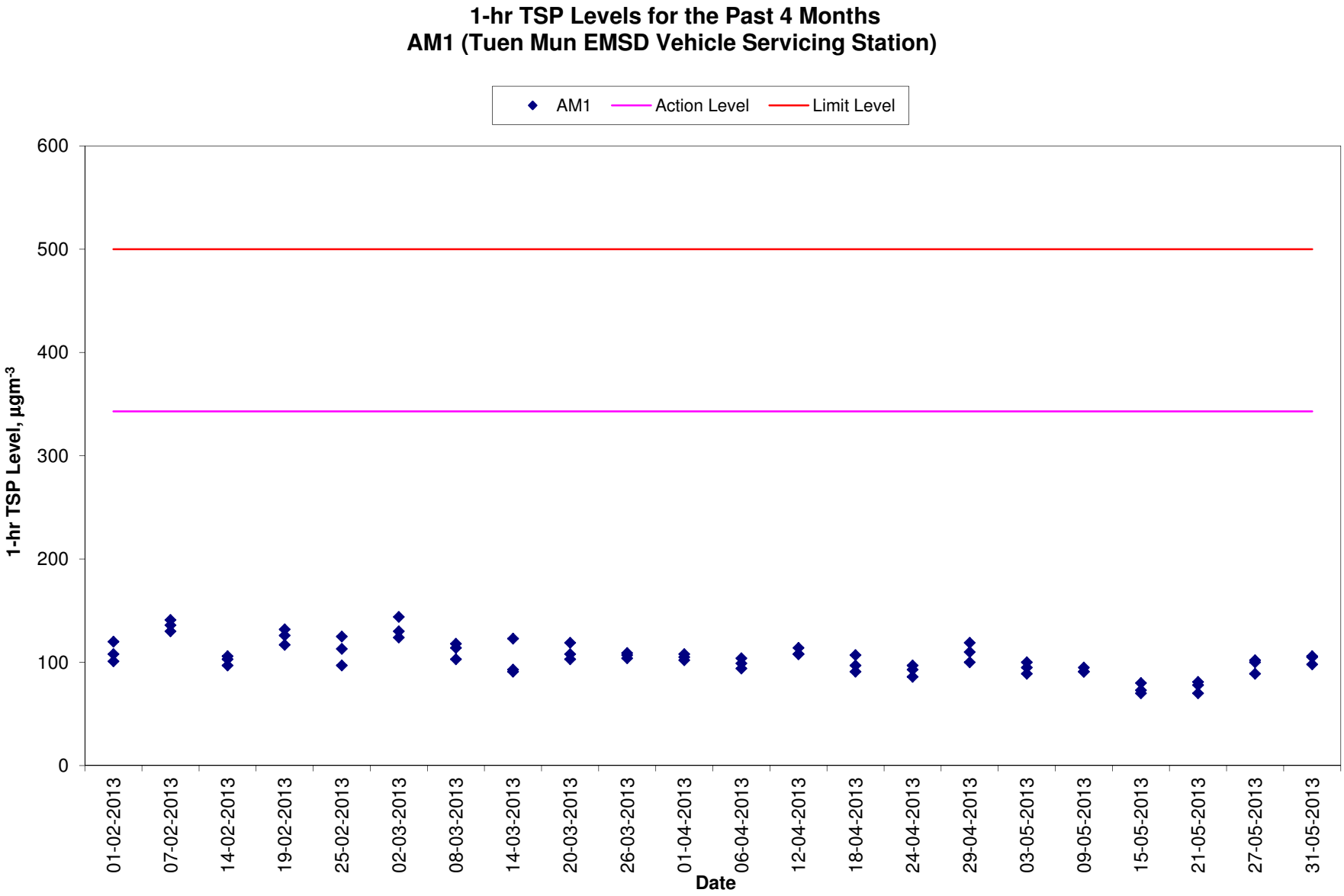
Annex G TSP Monitoring Results



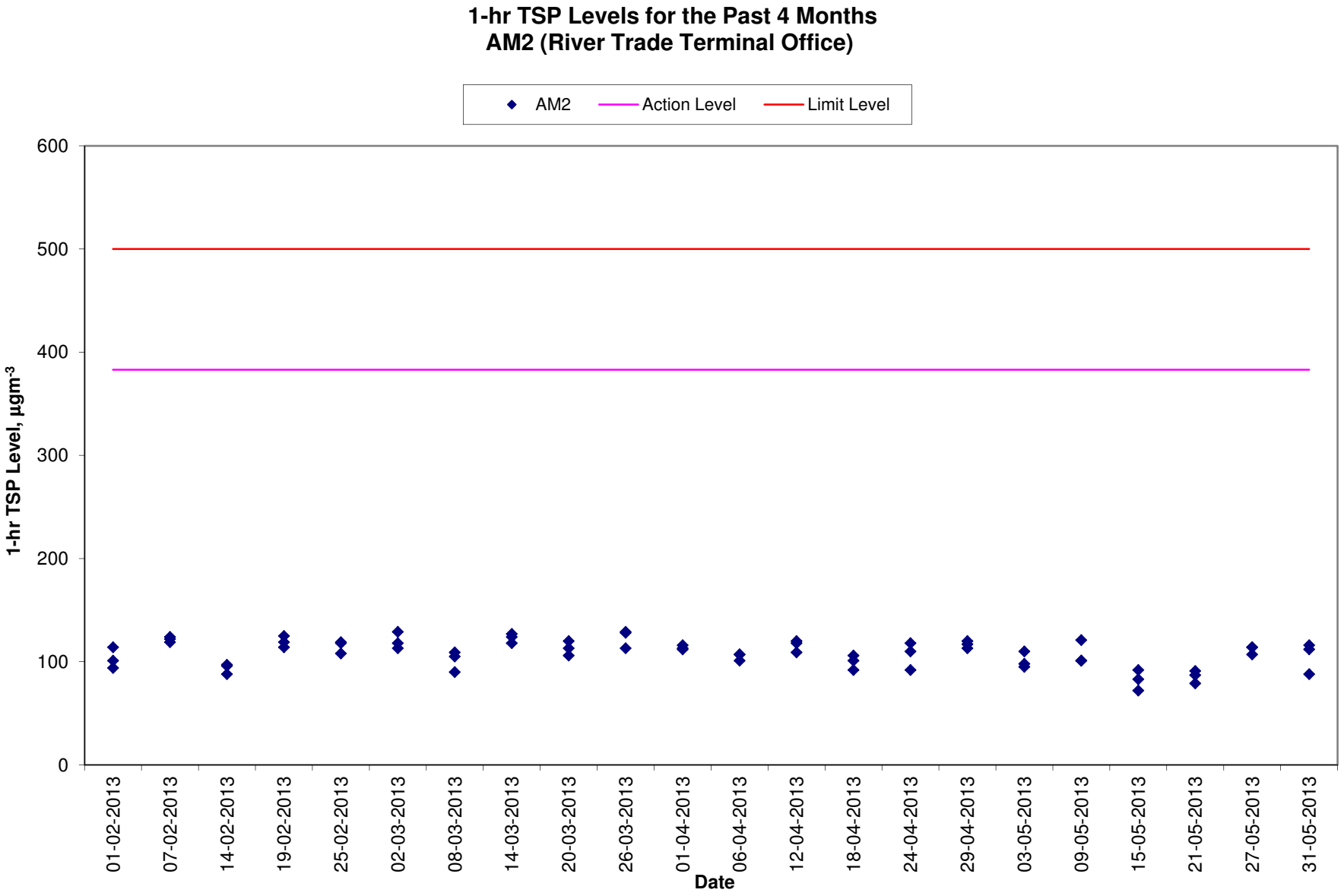
Annex G TSP Monitoring Results



Annex G TSP Monitoring Results



Annex G TSP Monitoring Results



Annex H

Event/Action Plan for Air Quality Monitoring

Table H1 Event Action Plan for Air Quality Monitoring

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Supervising Officer Representative (SOR)	Contractor
Action Level				
Exceedance for one sample	• Identify source, investigate the causes of complaint and propose remedial measures; • Inform IEC and SOR; • Repeat measurement to confirm findings; • Increase monitoring frequency to daily.	• Check monitoring data submitted by ET; • Check Contractor's working method.	• Notify Contractor and DSD.	• Rectify any unacceptable practice; • Amend working methods if appropriate.
Exceedance for two or more consecutive samples	• Identify source; • Inform IEC and SOR; • Advise the SOR on the effectiveness of the proposed remedial measures; • Repeat measurements to confirm findings; • Increase monitoring frequency to daily; • Discuss with IEC and Contractor on remedial actions required; • If exceedance continues, arrange meeting with IEC and SOR; • If exceedance stops, cease additional monitoring.	• Check monitoring data submitted by ET; • Check Contractor's working method; • Discuss with ET and Contractor on possible remedial measures; • Advise the ET on the effectiveness of the proposed remedial measures; • Supervise Implementation of remedial measures.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor and DSD; • Ensure remedial measures properly implemented.	• Submit proposals for remedial actions to IEC within three working days of notification; • Implement the agreed proposals; • Amend proposal if appropriate.

Action Level/Limit Level	Environmental Team Leader (ETL)	Independent Environmental Checker (IEC)	Supervising Officer Representative (SOR)	Contractor
Limit Level				
Exceedance for one sample	• Identify source, investigate the causes of exceedance and propose remedial measures; • Inform IEC, SOR, DSD and EPD; • Repeat measurement to confirm finding; • Increase monitoring frequency to daily; • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD, DSD and SOR informed of the results.	• Check monitoring data submitted by ET; • Check Contractor's working method; • Discuss with ET and Contractor on possible remedial measures; • Advise the SOR on the effectiveness of the proposed remedial measures; • Supervise implementation of remedial measures.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor; • Ensure remedial measures properly implemented.	• Take immediate action to avoid further exceedance; Submit proposals for remedial actions to IEC within three working days of notification; • Implement the agreed proposals; • Amend proposal if appropriate.
Exceedance for two or more consecutive samples	• Notify IEC, SOR, DSD and EPD; • Identify source; • Repeat measurement to confirm findings; • Increase monitoring frequency to daily; • Carry out analysis of Contractor's working procedures to determine possible mitigation to be implemented; • Arrange meeting with IEC and SOR to discuss the remedial actions to be taken; • Assess effectiveness of Contractor's remedial actions and keep IEC, EPD, DSD and SOR informed of the results; • If exceedance stops, cease additional monitoring.	• Discuss amongst SOR, ET, and Contractor on the potential remedial actions; • Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the SOR accordingly; • Supervise the implementation of remedial measures.	• Confirm receipt of notification of exceedance in writing; • Notify Contractor; • In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented; • Ensure remedial measures properly implemented; • If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.	• Take immediate action to avoid further exceedance; • Submit proposals for remedial actions to IEC within three working days of notification; • Implement the agreed proposals; • Resubmit proposals if problem still not under control; • Stop the relevant portion of works as determined by the SOR until the exceedance is abated.

Annex I

Implementation Schedule of Mitigation Measures

Annex I Summary of Mitigation Measures Implementation Schedule

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Summary of Environmental Mitigation Measures in the EIA and EM&A Manual			
Construction Phase			
Air Quality	Dust mitigation measures stipulated in *the Air Pollution Control (Construction Dust) Regulation* shall be incorporated to control Post emission. Notice shall be given to authority prior to commencing of work.	Work sites / during construction period	Notice of works commencement was submitted to EPD on 3 August 2010.
Water Quality	The practices outlined in ProPECC PN 1/94 Construction Site Drainage should be adopted. It is recommended to install perimeter channels in the works areas to intercept runoff as site boundary prior to the commencement of any earthwork. To prevent storm runoff from washing across exposed soil surfaces, intercepting channels should be provided. Drainage channels are also required to convey site runoff to sand/silt traps and oil interceptors. Provision of regular cleaning and maintenance can ensure the normal operation of these facilities throughout the construction period. Any practical options for the diversion and re-alignment of drainage should comply with both engineering and environmental requirements in order to ensure adequate hydraulic capacity of all drains.	Work site/During the construction period	<>
Water Quality	There is a need to apply to EPD for a discharge license under the WPCO for discharging effluent from the construction site. The discharge quality is required to meet the requirements specified in the discharge license. All the runoff and wastewater generated from the works areas should be treated so that it satisfies all the standards listed in the TM-DSS. Reuse and recycling of the treated effluent can minimize water consumption and reduce the effluent discharge volume. The beneficial uses of the treated effluent may include dust suppression, wheel washing and general cleaning. If monitoring of the treated effluent quality from the works areas is required during the construction phase of the Project, the monitoring should be carried out in accordance with the WPCO license which is under the ambit of regional office (RO) of EPD.	Work site/During the construction period	√ Discharge licence was awarded by EPD on 7 December 2010.
Water Quality	The construction programme should be properly planned to minimize soil excavation, if any, in rainy seasons. This prevents soil erosion from	Work site/During the construction period	<>

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	exposed soil surfaces. Any exposed soil surfaces should also be properly protected to minimize dust emission. In areas where a large amount of exposed soil exists, earth bunds or sand bags should be provided. Exposed stockpiles should be covered with tarpaulin or impervious sheets at all times. The stockpiles of materials should be placed at locations away from any stream course so as to avoid releasing materials into the water bodies. Final surfaces of earthworks should be compacted and protected by permanent work. It is suggested that haul roads should be paved with concrete and the temporary access roads protected using crashed stone or gravel, wherever practicable. Wheel washing facilities should be provided at all site exists to ensure that earth, mud and debris would not be carried out of the works areas by vehicles.		
Water Quality	Good sites practices should be adopted to clean the rubbish and litter on the construction sites so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.	Work site/During the construction period	√
Water Quality	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 water collector should be deployed to clean the chemical toilets on a regular basis. The construction workers can also make use of the existing toilet facilities within the PPSTW as necessary.	Work site/During the construction period	√
Water Quality	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 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 the construction period	√
Waste Management	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	Work site/During the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	should be observed and complied with for control of chemical wastes.		
Waste Management	Any service shop and maintenance facilities should be located on hard standings within a bunded area, and stumps and oil interceptors should be provided. Maintenance of vehicles and equipment involving activities with potential for leakage and spillage should only be undertaken within the areas appropriately equipped to control these discharges.	Work site/During the construction period	√
Waste Management	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 the 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 labelled, 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.	Work site/During the construction period	√
Waste Management	*Good Site Practices* Recommendations for good site practices during the construction activities include: • Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site • Training of site personnel in proper waste management and chemical handling procedures • Provision of sufficient waste disposal points and regular collection of waste • Appropriate measures to minimise windblown litter and dust during transportation of waste by either covering trucks or by	Work site/During the construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	transporting wastes in enclosed containers • Regular cleaning and maintenance programme for drainage systems, sumps and oil interceptors. • Separation of chemical wastes for special handling and appropriate treatment at the Chemical Waste Treatment Facility.		
Waste Management	*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: • Segregation and storage of different types of waste in different containers, skips or stockpiles to enhance reuse or recycling of materials and their proper disposal. • Encourage collection of aluminium cans by providing separate labelled bins to enable this waste to be segregated from other general refuse generated by the work force • Proper storage and site practices to minimise the potential for damage or contamination of construction materials. • Plan and stock construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste.	Work site/During planning & design stage, and construction stage	√
Waste Management	*General Refuse* General refuse should be stored in enclosed bins or compaction units separate from C&D material. A reputable 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 the construction period	<>
Waste Management	*Construction and Demolition Material* In order to minimise the impact resulting from collection and transportation of C&D material for off-site disposal, the excavated	Work site / During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	material generated from site formation works for the proposed new facilities and units at the STW should be reused on-site as far as practicable. The surplus excavated material should be disposed of at the designated public fill reception facility, as agreed with the Secretary of the Public Fill Committee, for other beneficial uses.		
Waste Management	Mitigation measures and good site practices should be followed to control potential environmental impact from handling and transportation of C&D material. The mitigation measures include: • Where it is unavoidable to have transient stockpiles of C&D material pending collection for disposal, the transient stockpiles shall be located away from waterfront or storm drains as far as possible. • Open stockpiles of construction materials or construction wastes on-site should be covered with tarpaulin or similar fabric. • Skip hoist for material transport should be totally enclosed by impervious sheeting. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving a construction site • The area where vehicle washing takes place and the section of the road between the washing facilities and the exit point should be paved with concrete, bituminous materials or hardcores. • The load of dusty materials carried by vehicle leaving a construction site should be covered entirely by clean impervious sheeting to ensure dust materials do not leak from the vehicle. • All dusty materials should be sprayed with water prior to any loading, unloading or transfer operation so as to maintain the dusty materials wet. • The height from which excavated materials are dropped should be controlled to a minimum practical height to limit fugitive dust generation from unloading.	Work site / During design stage & construction period	√
Waste Management	When disposing C&D material at a public filling facility, it shall be noted that the material shall only consist of earth, building debris and broken rock and concrete. The material shall be free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal	Work site/During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	and vegetable matter, and other material considered to be unsuitable by the Filling Supervisor. In order to monitor the disposal of the surplus C&D material at the designed public fill reception facility and to control fly tipping, a trip-ticket system should be included as one of the contractual requirements and implemented by an Environmental Team undertaking the Environmental Monitoring and Audit work with reference to the ETWB TCW No. 31/2004 "Trip Ticket System for Disposal of Construction and Demolition Materials" as attached in Appendix 7-1. An Independent Environmental Checker should be responsible for auditing the results of the system.		
Waste Management	*Chemical Waste* If chemical wastes are produced at the construction site, the Contractor would be required to register with the 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, corrosive, etc. The Contractor shall use a licensed collector to transport and dispose of the chemical wastes, to either the Chemical Waste Treatment Centre, or another licensed facility, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.	Work site / During the construction period	√
Landscape & Visual	<u>Temporary Tree Nurseries</u> Temporary tree nurseries may be set up for the transplanted tree and proposed trees at an early stage to allow small trees to grow during the construction periods. By the time when planting area becomes available, trees mature and increase in trunk & spread size. They will require minimal pruning and suffer much less damage during transplanting when comparing the travel distance from an on-site nursery to an off-site nursery. Besides, these trees may also be positioned as visual mitigation during	Work site/During design stage & construction period	√. A tree nursery has been set up off-site near the site office.

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	the construction period.		
Landscape & Visual	No-intrusion Zone To maximize protection to existing trees and ground vegetation, construction contracts may designate "No-intrusion Zone" to various areas within the site boundary with rigid and durable fencing for each individual no-intrusion zone. The contractor should close monitor and restrict the site working staff not to enter the "no-intrusion zone", even for non-direct construction activities and storage of equipment.	Work site/During design stage & construction period	<>
Landscape & Visual	Hoarding Hoarding or boundary fencing for construction shall be considered. It should be sensitively designed, subtle, camouflaged and more 'permeable' so that they fit into the existing environment when looking from outside.	Work site/During design stage & construction period	√
Landscape & Visual	Dust and Erosion Control for Exposed Soil Excavation works and demolition of existing building blocks and which will be highly visible form surrounding areas should be well planned and with precautions to suppress dust. Exposed soil shall be covered or 'camouflaged' and watered often. Areas that are expected to be left with bare soil for a long period of time after excavation shall be properly covered with suitable protective fabric. Silt and erosion shall be controlled by ground barriers around the slope cutting area..	Work site/During design stage & construction period	√
Landscape & Visual	Existing Tree Record Inventory All retained trees should be record photographically at the commencement of the Contract, and carefully protected during the construction period. Detailed tree protection specification shall be allowed and included in the Contract Specification, which specifying the tree protection requirement, submission and approval system, and the tree monitoring system.	Work site/During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	Construction Light All security floodlights for construction sites shall be equipped with adjustable shield, frosted diffusers and reflective covers, and be carefully controlled to minimize light pollution and night-time glare to nearby residences and GIC users. The Contractor shall consider other security measures which shall minimize the visual impacts.	Work site / During design stage & construction period	√
Landscape & Visual	Tree Transplanting Apart from the 18 numbers of "*Leucaena leucocephala*", which are proposed to be felled in accordance with ETWB TCW No. 3/2006, all the affected trees shall be transplanted. Where practicable, trees shall be directly transplanted to permanent on-site locations. The location of the transplanted tree is shown in **Figure 8.9.1**.	Work site / During design stage & construction period	√.
Landscape & Visual	Tree Compensation Ratio The total number of compensatory trees planted in the project area shall not be less than 1:1 ratios by new trees. Required numbers and locations of compensatory trees shall be determined and agreed with Government during the tree felling application process under ETWCTC 3/2006. Compensatory trees shall be at least heavy standard size to create "immediate" greening effect. 81 numbers of "*Cassia surattensis*" will be provided as the additional compensatory planting for loss of greenery in the area due to removal of the affected trees. The location of the additional compensatory planting is shown in **Figure 8.9.1**.	Work site / During design stage & construction period	N/A
Landscape & Visual	Re-use of Existing Soil and Advance formation of Planting Area Existing topsoil shall be re-used where possible for new planting areas within the project. Advance formation of planting area and early implementation of the plating works can minimize adverse impact on trees. The construction program shall consider using the soil removed from one phase for backfilling another. Suitable storage ground, gathering ground and mixing ground may be set up on-site as necessary.	Work site / During design stage & construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
Landscape & Visual	Establishment Period 12 month establishment period for the soft landscape works will be allowed in the main contract. Most construction contracts in Hong Kong require the Contractor to carry out routine horticultural operations, including watering, pruning, weeding, pest control, replacement of dead plants etc. to ensure healthy establishment of new planting during a 12 month establishment period. This period also serves as a kind of warranty / guarantee on the quality of the plants supplied and installed by the Contractor. Monthly monitoring during the first year of establishment period is recommended.	Work site/During operation period	N/A. To be implemented during operation phase of Project.
Landscape & Visual	Re-instatement of excavated Area All excavated area and disturbed area for utilities diversion, temporary road diversion, and pipeline woks will be reinstated to former conditions, subject to applicable Government Standards.	Work site / During design stage & operation period	N/A. To be implemented during operation phase of Project.
Landscape & Visual	Appearance and Greening for the proposed structures Compatible design, construction materials and surface finishes of the proposed structure should match with the nearby existing external appearance of PPSTW buildings for achieving visual uniformity. Finishing materials shall have due consideration to form, basic color, color/tone variation, micro-and macro-texture, and reflectivity/light absorbance to avoid glare. Planting, such as turf, low groundcovers and climbers, may also be planted on top of these elements to provide greening and aesthetic effect.	Work site / During design stage & operation period	N/A. To be implemented during operation phase of Project.
Summary of Key Environmental Mitigation Measures in Contract Requirements			
Air Quality	Only Ultra-low-sulphur diesel (ULSD) should be used for all diesel-operated plants and equipments on site	Work sites / during construction period	√
Air Quality and Noise	Plants and equipments of good operation conditions should be used on site.	Work sites / during construction period	√
Noise	No diesel hammers should be used for piling works	Work sites / during construction period	√
Noise	Construction Noise Permits (CNP) should be applied for works conducted outside non-restricted hours.	Work sites / during construction period	√
Noise	Quiet construction equipments and the quietest practicable working	Work sites / during construction period	√

Type of Impact	Environmental Protection Measures	Location/ Timing	Status
	methodologies should be adopted for works whenever feasible. Noise labels should be provided for air compressors. Hoods and cover panels of generators and air compressors should be closed during operation. Noise labels should be provided for air compressors and hand-held percussive breakers.		
Waste Management	Temporary works construction on site should minimize the use of timber to reduce the quantity of C&D waste generated during works period.	Work sites / during construction period	√
Landscape and Visual	Retained or to-be-transplanted trees on site should be properly protected from physical damages and soil compacts with temporary fencing or hessian armouring whenever feasible.	Work sites / during construction period	<>

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 ATAL-Degrémont-China State JV
Δ Deficiency of Mitigation Measures but rectified by ATAL-Degrémont-China State JV
N/A Not Applicable in Reporting Period

Annex J

Waste Flow Table

Contract No. : DC/2008/03 - Design, Build and Operate Pillar Point Sewage Treatment Works
Monthly Summary Waste Flow Table

Month	Actual Quantities of Inert C&D Materials Generated (see Note 13)					Actual Quantities of Non-inert C&D Materials (Construction Waste) Generated (see Note 13)				
	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
Nov 2010	2,248.00	0.00	0.00	55.00	2248.00	60.00	100.00	0.00	0.00	18.05 (see Note 4)
Dec 2010	11,314.00 (see Note 4)	0.00	0.00	225.00	11314.00	100.00	120.00	20.00	0.00	28.40 (see Note 4)
Jan 2011	58,383.00 (see Note 4)	0.00	0.00	3,000.00	58,382.90	250.00	280.00	60.00	0.00	4.59 (see Note 4)
Sub-total	71,945.00	0.00	0.00	3280.00	71944.90	410.00	500.00	80.00	0.00	51.04
Feb 2011	12,855.00	0.00	0.00	1,050.00	12,854.70	100.00	150.00	50.00	0.00	2.43 (see Note 4)
Mar 2011	22,859.00	0.00	0.00	1,500.00	22,858.70	150.00	180.00	55.00	0.00	9.02
Apr 2011	8,547.00 (see Note 7)	0.00	5,684.00(see Note 5, 7)	550.00	2,863.30	50.00	30.00	15.00	0.00	5.78
Sub-total	44,261.00	0.00	5684.00	3100.00	38576.70	300.00	360.00	120.00	0.00	17.23
May 2011	6,293.00 (see Note 7)	0.00	11.00 (see Note 5, 7)	425.00	6,282.00 (see Note 7)	45.00	25.00	10.00	360.00 (see Note 7)	8.83
Jun 2011	4,587.00 (see Note 7)	0.00	0.00 (see Note 7)	313.00	4,586.00 (see Note 7)	40.00	30.00	15.00	0.00	7.10
Jul 2011	523.00	0.00	0.00	25.00	522.90	15.00	5.00	10.00	0.00	7.20
Sub-total	11,403.00	0.00	11.00	763.00	11391.50	100.00	60.00	32.00	360.00	23.13
Aug 2011	571.00 (see Note 11)	0.00	0.00	50.00	571.00 (see Note 11)	0.00	0.00	15.00	450.00 (see Note 8)	6.12
Sept 2011	235.00	0.00	0.00	25.00	235	20.00	0.00	0.00	0.00	12.15 (see Note 9)
Oct 2011	5,705.00 (see Note 10)	0.00	0.00	650.00	5,705.00 (see Note 10)	100.00	0.00	0.00	0.00	2.98
Sub-total	6,511.00	0.00	0.00	725.00	6511.00	120.00	0.00	15.00	450.00	21.25
Nov 2011	6,294.00	0.00	0.00	775.00	6,294.00	50.00	0.00	0.00	0.00	44.84
Dec 2011	3,011.00	0.00	0.00	263.00	3,011.00	20.00	0.00	0.00	0.00	17.14
Jan 2012	349.00	64.00	0.00	25.00	284.60	20.00	150.00	0.00	0.00	49.01

Month	Actual Quantities of Inert C&D Materials (Public Fill) 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
Sub-total	9,654.00	64.00	0.00	1063.00	9589.60	90.00	150.00	0.00	0.00	110.99
Feb 2012	3,371.00	30.00	0.00	2,810.00	3,341.00	150.00	0.00	0.00	0.00	48.72
Mar 2012	6,460.00	3,000.00	0.00	625.00	3,459.70	30.00	0.00	0.00	0.00	41.10
Apr 2012	3,774.00	3,000.00	0.00	250.00	774.40	40.00	0.00	0.00	0.00	40.01
Sub-total	13,605.00	6,030.00	0.00	3685.00	7575.10	220.00	0.00	0.00	0.00	129.83
May 2012	7,936.00	5,600.00	0.00	750.00	2,336.20	40.00	0.00	10.00	0.00	75.19
Jun 2012	13,091.00	7,500.00	0.00	875.00	5,590.80	40.00	35.50	8.00	0.00	66.74
Jul 2012	11,972.00	8,600.00	0.00	825.00	3,372.50	40.00	36.40	5.00	0.00	100.50
Sub-total	32,999.00	21,700.00	0.00	2450.00	11299.50	120.00	70.90	23.00	0.00	242.43
Aug 2012	11,660.00	11,000.00	0.00	950.00	659.80	30.00	10.00	6.00	0.00	78.77
Sept 2012	3,055.00	1,500.00	0.00	920.00	1,555.38	30.00	40.00	5.00	0.00	118.80
Oct 2012	2,657.00	200.00	0.00	500.00	2,457.01	30.00	59.40	8.00	0.00	124.04
Sub-total	17,372.00	12,700.00	0.00	2370.00	4672.19	90.00	109.40	19.00	0.00	321.61
Nov 2012	2,691.00	250.00	0.00	750.00	2,441.01	50.00	25.00	10.00	0.00	128.08
Dec 2012	4,319.00	400.00	0.00	200.00	3,919.13	60.00	20.00	15.00	0.00	165.28
Jan 2013	4,442.00	100.00	0.00	200.00	4,341.56	200.00	40.00	20.00	0.00	111.23
Sub-total	11,452.00	750.00	0.00	1150.00	10701.70	310.00	85.00	45.00	0.00	404.59
Feb 2013	1,286.00	85.00	0.00	50.00	1,201.23	**180.00**	35.00	16.00	0.00	99.44
Mar 2013	900.00	900.00	0.00	120.00	0.00	120.00	45.00	10.00	0.00	97.43
Apr 2013	680.00	680.00	0.00	300.00	0.00	22.00	50.00	15.00	0.00	80.21
Sub-total	2866.00	1665.00	0.00	470.00	1201.23	322.00	130.00	41.00	0.00	277.08
May 2013	1443.37	100.00	0.00	1020.00	1343.37	40.00	43.00	9.00	0.00	297.89
Total	223511.37	43009.00	5695.00	20076.00	174806.79	2122.00	1508.30	387.00	810.00	1897.07

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 WENT by subcontractors.
(4) The waste flow data for November and December 2010, January and February 2011 was updated in March 2011based on SOR's comments and has been confirmed by the Contractor.
(5) The inert C&D materials were reused in the Contract No. EP/SP/58/08 at Tuen Mun Tsang Tsui.
(6) Chemical waste was collected though the licensed chemical waste collector, Dunwell Ind. (Holdings) Ltd, with the waste collection licence number 7111-757-W0015-WC.
(7) The waste flow data for April, May and June 2011 was updated in August 2011 based on SOR's comments and has been confirmed by the Contractor.
(8) The waste flow data of chemical waste for August 2011 was updated in October 2011 based on Contractor's revised waste flow summary.
(9) The waste flow data of general refuse for September 2011 was updated in November 2011 based on Contractor's revised waste flow summary.
(10) The waste flow data of C&D material for October 2011 was updated in December 2011 based on Contractor's revised waste flow summary.
(11) The waste flow data of C&D material for August 2011 was updated in January 2011 based on SOR's comments and has been confirmed by the Contractor.
(12) The waste flow data of metal and paper/cardboard packaging for June 2011 was revised in August 2012.
(13) The quantity of inert and non-inert C&D material generated from May 2012 to December and imported fill material was updated by the Contractor on 6 November 2012.
(14) The quantity of Rocks & Broken Concrete from November 2010 to November 2012 was updated by the Contractor on 12 December 2012.
(15) The quantity of C&D material reused in this Contract in Oct, Nov and Dec 2012 were updated by the Contractor on 5 January 2012.

Annex K

Environmental Complaint, Environmental Summons and Persecution Log

Annex K Cumulative Complaint and Summons/Prosecutions Log

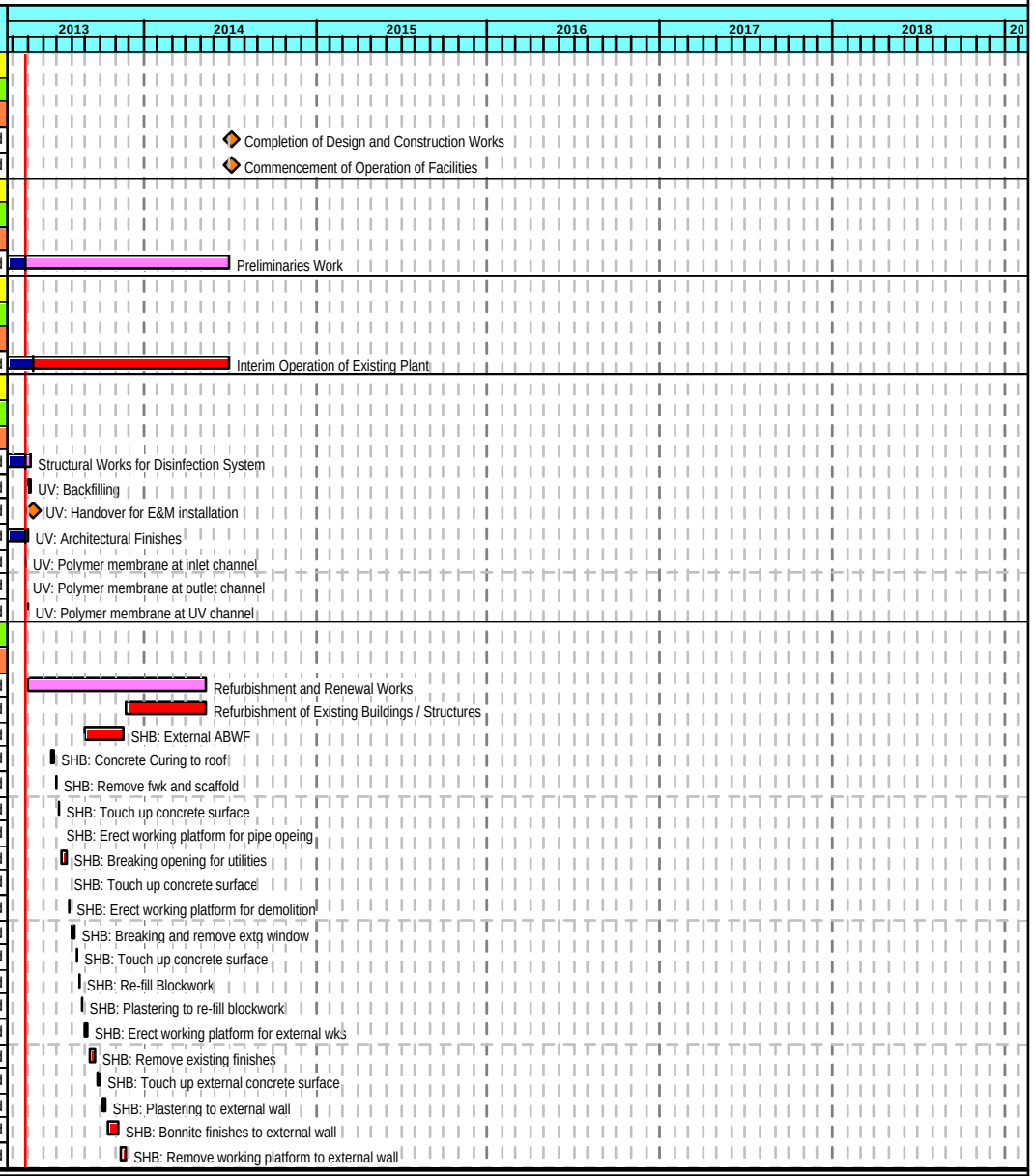
Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
November 2010	0	0
December 2010	0	0
January 2011	0	0
February 2011	0	0
March 2011	0	0
April 2011	0	0
May 2011	0	0
June 2011	0	0
July 2011	0	0
August 2011	0	0
September 2011	0	0
October 2011	0	0
November 2011	0	0
December 2011	0	0
January 2012	0	0
February 2012	0	0
March 2012	0	0

Reporting Month	Number of Complaints in Reporting Month	Number of Summons/Prosecutions in Reporting Month
April 2012	0	0
May 2012	0	0
June 2012	0	0
July 2012	0	0
August 2012	0	0
September 2012	0	0
October 2012	0	0
November 2012	0	0
December 2012	0	0
January 2013	0	0
February 2013	0	0
March 2013	0	0
April 2013	0	0
May 2013	0	0
Overall Total	0	0

Annex L

Construction Programme of the Project

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
Key Date					
Commencement and Completion of Works					
Contract Dates					
KMD000120	Completion of Design and Construction Works	0		06JUL2014	-42d
KMD000150	Commencement of Operation of Facilities	0	07JUL2014		-42d
Preliminaries					
General Requirements					
Contract Preliminaries					
PLW000000	Preliminaries Work	1440 *	28JUL2010 A	06JUL2014	-42d
Interim Operation					
Interim Operation of Existing Plant					
Interim Operation of Plant					
IP0000060	Interim Operation of Existing Plant	1075	19DEC2010 A	06JUL2014	-42d
Civil and Structural Works					
Disinfection System					
Building and Structures					
CCC300110	Structural Works for Disinfection System	366 *	13FEB2012 A	10MAY2013	-36d
CCC300180	UV: Backfilling	10	29APR2013	10MAY2013	-36d
CCC300200	UV: Handover for E&M installation	0		10MAY2013	-36d
CCC300960B	UV: Architectural Finishes	78 *	18FEB2013 A	06MAY2013	-43d
CCC300980B	UV: Polymer membrane at inlet channel	3	28APR2013	30APR2013	-43d
CCC300990B	UV: Polymer membrane at outlet channel	3	29APR2013	01MAY2013	-43d
CCC301000B	UV: Polymer membrane at UV channel	7	30APR2013	06MAY2013	-43d
Refurbishment and Renewal Works					
Miscellaneous Works					
CCM000100	Refurbishment and Renewal Works	309 *	29APR2013	17MAY2014	-33d
CCM000110	Refurbishment of Existing Buildings / Structures	135	26NOV2013	17MAY2014	-33d
CCM000160	SHB: External ABWF	75	27AUG2013	25NOV2013	-33d
CCM001070B	SHB: Concrete Curing to roof	10	18JUN2013	27JUN2013	-37d
CCM001080B	SHB: Remove fwk and scaffold	6	28JUN2013	05JUL2013	-31d
CCM001090B	SHB: Touch up concrete surface	2	06JUL2013	08JUL2013	-31d
CCM001100B	SHB: Erect working platform for pipe opeing	4	09JUL2013	12JUL2013	-39d
CCM001110B	SHB: Breaking opening for utilities	10	13JUL2013	24JUL2013	-32d
CCM001120B	SHB: Touch up concrete surface	4	25JUL2013	29JUL2013	-32d
CCM001130B	SHB: Erect working platform for demolition	4	30JUL2013	02AUG2013	-39d
CCM001140B	SHB: Breaking and remove extg window	10	03AUG2013	14AUG2013	-33d
CCM001150B	SHB: Touch up concrete surface	3	15AUG2013	17AUG2013	-33d
CCM001160B	SHB: Re-fill Blockwork	4	19AUG2013	22AUG2013	-33d
CCM001170B	SHB: Plastering to re-fill blockwork	4	23AUG2013	27AUG2013	-33d
CCM001180B	SHB: Erect working platform for external wks	12	28AUG2013	08SEP2013	-39d
CCM001190B	SHB: Remove existing finishes	12	09SEP2013	23SEP2013	-33d
CCM001200B	SHB: Touch up external concrete surface	10	24SEP2013	05OCT2013	-33d
CCM001210B	SHB: Plastering to external wall	10	07OCT2013	18OCT2013	-33d
CCM001220B	SHB: Bonnite finishes to external wall	24	19OCT2013	15NOV2013	-33d
CCM001230B	SHB: Remove working platform to external wall	12	16NOV2013	29NOV2013	-33d



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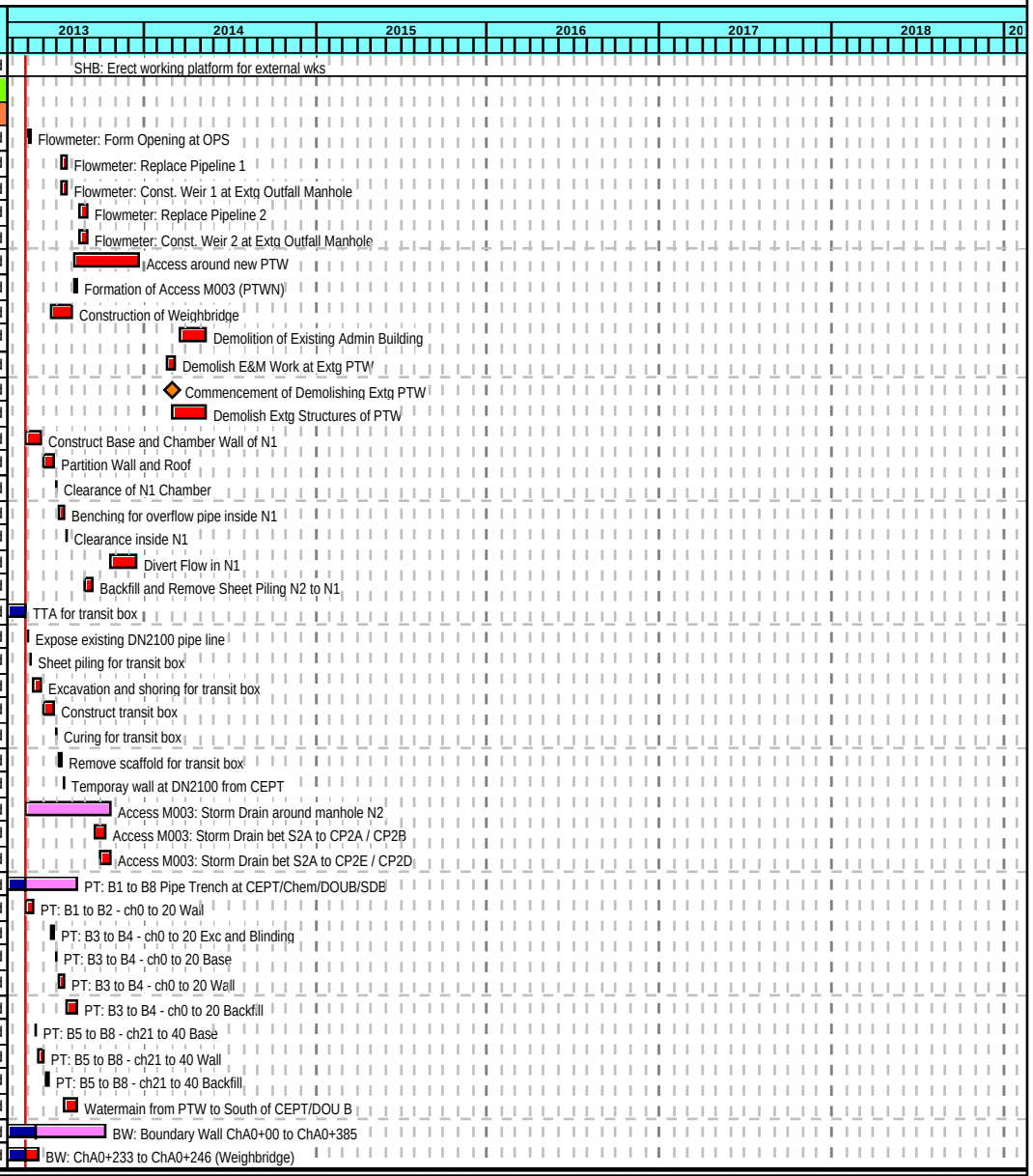
PPSTW Programme R7A- Three-Month Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
CCM001240B	SHB: Erect working platform for external wks	2	25JUL2013	26JUL2013	-32d
External Works					
Miscellaneous Works					
CWM101070	Flowmeter: Form Opening at OPS	10	29APR2013	10MAY2013	-42d
CWM101080	Flowmeter: Replace Pipeline 1	16	10JUL2013	27JUL2013	-42d
CWM101090	Flowmeter: Const. Weir 1 at Extg Outfall Manhole	16	10JUL2013	27JUL2013	-42d
CWM101100	Flowmeter: Replace Pipeline 2	16	21AUG2013	07SEP2013	-42d
CWM101110	Flowmeter: Const. Weir 2 at Extg Outfall Manhole	16	21AUG2013	07SEP2013	-42d
CWM101695	Access around new PTW	119	07AUG2013	28DEC2013	-30d
CWM101750	Formation of Access M003 (PTWN)	12	07AUG2013	20AUG2013	-30d
CWM101790	Construction of Weighbridge	40	20JUN2013	06AUG2013	-30d
CWM102300	Demolition of Existing Admin Building	48	19MAR2014	20MAY2014	-35d
CWM103100	Demolish E&M Work at Extg PTW	20	20FEB2014	11MAR2014	-51d
CWM103200	Commencement of Demolishing Extg PTW	0	04MAR2014		-45d
CWM103210	Demolish Extg Structures of PTW	75	04MAR2014	17MAY2014	-45d
CWM200450B	Construct Base and Chamber Wall of N1	37	26APR2013 A	01JUN2013	-37d
CWM200470B	Partition Wall and Roof	30	02JUN2013	01JUL2013	-37d
CWM200480B	Clearance of N1 Chamber	6	02JUL2013	07JUL2013	-37d
CWM200490B	Benching for overflow pipe inside N1	12	08JUL2013	19JUL2013	-37d
CWM200500B	Clearance inside N1	6	20JUL2013	25JUL2013	-37d
CWM200520B	Divert Flow in N1	50	25OCT2013	21DEC2013	-44d
CWM200610B	Backfill and Remove Sheet Piling N2 to N1	24	28AUG2013	20SEP2013	-36d
CWM202040B	TTA for transit box	9	22NOV2012 A	30APR2013	-46d
CWM202050B	Expose existing DN2100 pipe line	5	01MAY2013	05MAY2013	-46d
CWM202060B	Sheet piling for transit box	9	06MAY2013	14MAY2013	-46d
CWM202070B	Excavation and shoring for transit box	18	15MAY2013	01JUN2013	-46d
CWM202080B	Construct transit box	28	02JUN2013	29JUN2013	-46d
CWM202090B	Curing for transit box	8	30JUN2013	07JUL2013	-46d
CWM202100B	Remove scaffold for transit box	7	08JUL2013	14JUL2013	-46d
CWM202110B	Temporay wall at DN2100 from CEPT	7	15JUL2013	21JUL2013	-46d
CWM216100B	Access M003: Storm Drain around manhole N2	183 *	28APR2013	27OCT2013	-36d
CWM216120B	Access M003: Storm Drain bet S2A to CP2A / CP2B	25	21SEP2013	15OCT2013	-36d
CWM216130B	Access M003: Storm Drain bet S2A to CP2E / CP2D	25	03OCT2013	27OCT2013	-36d
CWM221100B	PT: B1 to B8 Pipe Trench at CEPT/Chem/DOUB/SDB	192 *	30JAN2013 A	15AUG2013	-32d
CWM221130B	PT: B1 to B2 - ch0 to 20 Wall	18	28APR2013	15MAY2013	-32d
CWM221220B	PT: B3 to B4 - ch0 to 20 Exc and Blinding	6	22JUN2013	27JUN2013	-32d
CWM221230B	PT: B3 to B4 - ch0 to 20 Base	7	28JUN2013	04JUL2013	-32d
CWM221240B	PT: B3 to B4 - ch0 to 20 Wall	18	05JUL2013	22JUL2013	-32d
CWM221250B	PT: B3 to B4 - ch0 to 20 Backfill	24	23JUL2013	15AUG2013	-32d
CWM221330B	PT: B5 to B8 - ch21 to 40 Base	7	16MAY2013	22MAY2013	-32d
CWM221340B	PT: B5 to B8 - ch21 to 40 Wall	18	23MAY2013	09JUN2013	-32d
CWM221350B	PT: B5 to B8 - ch21 to 40 Backfill	12	10JUN2013	21JUN2013	-32d
CWM227700B	Watermain from PTW to South of CEPT/DOU B	36	15JUL2013	19AUG2013	-46d
CWM228510B	BW: Boundary Wall ChA0+00 to ChA0+385	314 *	01DEC2012 A	16OCT2013	-33d
CWM228580	BW: ChA0+233 to ChA0+246 (Weighbridge)	36	25FEB2013 A	29MAY2013	-31d



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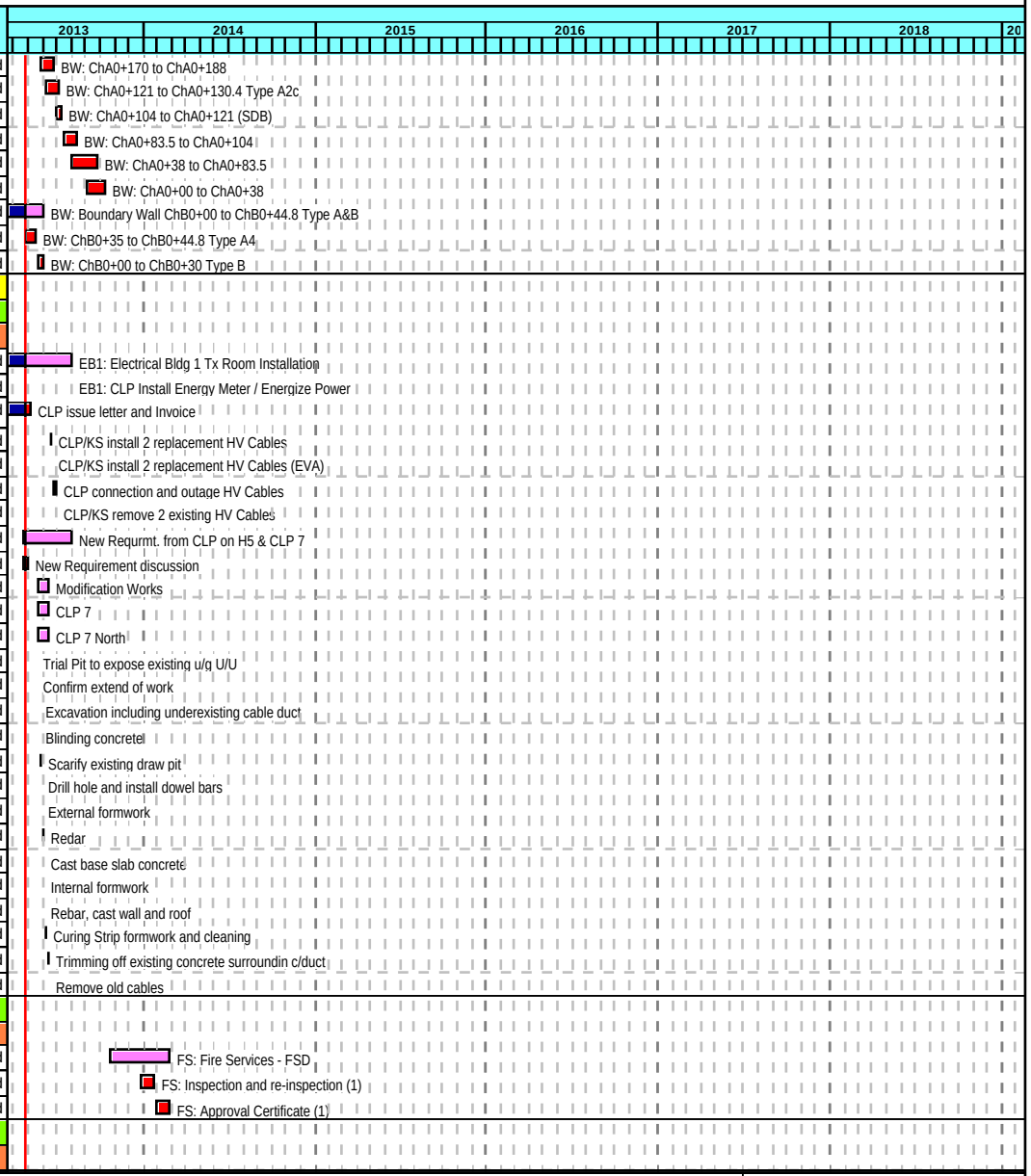
PPSTW Programme R7A- Three-Month Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
CWM228610	BW: ChA0+170 to ChA0+188	30	30MAY2013	28JUN2013	-31d
CWM228640	BW: ChA0+121 to ChA0+130.4 Type A2c	30	11JUN2013	10JUL2013	-33d
CWM228650	BW: ChA0+104 to ChA0+121 (SDB)	18	01JUL2013	18JUL2013	-33d
CWM228670	BW: ChA0+83.5 to ChA0+104	30	19JUL2013	17AUG2013	-33d
CWM228680	BW: ChA0+38 to ChA0+83.5	60	03AUG2013	01OCT2013	-33d
CWM228700	BW: ChA0+00 to ChA0+38	45	02SEP2013 *	16OCT2013	-33d
CWM228810B	BW: Boundary Wall ChB0+00 to ChB0+44.8 Type A&B	195 *	22NOV2012 A	10JUN2013	-33d
CWM228830	BW: ChB0+35 to ChB0+44.8 Type A4	24	28APR2013	21MAY2013	-33d
CWM228840	BW: ChB0+00 to ChB0+30 Type B	20	22MAY2013	10JUN2013	-33d
Statutory Works					
Electrical Supply and Energization - CLP					
Building and Structures					
SSE200110	EB1: Electrical Bldg 1 Tx Room Installation	270 *	12NOV2012 A	08AUG2013	-30d
SSE200190	EB1: CLP Install Energy Meter / Energize Power	3	06AUG2013	08AUG2013	-30d
SSE200540	CLP issue letter and Invoice	30	16DEC2010 A	14MAY2013	-40d
SSE200570	CLP/KS install 2 replacement HV Cables	5	18JUN2013	22JUN2013	-31d
SSE200575	CLP/KS install 2 replacement HV Cables (EVA)	2	23JUN2013	24JUN2013	-31d
SSE200580	CLP connection and outage HV Cables	10	25JUN2013	04JUL2013	-31d
SSE200590	CLP/KS remove 2 existing HV Cables	2	05JUL2013	06JUL2013	-31d
SSE201000	New Requrmt. from CLP on H5 & CLP 7	106 *	22APR2013 A	05AUG2013	-30d
SSE201010	New Requirement discussion	7	22APR2013 A	04MAY2013	-34d
SSE201100	Modification Works	20 *	24MAY2013 *	17JUN2013	-30d
SSE201110	CLP 7	20 *	24MAY2013	17JUN2013	-30d
SSE201120	CLP 7 North	20 *	24MAY2013	17JUN2013	-30d
SSE201130	Trial Pit to expose existing u/g U/U	1	24MAY2013	24MAY2013	-30d
SSE201140	Confirm extend of work	1	25MAY2013	25MAY2013	-30d
SSE201150	Excavation including underexisting cable duct	3	27MAY2013	29MAY2013	-30d
SSE201160	Blinding concrete	1	30MAY2013	30MAY2013	-30d
SSE201170	Scarify existing draw pit	1	31MAY2013	31MAY2013	-30d
SSE201180	Drill hole and install dowel bars	2	01JUN2013	03JUN2013	-30d
SSE201190	External formwork	1	04JUN2013	04JUN2013	-30d
SSE201200	Redar	1	05JUN2013	05JUN2013	-30d
SSE201210	Cast base slab concrete	1	06JUN2013	06JUN2013	-30d
SSE201220	Internal formwork	1	07JUN2013	07JUN2013	-30d
SSE201230	Rebar, cast wall and roof	1	08JUN2013	08JUN2013	-30d
SSE201240	Curing Strip formwork and cleaning	3	10JUN2013	13JUN2013	-30d
SSE201250	Trimming off existing concrete surroundin c/duct	3	14JUN2013	17JUN2013	-30d
SSE201600	Remove old cables	2	18JUN2013	19JUN2013	-30d
Fire Services - FSD					
Building and Structures					
SSF200400	FS: Fire Services - FSD	108 *	21OCT2013	04MAR2014	-30d
SSF200420	FS: Inspection and re-inspection (1)	25	30DEC2013	28JAN2014	-30d
SSF200430	FS: Approval Certificate (1)	25	29JAN2014	04MAR2014	-30d
Plumbing - WSD					
Building and Structures					



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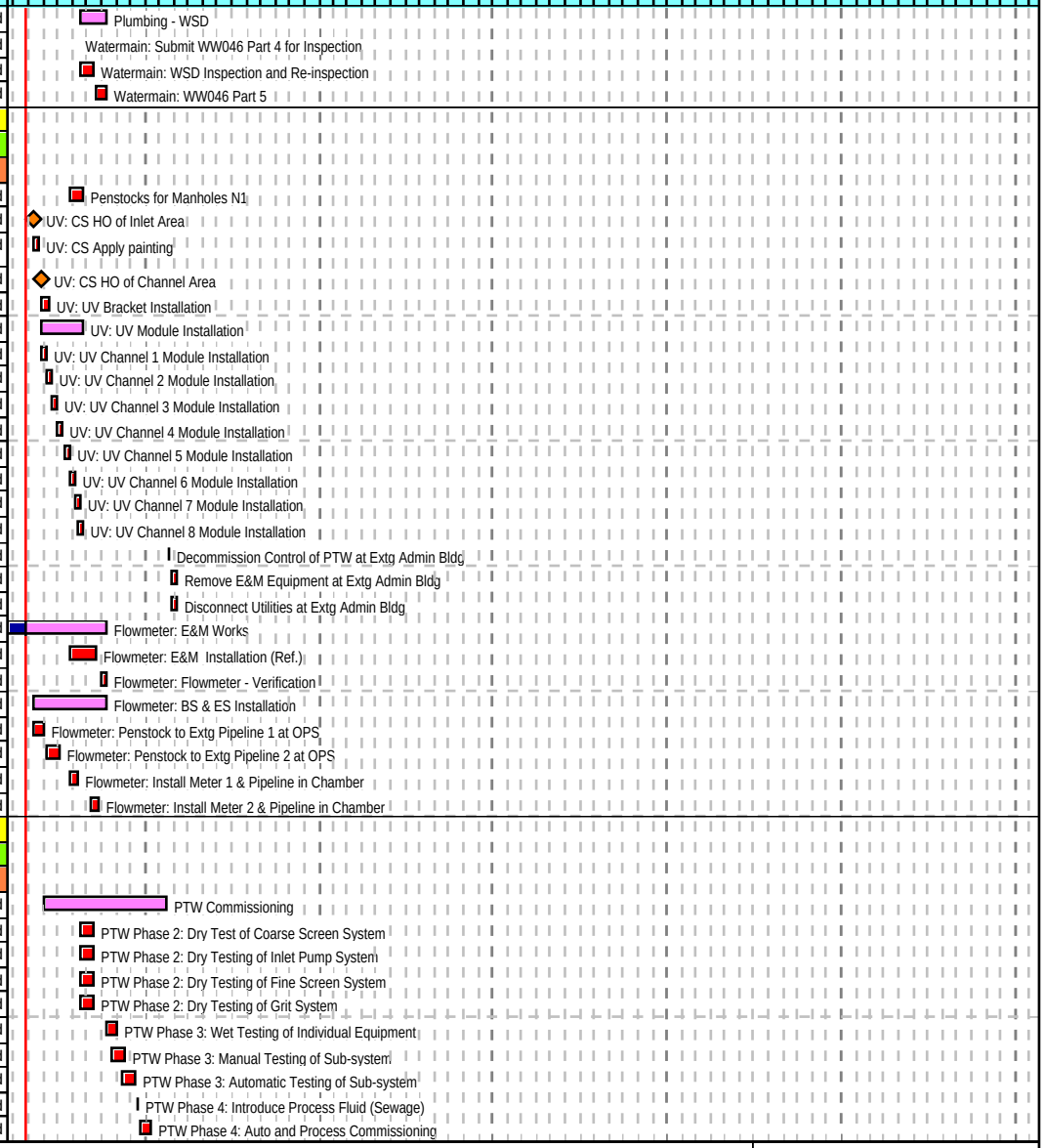
PPSTW Programme R7A- Three-Month Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
SSP200500	Plumbing - WSD	50 *	20AUG2013	19OCT2013	-39d
SSP200510	Watermain: Submit WW046 Part 4 for Inspection	1	20AUG2013	20AUG2013	-39d
SSP200520	Watermain: WSD Inspection and Re-inspection	25	21AUG2013	18SEP2013	-39d
SSP200530	Watermain: WW046 Part 5	24	19SEP2013	19OCT2013	-39d
E&M Works					
Procurement and Installation					
Building and Structures					
EMW001110	Penstocks for Manholes N1	28	26JUL2013	27AUG2013	-31d
EMW303100A	UV: CS HO of Inlet Area	0		10MAY2013	-36d
EMW303100B	UV: CS Apply painting	14	11MAY2013	28MAY2013	-36d
EMW303100D	UV: CS HO of Channel Area	0		28MAY2013	-36d
EMW303110	UV: UV Bracket Installation	20	29MAY2013	21JUN2013	-36d
EMW303160	UV: UV Module Installation	80 *	29MAY2013	31AUG2013	-36d
EMW303161	UV: UV Channel 1 Module Installation	15	29MAY2013	15JUN2013	-36d
EMW303162	UV: UV Channel 2 Module Installation	15	07JUN2013	25JUN2013	-36d
EMW303163	UV: UV Channel 3 Module Installation	15	18JUN2013	05JUL2013	-36d
EMW303164	UV: UV Channel 4 Module Installation	15	29JUN2013	17JUL2013	-36d
EMW303165	UV: UV Channel 5 Module Installation	15	18JUL2013	03AUG2013	-36d
EMW303166	UV: UV Channel 6 Module Installation	15	27JUL2013	13AUG2013	-36d
EMW303167	UV: UV Channel 7 Module Installation	15	06AUG2013	22AUG2013	-36d
EMW303168	UV: UV Channel 8 Module Installation	15	15AUG2013	31AUG2013	-36d
EMW808010	Decommission Control of PTW at Extg Admin Bldg	6	20FEB2014	26FEB2014	-30d
EMW808020	Remove E&M Equipment at Extg Admin Bldg	12	27FEB2014	12MAR2014	-30d
EMW808030	Disconnect Utilities at Extg Admin Bldg	12	27FEB2014	12MAR2014	-30d
EMW821000	Flowmeter: E&M Works	552 *	30NOV2011 A	16OCT2013	-42d
EMW821110	Flowmeter: E&M Installation (Ref.)	48	29JUL2013	23SEP2013	-34d
EMW821140	Flowmeter: Flowmeter - Verification	10	04OCT2013	16OCT2013	-42d
EMW821170	Flowmeter: BS & ES Installation	130 *	11MAY2013	16OCT2013	-42d
EMW821180	Flowmeter: Penstock to Extg Pipeline 1 at OPS	24	11MAY2013	08JUN2013	-42d
EMW821190	Flowmeter: Penstock to Extg Pipeline 2 at OPS	24	10JUN2013	09JUL2013	-42d
EMW821200	Flowmeter: Install Meter 1 & Pipeline in Chamber	20	29JUL2013	20AUG2013	-42d
EMW821205	Flowmeter: Install Meter 2 & Pipeline in Chamber	20	09SEP2013	03OCT2013	-42d
Testing and Commissioning					
PTW Testing and Commissioning					
Building and Structures					
EMT100000	PTW Commissioning	264 *	01JUN2013	19FEB2014	-51d
EMT102310	PTW Phase 2: Dry Test of Coarse Screen System	30	21AUG2013	19SEP2013	-31d
EMT102320	PTW Phase 2: Dry Testing of Inlet Pump System	30	21AUG2013	19SEP2013	-31d
EMT102330	PTW Phase 2: Dry Testing of Fine Screen System	30	21AUG2013	19SEP2013	-31d
EMT102340	PTW Phase 2: Dry Testing of Grit System	30	21AUG2013	19SEP2013	-31d
EMT103410	PTW Phase 3: Wet Testing of Individual Equipment	30	10OCT2013	08NOV2013	-51d
EMT103420	PTW Phase 3: Manual Testing of Sub-system	30	26OCT2013	24NOV2013	-51d
EMT103430	PTW Phase 3: Automatic Testing of Sub-system	30	15NOV2013 *	14DEC2013	-51d
EMT104100	PTW Phase 4: Introduce Process Fluid (Sewage)	7	15DEC2013	21DEC2013	-51d
EMT104200	PTW Phase 4: Auto and Process Commissioning	30	22DEC2013	20JAN2014	-51d



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Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
EMT104300	PTW Phase 4: Verification	30	21JAN2014	19FEB2014	-51d
CEPT Testing and Commissioning					
Building and Structures					
EMT200000	CEPT Tank Testing and Commissioning	282 *	21MAY2013	26FEB2014	-32d
EMT204100	CEPT Tank Phase 4: Introduce Process Sewage	6	03JAN2014	08JAN2014	-32d
EMT204200	CEPT: Phase 4 Auto Testing Process Commissioning	35	09JAN2014	12FEB2014	-32d
EMT204300	CEPT Tank Phase 4: Verification	14	13FEB2014	26FEB2014	-32d
UV Disinfection Facilities					
Building and Structures					
EMT300000	UV: Testing and Commissioning	189 *	01SEP2013	08MAR2014	-42d
EMT301100	UV: Phase 1 - Installation Inspection	50	01SEP2013	20OCT2013	-42d
EMT302100	UV: Phase 2 - Dry Test of Individual Eq't	30	21OCT2013	19NOV2013	-42d
EMT303100	UV: Phase 3 - Wet Test of Individual Eq't	30	20NOV2013	19DEC2013	-42d
EMT303200	UV: Phase 3 -Manual Testing of Sub-system	30	05DEC2013	03JAN2014	-42d
EMT303300	UV: Phase 3 - Auto Testing of Sub-system	30	20DEC2013	18JAN2014	-42d
EMT304100	UV: Phase 4 - Introduce Process Sewage	1	19JAN2014	19JAN2014	-42d
EMT304200	UV: Phase 4 Auto Testing Process Commissioning	30	20JAN2014	18FEB2014	-42d
EMT304300	UV: Phase 4 - Verification	30	07FEB2014	08MAR2014	-42d
Chemical Building					
Building and Structures					
EMT503100	Chemical: Phase 3 - Wet Test of Individual Eq't	30	30OCT2013	28NOV2013	-32d
EMT503200	Chemical: Phase 3 -Manual Testing of Sub-system	30	14NOV2013	13DEC2013	-32d
EMT503300	Chemical: Phase 3 - Auto Testing of Sub-system	30	04DEC2013	02JAN2014	-32d
Sludge Dewatering and Skip Storage					
Building and Structures					
EMT600000	Sludge: Testing and Commissioning	226 *	16JUL2013	26FEB2014	-32d
EMT604100	Sludge: Phase 4 - Introduce Process Sewage	3	09JAN2014	11JAN2014	-32d
EMT604200	Sludge: Phase 4 Auto Test/Process Commissioning	20	12JAN2014	31JAN2014	-32d
EMT604300	Sludge: Phase 4 - Verification	30	28JAN2014	26FEB2014	-32d
Septic Waste Collection facilities					
Building and Structures					
EMT150000	Septic Station: Testing and Commissioning	233 *	29JUN2013	16FEB2014	-48d
EMT153100	Septic Station: Phase 3 - Wet Test of Indiv Eq't	30	20OCT2013	18NOV2013	-48d
EMT153200	Septic Station: Phase 3 - Manual Test Sub-system	30	04NOV2013	03DEC2013	-48d
EMT153300	Septic Station: Phase 3 - Auto Test Sub-system	30	24NOV2013	23DEC2013	-48d
EMT154100	Septic Station: Phase 4-Introduce Process Sewage	7	24DEC2013	30DEC2013	-48d
EMT154200	Septic: Phase 4 Auto Test Process Commissioning	30	31DEC2013	29JAN2014	-48d
EMT154300	Septic Station: Phase 4 - Verification	30	18JAN2014	16FEB2014	-48d
Control System					
Building and Structures					
EMT810000	Control/SCADA: Testing and Commissioning	206 *	05AUG2013	26FEB2014	-32d
EMT811121	Control/SCADA: Phase 2/3 - SAT PLC LCP PTW	66 *	10OCT2013	14DEC2013	-51d
EMT811123	Control/SCADA: Phase 2/3 - SAT PLC LCP UV RW	60 *	20NOV2013	18JAN2014	-42d
EMT814200	Control/SCADA: Phase 4 Auto Test/Process Comm.	67 *	22DEC2013	26FEB2014	-32d
EMT814300	Control Phase 4 - Verification	37 *	21JAN2014	26FEB2014	-32d

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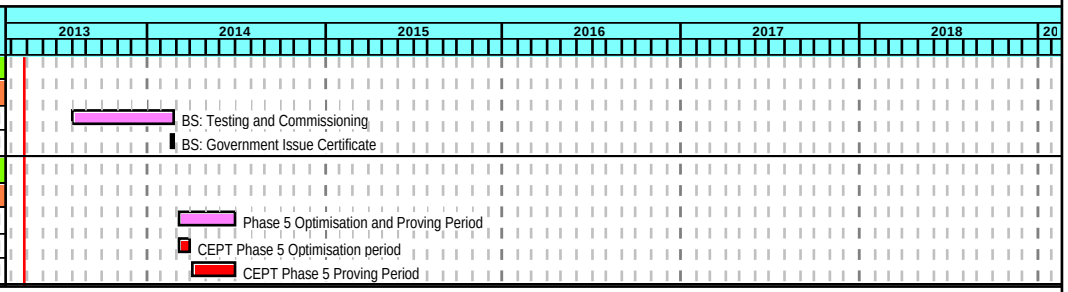
PPSTW Programme R7A- Three-Month Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point

Activity ID	Description	Original Duration	Early Start	Early Finish	Total Float
Building Services					
Building and Structures					
EMT830000	BS: Testing and Commissioning	213 *	04AUG2013	04MAR2014	-41d
EMT838000	BS: Government Issue Certificate	14	19FEB2014	04MAR2014	-41d
Optimisation and Proving Test for All E&M Works					
Building and Structures					
EMT990000	Phase 5 Optimisation and Proving Period	120 *	09MAR2014	06JUL2014	-42d
EMT995000	CEPT Phase 5 Optimisation period	30	09MAR2014	07APR2014	-42d
EMT995300	CEPT Phase 5 Proving Period	90	08APR2014	06JUL2014	-42d



PPSTW Programme R7A- Three-Month Rolling Programme

Early bar
Progress bar
Critical bar
Summary bar
Start milestone point
Finish milestone point